



MicroStation Batch Printing to PDF

Design Manual
Chapter 21
Automation Tools
Instructions
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Overview

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

1. Non-changing PDF's 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.

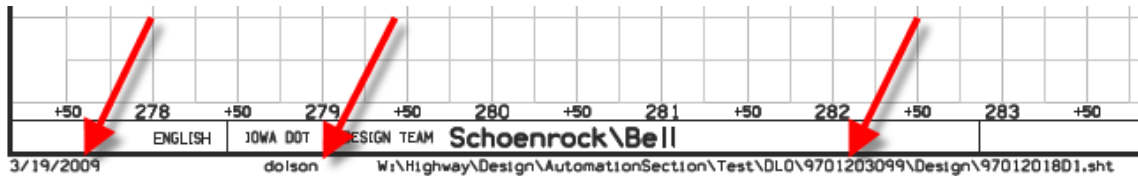
The MicroStation files can be printed to individual PDFs or to a multipage PDF.

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 **Batch Print** procedure, as used by the Office of Design and herein described. **Plot Shapes** have specific element attributes that are used by the MicroStation **Batch Print** process to locate and print the correct sheets. For additional information on Plot Shapes, see instruction file [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 **CBIS** pen table was correctly selected,

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

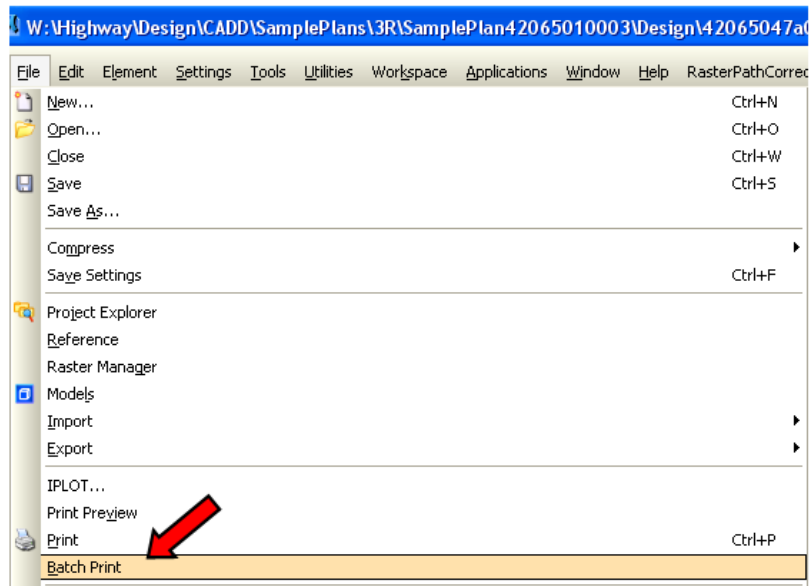
NOTE: After deleting the upf file, a new upf will be automatically created when MicroStation is restarted. The upf file is located as follows:

C:\Documents and Settings\username\usernameXM.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.)

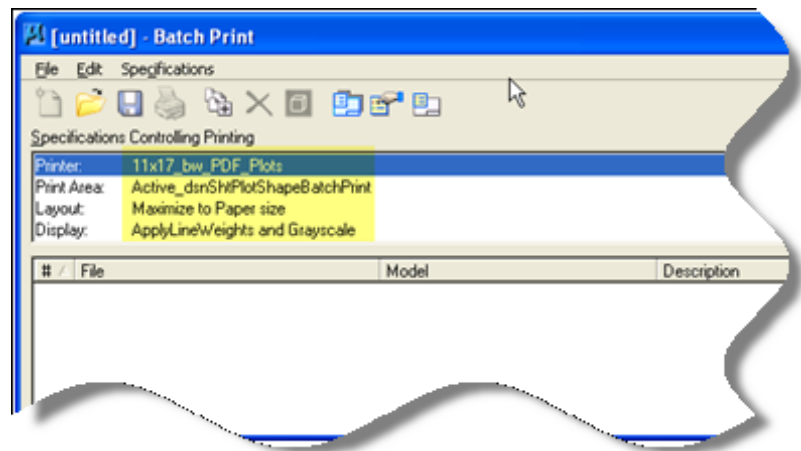
Launching Batch Print

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



This will produce the **Batch Print** dialog, as shown at the right. *Double-click* any of the highlighted items to produce an options dialog for that item.

By default, the **Batch Print** settings have been set to search the files for active “plot-shapes” on the level called `dsnShtPlotShapeBatchPrint`, and to produce 11x17 gray-scale prints. See the details of the various options below.

