



Table of Contents

CHAPTER 19 ~ Plan & Profile Sheet Clipping

Overview	19-1
Plan / Profile Sheet Creation	19-1
Clip Sheets and Motif Files	19-2
WORKFLOW 1: Plan / Profile Sheets using GEOPAK	19-3
<i>Figure 19-1: Project Manager</i>	<i>19-3</i>
<i>Figure 19-2: Plan Sheet Layout Dialog</i>	<i>19-3</i>
<i>Figure 19-3: Sheet Layout Settings</i>	<i>19-4</i>
<i>Figure 19-4: Plan Sheet Layout Dialog.....</i>	<i>19-4</i>
<i>Figure 19-5: Sheet Composition</i>	<i>19-5</i>
<i>Figure 19-6: Plan Sheet Layout Dialog</i>	<i>19-5</i>
<i>Figure 19-7: Layout Setting</i>	<i>19-5</i>
<i>Figure 19-8: Plan Port Data</i>	<i>19-6</i>
<i>Figure 19-9: Plan Port Data - Create Motif File</i>	<i>19-6</i>
<i>Figure 19-10: Profile Layout</i>	<i>19-7</i>
<i>Figure 19-11: Layout Setting</i>	<i>19-7</i>
<i>Figure 19-12: Plan Sheet Layout Dialog</i>	<i>19-8</i>
<i>Figure 19-13: Modify Sheet Layout-Plan</i>	<i>19-8</i>
<i>Figure 19-14: Modify Sheet layout-Profile</i>	<i>19-8</i>
<i>Figure 19-15: Plan Sheet Layout Dialog</i>	<i>19-10</i>
<i>Figure 19-16: Sheet Number Manager</i>	<i>19-10</i>
<i>Figure 19-17: Edit Sheet Number</i>	<i>19-11</i>



Table of Contents

<i>Figure 19-18: Sheet Number Manager</i>	<i>19-11</i>
<i>Figure 19-19: Plan Sheet Layout Dialog</i>	<i>19-11</i>
<i>Figure 19-20: Clip Sheet</i>	<i>19-12</i>
<i>Figure 19-21: Clip Sheets</i>	<i>19-13</i>
EFLHD Sheet Composition Dialog Setting	19-13
<i>Table 19-1: English Sheet Styles</i>	<i>19-14</i>
<i>Table 19-2: Metric Sheet Styles</i>	<i>19-15</i>



Chapter 19: Plan & Profile Sheet Clipping

Overview

This chapter will describe the methods used to create plan and profile sheets. The following workflows will show the user how to set up sheets using GEOPAK Plan and Profile Sheet Composition tool. This application has evolved over the years, allowing for profile stair stepping, ability to automatically clip the graphics with notches (Title block, project information, etc.), and customized sheet numbering and station adjustment on sheets.



Note: EFLHD policy is to create all sheet per file with rotate view only. This will use models for all the sheets in one design file and also allow the use of plan and profile labelers when detailing the sheets.

Plan/profile sheet creation

GEOPAK will create separate plan and Profile, double plans and plan/profile sheets. These sheets are generally created at 20, 40, 50, and 100 scale English (ft/in). Workflow 1 will describe the steps necessary to create a plan/profile sheet. Station range, drawing areas, and many other variables are contained in the sheet library files **eflhd_Eng_sheets.psl**. The sheet library file contains many values specific to EFLHD such as cell library names and locations, specific sheet cells to be used, drawing scales, and a variety of text parameters and cannot be modified by the user.

The sheet library files for EFLHD projects are located on the EFLHD network at:

M:\Cadd_resource_v8\Plan&Profile_Shts



For EFLHD employees, the unit correct .psl file will be automatically attached while opening a design file using the Project Configuration (*.pcf).

For consultants, EFLHD sheet library files are available through the **Cadd_resource_v8.zip** download. Download the file and extract the file to the server or local drive, keep the Cadd_resource_v8 directory structure intact. The unit correct .psl file will be attached when opening a design file using the project configuration file.

STANDARDS FOR USE WITH X30 CRITERIA



Clip Sheets and Motif Files

Prior to using the GEOPAK Plan and Profile Sheet Composition tool, three files need to be created. **Clip.dgn**, **Plan_motif.dgn** and **Profile_motif.dgn** should be created to assure proper setup of plan and profile sheets. Outlined below are the uses and instructions for creating each file.

