

9 LIGHTING TOOLS

OBJECTIVE

The objective of this chapter is to teach the designer how to use Design and Computation (D&C) Manager, the FDOT Menu and other GEOPAK tools to create proposed lighting features.

INTRODUCTION

This chapter discusses several applications and resources that help the designer in the creation of proposed lighting features to meet FDOT criteria and CADD standards. These include the cell libraries, D&C Manager, Draw Cell by Feature and Draw Cell Group by Feature.

Refer to the *Plans Preparation Manual*, Volume II, chapter 25 for more detail on developing the Lighting plans. Refer to the Design Standards indexes and the *Plans Preparation Manual*, Volume I, chapter 7 for design criteria.

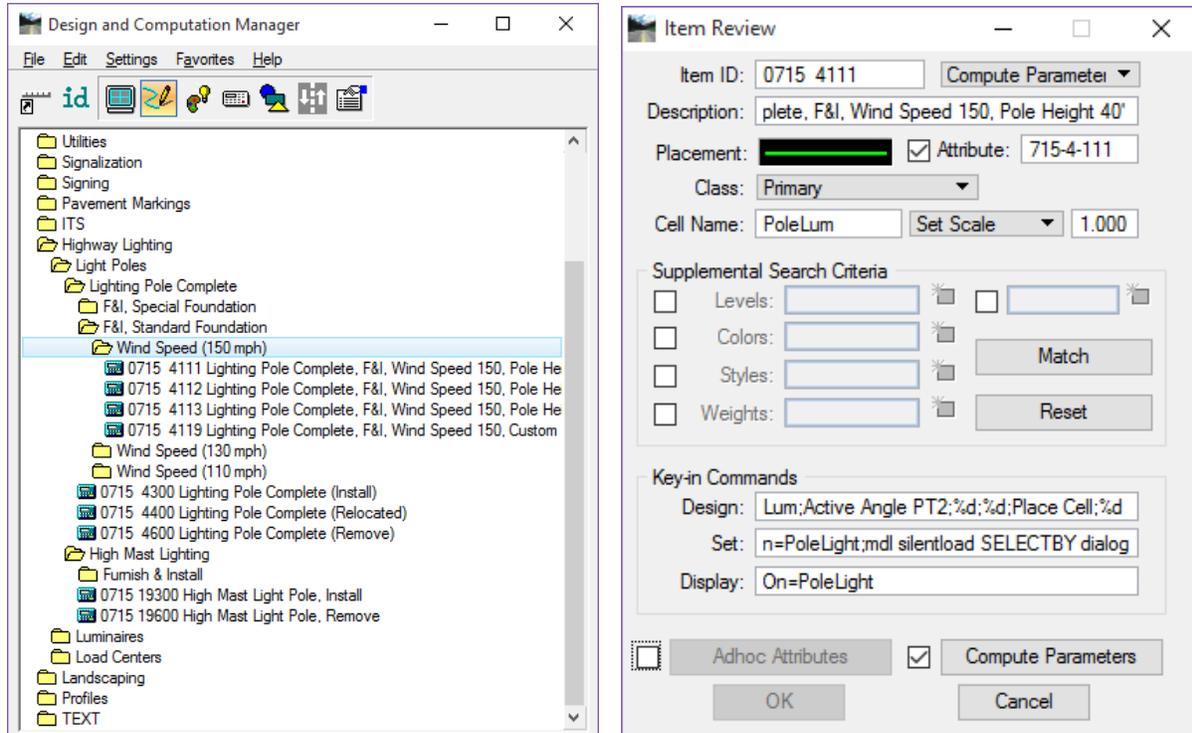
DRAWING LIGHT POLES

Generating the proposed lighting design is the responsibility of the engineer. It is also the engineer's responsibility to make sure an acceptable program is used to generate the proposed design. Currently FDOT uses AGI 32 when the design is done in-house. It is possible that the proposed design is done by the lighting manufacturer or Power Company; however, they will have to generate an acceptable report that is to be submitted to FDOT for review. This report can be used by the in-house designers to create the lighting design files i.e. light pole spacing.

There are a couple of ways to approach drawing the Light poles into MicroStation, one is to import the elements from the AGI 32 lighting program into MicroStation and then place the light pole cell on top of the AGI 32 element. Another way is to reference the AGI 32 file into the lighting design file then place the light pole cell on top of the AGI 32 element. A third option is to take the report generated from AGI 32 or another acceptable lighting program which details the spacing of the light poles then use D&C Manager in conjunction with other GEOPAK tools to draw the light poles at the specified spacing.

REVIEW LIGHT POLE ITEM IN D&C MANAGER

Before placing the *Light Poles* it is important to understand how the Light Pole items are set up. The next figure shows the Light Pole item in D&C Manager.



