
Chapter 5

Labeling

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5.1 Objectives

- Learn how to label information with Plan View, Profile View, and Cross-Section Labeler

5.2 Definitions

The GEOPAK **Labeler** is a tool that allows the user to construct labels using text inserts, computed inserts, and key-in text. In Road there is a different **Labeler** available for the plan, profile, and cross-section views. Although a labeler is also available for the other GEOPAK Suite projects (Drainage, Survey, etc.) only the labelers available in Road are discussed in this chapter. The other labelers work similarly to the ones available in Road.

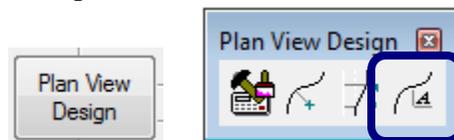
5.3 Accessing

5.3.1 Plan View Labeler

The Plan View Labeler can be accessed from one of three locations. It is available in the menu path **Applications > GEOPAK > Road > Plans Preparation > Plan View Labeling**. It can also be selected from Plans Preparation tool pallet, which is the pallet outlined in the Road toolbox shown to the right. It is the first icon in the **Plans Preparation** tool pallet shown below.



The third way that the Plan View Labeler can be accessed is from the **Road Project** dialog by clicking on **Plan View Design**, shown below on the left. This will bring up the Plan View Design tool pallet shown below on the right. The Plan View Labeler is the last one in that tool pallet, as outlined below.



5.3.2 Profile View Labeler

The Profile View Labeler can be accessed from the menu path **Applications > GEOPAK Road > Plans Preparation > Profile View Labeling** or by selecting the icon shown to the right. As shown below, it is the seventh (or fifth from the right) icon in the **Plans Preparation** tool pallet.





5.3.3 Cross Section Labeler

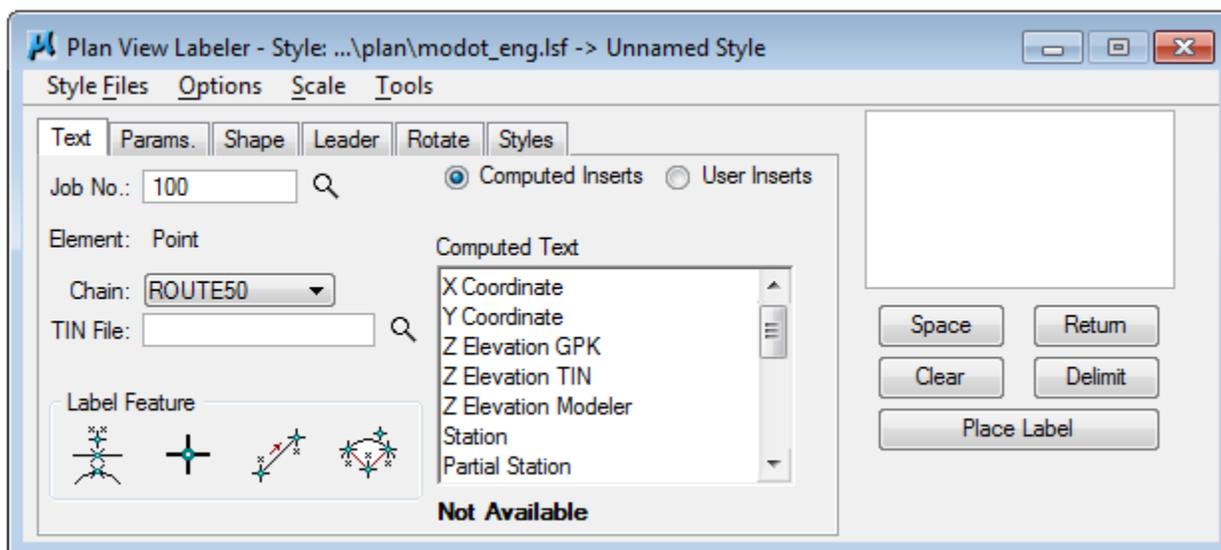


The Cross Section labeler can be accessed from the menu path **Applications > GEOPAK Road > Cross Sections > Cross Section Labeling** or by selecting the icon shown to the right. It is the sixth icon in the Cross Sections tool pallet shown below. The Cross Sections tool pallet is located in the lower left hand corner of the Road toolbox as shown to the left.



5.4 Basic Dialog

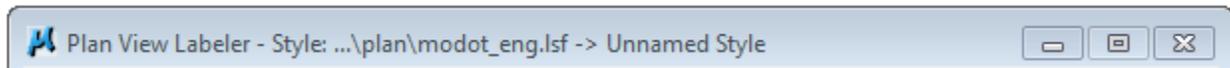
When you enter one of the labelers, a dialog similar to the one shown below appears. The dialog has four different parts.



5.4.1 Banner

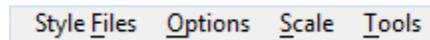
The window banner (shown below) displays which labeler is active, the name of the Labeler Style File (LSF), and the name of the style selected. If a predefined style from the active LSF is not selected, the banner displays “Unnamed Style.” In the following figure the Plan View Labeler is active, the name of the LSF is “...plan\modot_eng.lsf”, and a predefined style is not

selected.



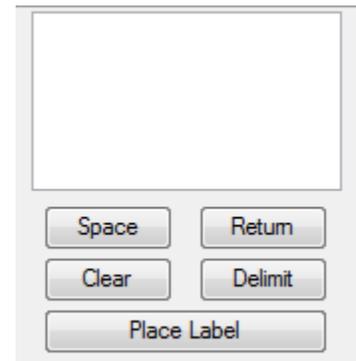
5.4.2 Menu Area

Immediately under the window banner are the pull-down menus shown below. The menu options are discussed below in Section 5.11 Menus.



5.4.3 Label Content

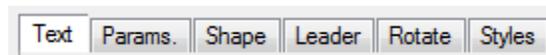
The label to be placed is displayed in the box on the right side of the dialog, shown in the figure to the right. Clicking in the box activates a text cursor, which indicates where information will be placed in the label. With this cursor active, the user may use the keyboard to type text for the label.



Under the box are several buttons. The **Space** button puts a space in the label at the cursor position. The **Return** button starts a new line. The **Clear** button clears the box to start a new label. The **Delimit** button places a line above or below a line of text. The **Place Label** button starts the place label process. **Note:** Follow the **Status Bar** prompts located in the lower left hand corner of the MicroStation window when placing a label.

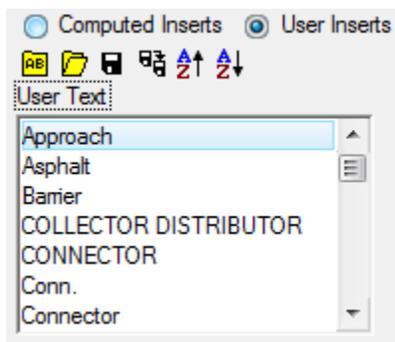
5.4.4 Option Tabs

The final area (shown below) contains tabs, which allow the user to define various options for the label. Each of these tabs are discussed next



5.5 Text Options

The **Text** tab allows the user to add either **Computed Inserts** or **User Inserts** to the label. If the User Inserts is selected, the right side of the text tab changes to the one shown below. This allows the user to view and insert predefined text into the label from a User Insert File (INS). The contents of the file are displayed in scrollable window below the icons. Double click on one of the predefined pieces of text to add it to the label.



