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CHAPTER 10 - PRINTING

10.1 – Introduction to Printing

Printing changes, or enhancements, have been released with MicroStation V8i. These changes include: plot file migration from .plt to .pltcfg, Print Definition files, Print Organizer (replaces Batch Print), Print Dialog revisions, and more.

This chapter will discuss the printing files & procedures used for EFLHD projects as well as how EFLHD has incorporated the V8i printing changes.

10.2 – Plot Drivers

Plot Drivers have many properties that can be set. The main functions are to define features such as: default printer, default Pen Table, paper sizes (including defaults), weight maps, default line style patterns. There are new features within the V8i .pltcfg files, and existing .plt files are still supported. However, new drivers (.pltcfg) have been created for EFLHD use with V8i to improve printing performance.



Note that there are no longer specific drivers for print orientation (landscape or portrait). These are not needed as the software can automatically determine the orientation of a fence or plot shape/cell.

10.3 – Pen Tables

Pen tables are files that contain directions for re-symbolizing the printed output of design or sheet files. The updated V8i pen tables have created sections where there are input and output actions for specific selection criteria.

EFLHD uses three standard pen tables for MicroStation printing. Pen tables are automatically loaded with a specific plot driver. If settings of the same feature are different in both the print driver and pen table, the pen table will govern over the print driver. EFLHD uses the re-symbolizing function for specific element shading or to disable the plot function of specific elements. Additionally, the Text Substitutions feature is used in the pen tables to print files specific information such as file name & path, date, and user. The three pen tables used at EFL are:

- HP5550_X30.tbl
- WIN7_HP5550_X30.tbl
- Color_WIN7_HP5550_X30.tbl

Pen Tables are located at:

M:\Engineering_Software\Cadd_resource_v8i\Plotting\pen_tables

At EFL there are several combinations of plot drivers and pen tables for 11x17, and for both color and black & white. Listed in the tables below are the plot drivers (.pltcfg), the pen tables (.tbl) that are automatically attached, and the output produced for each combination.

Plot Drivers are located at:

M:\Engineering_Software\Cadd_resource_v8i\Plotting\Plot_Driver\WIN7

Plot Driver	Pen Table (Attached Automatically)
Description	
Adobe_PDF.pltcfgr	WIN7_HP5550_X30.tbl
<p>Printer/Location: No Physical Printer Paper Sizes: ANSI A - 11x8.5, ANSI B-17x11(default), ANSI C-22x17, ANSI D-34x22, ANSI E-44x34 Orientation: Landscape or Portrait Output: Basic Adobe output in black and white. Fades the P&P and XS sheet grid, and everything on levels E_*. All other elements are plotted with color = black. Adds file name/date/time stamp at lower left edge of sheet border. Can be used with single or multiple sheet printing methods.</p>	
Adobe_PDF_color.pltcfgr	Color_WIN7_HP5550_X30.tbl
<p>Printer/Location: No Physical Printer Paper Sizes: ANSI A - 11x8.5, ANSI B-17x11(default), ANSI C-22x17, ANSI D-34x22, ANSI E-44x34 Orientation: Landscape or Portrait Output: Basic Adobe output in color. Plots all elements with color shown on screen except black screen background changed to white background in plot. Adds file name/date/time stamp at lower left edge of sheet border. Can be used with single or multiple sheet printing methods.</p>	
HP5550_220_HD.pltcfgr	WIN7_HP5550_X30.tbl
<p>Printer/Location: 2nd Floor (HP LaserJet) - Located in Design Paper Sizes: 17x11, 8.5x11 (default) Orientation: Landscape or Portrait Output: Black & White, and GrayScale prints. Fades the P&P and XS sheet grid, and everything on levels E_*. All other elements are plotted with color = black. Adds file name/date/time stamp at lower left edge of sheet border. Can be used with single or multiple sheet printing methods.</p>	
HP5550_320_HD.pltcfgr	WIN7_HP5550_X30.tbl
<p>Printer/Location: 3rd Floor (HP LaserJet) - Located in both Design Rooms Room 320 and 321 Paper Sizes: ANSI A - 11x8.5, ANSI B-17x11(default) Orientation: Landscape or Portrait Output: Black & White, and GrayScale prints. Existing elements and grids are shaded. Adds file name/date/time stamp at lower left edge of sheet border. Can be used with single or multiple sheet printing methods.</p>	

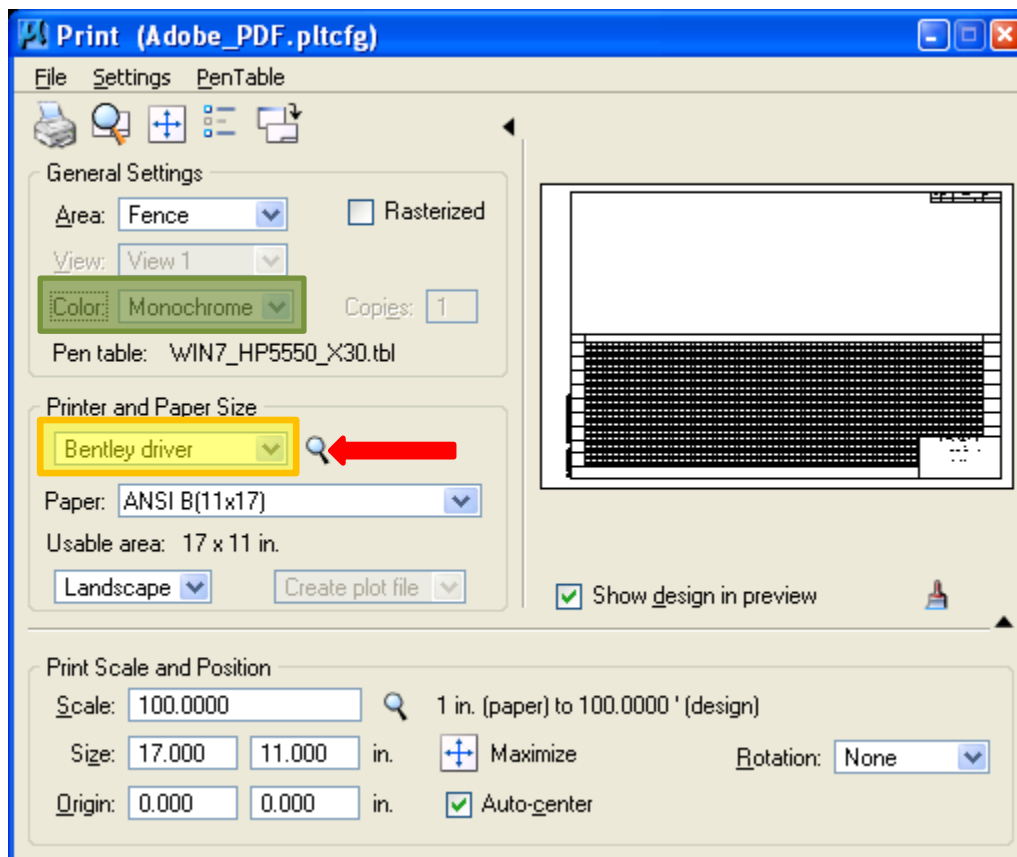
10.4 – Microstation Print Tool

The MicroStation Print Dialog continues to be a common way to print single or multiple plan sheets. The typical practice is to place a fence including the area desired to be printed. In most cases, this is the plot shape within the EFLHD border sheets. Once the Print Dialog is invoked, the previous print session's driver is loaded. The user must browse for and select the desired driver. (The MicroStation workspace environment has been developed to automatically open the location for standard drivers.) All other plot parameters should then be verified and/or set in the print dialog, and then the print function is selected.