Selecting and then right-clicking on an item offers the options to review or modify the item. The Item Modify or Item Review dialog allows the designer to review how an item will work when placed with D&C Manager.

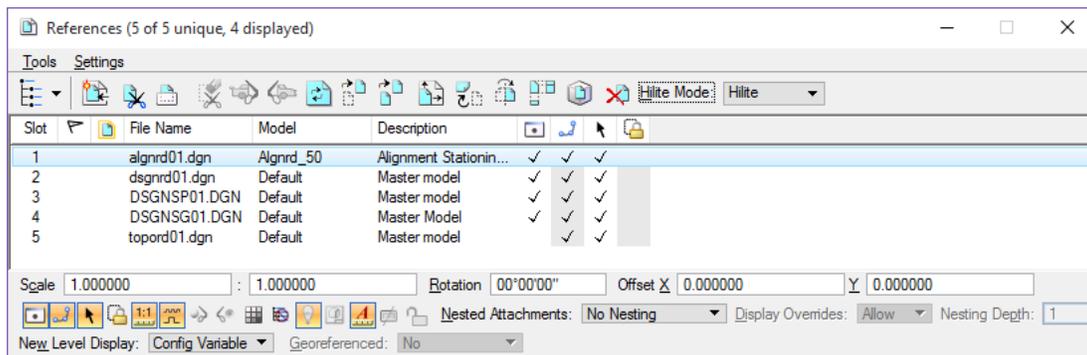
The top portion of the dialog shows information about the selected item such as pay item number, description, symbology and Cell Name. The bottom portion, Key-in Commands, describes what actions will be taken when the designer double-clicks on this item in D&C Manager.

In the Design field notice the string of commands that takes place when this item is selected for placement. One of the important items the designer needs to be aware of is when this item is placed it requires 2 points to set the rotation.

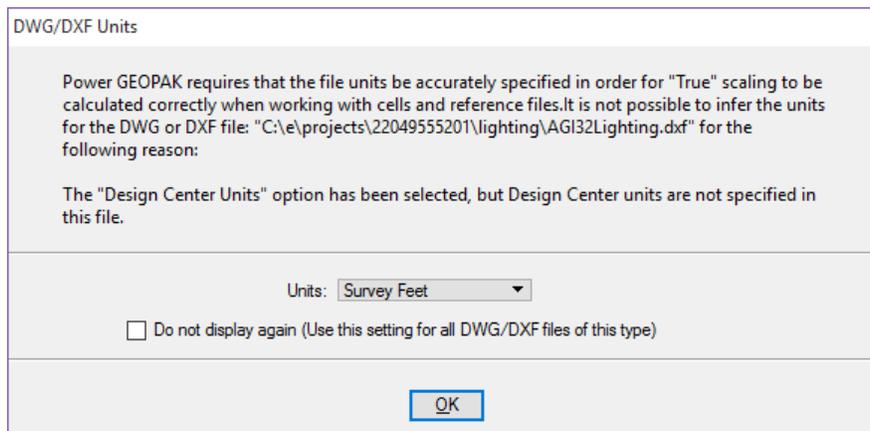
Exercise 9.1 Place Light Poles Using Draw Cell Group by Feature

In this exercise the designer will place Light Poles at a specified spacing and offset supplied from a referenced AGI 32 Lighting DXF file.

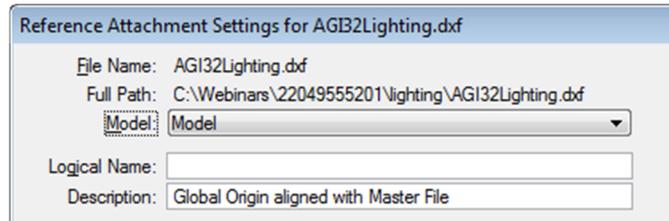
1. Create and open the *DSGNLT01.dgn* and attach the following reference files:
 - **Dsgnrd01.dgn** from the *roadway* folder, *Default* model.
 - **Algnrd01.dgn** from the *roadway* folder, attach the *Default* and *Algnrd_50* model.
 - **Dsgnsp01.dgn** from the *signing* folder, *Default* model.
 - **Dsgnsg01.dgn** from the *signals* folder, *Default* model.
 - **Topord01.dgn** from the *survey* folder, *Default* model.



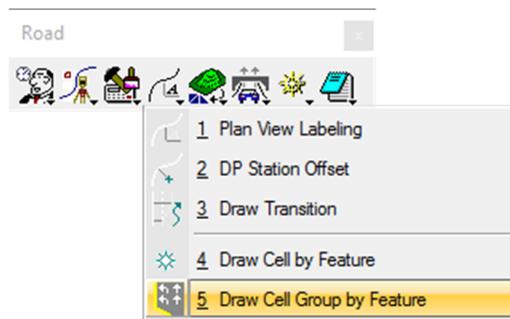
2. Reference in the **AGI32Lighting.dxf** file. The light poles locations are along the **SR61 Corridor** offset from the *CLCON Chain*.
3. Read DWG/DXF Units dialog and click the **OK** button. (Leave the dialog set to **Survey Feet**.)