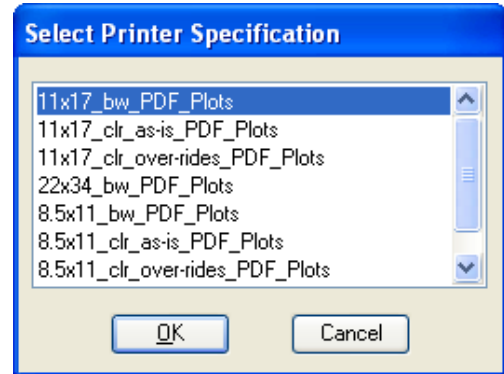


Batch Print Settings

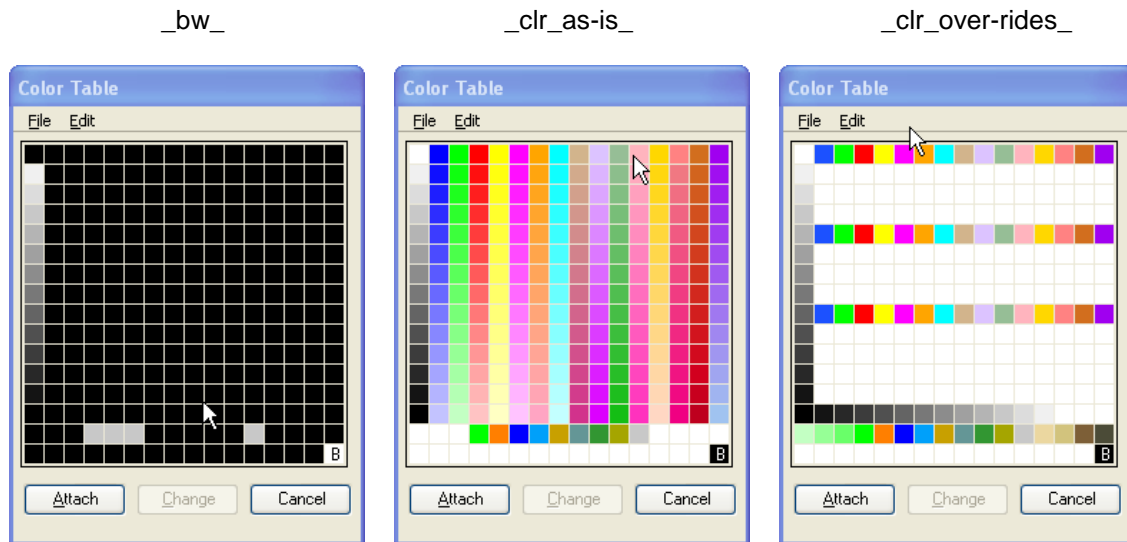
PDF Printer Specifications

Double-clicking the **Printer** item in the **Batch Print** dialog, shown above, will produce the **Select Printer Specification** dialog with the options shown at the right. Several paper sizes are available with three color choices for most paper sizes, including:

1. **_bw_** option to produce black and white and gray-scale prints
2. **_clr_as-is_** option to produce a print with the colors shown on the screen, as in “**What You See Is What You Get**”, (WYSIWYG)
3. **_clr_over-rides_** option to return some elements as colored but many colored elements are converted to black for printing.



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



Print Area Specifications

Double-clicking the **Print Area** item in the **Batch Print** dialog will produce the **Select Print Area Specification** dialog, as shown at the right.

Active+Reference_dsnShtPlotShapeBatchPrint

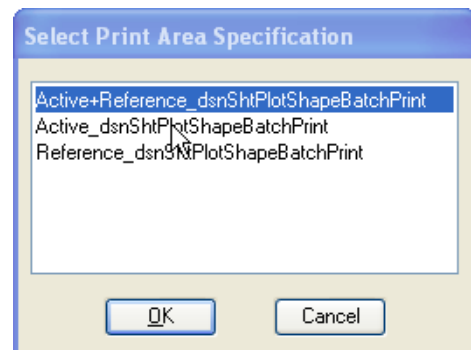
This setting causes the print program to **search both the active and referenced files** for plot-shapes on level **dsnShtPlotShapeBatchPrint**

Active_dsnShtPlotShapeBatchPrint (This is the Default Setting)

This setting causes the print program to **search only the active file** for plot-shapes on level **dsnShtPlotShapeBatchPrint**

Reference_dsnShtPlotShapeBatchPrint

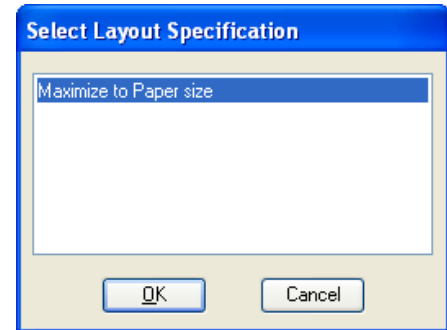
This setting causes the print program to **search only the reference files** for the plot-shapes on level **dsnShtPlotShapeBatchPrint**



Layout Specifications

Double-clicking the **Layout** item in the **Batch Print** dialog will produce the **Select Layout Specification** dialog, as shown at the right.

The **Maximize to Paper size** setting causes the **MicroStation Batch Print** program to maximize the print size to totally utilize the selected paper size. The pre-defined plot-shapes in our seed files should normally produce accurately scaled PDF print files. However, unique plot-shape sizes, plot settings, margins settings or unexpected printer conditions may cause the print scale to be slightly off. Therefore, the scale of the PDF file prints should be spot-checked occasionally to confirm final product scale accuracy.

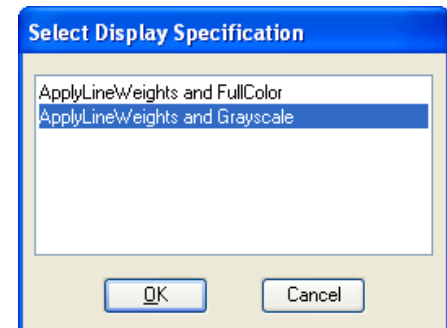


Display Specifications

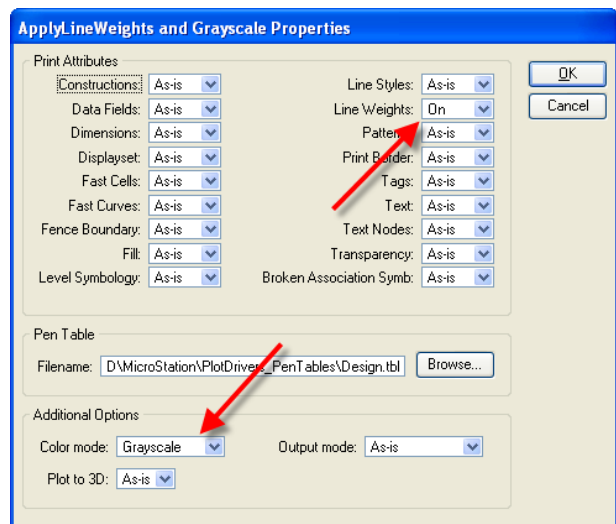
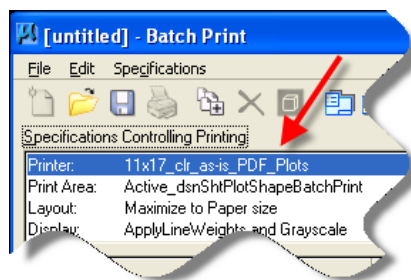
Double-clicking the **Display** item in the **Batch Print** dialog will produce the **Select Display Specification** dialog, as shown at the right.

