

---

# PDF Scroll: Creating and Plotting

Design Manual  
Chapter 21  
Automation Tools  
Instructions

Originally issued: 10-30-09  
Revised: 03-31-16

---

## Index

### [Create the PDF File for Long Plot \(Scroll\) Printing](#)

[Select Pen Table Dialog](#)

[Print Dialog](#)

[Select a Scroll Plot Printer Driver Configuration File](#)

[Set the Print Units \(inches, feet, etc.\)](#)

[Select Plot Driver](#)

[Edit the Printer Driver Configuration](#)

[Select Paper Size option](#)

[Select the Print Scale](#)

[Adjust \(Change\) the Paper Size](#)

[Center the Plot on the Paper](#)

[Print Attributes](#)

[Update Print Settings from View](#)

[File > Print](#)

### [Print the PDF File to a “Roll Paper” Scroll Plotter](#)

[Open Adobe Acrobat \(or other PDF Software\)](#)

[Select the Print Queue](#)

[Set Print Properties](#)

[Print Orientation \(Portrait or Landscape\)](#)

[Custom Paper Size](#)

[Rotate 90 Degrees](#)

[Color or Grayscale](#)

[Paper Size matches Document Size](#)

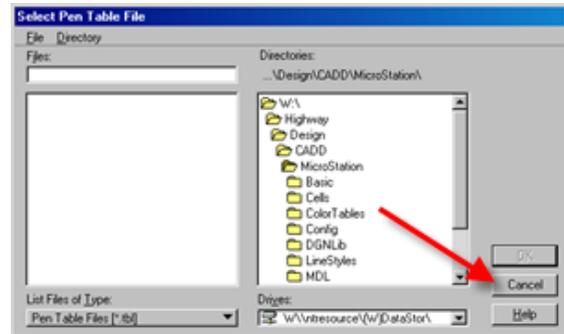
[Print](#)

## Create the PDF File for Long Plot (Scroll) Printing

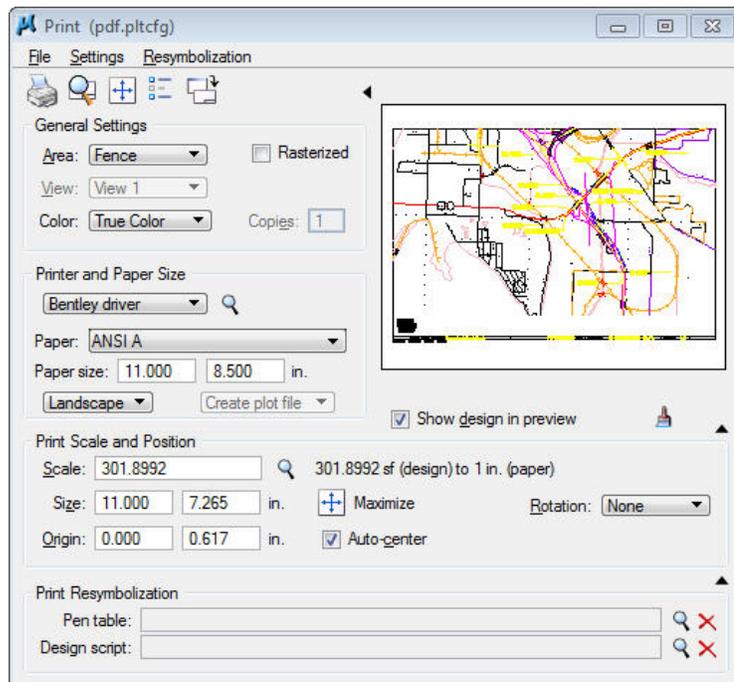
- 1) To create a MicroStation “PDF print scroll file”:
  1. Place a fence around the print area, then
  2. Select *File > Print* from the MicroStation pull-down menu.

- 2) The first dialog to display may be the **Select Pen Table File** dialog. We do not use MicroStation Pen Tables, so *click* the **Cancel** button, as shown by the red arrow at the right, and move on to the next dialog.

**Note:** When using Interplot plotting rather than MicroStation plotting, we use IPLLOT “Script Files”, which are often mistakenly referred to as Pen Tables.



- 3) After *clicking* the **Cancel** button, shown above, the **Print** dialog should appear, similar to as shown at the right.

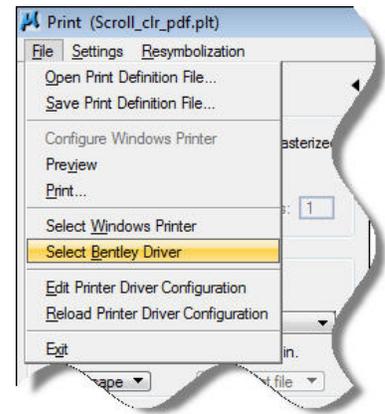


If a message displays that says something similar to

“cannot locate file W:\Highway\Design\CADD\MicroStation\Plotting\...”,  
then exit MicroStation, delete your “upf” file, and restart MicroStation.

The “upf” file is located at follows: C:\Users\your login ID\your login IDPWW8i.upf

- 4) If the **Print** dialog title bar does not display one of the “...pdf.plt” options, (as shown above), it must be changed. Select a “...pdf.plt” “print driver” file from the *File > Select Bentley Driver* option list, as shown at the right.