Clip.dgn

Creating a drawing to display the sheet boundaries will allow the user to always have a visual representation of how each sheet will layout in relation to the others. If the design changes, having this file will allow the user to move sheets around to better fit any design changes. To create this sheet, create new design file and select the seed file “**Sur_ft2D.dgn**” and reference the **horizontal alignment design file** and **profile design file** into this new file. By referencing the overall design back into the **Clip.dgn** file, any future design changes will be displayed in this new file, instantly showing the designer which sheets, if any, will need to be adjusted.

Motif files

Motif files act as seed files for clipping plan and profile sheets. Motif file should be a blank file with the proper reference files attached, and the proper levels for each file turned on or off. The **Plan and Profile Sheet Composition tool** will then use these files when clipping each sheet and each clip sheet will have the correct files displayed with the correct levels on. For example, if the plan view in a final plan sheet needs to show overall design, mapping, raster images, ROW, etc., with specific levels on or off for each of these files, you would only need to setup this combination once in the motif file. This information would then be used to create each sheet. These sheets should be named **Plan_motif.dgn** and **Profile_motif.dgn**. To create **Plan_motif.dgn**, create new design file and select the seed file “**Sur_ft2D.dgn**” and attach each reference file that should be shown in the plan view, and turn on or off any levels to make the display look exactly like the final plan sheets in plan view. Repeat these steps for the **Profile_motif.dgn**, referencing the profile sheet into the motif file.



Workflow 1: Plan/Profile sheets using GEOPAK

1. *Open the Clip.dgn and invoke Plan and Profile Sheet Composition tool from Project Manager by selecting the button for Plan & Profile Sheets. Select a Run or create a new Run.*

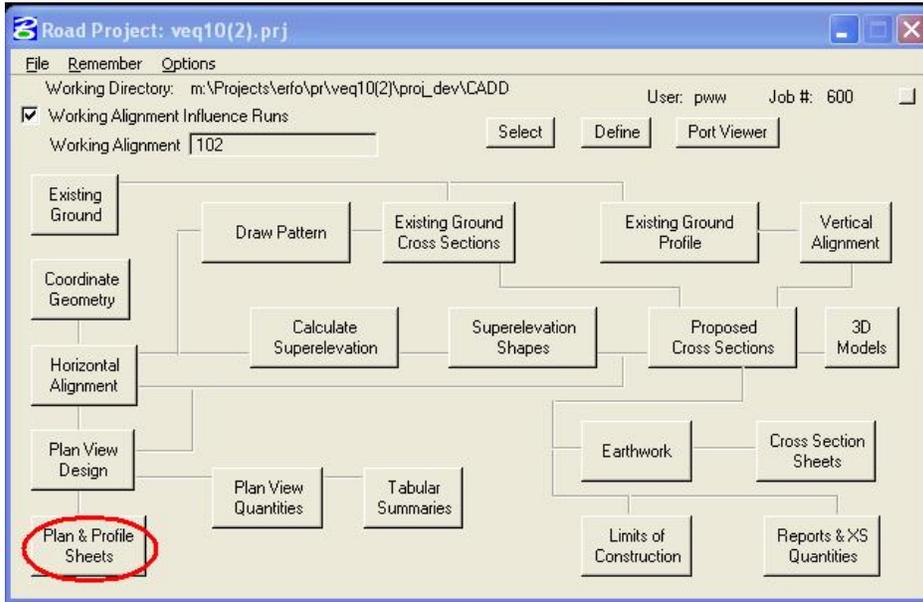


Figure 19-1: Project Manager

The example below is focused on clipping an English project using 100 Scale Plan/Profile sheets.

2. *The following Plan Sheet Layout dialog box appears. Select 100 Scale Plan/Profile using the drop down arrow, and adjust the Scale field to 100 ft/in as shown below:*