The icons serve the following functions:

- Edit the Insert File.
- Open an Insert File.
- Save the Insert File.
- Save the Insert File As...

 Sort the contents in ascending alphabetical order.

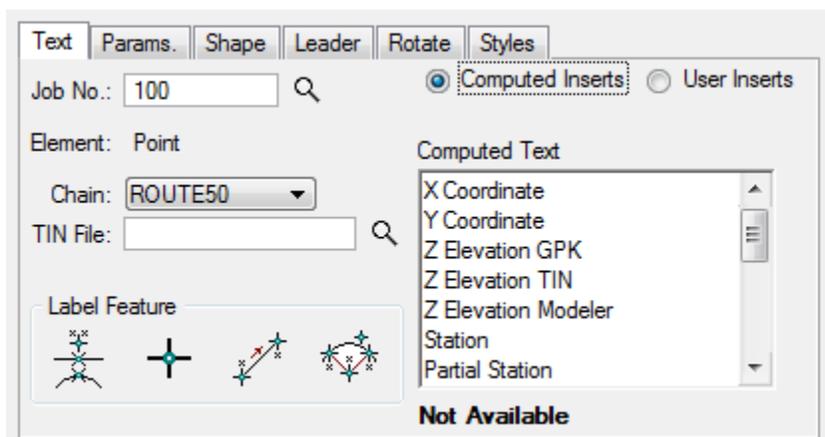
 Sort the contents in descending alphabetical order.

Often it is easier to type directly into the label content box unless the user is unsure of spelling or acceptable abbreviation. The predefined user insert files are those that come with GEOPAK. The user is able to edit these files or create one. If you do have a personal inserts file, it is a good idea to save it to some location other than the GEOPAK ... \bin\ folder to keep it from being overwritten during program upgrades.

The Computed Inserts section and the context of the rest of the text options tab changes depending on which labeler is active. Each of these is presented in the following subsections.

5.5.1 Plan View Labeler Computed Text Options

The text options tab for the Plan View Labeler using Computed Inserts is shown below.



To use the station and offset computed inserts, the job number and the chain need to be selected. If elevations are to be calculated, a .tin file must be chosen. The **Job No:** may be typed in or the GPK may be selected from a list of available files in the working directory by clicking on the magnifying glass icon  to the right of the Job No: field.

The **Computed Inserts** are items that Geopak has the ability to calculate for the chosen item. The list of **Computed Inserts** changes with the type of element that is chosen. If a line is chosen, the list of **Computed Inserts** will show inserts of bearing, and length. If a curve is chosen the list of **Computed Inserts** will change to show inserts of radius, curvature, chord length, etc.

The user can select different elements by using the icons in the **Label Feature** section.



Allows the user to select a graphical element such as a point, line, or curve.



Allows the user to data point a location on the screen.

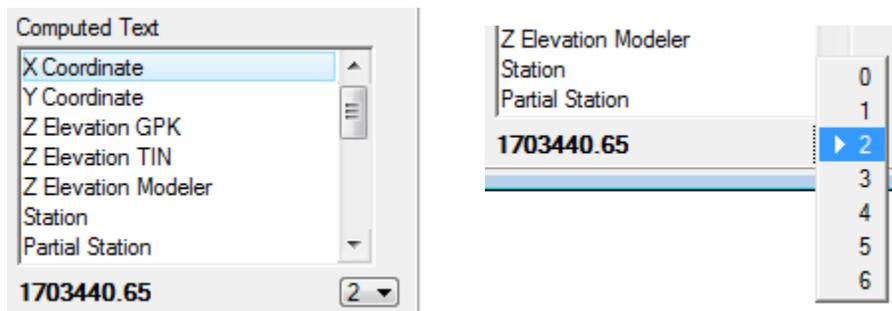


Allows the user to choose two visualized COGO points to represent a line.



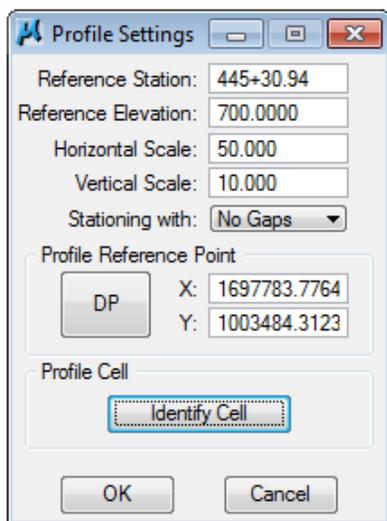
Allows the user to select the curve start point, ending point, and either the curve center or a point on curve using visualized name COGO points. Only elements listed as Points in the COGO navigator may be used for this option.

To use the computed inserts, select the Label Feature icon for the type feature you want to label. Next, follow the prompts in the lower left corner of the MicroStation window to select the feature. Once the feature is selected, the list of Computed Text will reflect those values that the labeler can calculate for that type of element. To view the computed value, select one of the items from the list. The computed value will appear in the bottom center of the dialog, as shown in the figure below. To change the decimal accuracy of the value, click on the pull down to the right of the value and select the desired accuracy as shown below in the figure on the right.

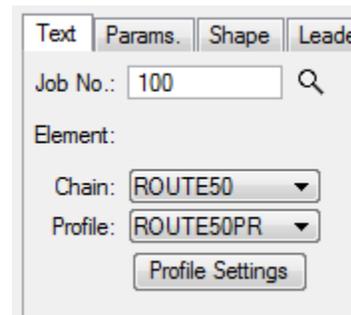


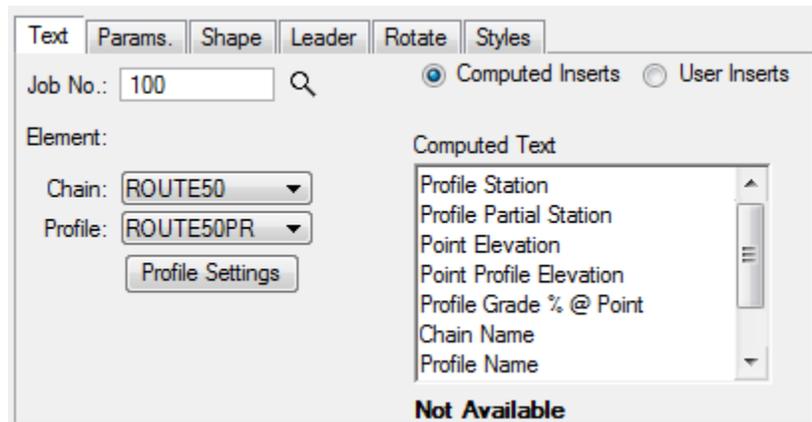
Once the accuracy is set, double click on the highlighted item in the Computed Text list to add the value to the label being created.