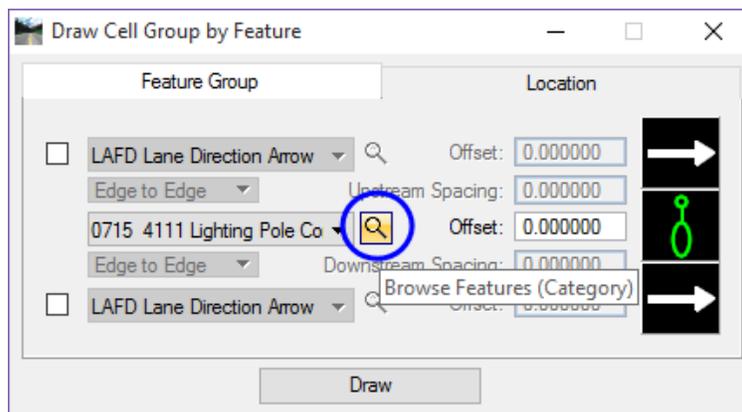
4. Select **Model** from the drop down on the Reference Attachment Settings dialog. (The selection options are *Model* or *Layout1*.)



5. Click the **OK** button on the Reference Attachment Settings dialog.
6. Zoom into *station range 702+00 to 706+00*.
7. From the Road tools palette, click on the **Draw Cell Group by Feature** tool.



8. On the *Feature Group* tab click on the middle *magnifying glass* icon to open D&C Manager.

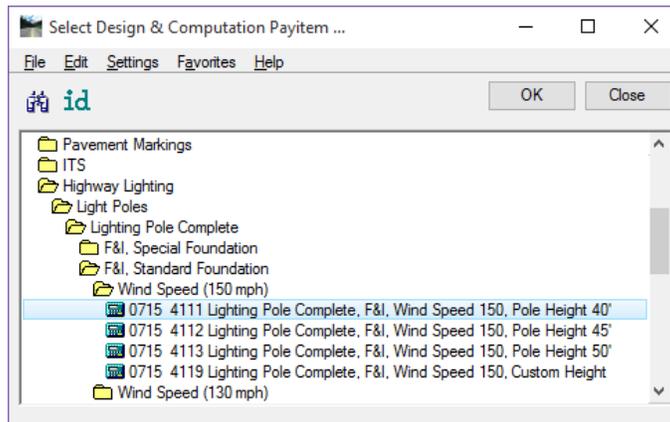


9. Verify the project specific *DDB (22049555201.ddb)* is loaded. If not, select **File > Open** from the Select Design & Computation Payitem dialog.

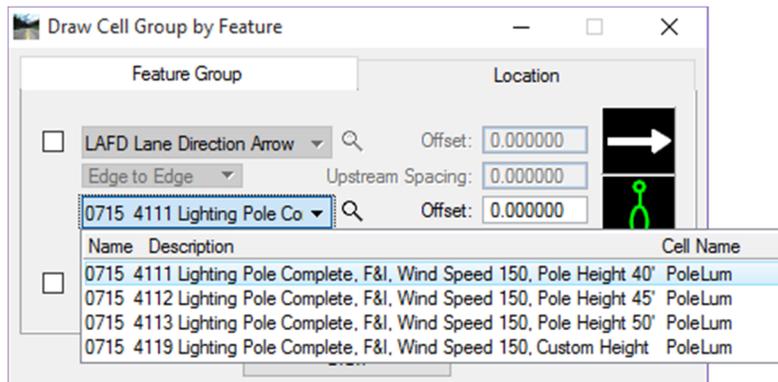
Note If the correct DDB file is loaded, skip the following steps and move on to step 7.

10. Navigate to the *symp* folder and select **22049555201.ddb**. (This is the project DDB file; it is a copy of the current *FDOTSS4.ddb* file renamed to the eleven-digit FIN number.)
11. Click **OK**. This loads the selected DDB file.
12. Navigate to the Highway Lighting > Light Poles > Light Pole Complete > F&I, Standard Foundation > Wind Speed (150 mph) category.