One of the common ways to ensure that a plot will be printed to scale and at the right format is to:

1. Place a fence at the corners of the D_Plot_Shape border of your design file.
2. Select the magnifier at **Printer and Paper Size** on the **Print** dialog box as shown in **yellow** for the list of print drivers. Select the right print driver (EFLHD print driver).
3. Select **Color** icon on the **Print** dialog as shown in Green and verify the selection, either Gray scale (for Cross section and Plan & Profile sheets), full color for colorful sheets or Monochrome for all black sheets.

Note : The Color icon should be set automatically with the selection of the driver, but you should always verify the setting.

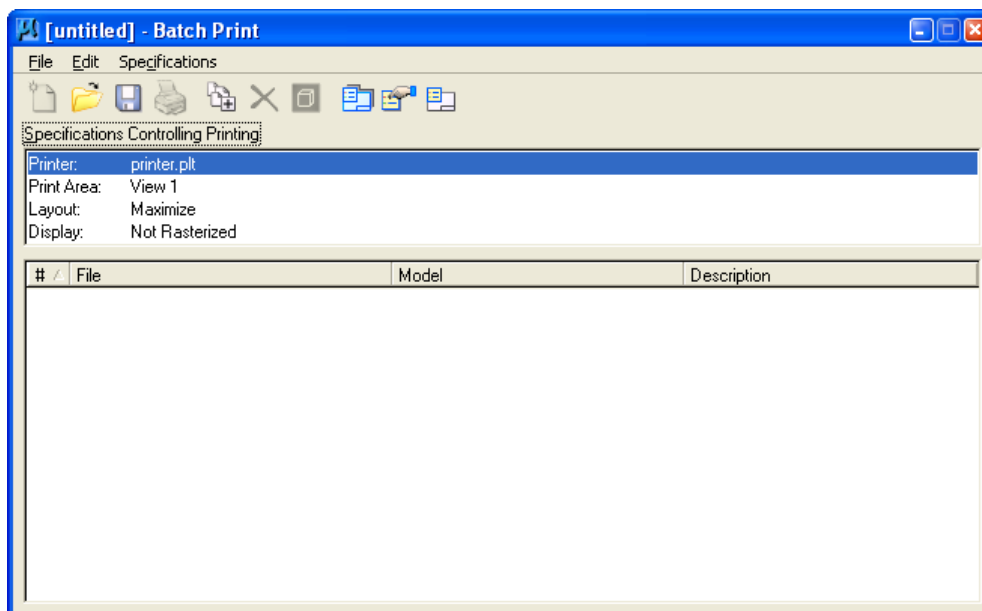


10.5 – Batch Plotting

The Batch Print utility is no longer included in the menus of MicroStation in version V8i. However, it does continue to be supported. The Batch Print dialog can be loaded via key-in “**mdl load batchplt**”.

Batch printing will allow users to plot files without having to open the file and place a fence around the data to get a plot. Batch printing is a MicroStation utility used to print and re-print sets of drawings. Job sets are created containing the desired drawing files and a set of print specifications are created for each job set. The print specifications are defined containing information such as printer, print area, layout, and display. This chapter will detail each of the necessary settings associated with Batch Printing.

- Select **Utilities > Key-In** from the main MicroStation pull-down menu.
- Key in **mdl load batchplt** and hit Enter.
- Once selected the **Batch Print** dialog box is activated. The top bar on this dialog will show the current Job Set. Shown below as [Untitled]. Once a new Job Set is created or an existing Job Set is opened the name will replace [untitled].

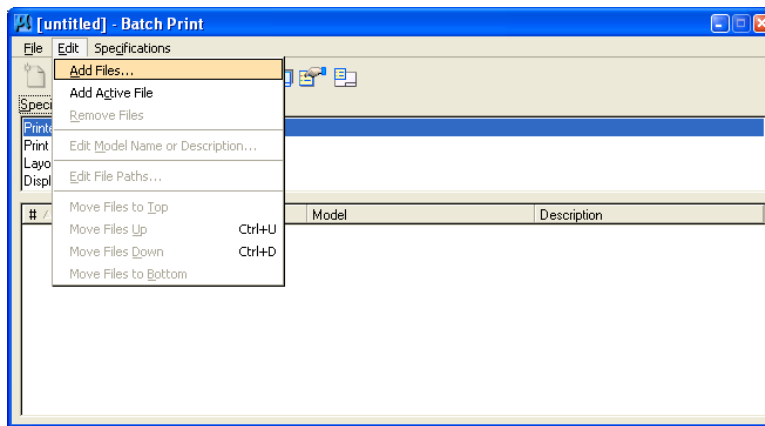


- To open an existing job set select **File > Open** and select the desired job.
Job Sets are lists of files to be printed, along with the associated print specifications used to print the files such as which printer, what area to print, what scale, which pen table, etc. Each job set created will have the extension, .job.

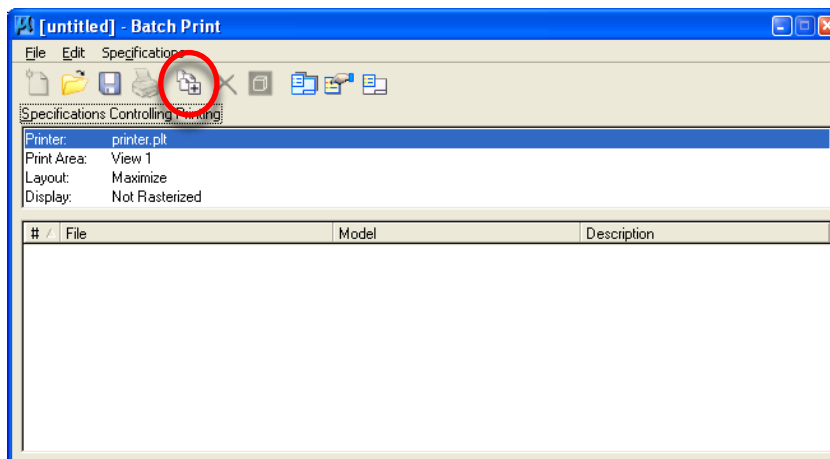
Step I

- Creating a New Job Set- The user must first select the design files to be added to the Job Set.