5.5.2 Profile View Computed Text Options



When the Profile Labeler first opens there are no Label Feature icons, as shown to the right. This is because the profile location is unknown. To proceed with the tool, click on the **Profile Settings** button. This brings up the dialog shown below on the left. The information may be entered manually or, if a profile cell has been utilized, the user may click on the **Identify Cell** button and data point / accept on the cell. Click **OK** to save the settings, which causes the two icons to appear.





The user can select different elements by using the following icons:



Allows the user to data point a location on the screen. The available computer inserts are station, elevation, grade, chain, and profile information.



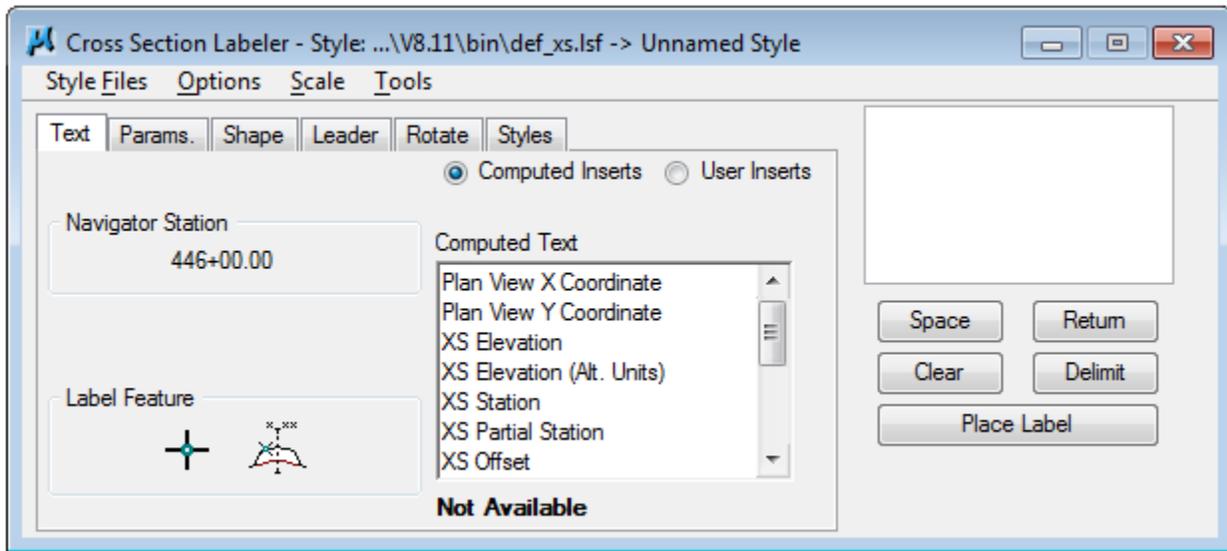
Allows the user to select a GEOPAK profile element on the screen. If a tangent element is selected grade and change in elevation information is available. If a vertical curve is selected, station and elevation information are available for VPC, VPI, VPT, and High-Low Point as well as the usual curve data (length, K value, stopping sight distance, etc.) and profile & chain names.

The rest of the Profile Labeler compute text options works the same as the Plan View Labeler.

5.5.3 Cross-Section View Computed Text Options

Launching the **Cross Section Labeler** also opens the Cross Section Navigator, which is used to navigate from cross section to cross section. This is because the active cross section for the labeler is the same as that for the navigator, as shown in the following dialogs.





The user can select different elements by using the following icons:



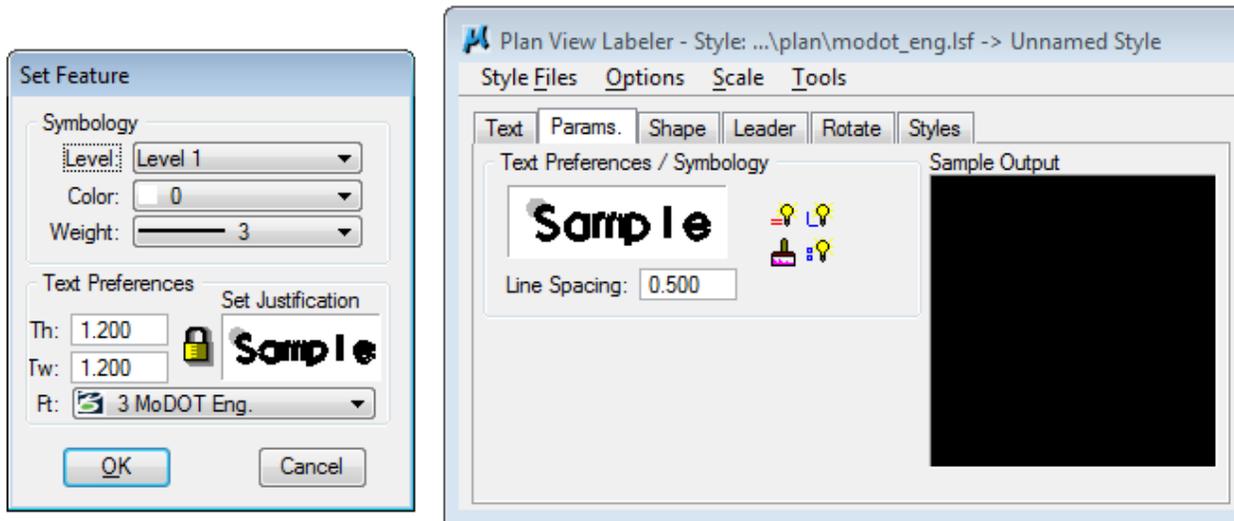
Allows the user to data point a location on the screen. The available computer inserts are plan view coordinates, elevation, station, offset distance, offset direction, and chain information.



Allows the user to select a cross section element. Slope in differing formats and delta elevation information is available.

5.6 Parameters Tab

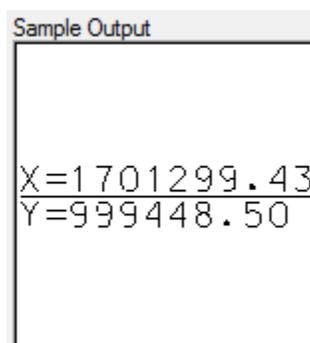
The **Parameters** Tab controls the text settings for a label. It is exactly the same for all three labelers. The tab lets the user set the text **Height, Width, Line Spacing, Justification, Font,** and placement symbology, as shown in the following figure.