13. Select the 0715 4111 Lighting Pole Complete, F&I, Wind Speed 150, Pole Height 40' item.

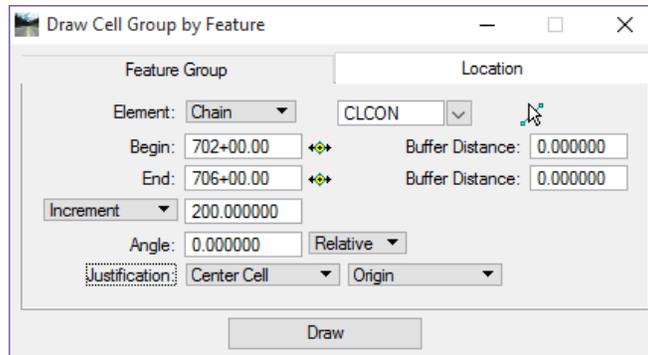


14. Click the **OK** button or double-click on the item. (This will close *Select Design & Computation Payitem* and push these items over to the *Feature Group* tab.)
15. On the *Draw Cell Group by Feature*, from the drop down arrow next to the *magnifying glass*, select the item **0715 4111 Lighting Pole Complete, F&I, Wind Speed 150, Pole Height 40'**. (This sets the item in the tool.)



16. Set the *Offset* to **52.0**. This will be the offset from the **CLCON Chain** to the center of the light pole origin. Typically, this information would come from the lighting design software.
17. Select the **Location** tab:
 - a. Set the *Element* to **Chain**.
 - b. From the *chain* drop down menu select **CLCON**.
 - c. Set the *Begin station* to **702+00**.
 - d. Set the *End station* to **706+00**.
 - e. Begin and End Buffer Distance should be **0.00**.
 - f. From the drop down menu, set placement spacing option to **Increment** and the *Value* to **200.00**. (Typically, this value would come from the lighting design software.)

- g. The *Angle* should be **0.00** and set to **Relative**. (*Angle 0.00* is for the *left side* of the road, **180.00** would be for the *right side* of the road.)
- h. Set the *Justification* to **Center Cell** and **Origin**.



- i. Click the **Draw** button. Data point on the left side of the centerline to place the cells.
18. Modify the Begin/End station values to 701+00 to 705+00.
 19. Modify the angle value to 180.
 20. Click the Draw button. Data point on the right side of the centerline to place the cells.

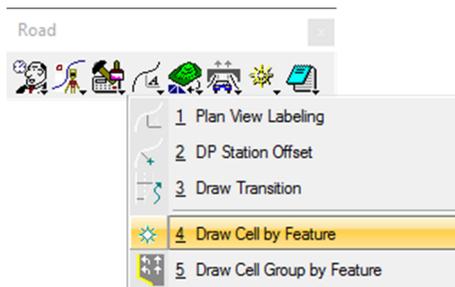
Note The designer could also stagger the placement of the poles by adding 100' to the Begin and End Station Buffer Distances.

Exercise 9.2 Place Light Poles Using Draw Cell by Feature

➤ **Place Light Poles at Specified Spacing and Offset**

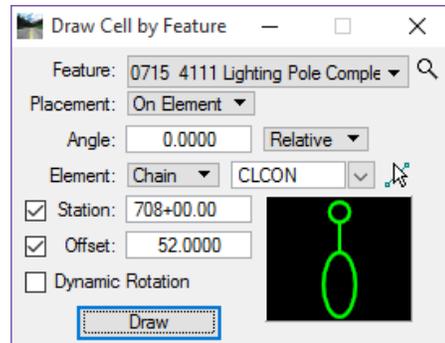
In this exercise the designer will place Light Poles at specified stations and offsets.

1. Continuing in *DSGNLT01.dgn*, zoom in to the area around **station 707+00** to **station 714+00**.
2. From the Road Tools palette, click on the **Draw Cell by Feature** tool.



3. Select the 0715 4111 Lighting Pole Complete, F&I, Wind Speed 150, Pole Height 40' item from the DDB by clicking the *Feature magnifying glass* and navigating to: Highway Lighting > Light Poles > Light Pole Complete > F&I, Standard Foundation > Wind Speed (150 mph) category.

4. On the drop down list, select the item **0715 4111**.
5. Set the *Placement* to **On Element**.
6. Set the *Angle* to **0; Relative**.
7. Set the *Element* to **Chain CLCON**.
8. Set the *Station* to **708+00**.
9. Set the *Offset* to **52**.



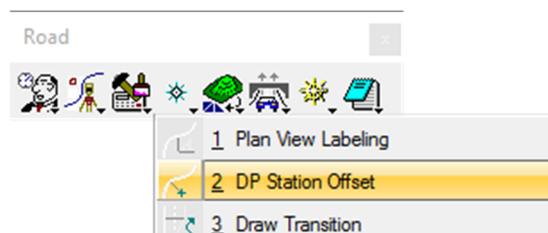
10. Click the **Draw** button on the **Draw Cell by Feature** dialog. Snap to the end of the station tick mark at Station 708+00 and data point to the left of the centerline to place the cell at the referenced location from the DXF file.