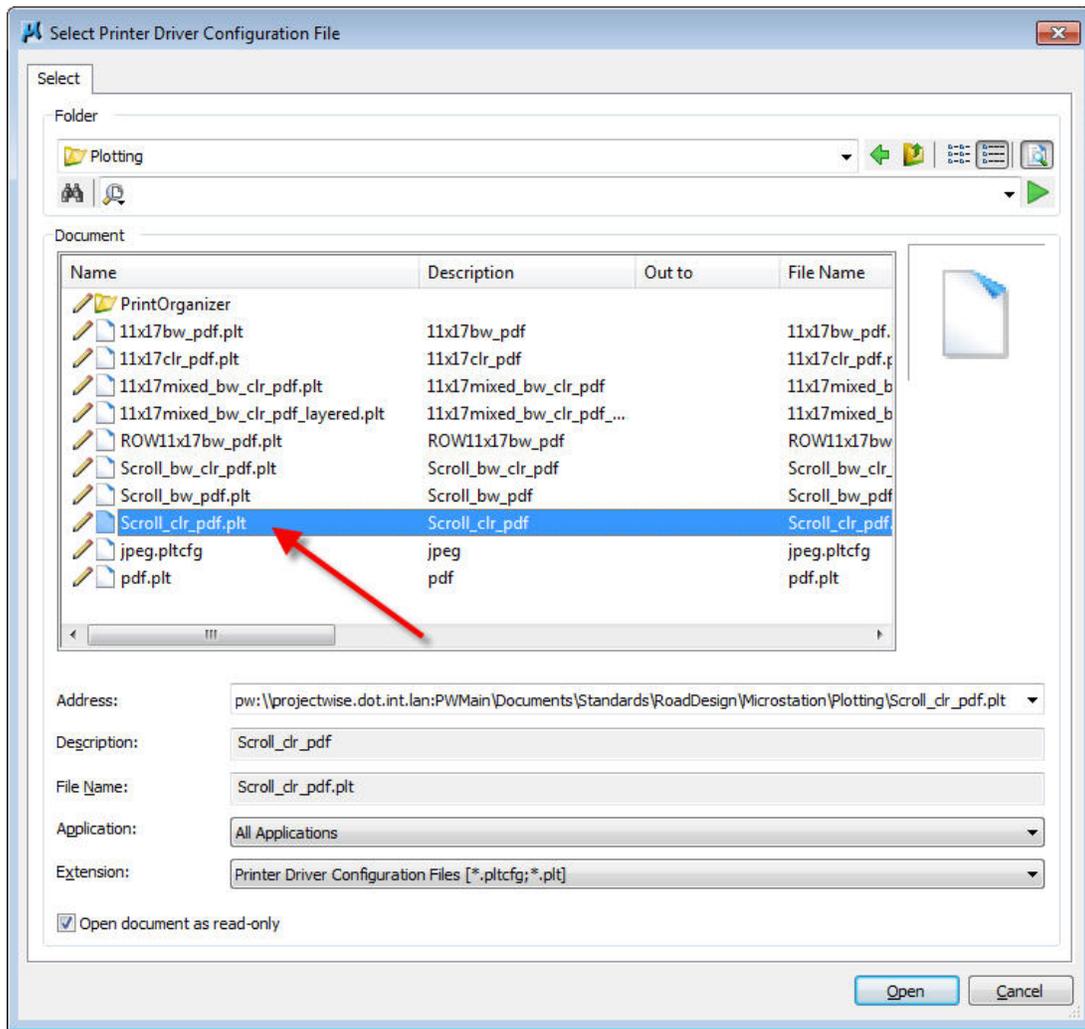


- 5) For a colored PDF scroll, select **Scroll\_clr\_pdf.plt** from the “**Select Printer Driver Configuration File**” dialog, as shown below.

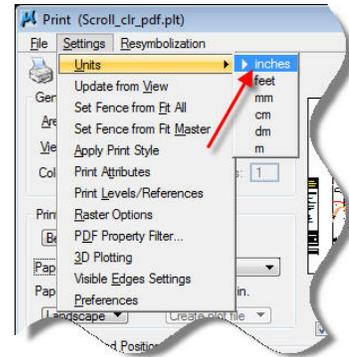
Click the **Open** button and the blue title bar should then display: “**Print (Scroll\_clr\_pdf.plt)**”, as shown on the next page.

The print drivers are located at the following location:

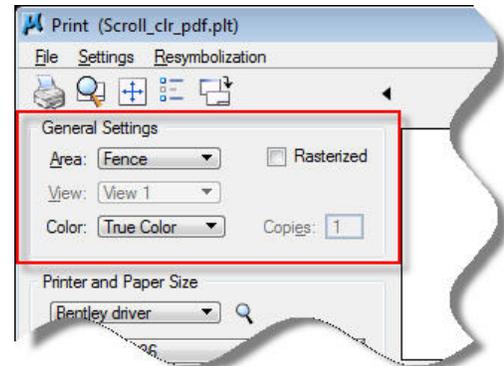
<pw:\Documents\Standards\RoadDesign\Microstation\Plotting>



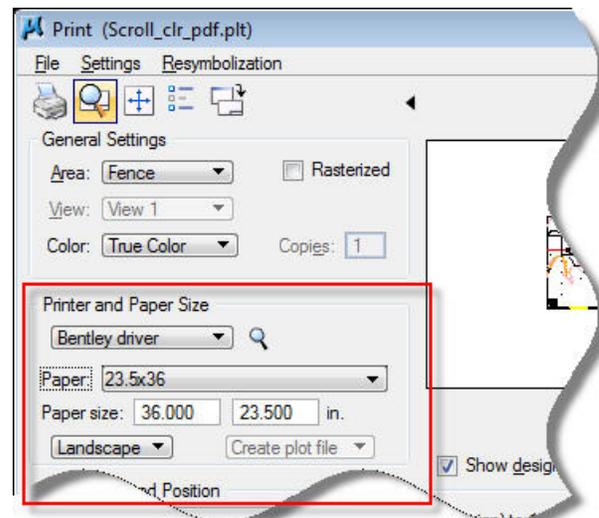
- 6) From the **Print** dialog (partially shown at the right), set the units to **inches** from *Settings > Units > Inches*.



- 7) For a color plot, the **General Settings** area of the **Print** dialog should appear as shown at the right.



- 8) The **Plot Driver** is selected from the **Printer and Paper Size** section of the **Print** dialog. The **Bentley driver** should be selected by clicking the drop-down arrow to produce the list of available Print Driver files, as shown at the right.



**Note:** If it will be necessary to turn levels on/off within the created PDF file, then a copy of the selected "...plt" file must be edited. To do this, the "...plt" file must be copied from the hyperlink location shown below to your project directory.