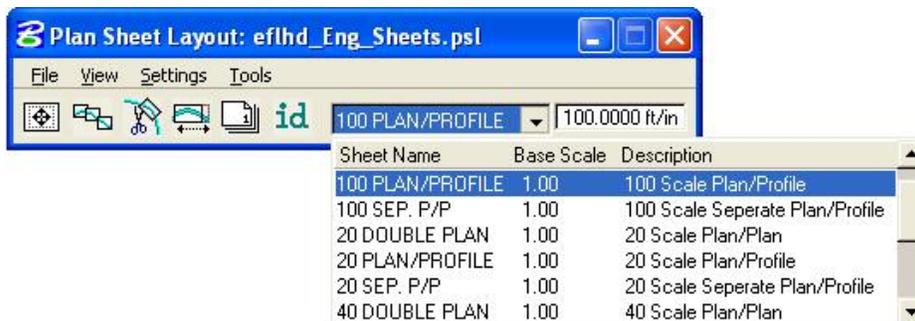


Figure 19-2: Plan Sheet Layout Dialog



3. From the pulldowns, select *Settings > Sheet Layout* and adjust the *Sheet Layout Settings* as shown below and press *OK*:

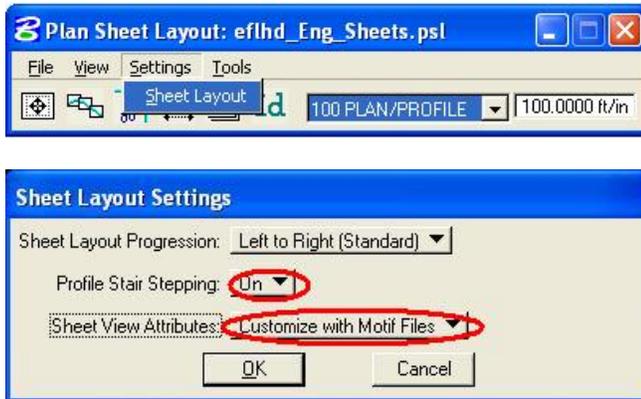


Figure 19-3: Sheet Layout Settings

4. Invoke the *Sheet Composition* dialog by clicking on the *Sheet Composition* icon from the *Plan Sheet Layout* dialog as shown below:



Figure 19-4: Plan Sheet Layout Dialog

5. Modify the *Sheet Composition* dialog box as shown below:

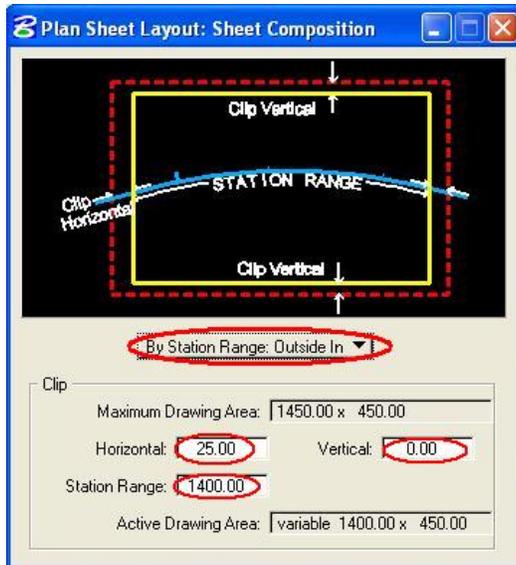


Figure 19-5: Sheet Composition

The dialog shown is settings for a 100 Scale PLAN/PROFILE "sheet style". Other "sheet styles" have been created for English and Metric projects. The settings can be found at the end of this documentation... To go directly there, click [HERE](#).

6. Invoke the Layout Sheets tools by selecting the *Layout Sheets icon from the Plan Sheet Layout dialog as shown below:*