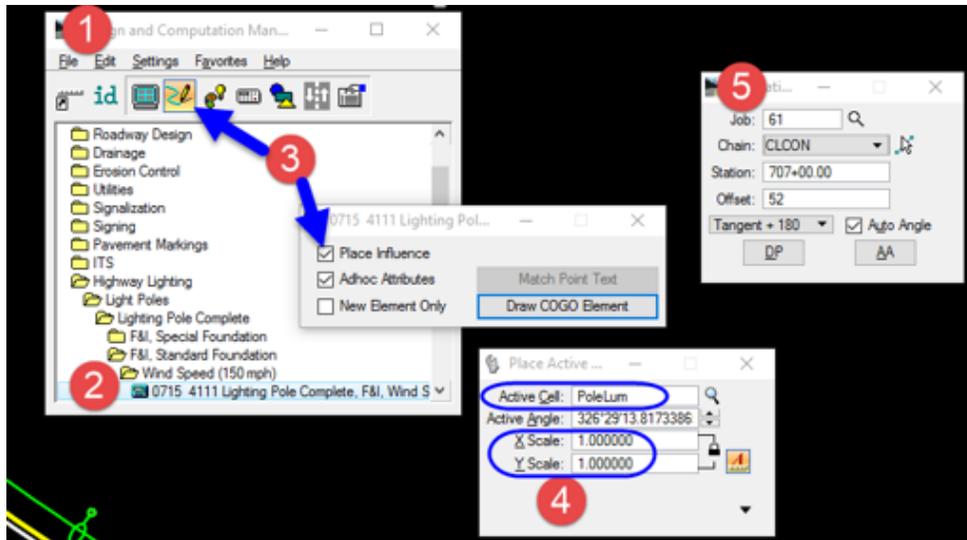
Note Since station 708+00 is within the curve of the centerline, moving the cursor adjusts the rotation of the cell to be perpendicular to the alignment through the data point. Snapping to the tick mark sets the rotation for the cell to be perpendicular to the alignment at the correct station.

11. Continue placing the remaining light poles on the left of the centerline, every 200' to Station 714+00.
12. Close the Draw Cell by Feature tool.

Exercise 9.3 Draw Light Poles Using D&C Manager, Place Cell & DP Station/Offset tool

1. Open the D&C Manager.
2. Navigate to the **Highway Lighting > Light Poles > Light Pole Complete > F&I, Standard Foundation > Wind Speed (150 mph) category** and select the *item 0715 4111 Lighting Pole Complete, F&I, Wind Speed 150, Pole Height 40'*.
3. Set the *Mode* to **Design** and turn **On Place Influence**.
4. Open the *Place Cell* tool. (Check the *Active Cell* is set to **PoleLum** and the *X and Y Scale* is set to **1**.)
5. Open the *DP Station/Offset* tool from the Roadway toolbox.





- a. Set the *job* to **61**.
- b. Set the *chain* to **CLCON**.
- c. Set the *station* to **707+00**.
- d. Set the *offset* to **52**.

Note Positive and negative are important on this dialog. Moving the cursor from one side of the alignment to the other will not change the location of cell placement.

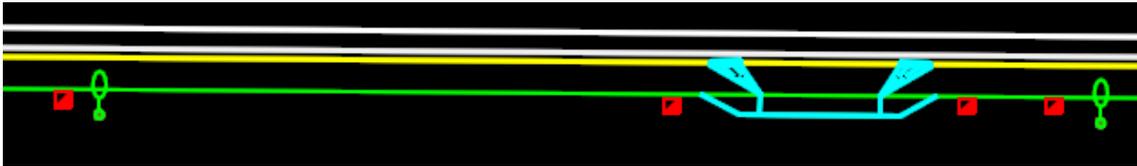
- e. Set the *placement* to use **Tangent + 180** with the *Auto Angle* option turned **On**.
 - f. Click the **DP** button to place the cell.
6. Repeat step 5 modifying the station to place the light poles on the right side of the alignment every 200' through to station 713+00.
 7. Right click to exit *Place cell* command.
 8. Close *Place cell* and *DP Station/Offset* tools.

Exercise 9.4 Place Pull Box Item in D&C Manager

➤ **Place Pull Boxes**

In this exercise the designer will use the *Draw Cell by Feature* tool in conjunction with D&C Manager to place Pull Boxes at a driveway.