ApplyLineWeights and Grayscale (Default Setting)

This selection overrides the **Properties** dialog settings and forces the line-weights to be toggled **ON** and the **color mode** to be **Grayscale**, (as if they had been manually set in the **Properties** dialog, as shown by the arrows in the example, below right.) The **Grayscale** setting is required to cause attached images to be converted to grayscale, (such as photo backgrounds, etc.) However, **MicroStation** elements are converted by the print driver selection.



NOTE: The **Grayscale** setting will override any color printer selection and cause prints to be created in grayscale, not color. (An example of a color printer selection is shown below.)



ApplyLineWeights and FullColor

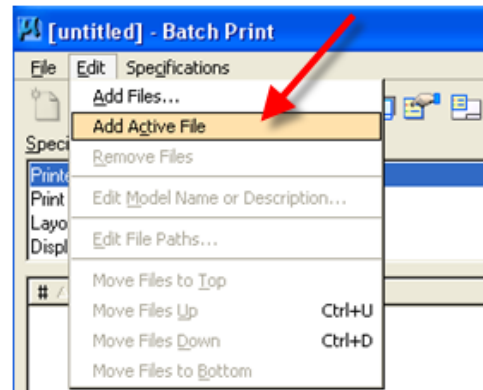
This setting also forces the line-weights to be ON in the PDF print file but allows the color to be printed “as viewed”, which produces a WYSIWYG print (“**What You See Is What You Get**”).

NOTE: When full color prints are required, this setting should be used with a color printer selection, as shown in the example above, left.

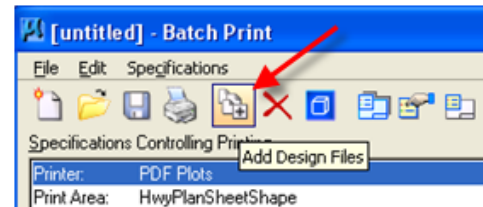


Select files and models to print (to PDF file)

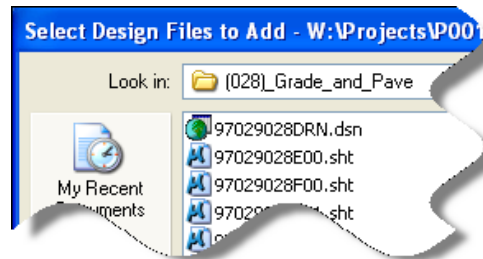
After all print specifications have been set, the models to be printed must be selected. This can be accomplished in several different ways. Initially, files may be selected from the “**Edit**” pull-down menu, from either “**Add Files**” or “**Add Active File**”, as shown at the right. The “**Add Files**” option allows one or multiple files to be added to the same plot list. It is not required for the active file to be included in the list. (The individual models will be selected later.)



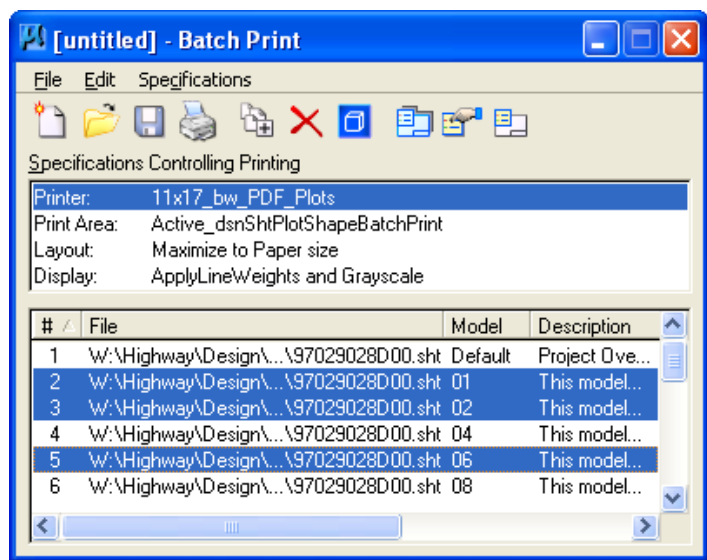
A second method to add files to the plot list is through the **Add Design Files** icon, as shown at the right.



When either the “**Add Files**” or “**Add Design Files**” option has been selected, the **Select Design files to Add** dialog will display, as partially shown at the right.



All models in all selected files will be listed in the **Batch Print** dialog, shown at the right. *Click* on (select) only those models to be printed.