<pw:\Documents\Standards\RoadDesign\Microstation\Plotting>

To make the minor changes to the copied "...plt" file, use a common text editor, (such as Notepad, PFE32, etc.). The lines to be changed are listed below. The actual changes to be made are listed at the "bullet" (●), immediately following the lines of code shown below.

```

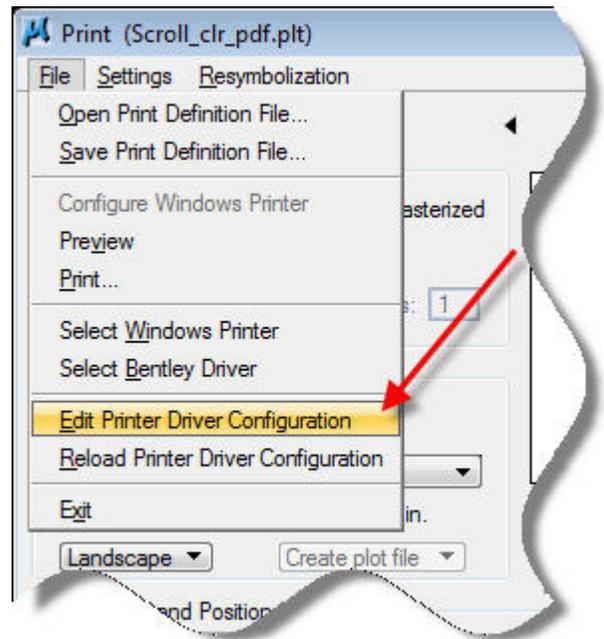
;=====
;Turn the Level/File optional content on and off
;CmdName /appname="pdf" /command="FileOptionalContent" /qualifier="On"
CmdName /appname="pdf" /command="FileOptionalContent" /qualifier="Off"
;off by default
;=====

```

- Changes to be made, to the above lines of code, are as follows:  
Remove the semi-colon (;) from the left end of the line that ends with **qualifier="On"**,  
and add a semi-colon (;) to the left end of the line that ends with **qualifier="Off"**.

A newer version of plot driver with the file extension **".pltcfig"** can only be edited from within MicroStation.

To edit a **".pltcfig"** plot driver file, access the file through *File > Edit Printer Driver Configuration*, as shown at the right



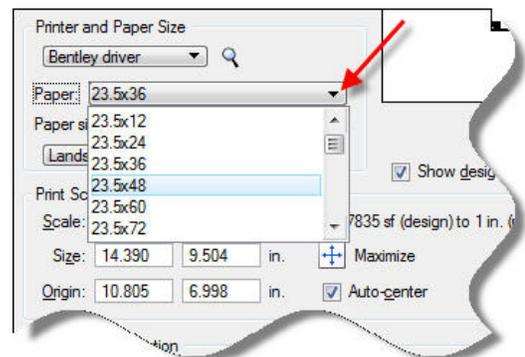
## 9) Paper Size

Presently, the two scroll plotters in Design are set for 24 inch and 36 inch paper, which plot at a maximum width of 23.5 inches and 35.5 inches respectively. Preset paper size selections, at one foot length increments, are available through the *drop-down* option listing, as shown at the right.

The size options include from

23.5x12 through 23.5x199 and

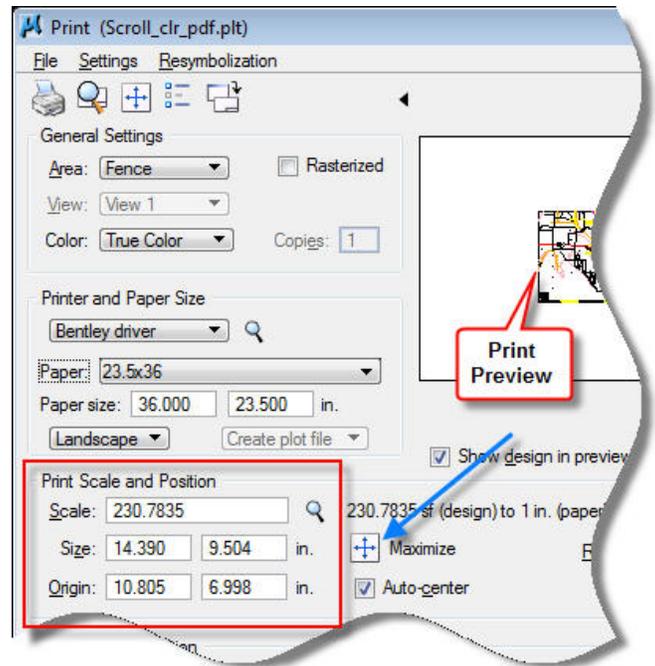
35.5x12 through 35.5x199



After a fence has been placed around the area to be printed and a **Paper** size has been selected, (such as 23.5x36 in the example to the right), the **Print** program will automatically calculate the scale and size of the plot, as shown at the right.

Example:

Based on the **Paper Size** choice of 23.5x199, the program maximized the print to the largest possible dimension of 23.5" x 195.315", at a scale of 6.6825.

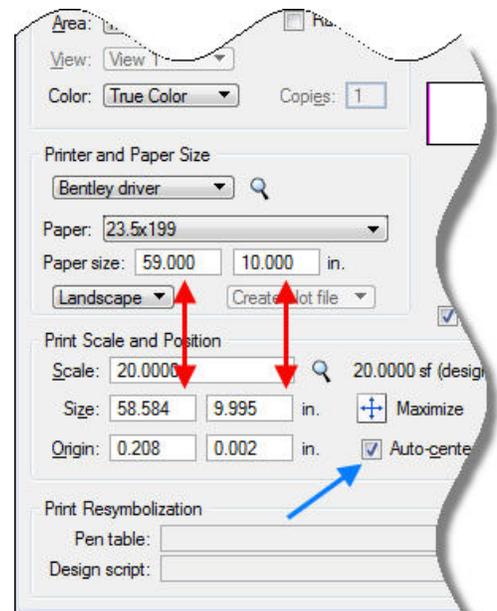


**Note:** If it is unknown what paper size to use, select one of the preset maximum sizes (23.5x199, or 35.5x199) and *click* the **Maximize** button (as located by the blue arrow). The program will then display the largest possible **Print Scale** (and **Print Size**) within the selected paper size. After the program determines the maximum print size and scale combination for the specific fenced area, the print size can then be reduced by increasing the scale appropriately, as shown below.