The buttons at the bottom of tab allow the user to quickly set all of the symbology as follows:

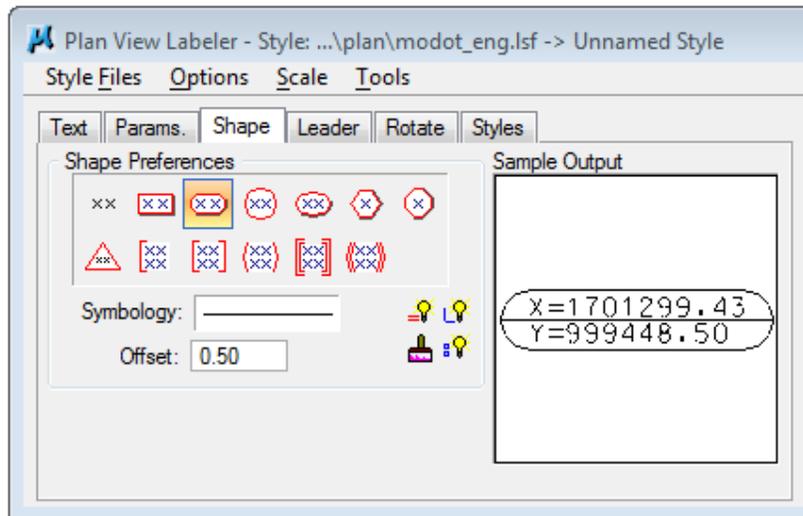
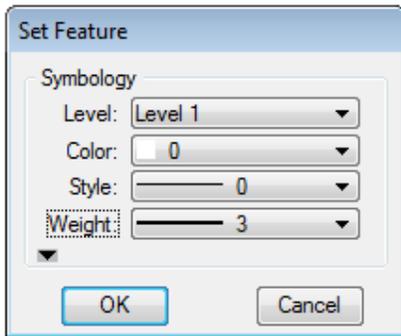
-  Sets the symbology to the current MicroStation settings.
-  Allows the user to set the symbology by choosing a MicroStation element.
-  Sets the symbology using D&C Manager symbology
-  Sets the symbology for all of the other label element tabs (Shape and Leader) to match the settings in the current tab.

The Sample Output section of this and the remaining tabs gives a preview of the label. The sample output of a coordinate label is shown below.



5.7 Shape Tab

The **Shape** tab allows the user to place a shape around the label and set the symbology for the shape. The user can select the shape to be placed around the text. The shape **Offset** is used to determine the distance between the shape and the text. The symbology icons are the same as those described under the Parameters tab. An example with a balloon shape and an offset equal to half of the text height and width is shown below as a decimal percentage (50% = 0.50).

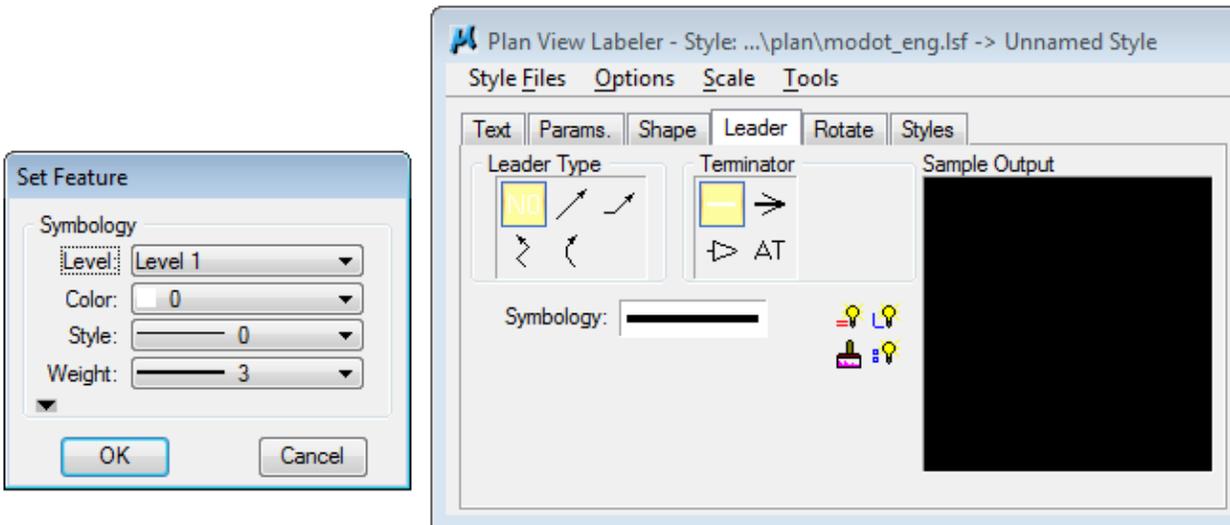


The **Shape Preferences** are:

- | | | | |
|---|-----------------------|---|-----------------------|
|  | None |  | Rectangular |
|  | Balloon |  | Circle |
|  | Ellipse |  | Hexagon |
|  | Octagon |  | Triangle |
|  | Single Square Bracket |  | Square Bracket |
|  | Round Bracket |  | Double Square Bracket |
|  | Double Round Bracket | | |

5.8 Leader Tab

The **Leader** tab allows the user to attach a leader from the label to the label. Different leader types and terminators are available. The active terminator, as defined in MicroStation pull down menu Element> Cell can also be used. The symbology icons are the same as those described under the Parameters tab.



The **Leader Types** are:

-  No Leader
-  One Point Leader with no bends in the leader
-  Two Point Leader with a single bend in the leader
-  Three Point Leader with two bends in the leader
-  Arc Leader.

The **Terminators** are:

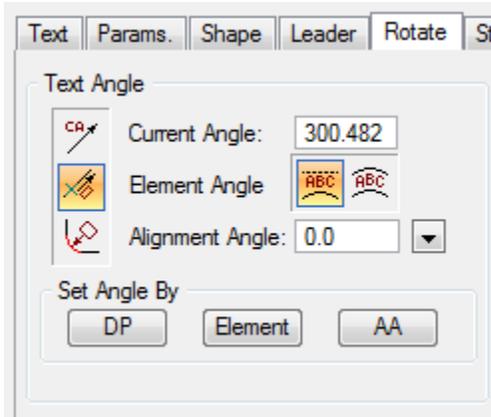
-  No Terminator
-  Open Terminator

 Closed Terminator (filled or unfilled)

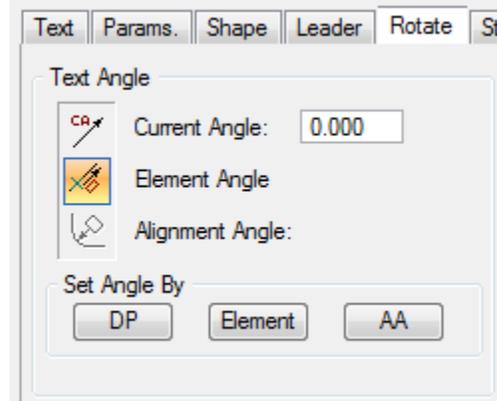
 Active Terminator

5.9 Rotate Tab

The **Rotate** tab allows the label to be rotated.



Plan View Labeler Rotate Tab



Profile and Cross Section Labeler Rotate Tab

The following **Text Angle** icons may be used to set the rotation of the label:

 Rotates the label text to the current angle, which is displayed and may be set in the field to the right 

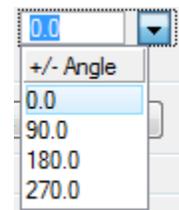
 Rotates the label text to the angle of the element being labeled. The **Plan View** text maybe plotted:

 Straight or

 Curved

Profile and **Cross Section** Labels must be plotted as straight text.

 The alignment angle rotated by +/- 0°, 90°, 180°, or 270° using the pull down shown to right.