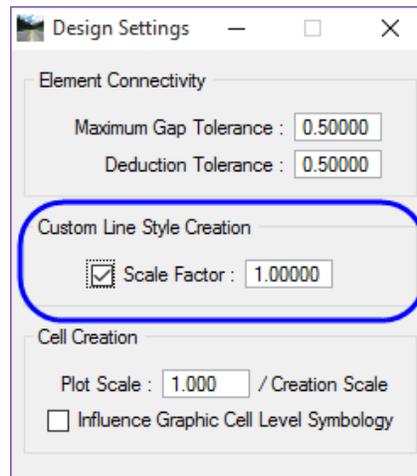
1. Open the D&C Manager.
2. Navigate to the Signalization > Pull and Junction Boxes > Pull and Splice Boxes category and select the item **0635 2 11 Pull and Splice Boxes, F&I, 13" x 24"**.
3. Set the Mode to Design and turn on Place Influence.
4. Double click on the 0635 2 11 item to activate the Design Key-in.
5. Using the centerline tic marks set the active angle by 2 points.
- 6.



Exercise 9.5 Draw Conduit under Ground between Light Poles

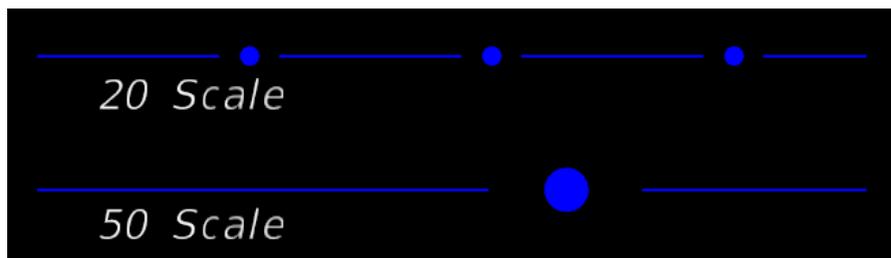
The custom line styles used to draw the *Conduit* lines can be adjusted so that the line style displays graphically pleasing. At times it may be necessary to adjust the line style scale to get the symbols built into the line style to display properly.

To adjust the line style scale in D&C Manager the user would go to **Settings > Design** this opens the Design Settings dialog.



In the center of the **Design Settings** dialog is the item for *Custom Line Style Creation*. This setting controls how a line style is displayed when drawn with D&C Manager. The user should check on the *Scale Factor* and set the scale. In most cases the *Plot Scale* will work but in some it may be necessary to adjust this value as with the *Conduit* on a 50 scale plan sheet, a scale of **20.0** gives a better representation of the *Conduit* line style. Changing this value will not affect the quantities; however, it is very important that the designer communicate any changes to all design squad members for consistency.

The figure below shows the same 50' conduit line drawn using two different *Scale Factors*.



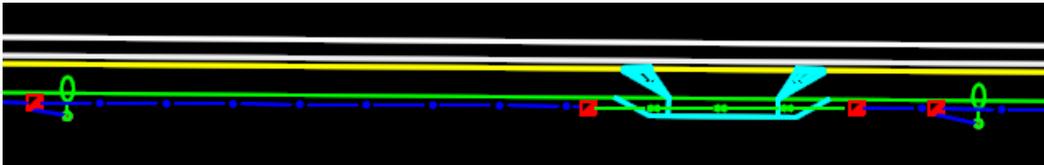
In this exercise the designer will use D&C Manager to draw the conduit between the light poles and pull boxes.

1. Continuing in *DSGNLT01.dgn*, zoom in near one of the **Pull Boxes** placed near one of the light poles near the signalized intersection (around Station 701+00).
2. Open D&C Manager and select the option **Settings > Design**. (This opens Design Settings.)

3. Check on *Scale Factor*. Enter the value **20/50 (or 0.4)**.

Note Using the value of 0.4 takes into account the scale desired 1:20 and the Drawing Scale in the file which is set to 1:50.

4. Close the Design Settings dialog.
5. In D&C Manager, navigate to **Signalization > Conduit**.
6. Select item **0630 2 11 Conduit, Furnish & Install, Open Trench or Contractor's Option**.
7. In D&C Manager, click the button for the **Design mode**.
8. Check on **Place Influence**. (This will set the MicroStation level symbology.)
9. Using the MicroStation *Place Line* tool, draw a line from the pull box to the light pole and from the pull box to the next pull box. See figure below.



Note The designer could navigate to Task Navigator > Civil Tools > Horizontal Geometry > Line Between Points  instead of opening the D&C Manager, and use this Civil Tool, selecting the Conduit, Furnish & Install, Open Trench or Contractor's Option or the Conduit, Furnish & Install, Underground or Underpavement - Directional Bore from the feature drop down list, in order to draw conduit in the DSGNSG01.dgn file.

10. Continue to place the rest of the *Conduit item 0630 2 11 Conduit, Furnish & Install, Open Trench or Contractor's Option* and *0630 2 12 Conduit, Furnish & Install, Underground or Underpavement - Directional Bore* to connect all of the light poles.

Note These same tools can be used to place the load center, electrical service & wires, other poles that may be required, etc.

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10 LABELING TOOLS

OBJECTIVE

The objective of this chapter is to introduce the GEOPAK Plan View Labeler which can be used by all the Traffic Plans disciplines.