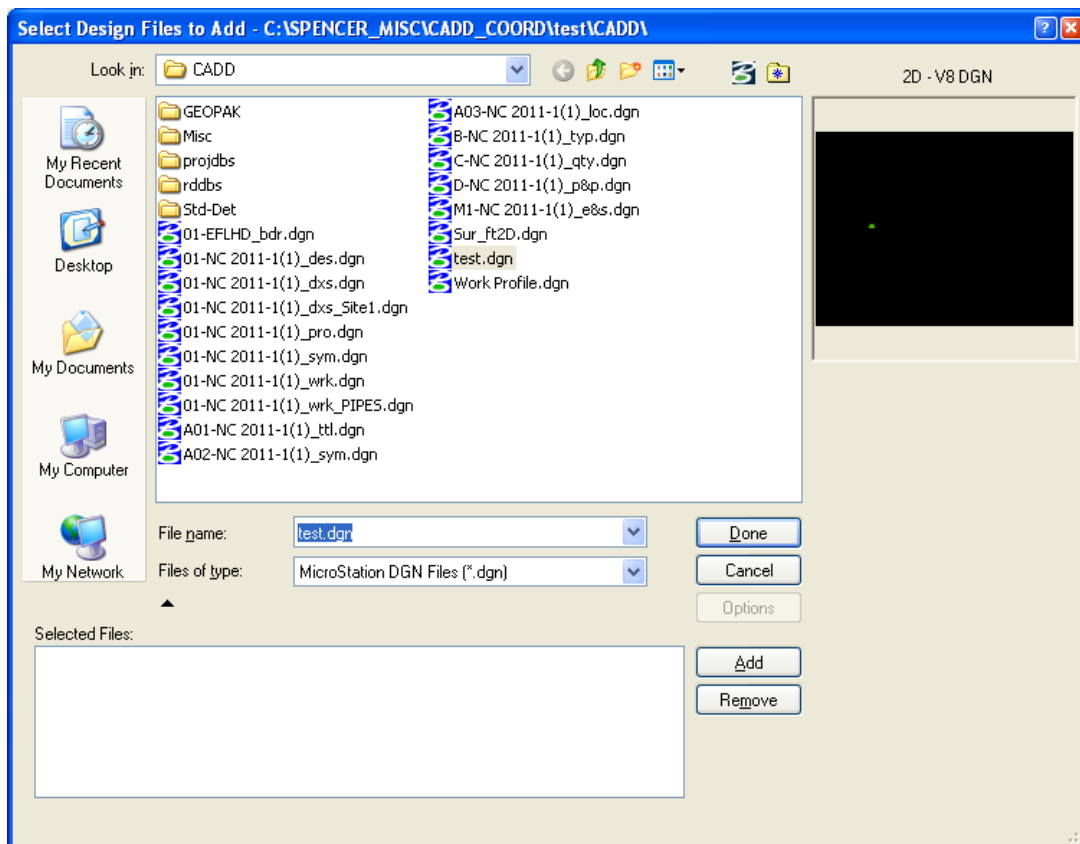
Select **Edit > Add Files...**



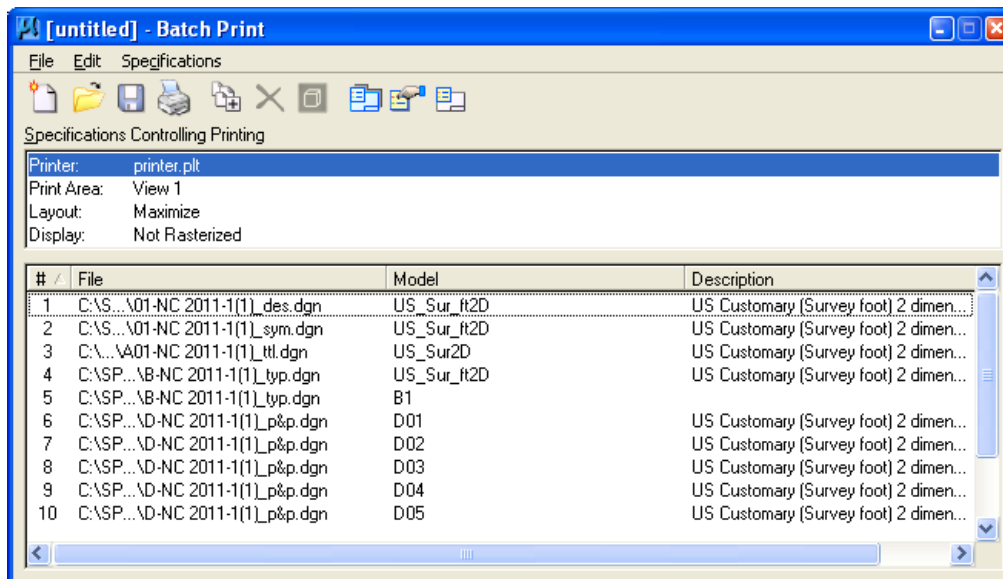
- The user may also alternatively select the Add Design Files icon, as shown below.



- Once selected the Select Design Files to Add dialog box will activate as shown below.

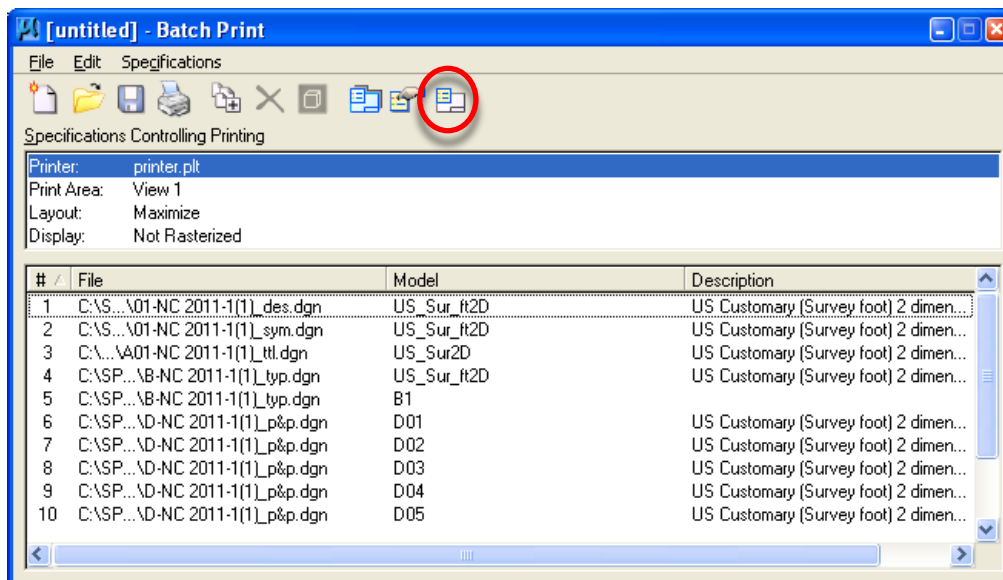


- Select the desired directory from the upper right Directories box. Once you have navigated to the correct directory, select the desired files from the upper left Files box. You may select multiple files by using the control or shift keys while selecting.
- After selecting the desired files, the **Add** button will be active. Select the **Add** button and the selected files will be populated in the selected files box at the bottom of the above dialog box.
- Once complete, select the done button. The Batch Print dialog box will display as shown below.

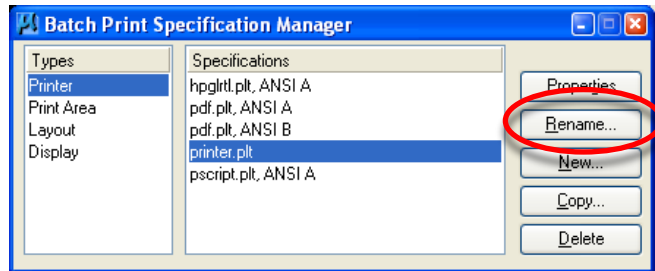


Step II

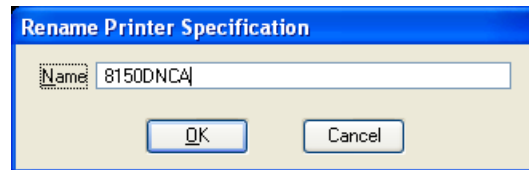
- Now set the plot specifications (Plot specifications tell MicroStation how to plot the selected files).
- Select **Specifications > Manage**, or select the **Manage Specification** icon, as shown below.