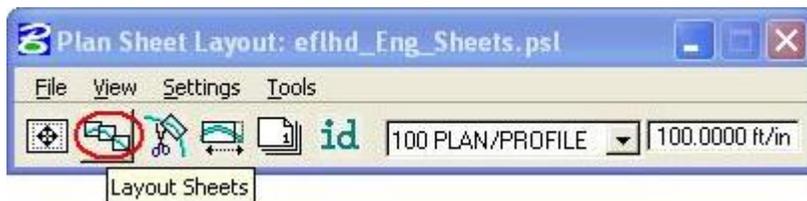


Figure 19-6: Plan Sheet Layout Dialog

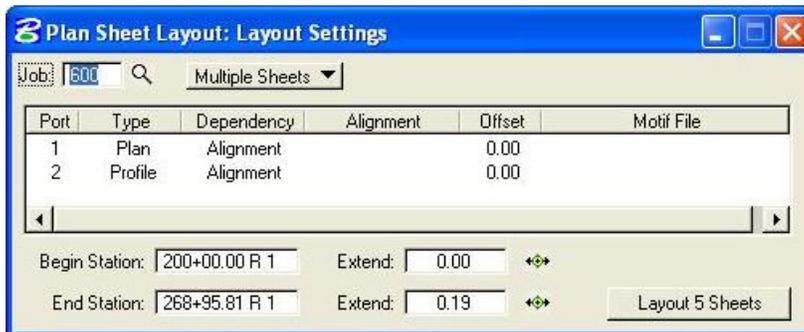


Figure 19-7: Layout Settings



7. *Select Multiple Sheets from the dialog box and Select the GPK file by keying it into the “Job:” box, or by browsing using the file open icon.*
8. *To populate the Plan Port Data dialog box, double click anywhere along the row for Port 1 in the Layout Settings dialog box and the following dialog box will be invoked.*



Figure 19-8: Plan Port Data

9. *Select the correct Chain and the appropriate Plan Motif file. Press OK. If the Motif File has not been created, create Motif files using the second icon as shown below:*

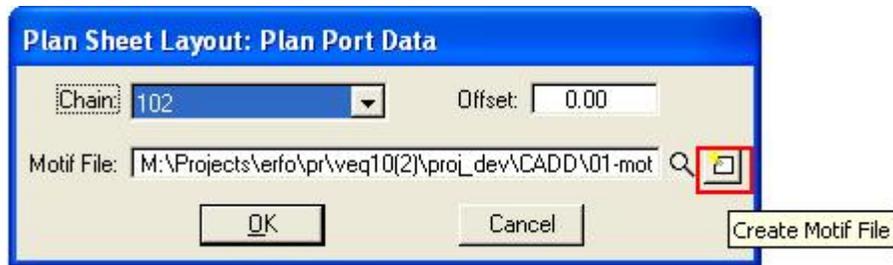


Figure 19-9: Plan Port Data - Create Motif File

Motif file should be created from a “Sur_ft2D.dgn” seed file. After creating the Motif file, make sure to attach the required reference files.

10. *To populate the Profile Port Data dialog box, double click anywhere along the row for Port 2 in the Layout Settings dialog box and the following dialog box will be invoked.*

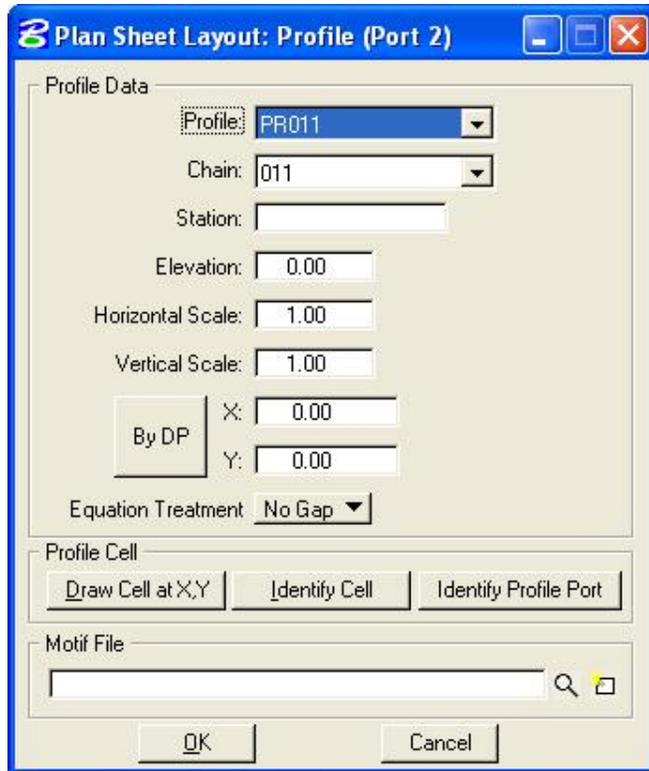


Figure 19-10: Profile Layout

11. *If a profile cell exist for the file that is referenced to the Clip.dgn file then click on Identify cell, place data point on the profile cell and accept. Profile Data dialog fields can be populated using this method, or manually enter in the required information.*
12. *Select the appropriate Profile Motif file. Press OK. If the Motif file has not been created, create Motif files using a "Sur_ft2D.dgn" seed file as outlined in step 9.*
13. *GEOPAK will calculate the number of sheets to layout, number of sheets calculated will be placed on the button at the bottom right of the Layout Settings dialog box. The extend distance filed will allow the user to enter a value that will shift the clipping shapes backwards or forwards a given distance. If the number of sheets is acceptable, press the Layout 8 Sheets button and GEOPAK will draw clipping shapes into the drawing.*