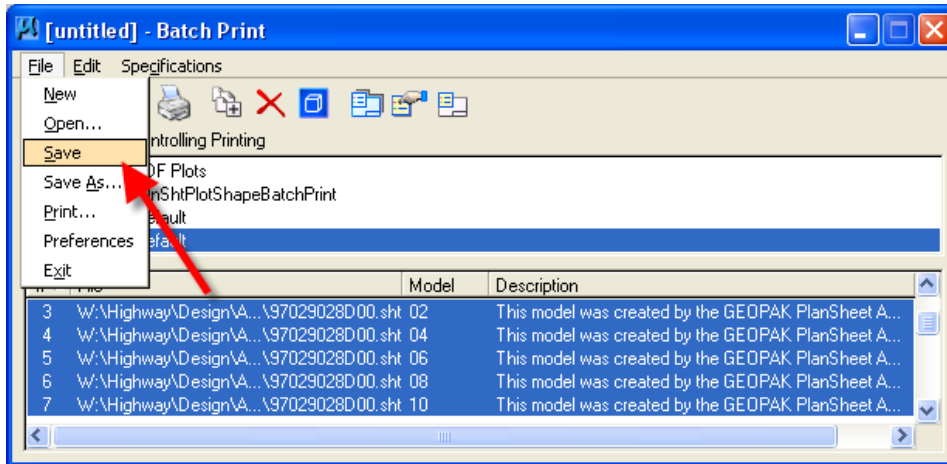


NOTE: If printing multiple sheets from the Working model, the **BatchPrintShapePlacement** program should be run to copy the appropriate plot-shape borders to the active Working model.

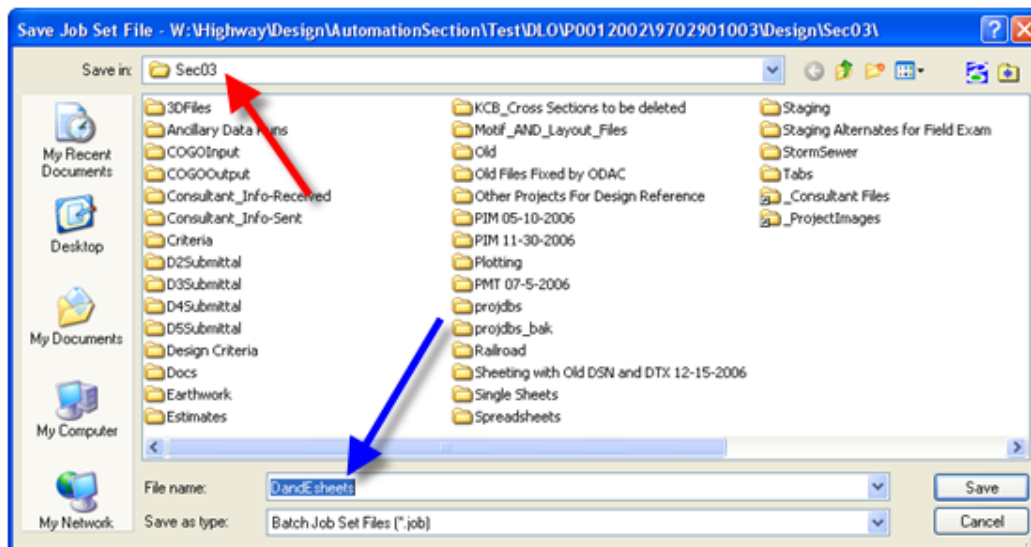
For information on the **BatchPrintShapePlacement** program, see instruction file [21A-80](#).

Saving a “Job Set File” print listing

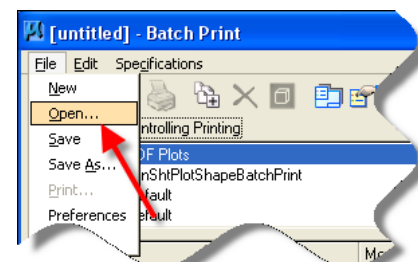
It is not necessary to remove the unwanted, (and non-highlighted), models from the print list for a one-time print job. However, the list can be saved, (if desired), as a print **Job Set File** listing for future access. Therefore, if saving the **Job Set File** listing, it is recommended to then remove the unnecessary models from the list before saving. The **Job Set File** is saved from the “*File > Save*” pull-down, as shown below.



After **Save** or **Save As** has been selected, the **Save Job 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 **Job Set File** will be “.job”.



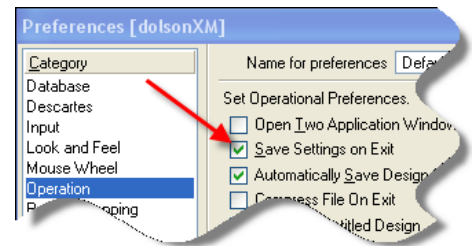
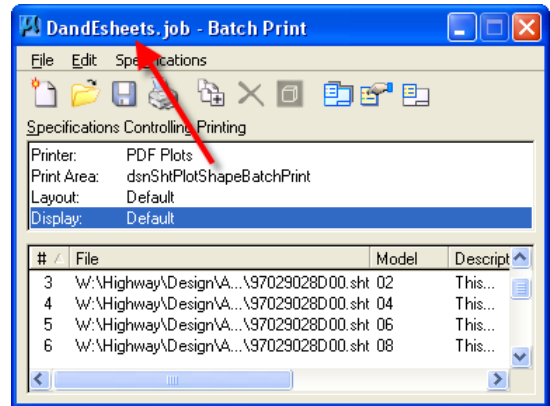
The saved **Job Set File** can be recalled at any time from the **Batch Print** dialog “*File > Open*” pull-down, as shown at the right.



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

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, and therefore 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.

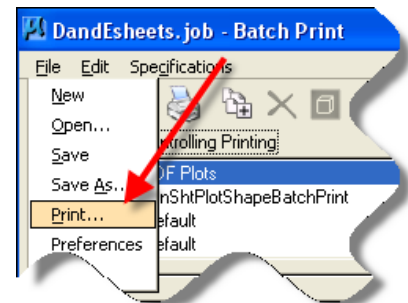
The **MicroStation Save Settings on Exit** option is found under “*Workspace > Preferences > Operation*”, as shown at the right.