- Once selected the Batch Print **Specification Manager** dialog box will activate.



- Select **Printer** Type and highlight **Default** Specification. Begin by renaming the default printer to be a more descriptive name. Select **R**ename from the dialog box shown above, the **Rename Printer Specification** dialog box will activate. Give a descriptive name, shown as 8150DNCA below, and select **OK**.

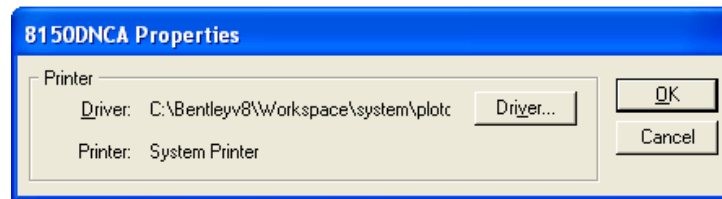


- Once renamed, highlight the printer on the left and the newly renamed **8150DNCA** on the right, and select **Properties**.

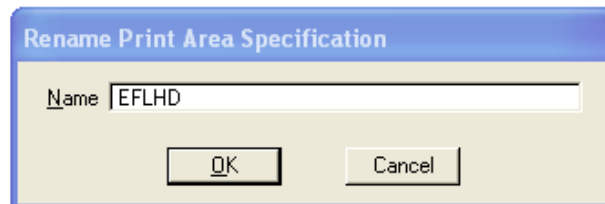
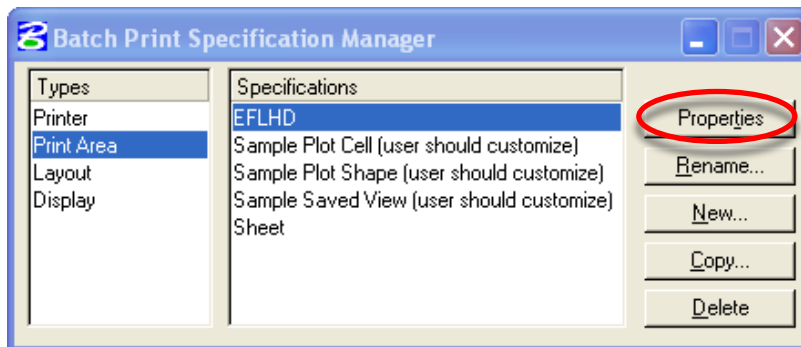


Note: In most cases the EFLHD user will want to select one of the plot driver files found in the *M:\Engineering_Software\Cadd_resource_v8i\Plotting\Plot_Driver\WIN7* directory in order to achieve special plotting effects such as shading contours or P&P sheet grids.

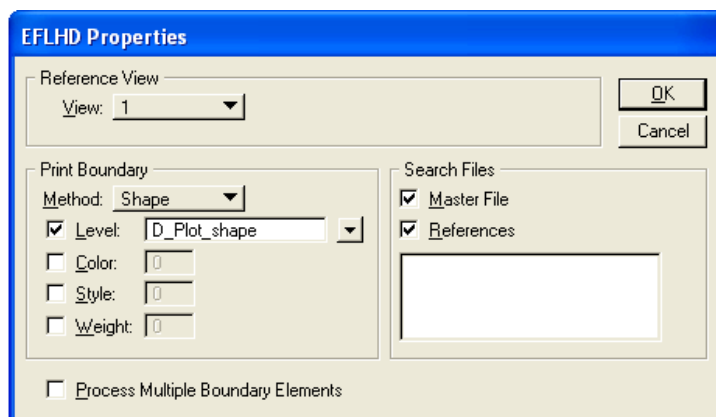
- Once **Properties** is selected, the following dialog box will activate allowing the user to select the desired printer driver. Click the **Driver** button on the Properties dialog and select the printer driver (see **Section 10.2**) and choose **OK**.



- Select **Print Area** Type and highlight **Default** Specification on the Specification Manager dialog and rename the **Print Area** specification to be more descriptive, shown below as **EFLHD**.



- Select **EFLHD** Specification of **Print Area** and click on **Properties** button. The EFLHD Properties dialog box will appear as shown below.

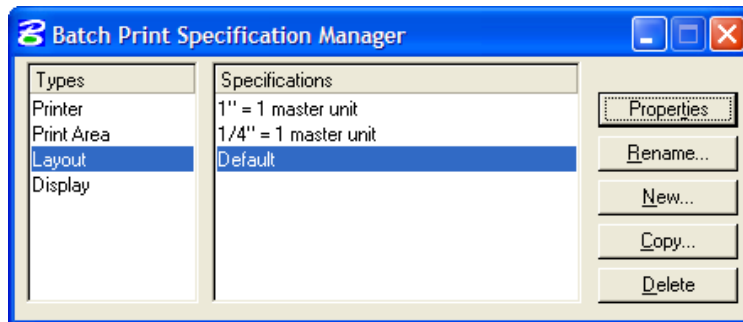


Note - This step will be to set the desired print area. Using the EFLHD standard sheet border cells will ensure that a plot shape will be available to define the area to be plotted for each sheet. Included with each border is a plot shape on level **D_Plot_Shape** that has been created as a construction element so it will not plot unless desired. The print area properties dialog, shown above, allows the user to select the attributes of the plot shape and to look for the plot shape in the master file, reference files, or both. If any of the design files to be plotted has more than one sheet then check the Process Multiple Boundary Elements box at the bottom of the properties dialog

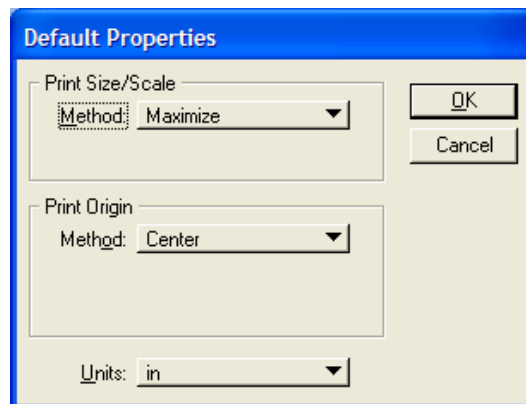
- Select the attributes of the plot shape as shown above and click **OK**. When selecting the References check box the box below becomes active to allow the user to select certain reference files by logical or file name. If this box is left empty all of the reference files will be searched.

Note - The level of the plot shape must be typed in. The drop-down box will only include the levels in the master file, as the list could get quite long.

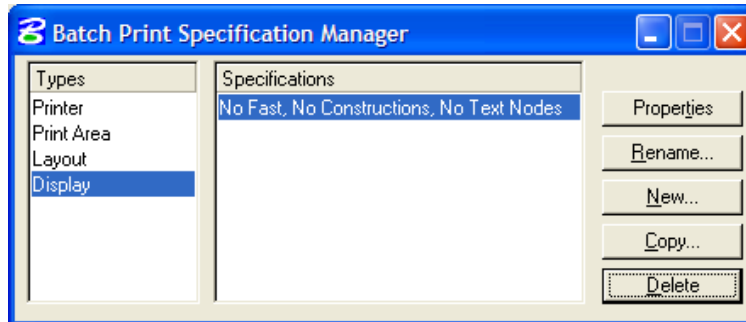
- From the **Batch Print Specification Manager** dialog box select **Layout**.