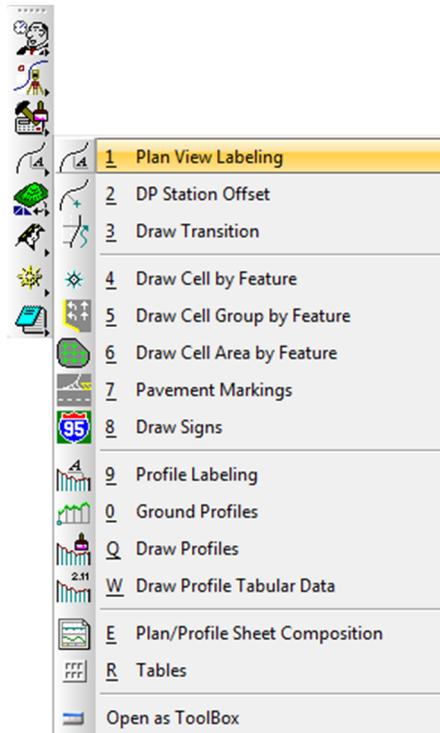
INTRODUCTION

GEOPAK delivers a tool, Plan View Labeler, to aid in the placement of plan labels. These labels can be simple callouts or complex blocks of text with stations and offsets built into them. It is possible to create custom labels for those pieces of text that are placed repeatedly into a style file similar to a library. FDOT delivers style files with custom labels already created.

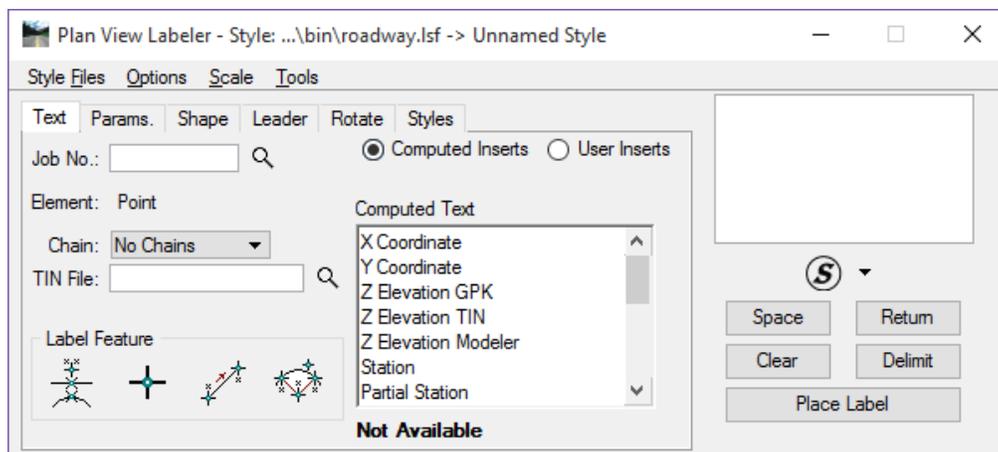
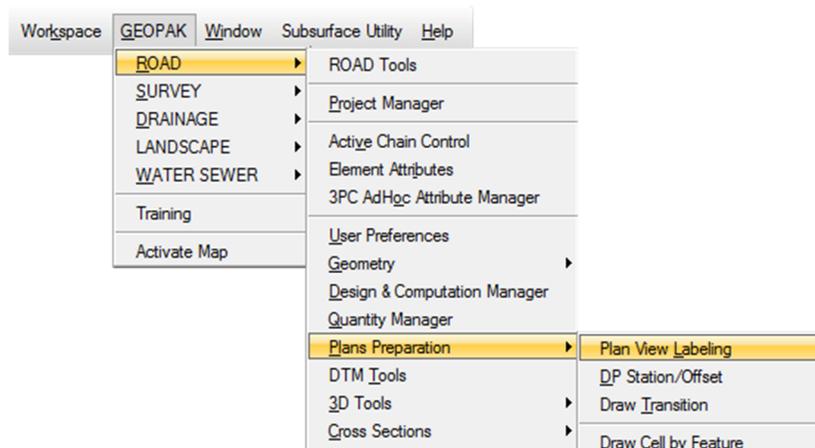
Labels can be created with leader lines and arrow heads as part of the custom label. The arrow heads can be terminators delivered by FDOT or the standard arrows built into the labeler. Again this makes for very consistent plan labeling if all users use the same labels.

ACCESSING THE PLAN VIEW LABELER

Plan View Labeler can be launched from the Road tools palette.



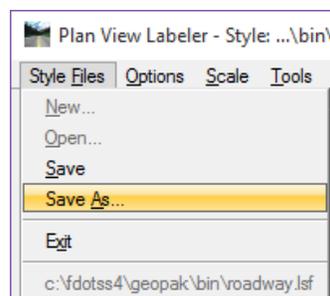
<Or> from the MicroStation menu Applications > GEOPAK ROAD > Plans Preparation > Plan View Labeling.