Next, change the **Scale** value to the desired scale for the plot (20 in this example). The **Print Size** dimensions will automatically change and display the minimum possible size for the given scale (58.584 x 9.995 in the example) shown at the bottom of the double ended red arrows.

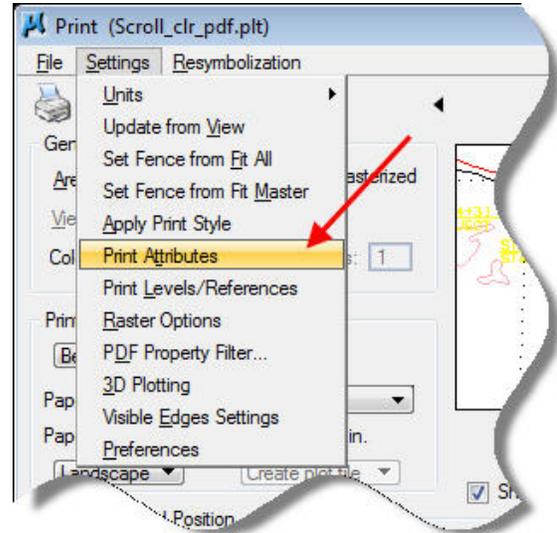
The **Printer Paper size** dimensions should then be changed to match or exceed the **Print Scale Size** values. If a small white border is required on the print, the size values should be rounded up slightly, as shown at the top of the double ended red arrows, (59 and 10.)

To center the plot on the paper, *click* the **Auto-center** check-box () , as shown by the blue arrow at the right.



## 10) Print Attributes

The **Print Attributes** dialog is accessed through *Settings > Print Attributes*, as shown at the right.



Verify the settings to be as listed below, and as shown at the right.

For all plots,

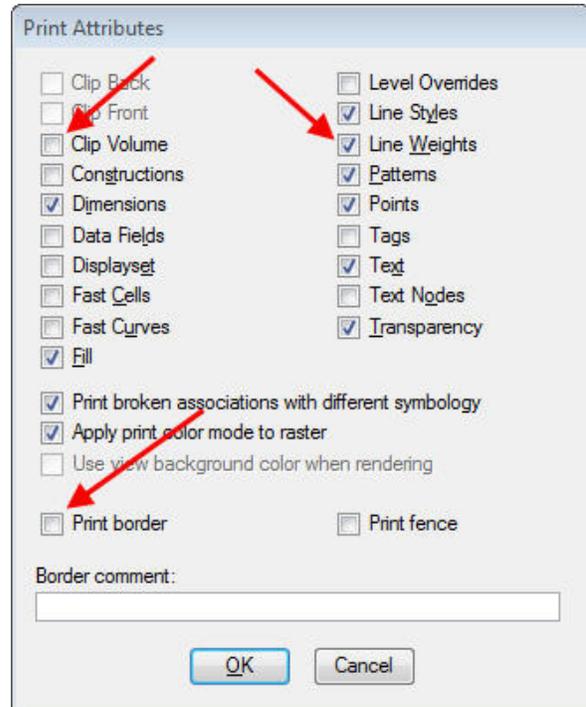
*uncheck*, () **Clip Volume** and **Print Border**

If plotting a scroll,

*check*, () **Line Weights**

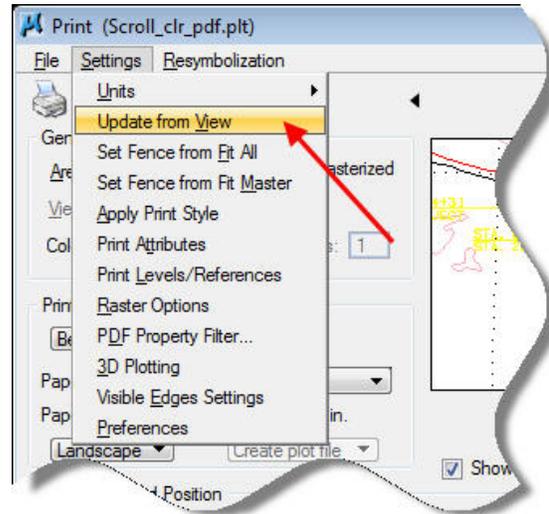
If plotting an 11x17 or 8.5x11,

*uncheck*, () **Line Weights**



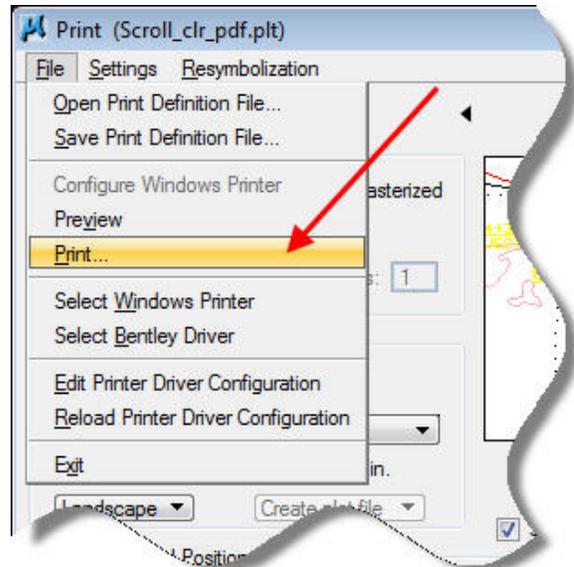
### 11) Update from View

Before printing, verify that all print settings are still as intended and as shown in the current view. Click “Settings > Update from View”, as shown at the right.