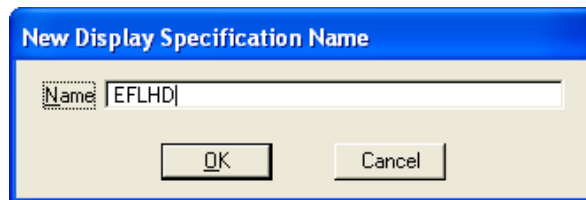
- Select **Default** from the right hand box and then select **Properties**. For layout, the name (default) may be renamed if desired however there may be little need to change these specifications so default may be fine.



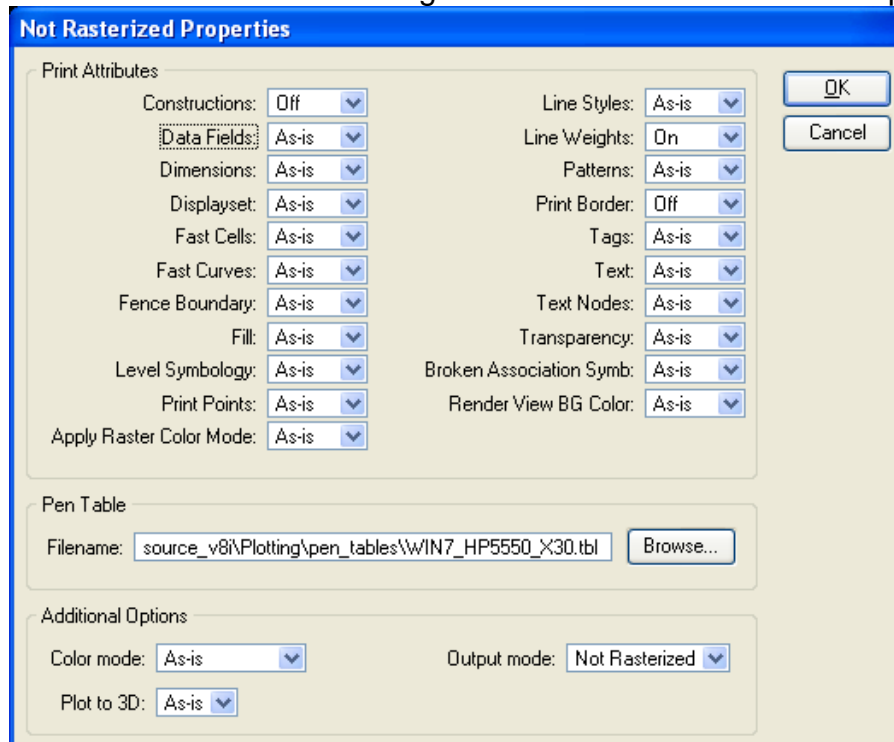
- Select Maximize, Center, and the correct units and select **OK**.
- From the Batch Print Specification Manager dialog box select Display.



- Select New to create a new set of specifications. Input a new name and click **OK**.



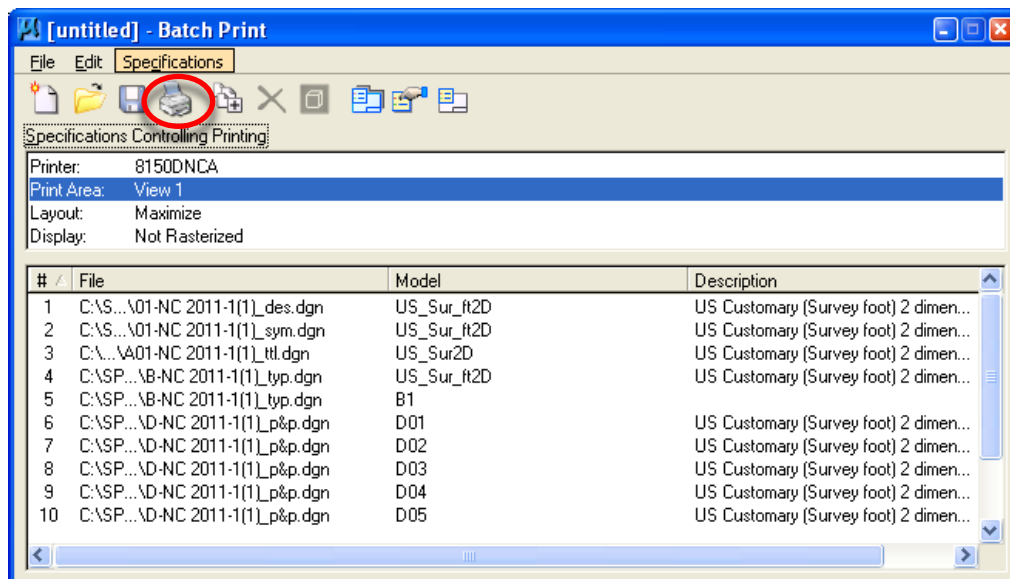
- Select the new name from the right hand box and then select Properties.



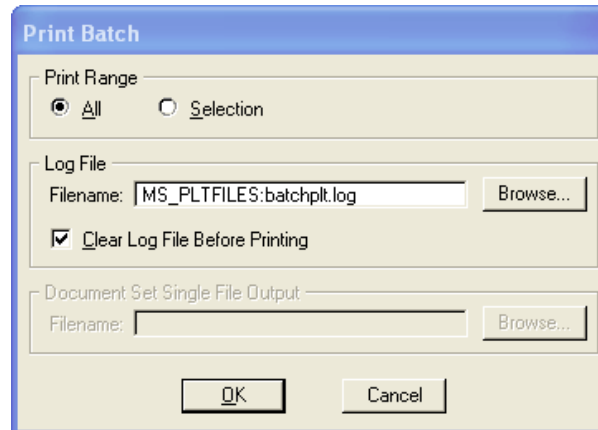
- The display dialog is similar to the view attributes dialog box, but is specific to printing. In V8i you have the ability to plot with attributes different than the current view. From this dialog box you also have the ability to specify a pen table.
- From the example above we have turned Constructions, and Print Border Off. This allows us to use these features during our work but not to plot them.
- Select the desired attributes and select **OK**.
- Close the Batch Print Specification Manager by selecting the X in the upper right corner.
- Once the files have been added and the specifications set, select **File > Save**. This will save all of the settings in a Job Set file with a .job extension. Job Set files may be stored in your M:\ . . . \Plots\Adobe directory. There is no standard or default directory where batch print looks for these files.

Step III – Printing

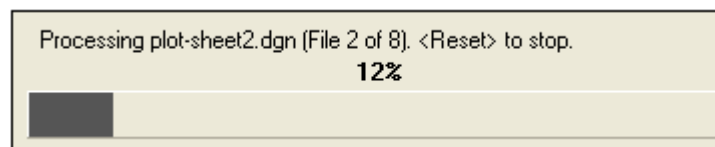
- If reprinting a previously saved Batch Print Job Set use **File > Open** in the main Batch Print dialog pull down menus to select the .job file for that Job Set. This will populate the dialog with the files to be printed and the associated print specifications. If continuing directly from Workflow 2 above (Creating a New Job Set) then skip this step.
- From the Batch Print dialog, shown below, select the printer icon.