Batch Printing to the PDF file - creating the PDF

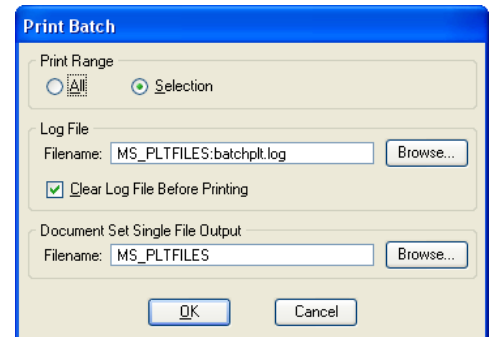
If all models in the **Batch Print** list are to be printed, there is no need to select, (highlight), the model names. If only some of the models in the list are to be printed, they must be selected.

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



When the **Print Batch** dialog opens, the default values should be as shown at the right. The value set for the **MS_PLTFILES** variable should cause both the **Log** file and the **pdf** file to be placed in the home directory of the open file. Use the **Browse** feature to either confirm or change the **default** values. Edit the **log** and the **pdf** file names, as necessary.

If no specific models were selected in the **Batch Print** dialog model listing, (shown on a previous page), the **Print Range** option, in the **Print Batch** dialog, (at right), will default to **ALL**. If specific models were chosen, the **Print Range** will default to **Selection**.

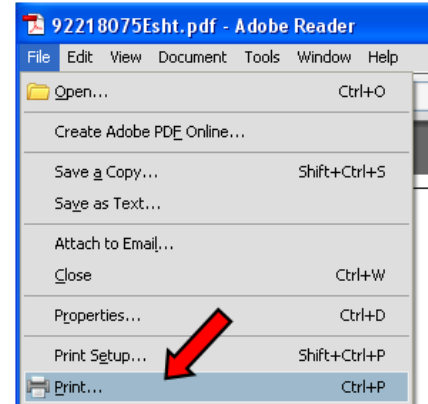


The **Log File**, (listed in the **Print Batch** dialog, above), will provide information about the plot creation. If a new Log File is necessary for each **Batch Print** run, the **Clear Log file Before Printing** check-box, () , should be checked. Otherwise, the new Log information will be appended to an existing **Log File**, if one exists at that location with the same name.

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

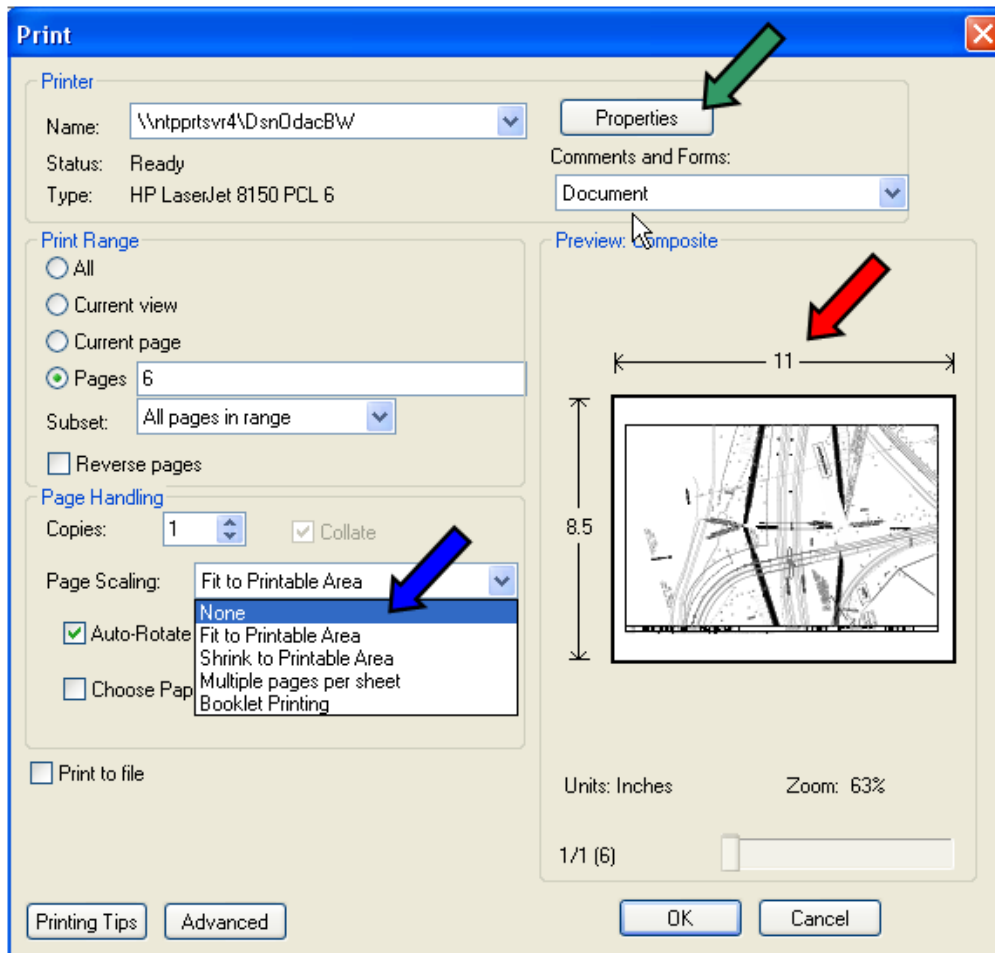
Printing the PDF file

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.