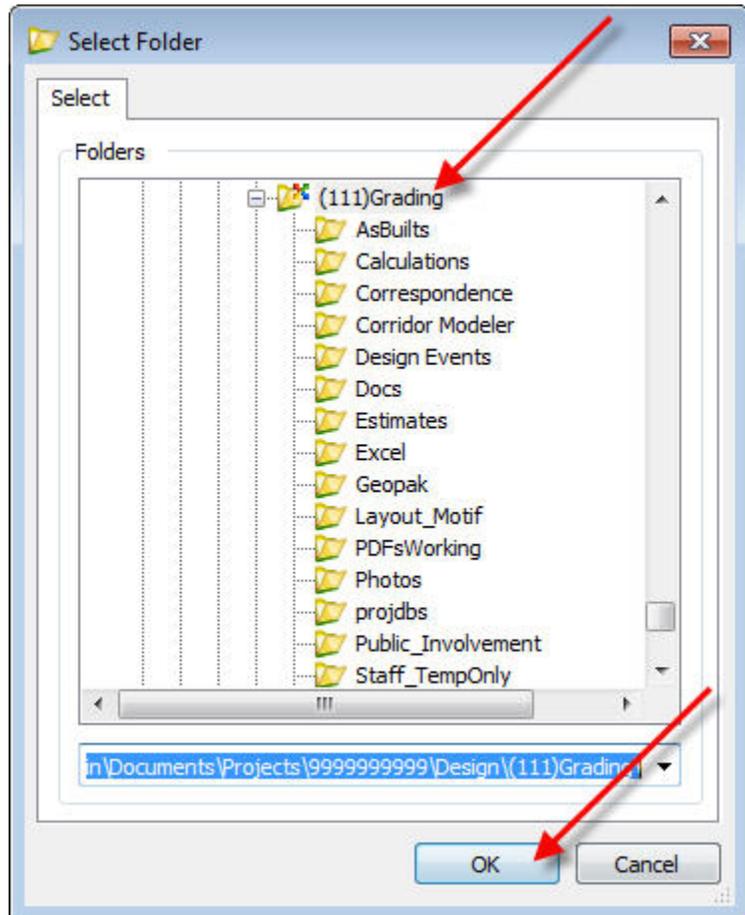
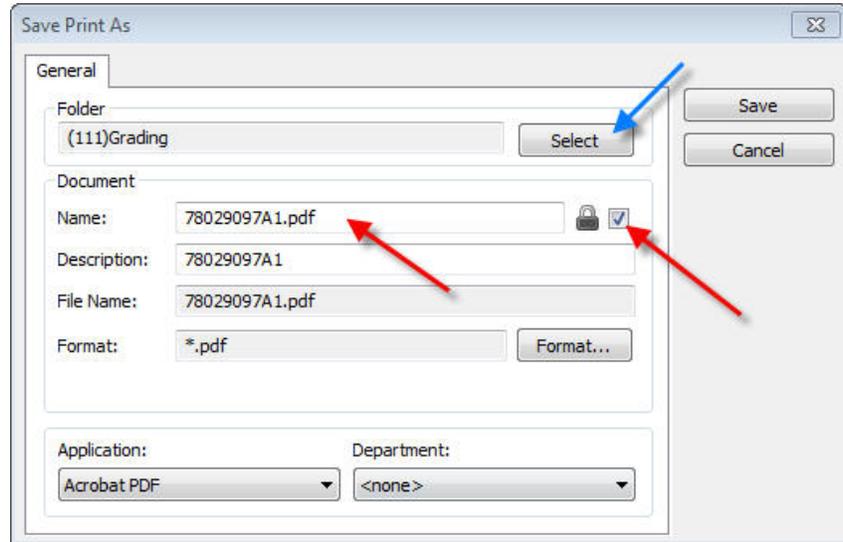


### 12) File > Print

When ready to print, click “File > Print” from the drop-down menu, as shown at the right. This will produce the “Save Print As” dialog, as shown on the next page.

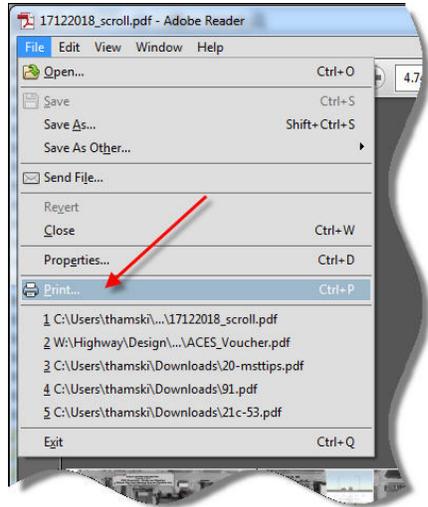


Select the appropriate project directory to save your PDF to by *Clicking* on the **“Select”** button. Browse to the folder where the file is to be saved and *Click* **“OK”**, as shown below. Provide a name for the file, as shown at the right. Checking the box next to the padlock symbol will make the file name and ProjectWise document name the same (the file name extension will default to “.pdf”).



## Print the PDF File to a “Rolled Paper” Scroll Plotter

- 1) Open the PDF file with a PDF software, such as Adobe Acrobat, by *double-clicking* the file name in Windows Explorer. For this instruction document, it will be assumed that Adobe Acrobat is used to open the PDF file.
- 2) Access the **Print** dialog from the Adobe Acrobat *File > Print* pull-down menu, as shown at the right.



The **Print** dialog should resemble the one shown below.

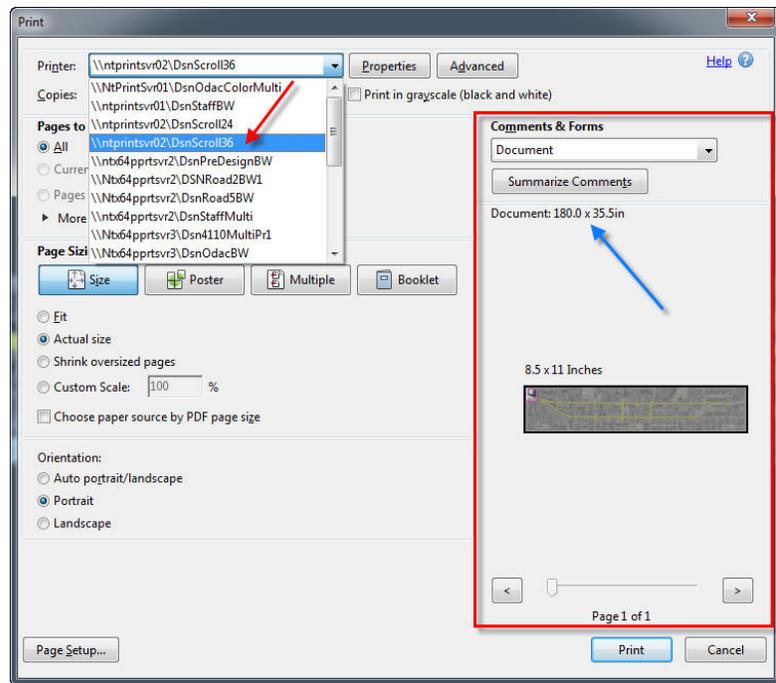
- 3) From the **Print** dialog *drop-down* selection list (located by the red arrow), select the Plotter that is to be used.