- The Print Batch dialog will activate.



- From this dialog box the user can select a print range, and log file.
- Select **OK** and the files will be sent to the printer. A status bar will be displayed during the process, as shown below.



10.6 – Print Organizer

Print Organizer is a new utility in V8i that is used for creating, managing, and publishing project plan sheets. This new utility replaces the Batch Print utility used in MicroStation V8.

All standard border cells (sheets) have a sheet boundary indicated by the dotted line surrounding the actual border. This sheet boundary is on the D_Plot_Shape level in MicroStation. This represents the paper limits. The **dotted line** is a guide to place fences for single sheet printing and it is read by the Print Organizer tool when batch printing. The fence or plot shape defines the area to be plotted.

10.6.1 - Preparation

DO NOT RENAME the border .dgn file when copying it to your project folder.

Print Organizer searches for *01-EFLHD_bdr.dgn* and/or *01-EFLHD_bdr-nps.dgn* in reference files and the active .dgn, by name, when assembling the batch.

A properly defined plot shape must be found in the drawing(s) to define the area(s) to be batch plotted. The element **attributes** of the plot shape are:

- **Level = D_Plot_Shape**
- **Color = 3**
- **Line Style = 2**
- **Line Weight = 1**

A Print Set file (Roadway_Print_default.pset) has been created for you with named expressions for each sheet number descriptor (A_Shts, B_Shts, C_Shts, etc).

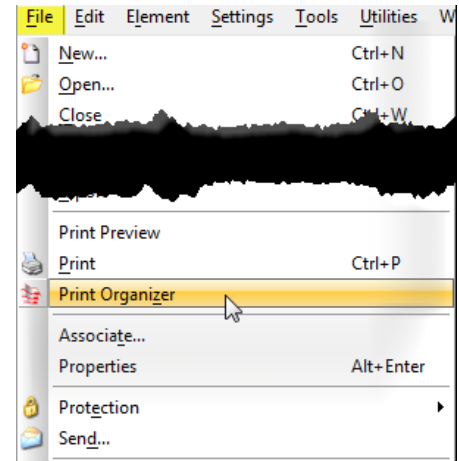
Copy the Roadway_Print_default.pset file from M:\Engineering_Software\Cadd_resource_v8i\Plotting\Print_Organizer to your project folder.

This is where you will access the file from.

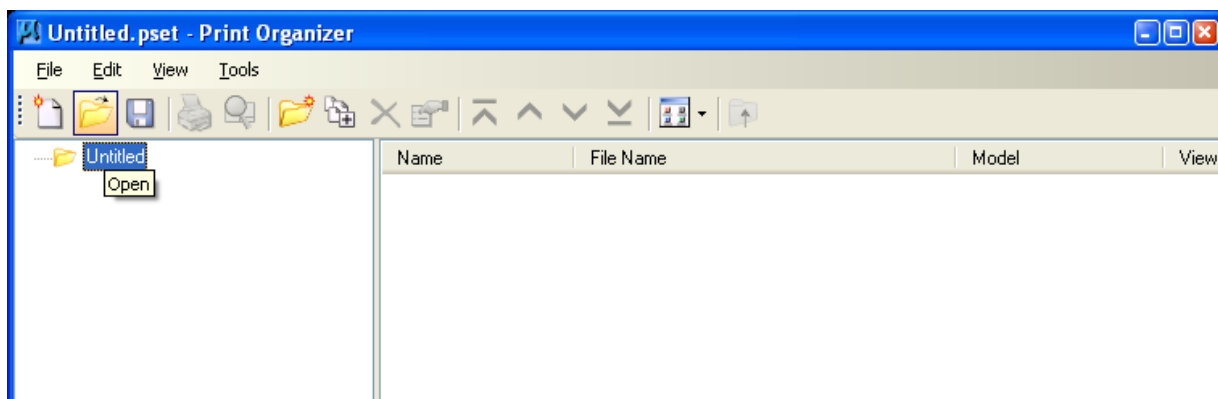
10.6.2 - Batch Printing

As noted earlier, **plot shapes must be in place in all drawings, in all areas to be printed using the batch plotting routine.**

To begin batch printing go to **File > Print Organizer**

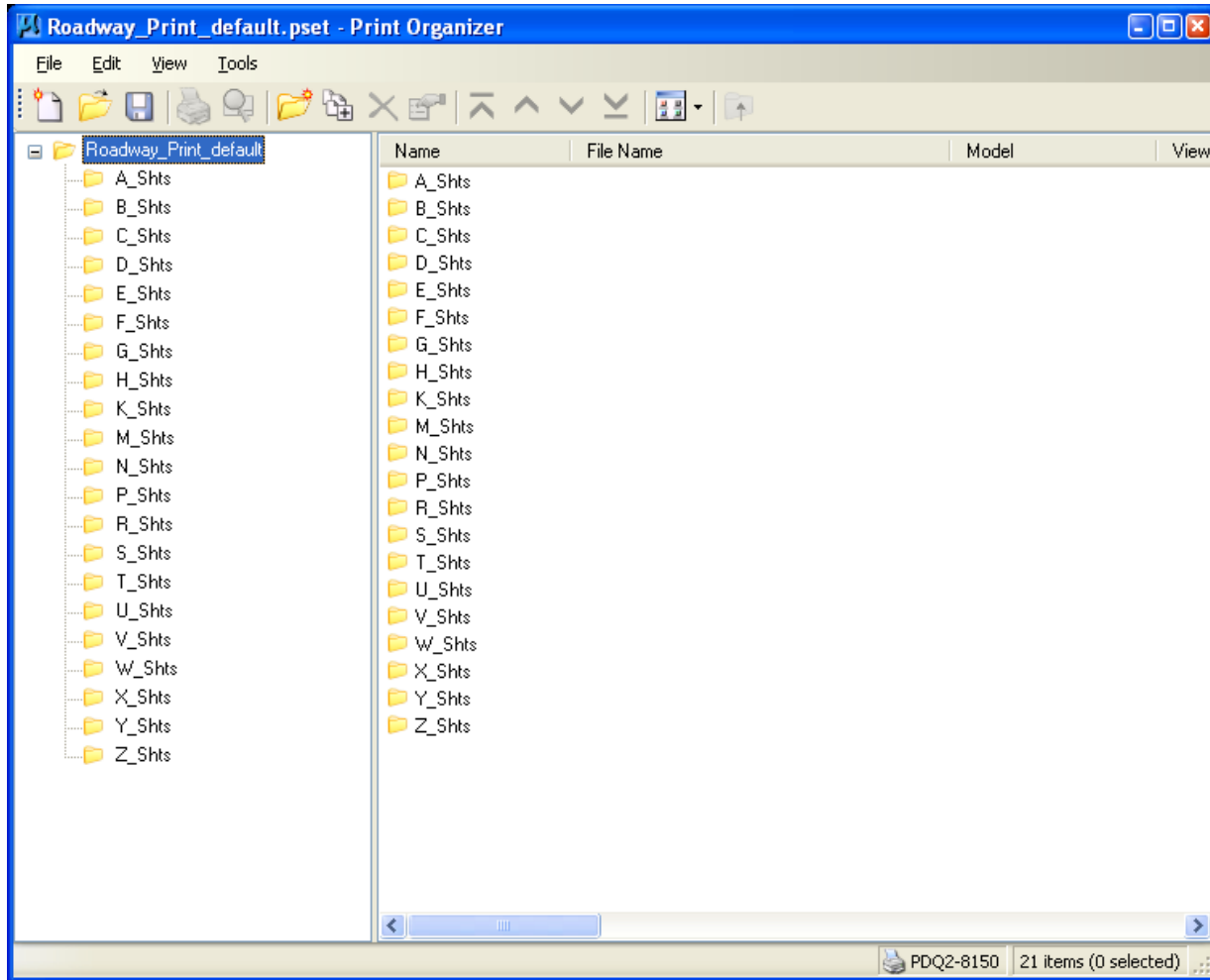


Open the Roadway_Print_default.pset file;