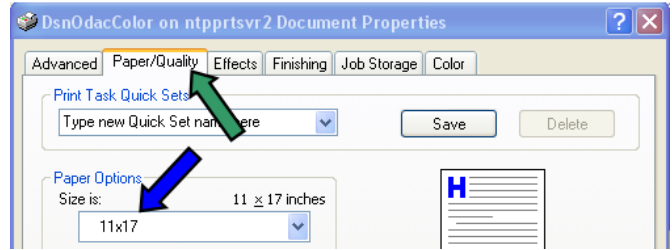


When a PDF file print is requested, the size often defaults to 8.5" x 11" paper size, as shown below by the red arrow. The paper size can be changed to 11" x 17", (or any other size), by selecting the **Properties** button, as shown by the green arrow. Also, **Page Scaling** should be changed to **None**, shown by the blue arrow.

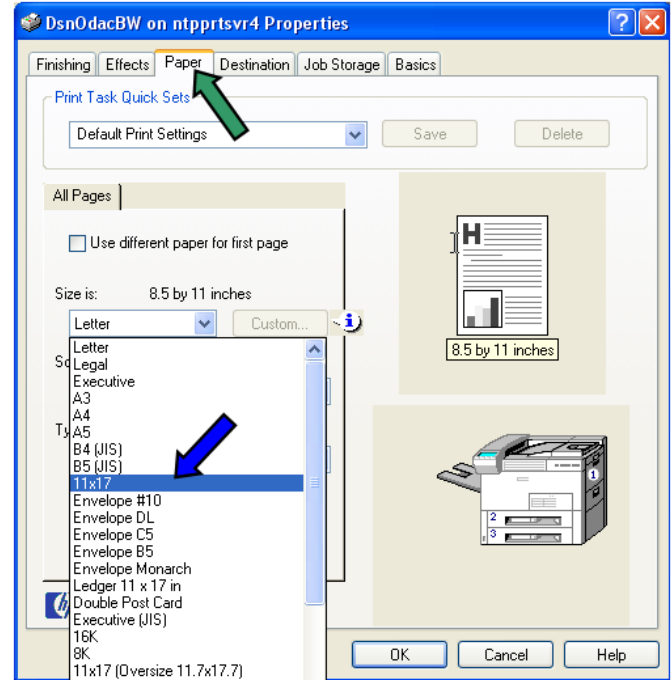
To change the paper size, click the **Properties** button.



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

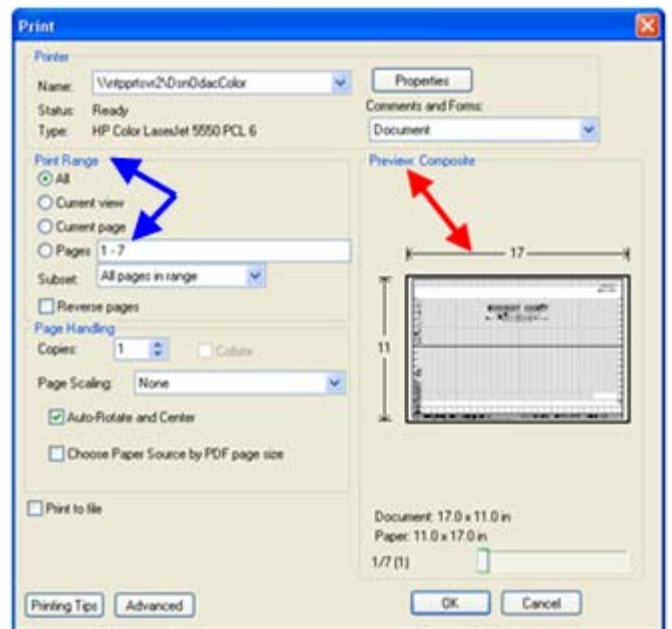


For the “DsnOdacBW” printer, the paper size is selected from the **Paper** tab, shown by the green arrow at the right. Select the desired paper size, as shown by the blue arrow. Click the **OK** button to return to the Print dialog.



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 **Preview: Composite** 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.



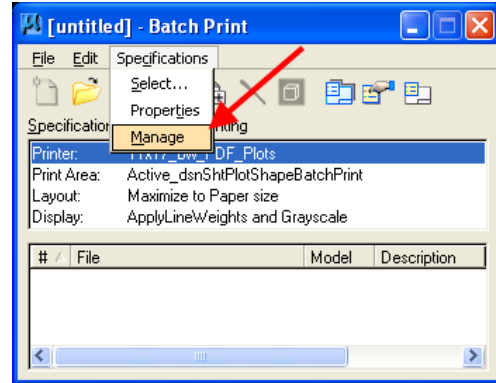
Select the appropriate **Print Range**, (pages to print), shown by the blue arrow, and click the **OK** button to produce the paper prints.

Setting Special Print specifications

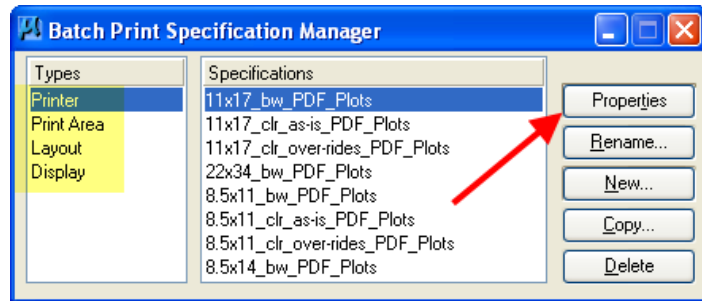
The **Batch Print** options listed above should cover nearly every “sheet batch printing” situation for the Office of Design. Even though additional details are likely unnecessary, the following information is provided for a more generic description of the MicroStation **Batch Print** program.