The Design scroll plotters that are currently available for PDF printing are:

\\ntprintsvr02\DsnScroll24

and

\\ntprintsvr02\DsnScroll36



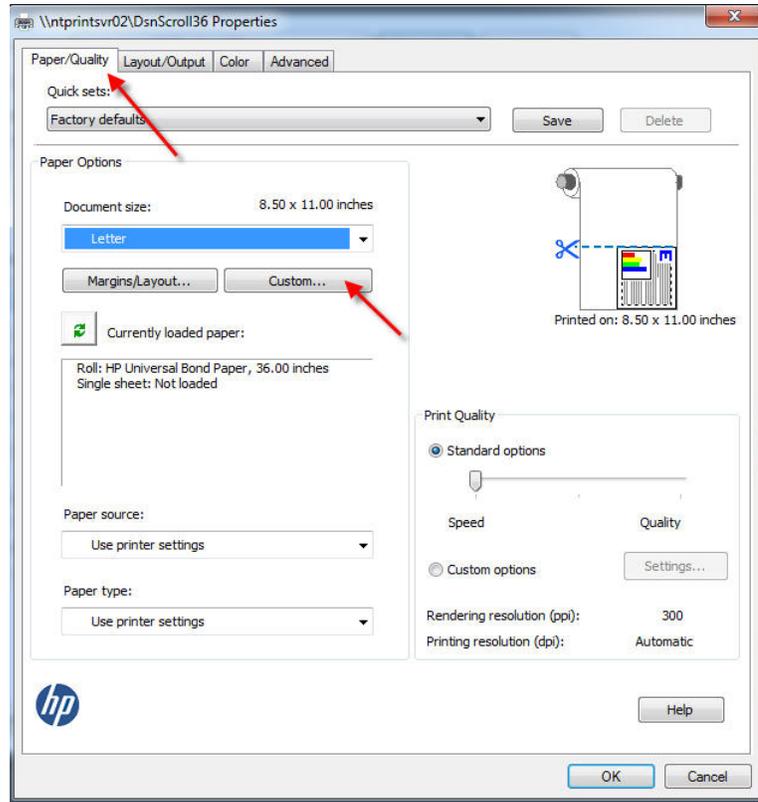
No matter what printer/plotter is selected, the PDF **Print** dialog usually defaults to a print size of 8.5 x 11, as shown in the red box above. Since the size of this example print document is shown to be 180 x 35.5 (blue arrow above), the print size must be changed from the default setting to the correct setting for this print, as shown in the **Properties** dialog, below.

- 4) After making the printer/plotter selection from the *drop-down* selection list (above), *click* the **Print > Properties** button, as located by the arrow at the right.



- 5) To change the plot size, it will be necessary to create a **Custom Document Size** to fit the situation.

On the **Paper/Quality** tab, *click* the “**Custom**” button.

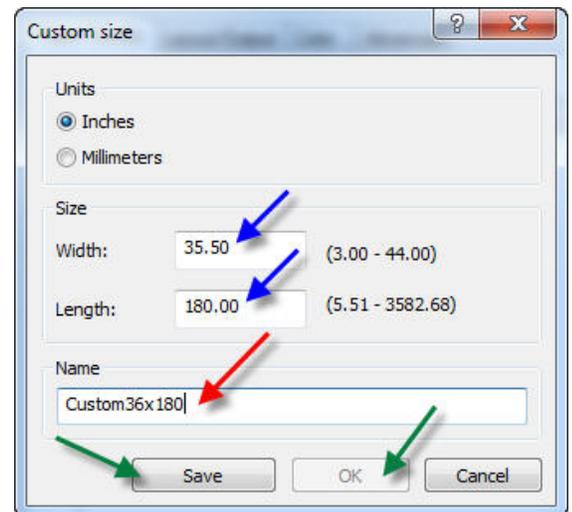


- 6) On the **Custom Paper Size** dialog, change the **Width** and **Length** to match or exceed the size needs of the plot, which are 35.5 x 180 in this example, and shown by the blue arrows.

**Note:** It is very important that the newly created **Paper Size** (35.5 x 180 in this example) either matches or is larger than the area to be plotted (35.5 x 180 in this example, which was displayed in the initial **Print** dialog)

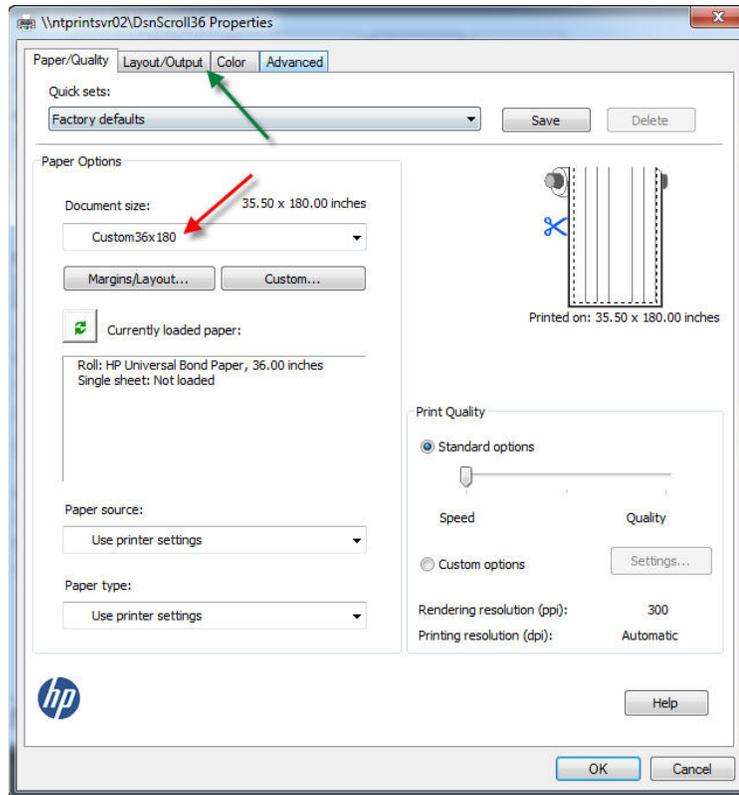
Provide a **Name** for the new **Custom Paper Size**, as shown by the red arrow.