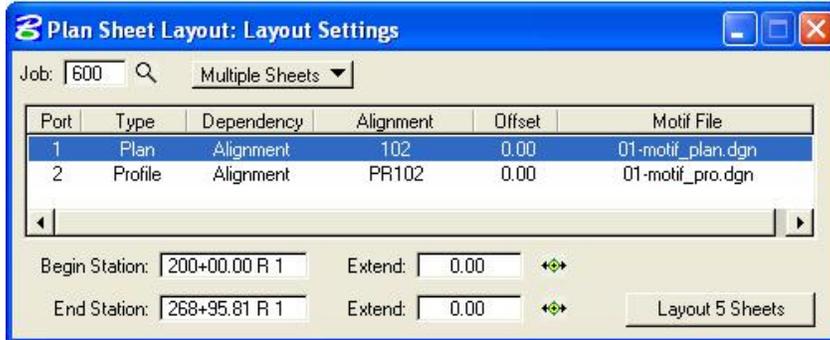


Figure 19-11: Layout Settings

In order for the data to be clipped correctly, use the Sheet Layout Modify Tools. Two most common types of modification supported are sliding the sheets and modifying the drawing area. The drawing area cannot be increased in Length (Horizontal) or Height (Vertical) to exceed the Drawing Area setup in the sheet library.

14. *Once the clipping shapes are placed, for extremely curved chains and steep vertical curves it may be necessary to modify the clipping shapes. To invoke the Modify tools, use the Modify Sheets icon, from the Plan Sheet Layout dialog, as shown below:*



Figure 19-12: Plan Sheet Layout Dialog

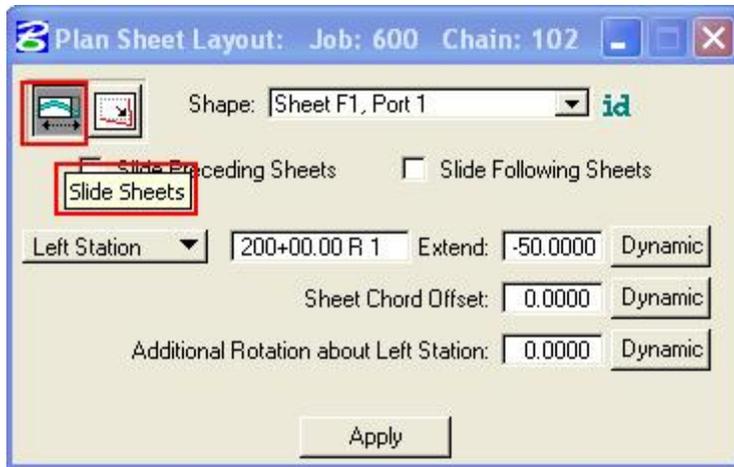


Figure 19-13: Modify Sheet Layout-Plan

15. *Identify the Sheet (Clipping Shape) to be modified by clicking on the ID button and then data pointing the clipping shape or simply select it from the pick list, via the down arrow.*

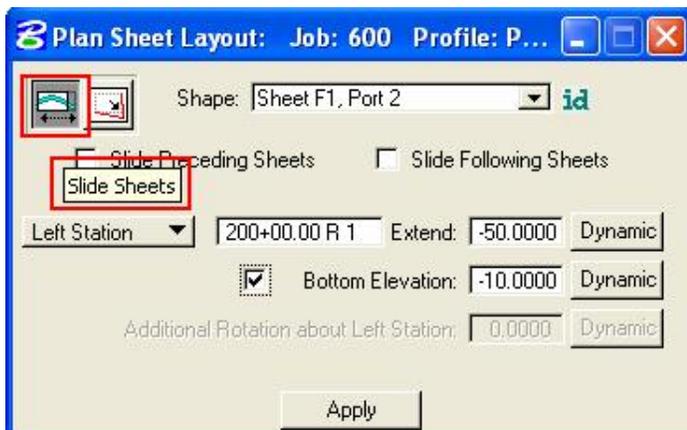


Figure 19-14: Modify Sheet Layout-Profile



NOTE: The application is intelligent enough to know whether a Plan clipping shape or Profile clipping shape has been identified. When a Profile clipping shape is identified, the "Sheet Chord Offset" field changes to "Bottom Elevation", (as shown above). When modifying the vertical position of a Profile clipping shape, toggle "Bottom Elevation" ON, type in the desired "bottom of the shape" elevation, or press **Dynamic** and move the shape up or down.