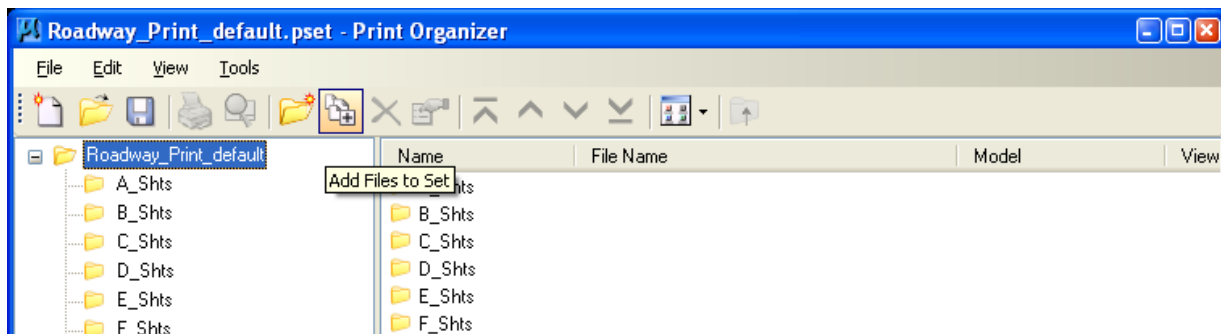


Navigate to the .pset file saved to your project folder.

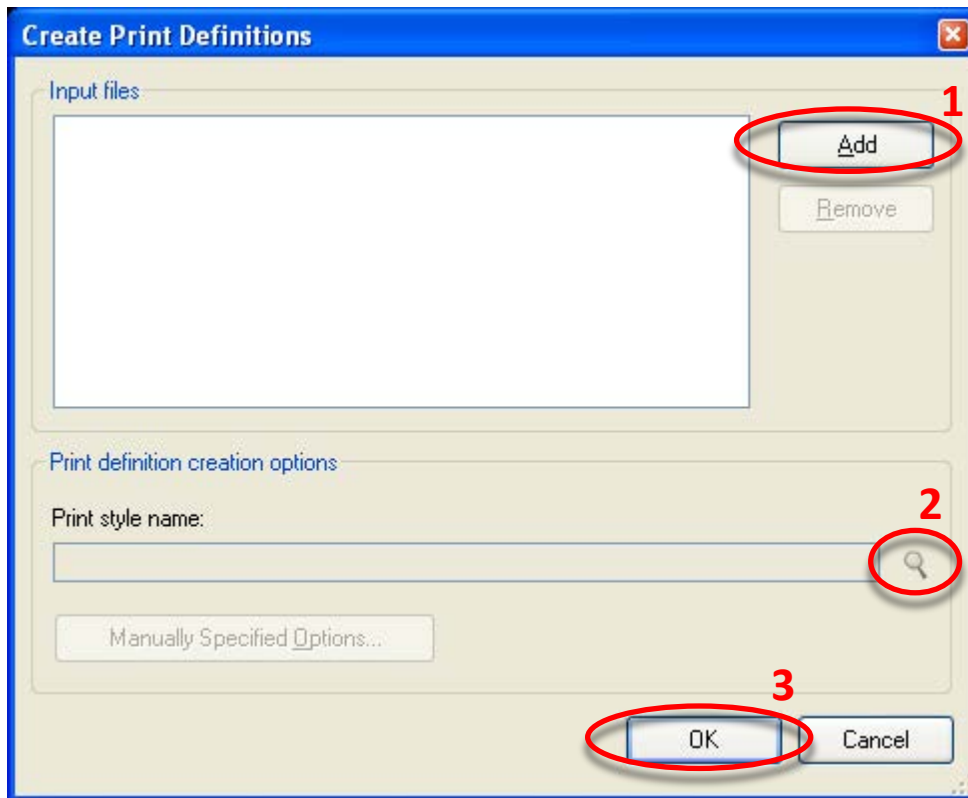
You will see the following;



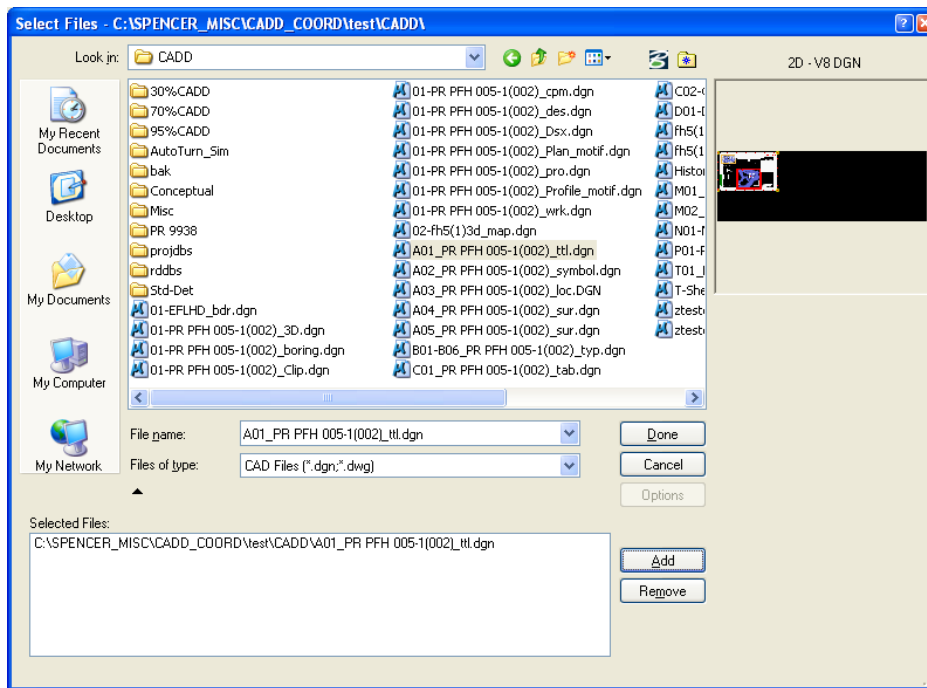
To add files to the batch printing set, select the named folder you want to add files to and click **Add Files to Set** . (or go to **File > Add Files to Set**)



Next select **Add** to navigate to and select files to add to the batch. Multiple file locations can be selected by selecting add and navigating to other location and files.