When complete, *click* the “**Save**” and “**OK**” buttons, as shown by the green arrows.

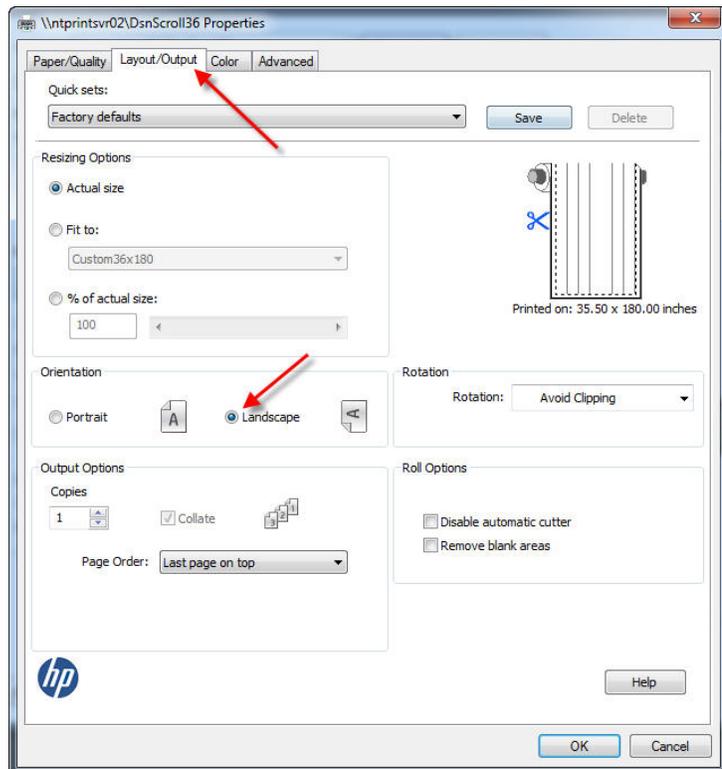


- 7) The new **Document size** should now display on the **Paper/Quality** tab, as shown below by the red arrow.

When complete, select the **Layout/Output** tab, as located by the green arrow below.



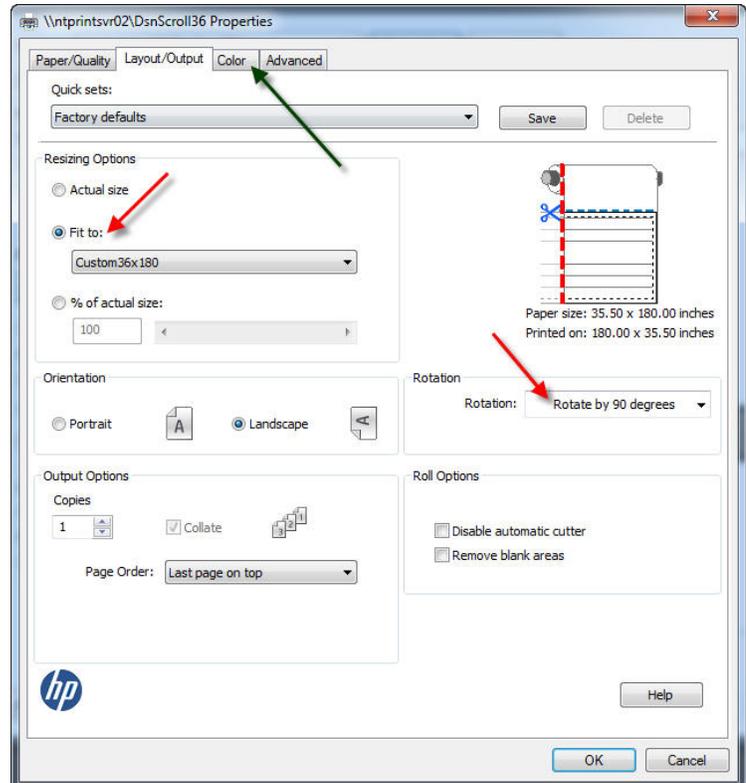
- 8) If the print is to be longer than the paper width, the print **Orientation** must be changed to **Landscape**, as shown at the right on the **Properties** dialog **Layout/Output** tab. For most scroll plots, it will be necessary to select the **Landscape** print **Orientation**.



- 9) **Layout/Output** tab: For some scroll plots, it may be necessary to select the **Rotate by 90 degrees** in the **Rotation** combo box.

The saved **Document Size** should also be selected, as shown.