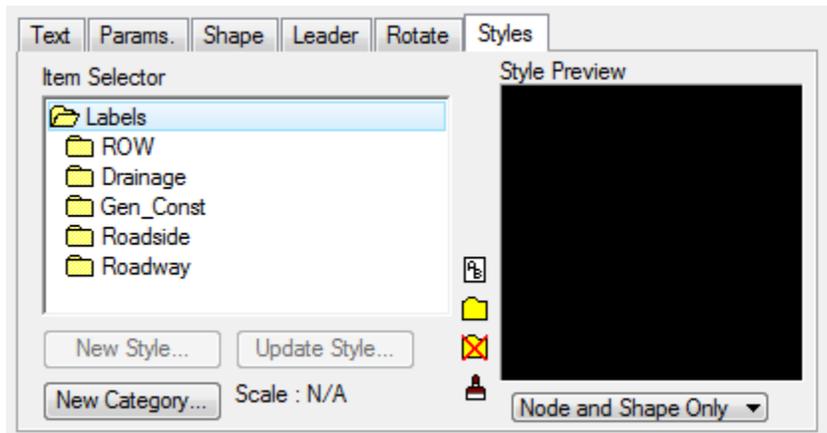
The user may also rotate the label by using the follow **Set Angle By** options:

- Set the text angle by two data points
- Set the text angle by any MicroStation element
- Set the text angle by the MicroStation active angle

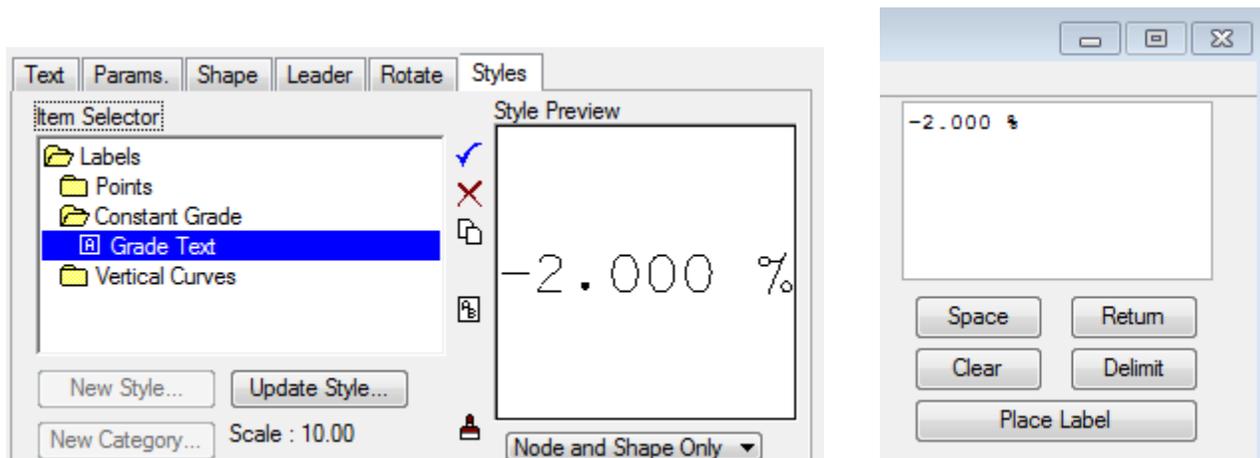
5.10 Styles Tab

The **Styles** tab allows the user to choose label formats from a library of pre-defined styles. When the user chooses a style, all of the parameter, shape, leader, and rotate options are set. Both the Plan View Labeler and the Profile Labeler have MoDOT default files. The styles are grouped in folders

The **Plan View Labeler Style File** contains the five folders shown in the following figure. Most of the items in the plan LSF file are regular text. Computed text labels have been created in the **ROW** folder for existing and proposed right of way and easement points. They plot the partial station and offset. The **Roadway** folder contains to labels with computed text for the station and offset of pavement and shoulder points.



The **Profile Labeler Style File** has three folders, as shown below on the left. All of the labels in this LSF contain computed text.

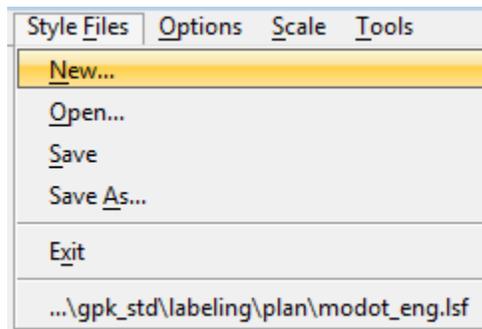


When an individual label style is selected, a preview of the label is given in the **Style Preview** window, as shown above on the left. (**Note:** The **Scale** value in that figure list the scale used to create the label, not the current scale.) The style can be transferred to the box in the upper right hand corner of the labeler dialog by clicking on it.

5.11 Menus

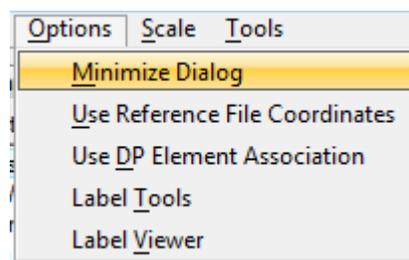
5.11.1 Style Files

The **Style Files** menu allows the user to manage style library files. While the default MoDOT style files will load automatically, the user may create a personalized file by saving a file to a location with write permission. Recently opened style files appear at the bottom of the menu. This allows for quickly switching between files,

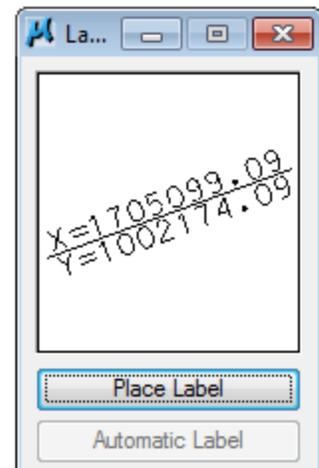


5.11.2 Options

The **Options** menu offers several ways to customize the way the labeler works.



Minimize Dialog only works with the Plan View Labeler. If it is checked, the labeler dialog box minimizes when **Place Label** is chosen and the **Label Viewer** (shown to the right) and the **Plan View Label Control** (shown on the next page) boxes open. This allows the user to see more of the screen while placing a label. You may notice that the second icon from the right in the Label Control tool pallet is active. This indicates that the labeler is in **Place Label** mode. The last icon on the Plan View Label Control is the **Restore Label Dialog** button. Clicking





Rotate Label To Active Angle



Rotate Label By Element Angle



Rotate Label By Two Data Points

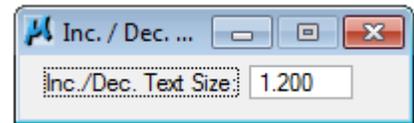


Rotate Label 180 Degrees



Rotate Label By Alignment Angle

The second group icons may be used to increment the label text size by the increment value defined in the **Inc. / Dec. Text Size** dialog shown to the right. Each time the user clicks on one of the two icons in the group, the text size is incremented. The icons are:



Increase Text Size



Decrease Text Size

The third group of icons contains the Feature Label options. Not all options are available for all labelers. The icons are:



Data Point



Plan View Graphic Element



2 COGO Points



Arc Defined by 2 COGO Points



Profile or Cross Section Element

The fourth group of icons is for label modification. The individual icons are:



Edit Label, which allows the user to edit an already placed label. It loads the label in the labeler dialog for editing. The label must be placed again after it is edited.