Specifications > Manage

Clicking the **Batch Print Specifications > Manage** option, (shown at the right), will produce the **Batch Print Specification Manager** dialog, shown below.

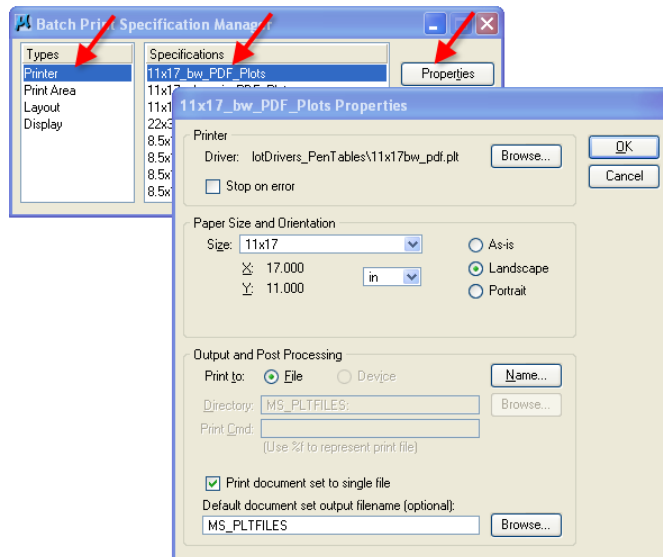


The same four options exist in the “**Types**” field as shown previously, (as highlighted in yellow at the right), but additional options become available, including the **Properties** button, located by the red arrow.



Printer > ...Plot type > Properties

Select “**Printer > Plot type > Properties**”, (as shown by the arrows at the right), to produce the **...Plots Properties** dialog.



The options in the **...Plots Properties** dialog are as shown at the right. The standard **Printer Drivers** are located as follows:

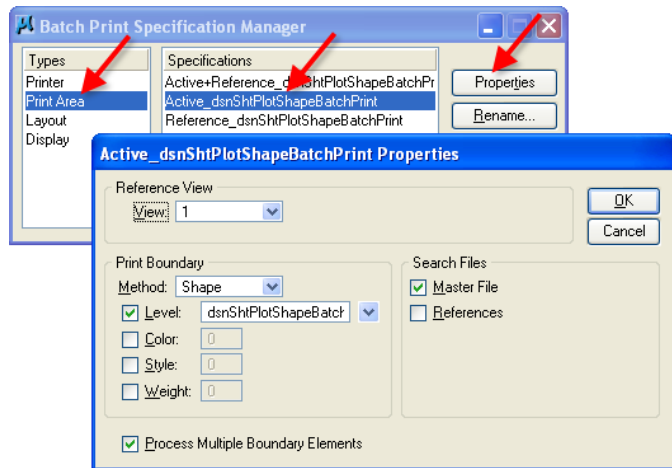
W:\Highway\Design\CADD\MicroStation\PlotDrivers_PenTables\

The most common print request will utilize **11x17** Paper Size, **Landscape** for sheet Orientation and will cause multiple sheets to print to a single file. If it is not the intent to have “multiple sheets per file”, *click* the check-box, (☑), for “**Print document set to single file**”. *Click* the **Browse** button to rename or relocate the output file.

Print Area > ...dsnShtPlotShapeBatchPrint > Properties

Select “**Print Area > print shape type > Properties**” (as shown by the arrows at the right), to produce the **Print Properties** dialog.

The **Print Properties** options are shown at the right. Select the **View** that will be used to search for the **Print Boundary**, (plot-shape). Set the plot-shape parameters for the **Print Boundary**. The **Search Files** check box () options allow for searching for the plot-shape(s) in the **Master** file, **Reference** files, or both.



Printing from a Working model

If printing from the “Working” model, (rather than from individual sheet models), the program called **Batch Print Shape Placement** must be used to copy the appropriate referenced “Print Shape Borders” from the reference level, **dsnShtPlotShapeMultiColor**, to the active level, **dsnShtPlotShapeBatchPrint**. (For additional information on using the **Batch Print Shape Placement** tool to copy the plot-shapes to the Working model, see instruction file [21A-80](#)). After copying the plot-borders from the multi-colored level to the batch-print level, they become active dark blue plot-shapes. Since the plot-shapes are now active, the selected **Search Files** check-box should be for the **Master File**. The **Process Multiple Boundary Elements** check-box should also be checked, () .

Printing from an individual “Sheet model”

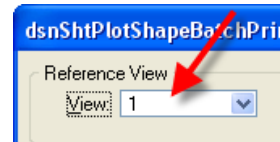
The types of files using single-sheet models include Plan, Profile, and Plan & Profile. The referenced plot-shape border should be copied to the active file, for each sheet model. A program used to alter the **update priority** of the Plan Sheet Border will also copy the plot-shape to the active file in each model containing a single sheet. This program is called “**Border (Send to Back)/(Copy Print Border)**”. (For more information on the “...**Send to the Back...**” program, see instruction file [21A-81](#) .) Since the plot-shapes are now active, the selected **Search Files** check-box should be for the **Master File**.

NOTE: When plotting from a “sheet model”, if the **Search File** check-box options for both the “**Master File**” and “**References**” are checked, () , two plots will be unnecessarily created for each sheet.

NOTE: If the **Batch Print** request combines sheets from file(s) with single-sheet models and file(s) with a multiple-sheet Working Model, the “**Process Multiple Boundary Elements**” check-box should be checked, () .

NOTE - (For information only): In Road Design, the only MicroStation model type that we use for everything is what MicroStation refers to as a “Design Model”. We use this one model type as a “Design” Model and as a “Sheet” Model. Our definition of a “Sheet Model” is “a model containing only one sheet, developed for the sole purpose of printing”. We do NOT use the MicroStation “Sheet Model”, (as defined by MicroStation), which refers to a sheet model as one with a white background, and is defined as “The electronic drawing sheet”.