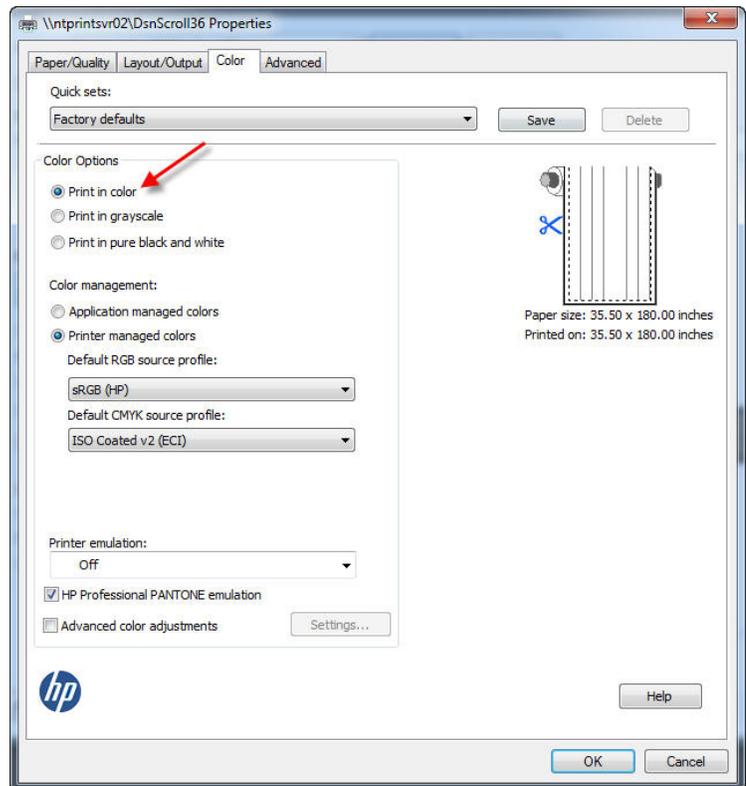
Click the **Color** tab, located by the green arrow.



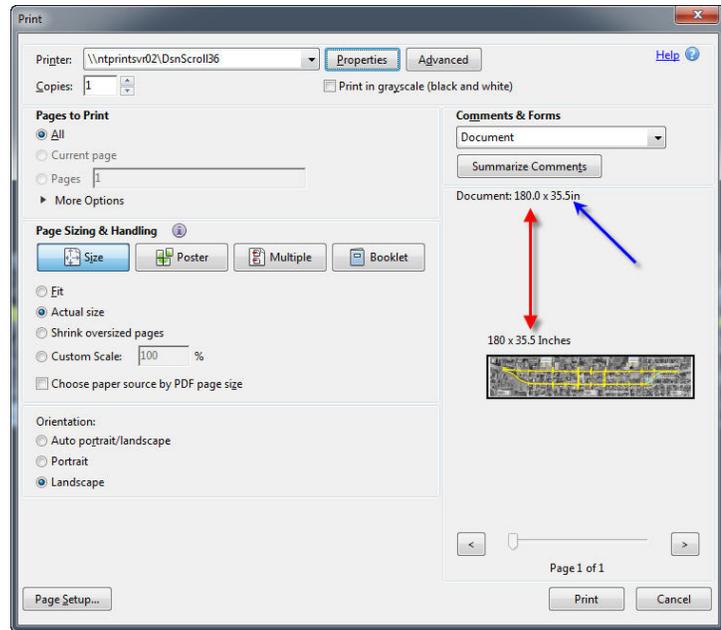
- 10) **Color** tab: select either **Color** or **Grayscale**, as appropriate for the plot (as shown at the right.)

Many more settings and options are available which allow the print properties to be set exactly to the needs of any specific print situation, but the above listed settings will generally be the minimum to produce a scroll plot. Adjust additional settings as desired.

When complete, click the “**OK**” button, which will then display the updated **Print** dialog, as shown below.



- 11) The **Paper Size** and the plot dimensions (shown by the double-ended arrow) should now match. These dimensions will also match the new **Document size** created earlier.



**Note:** It is very important that the newly created **Document size** (180 x 35.5 in this example) either matches or is larger than the area to be plotted (180 x 35.5 in this example, and shown by the blue arrow). If this is not the case, it may cause the plot file size to be extremely large (possibly up to several hundred or thousand Mb) and it will take a very long time to plot (possibly up to several hours.)

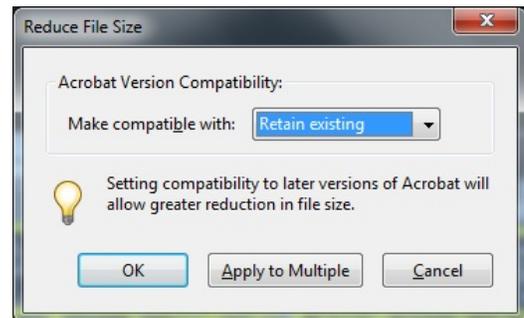
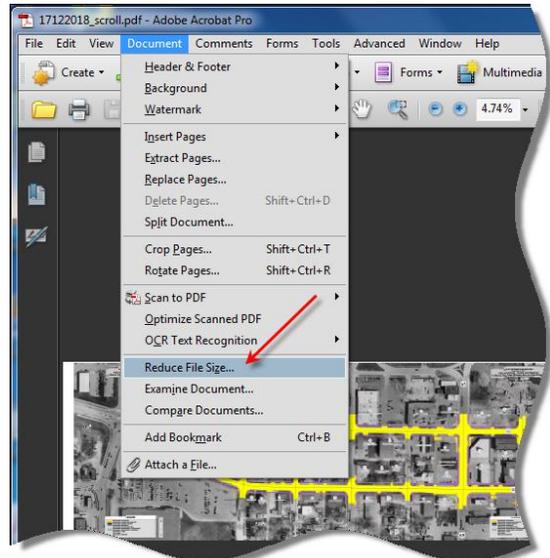
- 12) When all of the above steps are complete, *click* the **“Print”** button and the plot will be sent to the selected scroll plotter.

If the scroll is very large and takes a long amount of time to print on the plotters reducing the file size may speed up the process. This can only be done with PDF editing software like Adobe Acrobat.

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

The dialog in the bottom right will appear, select **Retain Existing** from the **Make compatible with** combobox.

Using this tool in Adobe Acrobat can greatly reduce the file size and time in which the pdf buffers at the scroll plotters. On average PDF files with raster images can be reduced to about one third the original file size. Buffering times are approximately reduced to one third the time as well. The reduction has not been found to reduce the quality of the image.



# Chronology of Changes to Design Manual Section:

## 021C-033 PDF Scroll: Creating and Plotting

3/31/2016	Revised	Updated imagery to reflect newer software versions. Updated the software settings for physical plot to reflect current equipment. Added Section for reducing PDF file size of very large PDFs
1/15/2014	Revised	Update graphics due to move to Projectwise.
2/26/2010	NEW	