STANDARDS FOR USE WITH X30 CRITERIA



16. Use the Sheet Number Manager tool to number sheet to EFL standards. To invoke the Sheet Number Manager tool, use the Sheet Number Manager icon, from the Plan Sheet Layout dialog, as shown below:



Figure 19-15: Plan Sheet Layout Dialog

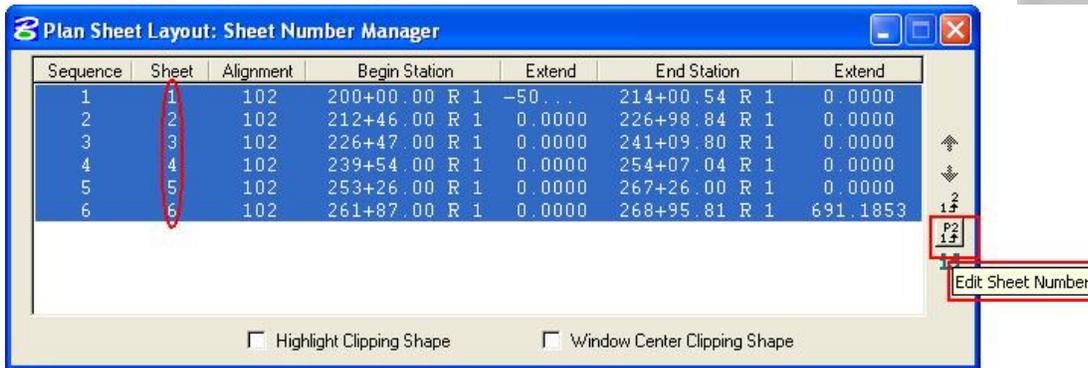


Figure 19-16: Sheet Number Manager

17. Click inside the white area anywhere on row one, hold down the shift key and click a second time anywhere on the last row. Once all rows are selected, click on Edit Sheet Number as shown above.
18. For EFL specific sheet numbering scheme where the sheets are numbered in sequence beginning with D1, complete the Edit Sheet Number dialog as shown below and press OK:

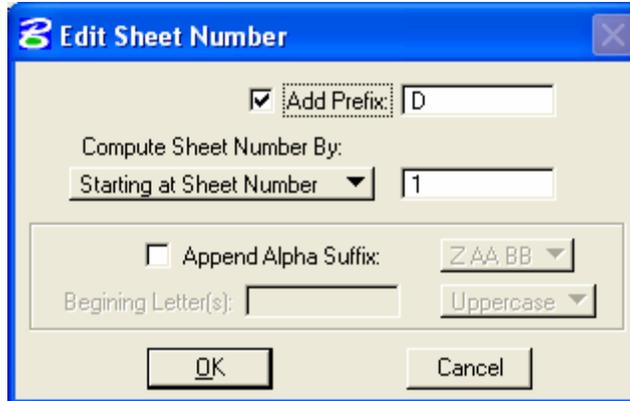


Figure 19-17: Edit Sheet Number

19. When OK is pressed the Sheet Number Manager dialog will appear as shown below:

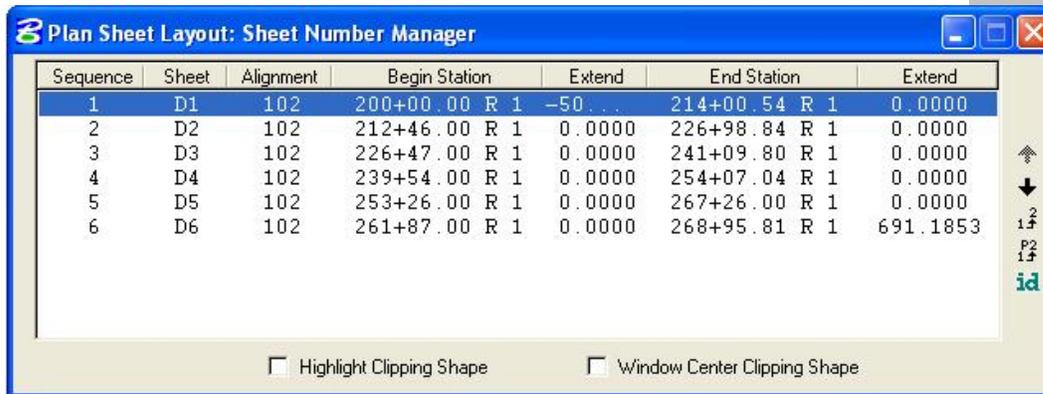


Figure 19-18: Sheet Number Manager

20. Once the clipping shapes are placed and satisfactorily modified, invoke the Clip Sheets tool, Select the Clip Sheets icon from the Plan Sheet Layout dialog as shown below:

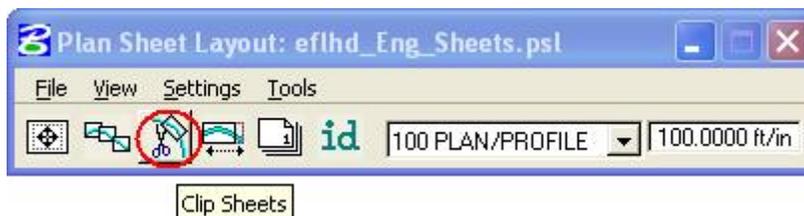


Figure 19-19: Plan Sheet Layout Dialog

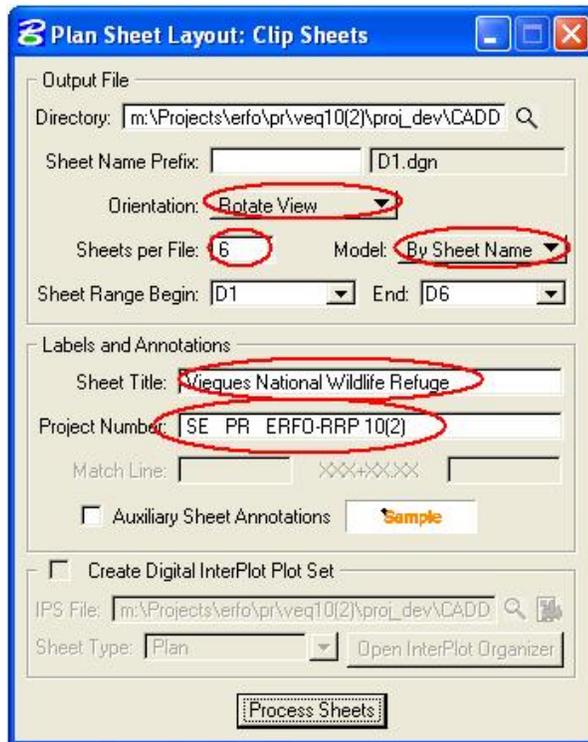


Figure 19-20: Clip Sheets

21. *Select the working directory in the Output File box. Keep the sheet name prefix in the second field as blank, change the design file name latter after process.*



NOTE: The software **appends** the **beginning sheet number** to the "Sheet Name ". You most likely will have to rename this (or these) file(s) later .

22. *Select Orientation to Rotate View. The sheet cell and the view are rotated and the clipped graphics maintains it's coordinate grid intelligence, thus allowing for labeling right on the sheet.*



NOTE: EFLHD policy to choose Rotate View, thus not to loose coordinate grid intelligence of the clipped graphics.

23. *Select Sheet per File to total number of sheets, thus sheet will be drawn in different models of the*



design file. EFLHD prefer to use all sheet shown in different models of one design file.

24. *Select the Sheet Range required from the pick list, using the drop down arrows. Use the Sheet Number Manager Tool to renumber sheets to EFL specific sheet numbering scheme, (such as D1, D2, D3....) as explained earlier.*

25. *Enter Labels and Annotation. An example of a completed Clip Sheets dialog is shown below (illustrating the results of the completed Labels and Annotation fields)... when completed press Process Sheets.*