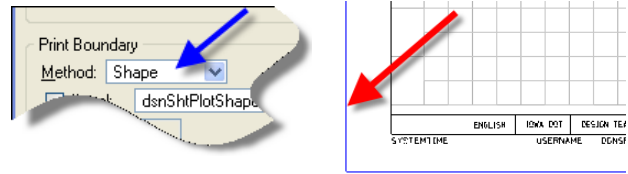
View 1 is selected as the **Reference View** (print view), (see at the right and the dialog above), because **View 1** is normally the only view that is rotated correctly during the Geopak Plan & Profile sheeting process.



NOTE: The only view in the P&P Sheet File that is rotated correctly is the one that matches the active view in the primary Motif file. The Motif “active” view is the view that was active when the Motif was closed. The “primary” Motif file would be the “PLN” Motif for a Plan & Profile sheet or Full Plan sheet, and the “PRF” Motif for a full Profile sheet.

There is no need to turn on the weight display in View 1 for plotting purposes. Weights will be covered in an upcoming dialog.

Shape - The Print Boundary **Shape** method, (as shown by the blue arrow, right), on Level **dsnShtPlotShapeBatchPrint**, refers to the blue non-printable PDF plot border, (as shown by the red arrow at the right).



The **dsnShtPlotShapeBatchPrint** level display should be **ON** in View 1 of each model.

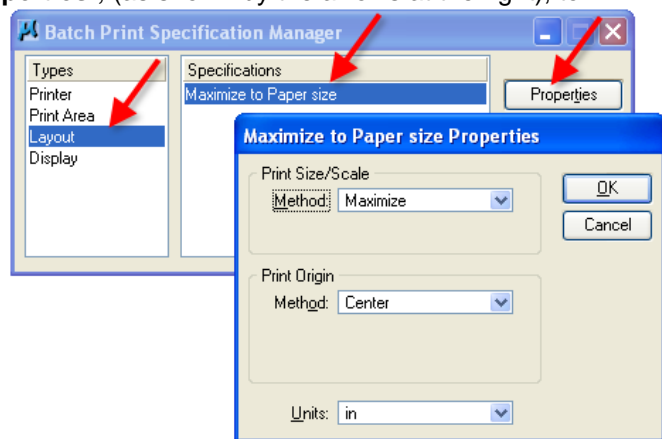
Layout > ...paper size > Properties

Select “**Layout > ...paper size > Properties**”, (as shown by the arrows at the right), to produce the **...Paper size Properties** dialog.

Settings should normally be as shown, including:

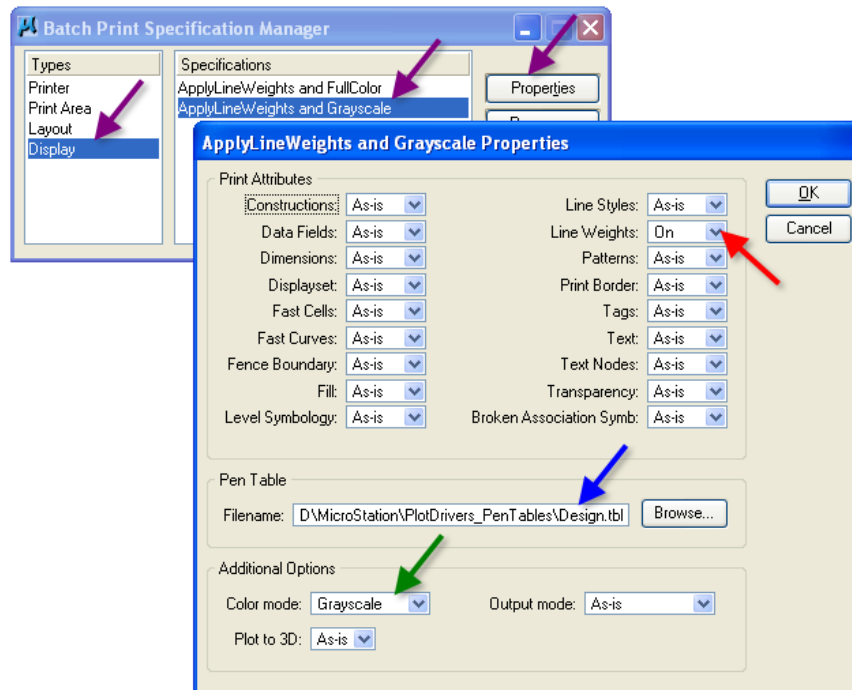
Maximize for **Print Size**, and
Center for the **Print Origin**.

The value in the **Units** field makes no difference when **Maximize** has been selected as the **Print Size**.



Display > weights and color > Properties

Select “**Display > weights and color specifications > Properties**”, (as shown by the three purple arrows below), to produce the ...*weights and color Properties* dialog.



The **Design** Pen Table, (blue arrow), is located as follows:

W:\Highway\Design\CADD\MicroStation\PlotDrivers_PenTables\Design.tbl

NOTE: The toggle settings in the “**Display > weights and color specifications > Properties**” dialog will override the “on-screen” values displayed in the graphics file. Toggling “**Line Weights ON**”, (red arrow), is how View 1 can be used for printing, without turning the display weights on in the file. Change the other settings as appropriate for each situation.

NOTE: The **Grayscale** setting, (green arrow), will override any color printer selection and cause prints to be created in grayscale, not color.

Click the **OK** button to dismiss the “**Display > weights and color specifications > Properties**” dialog. Click the red “**X**” to dismiss the **Batch Print Specification Manager** dialog.