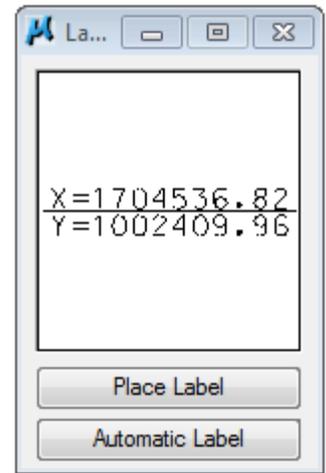


Move Label, which allows the user to move an already placed label.



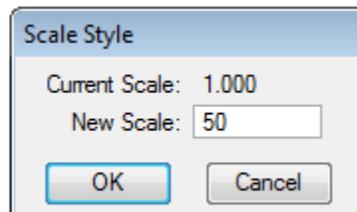
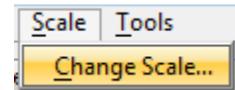
Extract Label, which allows the user to extract the format of an already placed label and load it into the labeler so a label of the format may be placed at another location.

Label Viewer brings up the dialog shown to the right. It allows the user to view and place a label. **Automatic Label** copies a label with computed inserts to a new location and the newly computed values. To use this option, identify a label you want to copy by extracting or placing a label. Use a Label Feature icon to indicate another item to be labeled and click on Automatic Label. This will place a label at the new location using the placement settings as the previous label.



5.11.3 Scale

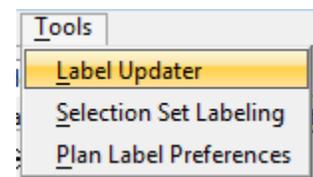
The **Label Scale** menu, shown to the right, allows the user to choose a plan scale. All labels are adjusted according to the new scale. After selecting the menu option, the following dialog appears. The user simply keys in a scale, and clicks **OK**. All size parameters are adjusted by the difference in the Current and New Scale values. **Note:** This scale should not be confused with the scale shown in the Styles tab, which gives the scale used to create the style and not the current scale. The only way to find the current scale is by the relative text size or by going to Scale > Change Scale.



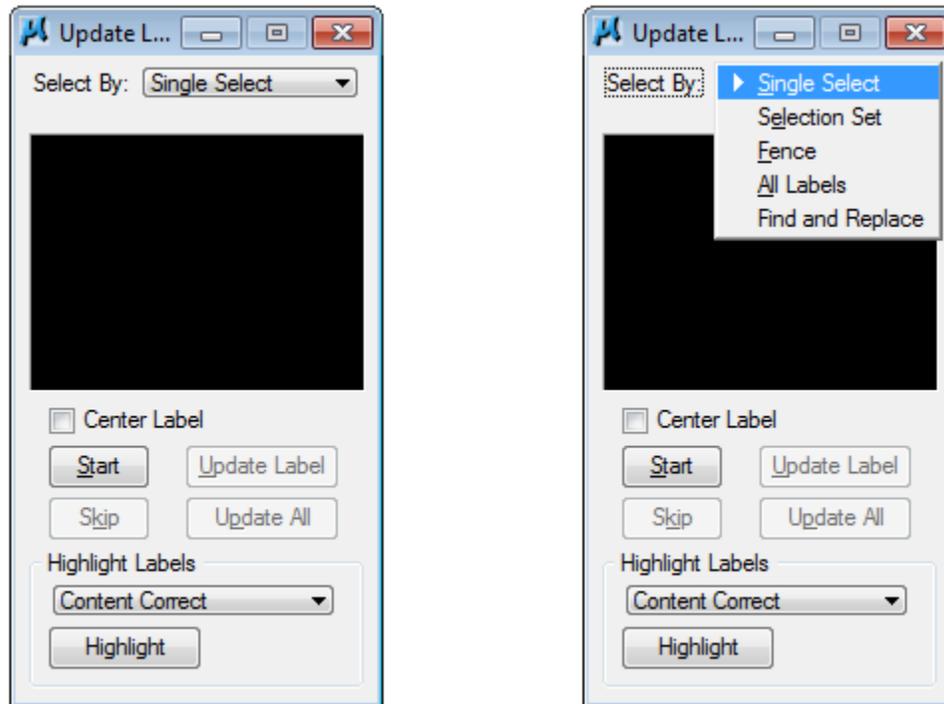
5.11.4 Tools

The **Tools** menu, shown to the right, provides the user with some specialized tools.

The **Label Updater** allows the user to update a label's computed inserts if any of the following is changed: the alignment, the TIN, a labels position, etc. Several **Select By** options are available, as shown in the figure on the next page: **Single Select**, **Selection Set**, **Fence**, **All Labels**, and **Find and Replace**.



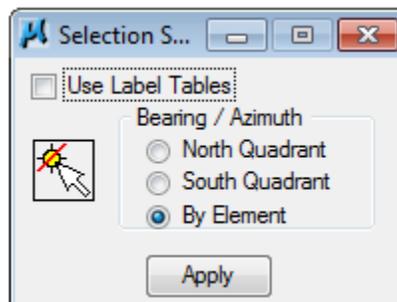
Clicking on the **Start** button starts the update process.



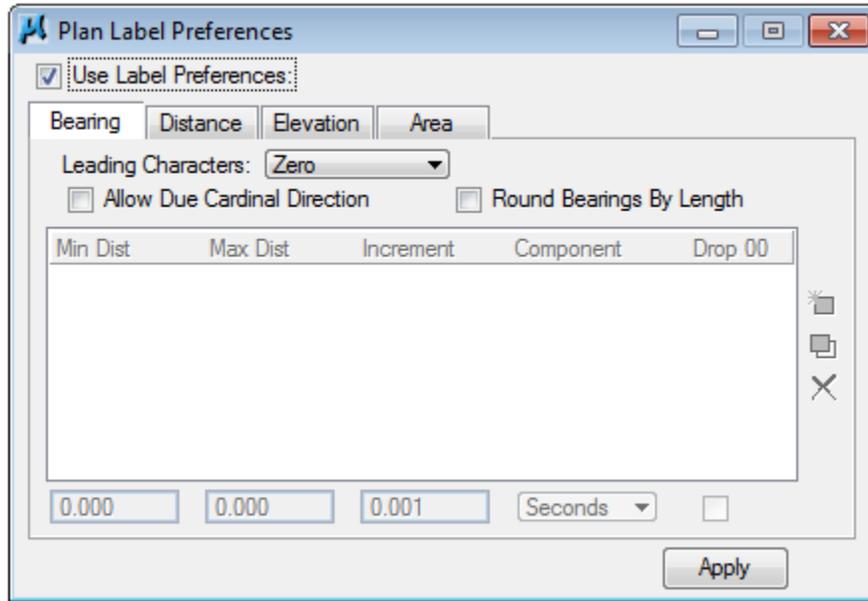
In addition, the **Highlight Labels** section of the dialog (shown below on the left) may be used to scan the labels and highlights those that meet the selected option. The four options are shown below to the right.