1. Select the desired files, then select **Add**, and then Select **OK**. **Multiple files can be added.**

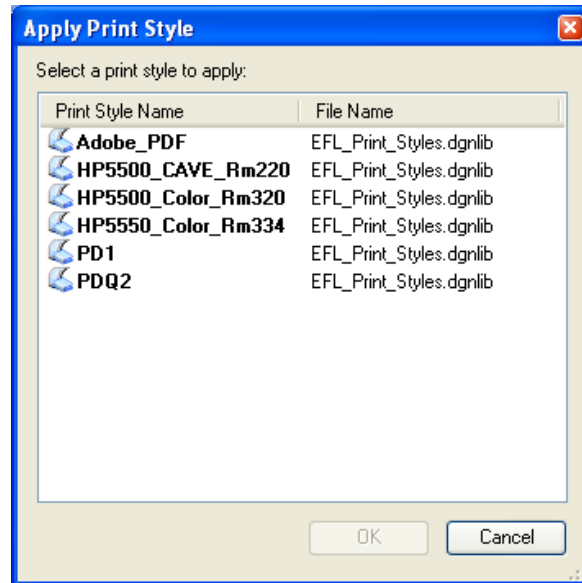


2. Next select magnifying glass to browse to and apply a print style. Select a style and then hit **OK**.

Style names are based on and configured to printer names.



Creating PDF files, and then printing from the PDF is the best practice.

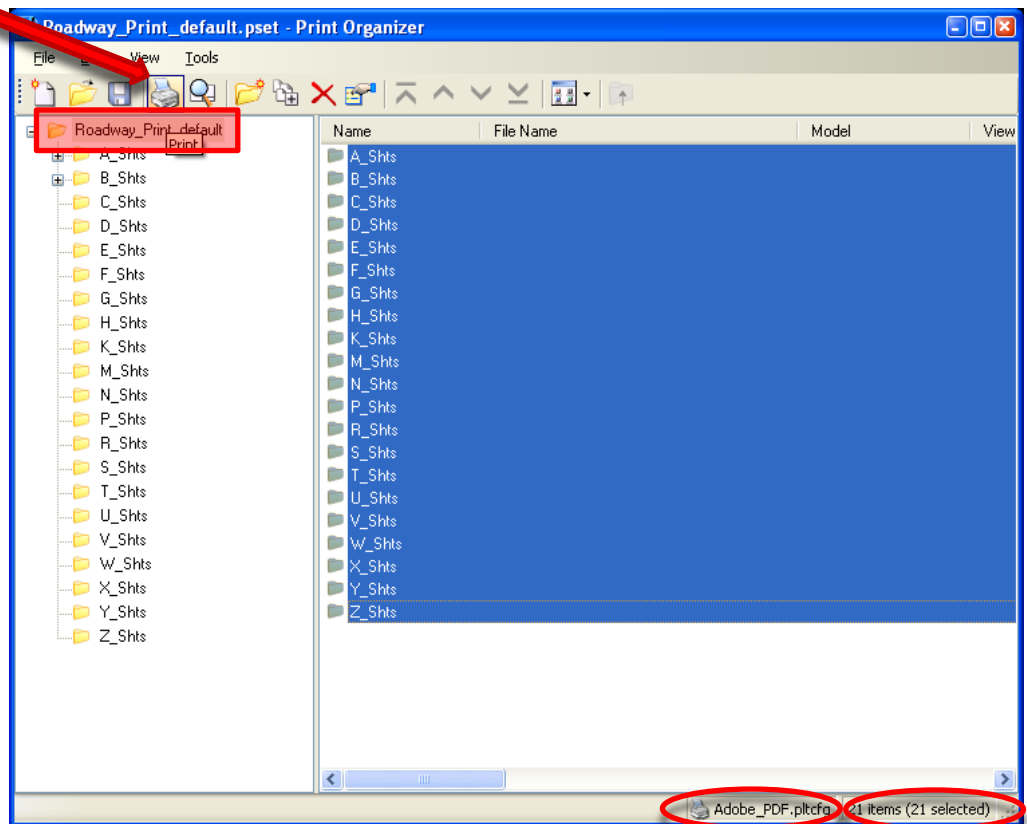


These Print Styles are configured to search in all of the .dgn's you've added to find the **D_Plot_Shape**. The tool searches the active file, the file's Models, and sheet border reference files (01-EFLHD_bdr.dgn, 01-EFLHD_bdr-nps.dgn).

3. After the files have been added and the print style has been selected, Hit **OK**. The Print Organizer Status menu will flash with data while compiling the batch.

Repeat the steps to add your files to each named folder until all of your files have been added. Moving files up or down in the order is allowed as well. *You may have to edit the list of files found when the batch was assembled. (it may have found plot shapes around sheets you do not want in your batch) Use the Display icon to view the sheets.*

To print the batch, select the “root” folder and highlight the group you want to print. **Select the Print icon.** (Note the print style name and number of sheets created at the bottom of dialog.

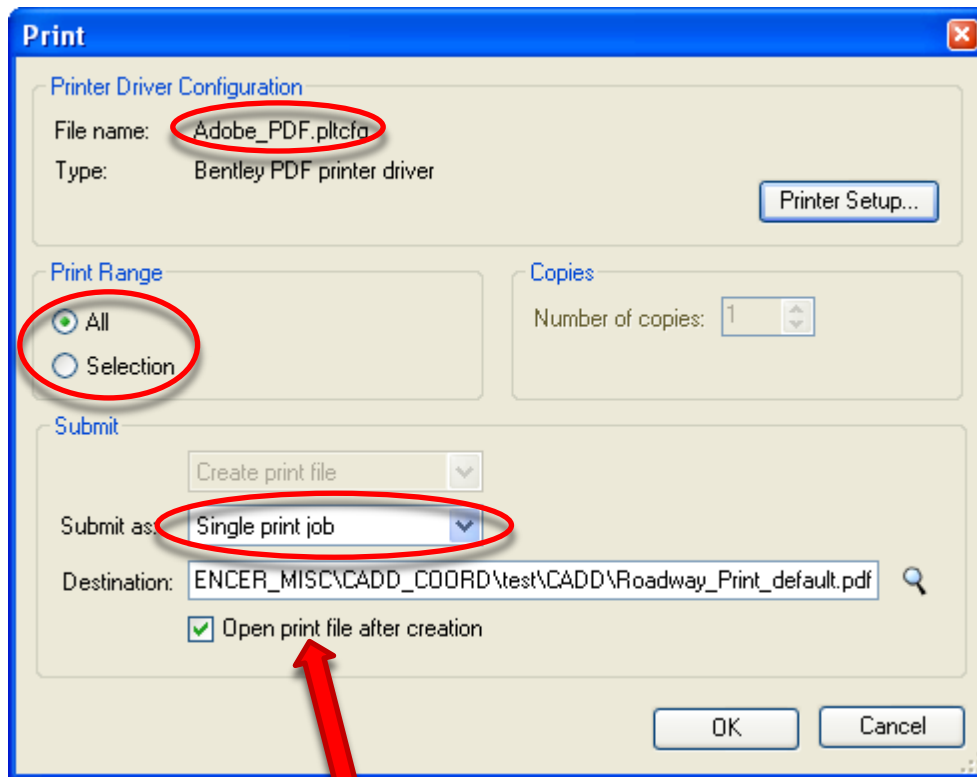


Note again, the driver **configuration file name** should match the **printer name**.

Specify the Print Range.

4. **Select Single print job.** Using the Separate print jobs setting is not recommended, this would produce multiple PDF files.

5. **Select the magnifying glass** to browse to the location and name of the PDF file to be created. **Select OK.**



Your PDF file should open (if toggled on) after it has been created.