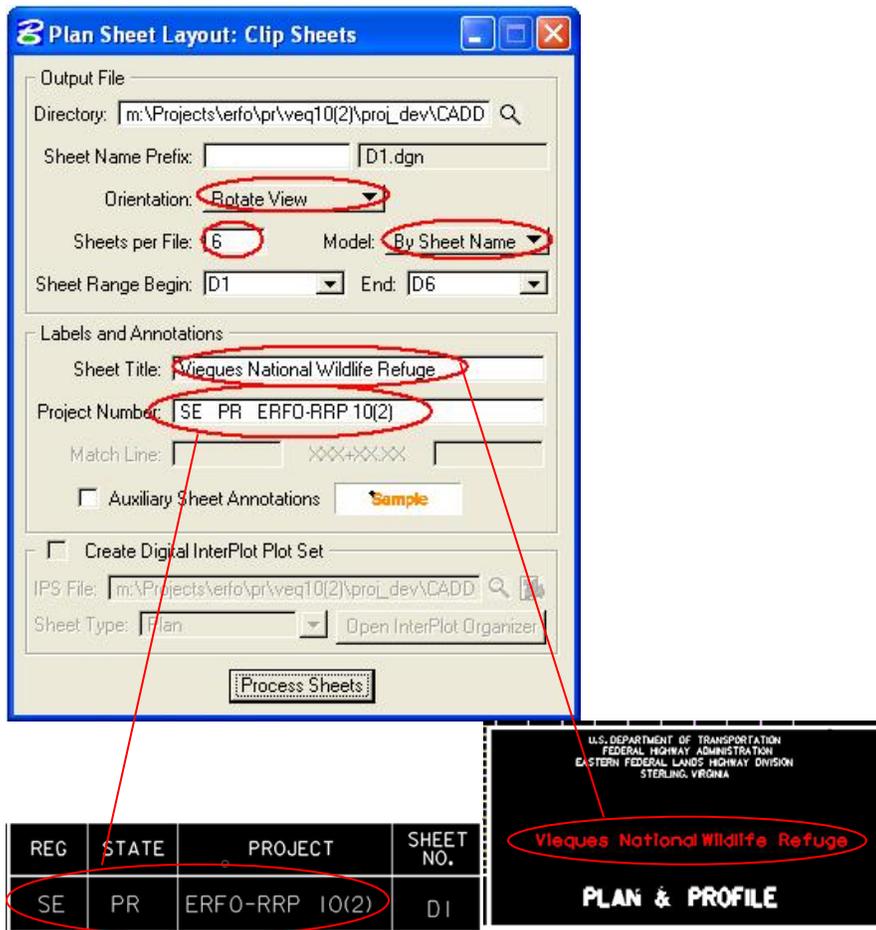


Figure 19-21: Clip Sheets

Note: *Keep 9 space between SE(Region) and PR(state), and 11 space between PR(state) and ERFO-RRP 10(2)[Project Number]*



EFLHD Sheet Composition Dialog Settings:

ENGLISH Sheet Styles:

Table 19-1: English Sheet Styles

Sheet Style	Scale (ft/in)	Station Range	Horizontal	Overlap (if using overlap option)
100 Plan/Profile	100	1400	25	Multiple of 25
50 Plan/Profile	50	700	12.5	Multiple of 12.5
40 Plan/Profile	40	550	15	Multiple of 10
20 Plan/Profile	20	280	15	Multiple of 5
100 Double Plan	100	1400	25	
50 Double Plan	50	700	12.5	
40 Double Plan	40	550	15	
20 Double Plan	20	280	15	
100 Separate Plan/Profile	100	1400	25	Multiple of 25
50 Separate Plan/Profile	50	700	12.5	Multiple of 12.5
40 Separate Plan/Profile	40	550	15	Multiple of 10
20 Separate Plan/Profile	20	280	15	Multiple of 5
10 Separate Plan/Profile	10	140	5	Multiple of 5



METRIC Sheet Styles:

Table 19-2: Metric Sheet Styles

Sheet Style	Scale (n:1)	Station Range	Horizontal Overlap
1000 Plan/Profile	1000	350	10
500 Plan/Profile	50	700	12.5
400 Plan/Profile	40	550	15
300 Plan/Profile	20	280	15
100 Plan/Profile	100	1400	25
500 Double Plan	50	700	12.5
400 Double Plan	40	550	15
300 Double Plan	20	280	15
100 Double Plan	100	1400	25
1000 Separate Plan/Profile	50	700	12.5
500 Separate Plan/Profile	40	550	15
400 Separate Plan/Profile	20	280	15
300 Separate Plan/Profile	10	140	5
100 Separate Plan/Profile	10	140	5