Selection Set Labeling allows the user to update multiple labels to a selected style using a MicroStation selection set. See the GEOPAK help for more information on using this tool.



Plan Label Preferences (shown on the next page) allows the user control the label preferences. To use the tool toggle on **Use Label Preferences** and activate the options you wish to use. See the GEOPAK help for more information on using this tool.



5.12 Exercise 5-1

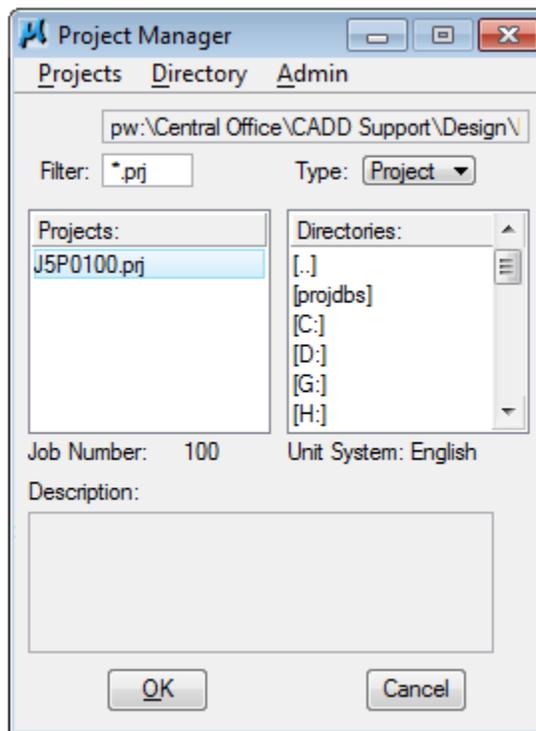
1. In ProjectWise, open the following MicroStation file:

pwname: \\MoDOT\Documents\District CADD\Design\Miller##\J5P0100\data\rw_plan_j5p0100.dgn

2. Open the following GEOPAK project:

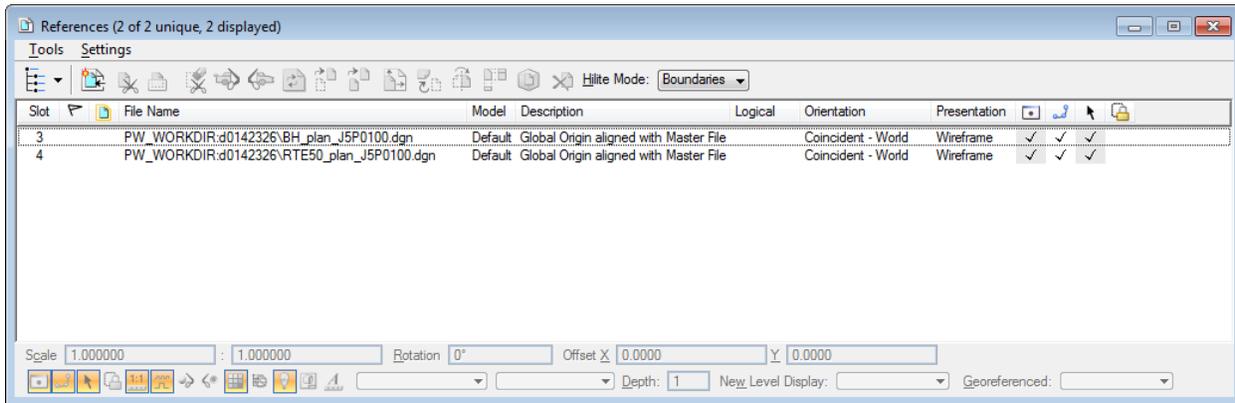
pwname: \\MoDOT\Documents\District CADD\Design\Miller##\J5P0100\project\j5p0100.prj

Enter the project as **ClUser**.

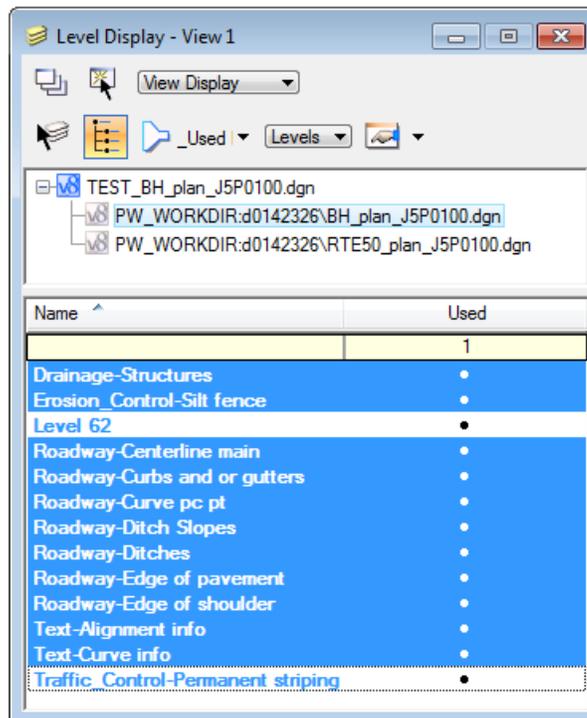


- The first step is to attach the Route 50 and BigHorn plan view drawing to the right of way drawing. Open the **References** dialog box and then go to **Tools – Attach** and attach the two dgn files below located under the Data folder for the job.

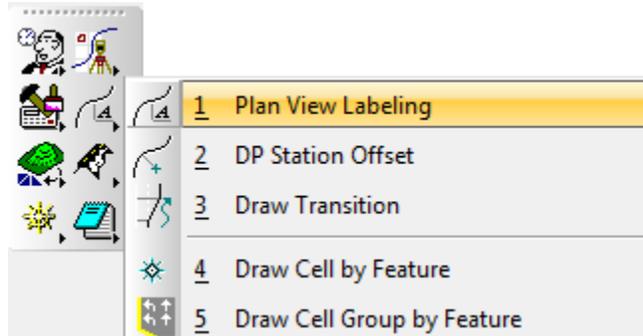
BH_plan_J5P0100.dgn
RTE50_plan_J5P0100.dgn



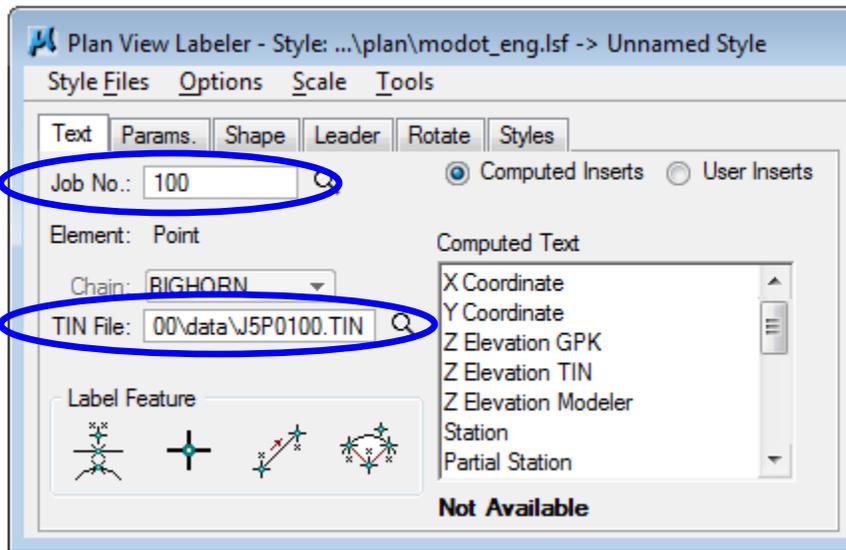
- Turn off **Level 62** and **Traffic_Control-Permanent striping** levels in both of the reference files you previously attached.



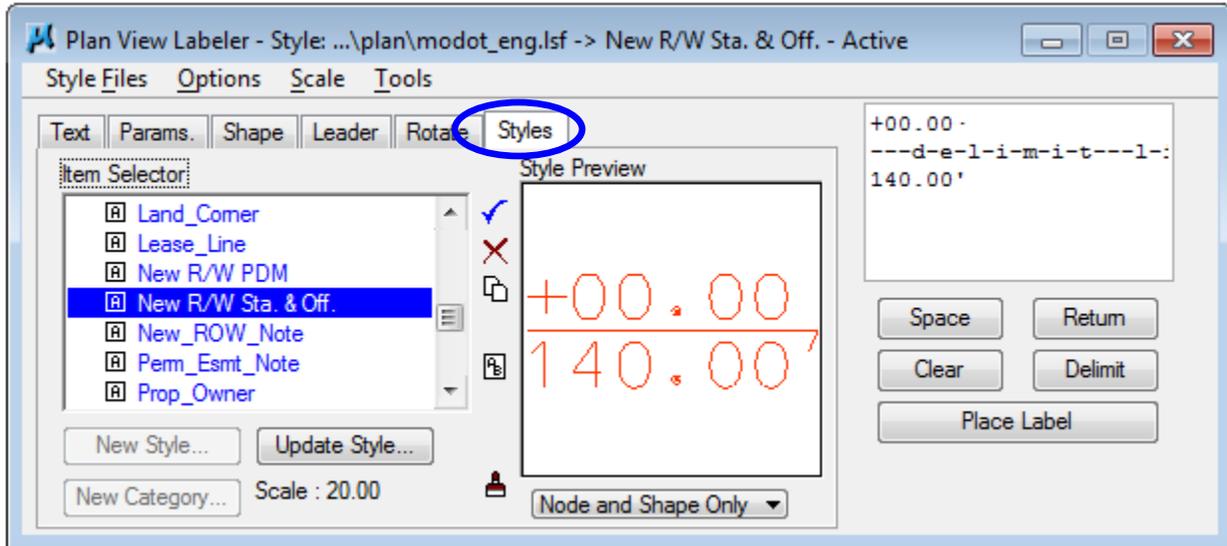
5. Next open the **Plan View Labeling** tool.



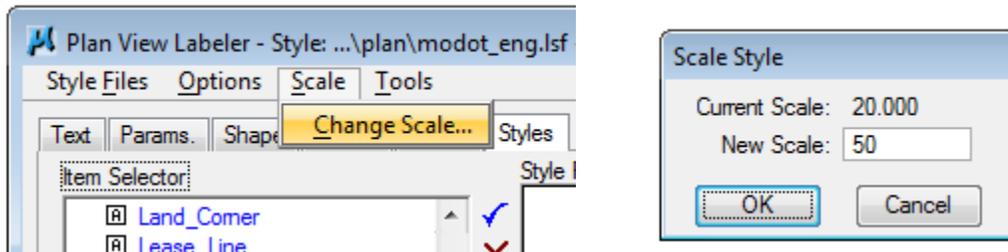
6. In the Plan View Labeler under the **Text** tab, make sure the Job Number is set to the **job100.gpk** file and the tin file (**J5P0100.TIN**) is attached also.



- Now we are going to label the R/W breaks along both alignments. Under the **Styles** tab, go to the folder named **ROW** and select the style named **New R/W Sta. & Off.** This will allow the user to label the R/W breaks with the proper attributes.

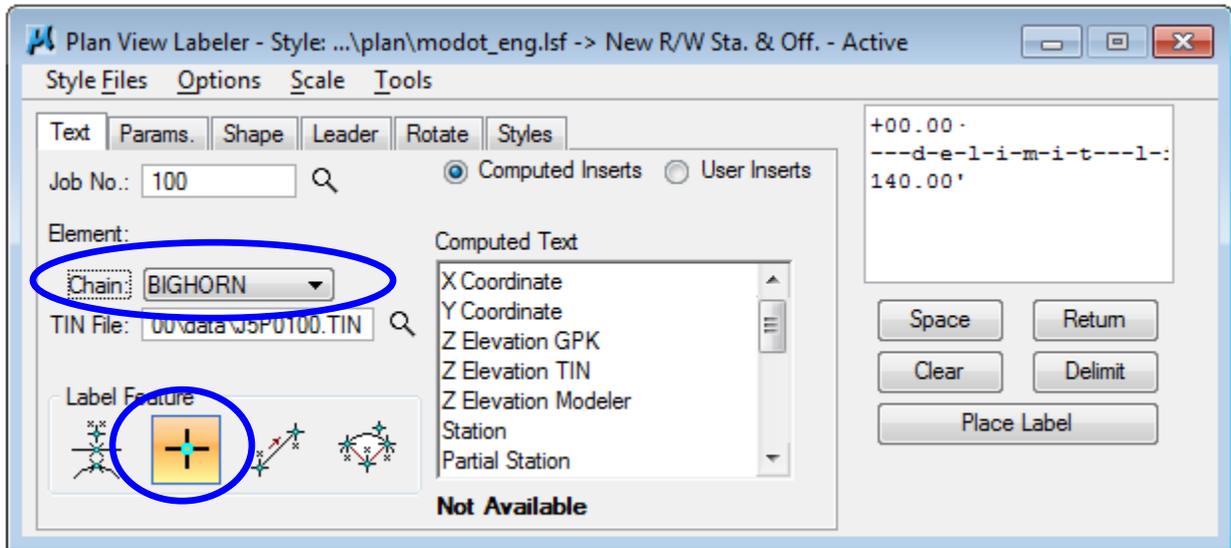


- Go to the **Scale** pulldown and set the scale to **50**.



- Using the **Data Point** option in the Plan View Labeler under the **Text** tab, go through and label every R/W break along the two alignments.

Make sure you have the correct chain for the R/W breaks you are labeling.



- Once all the R/W breaks are labeled, you are finished. The labels should look similar to the picture below.