MENU BAR

Four menus are available on the Plan View Labeler, Style Files, Options, Scale, and Tools.

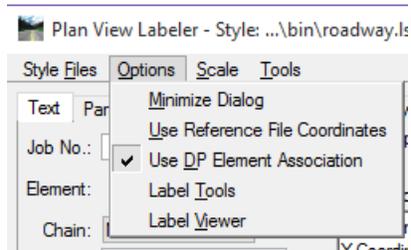
STYLE FILES



The Style Files menu contains options to create new, open, save or save as style files(.lsf) and exit the labeler. Previously used style files are listed at the bottom of the menu for quick access.

Note When first opening the tool in the FDOT workspace, some of the options will be grayed out and unavailable. It is recommended that the provided LSF file be copied to the local project directory before making any custom edits. It should be saved to the project symb directory.

OPTIONS



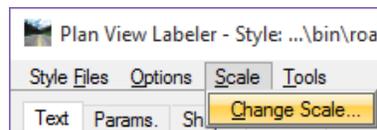
The Options menu contains commands to assist the designer when placing labels.

- **Minimize Dialog** Minimizes the dialog box when selecting Place Label.
- **Use Reference File Coordinates** Uses the coordinates from the master plan file when placing a label in a plan sheet that has rotated reference files not rotated view.
- **Use DP Element Association** Enables the association between MicroStation elements and data point labels snapped to the element. If using this option to modify the element labeled, the point labels move with the element when the label update feature is used.
- **Label Tools** Opens the Plan View Label Control toolbox, as shown below. This toolbox contains common tools for placing and modifying labels.

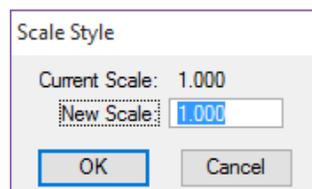


- **Label Viewer** Activates Label View and displays a preview of the label with the ability to place the label from the dialog.

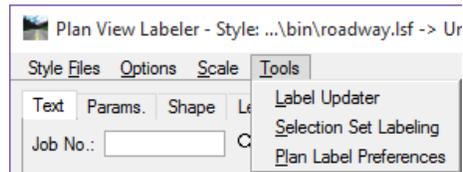
SCALE



The Scale menu option opens the Scale Style dialog. This tool changes the scale of a label placed and uses the original creation scale to scale the label. For example, a label created with text set to 0.07 at a scale of 1.000 draws with text at 3.5 when changing the scale to 50.000.



TOOLS



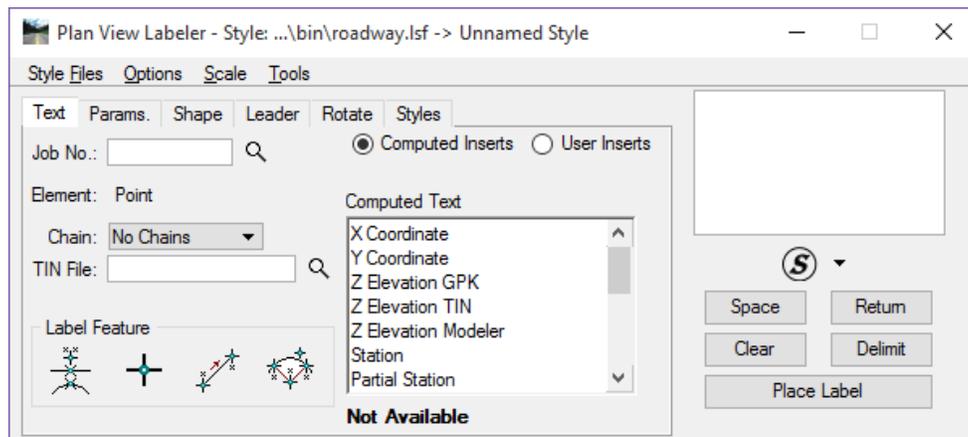
- **Label Updater** Replaces any label that has been previously placed by Plan View Labeler with the Use DP Element Association option selected and corrects the label to the new contents based upon changed information.
- **Selection Set Labeling** Allows for placement of multiple elements that need labeling in a selection set and mass labeled at one time.
- **Plan Label Preferences** Customizes plan view labels. There are options for Bearing, Distance, Elevation, and Area.

For more information on these tools, see the GEOPAK help files.

TOOL TABS

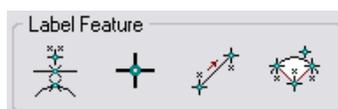
The Plan View Labeler dialog is composed of 6 tabs that are used to define the various attributes for the labels.

TEXT TAB



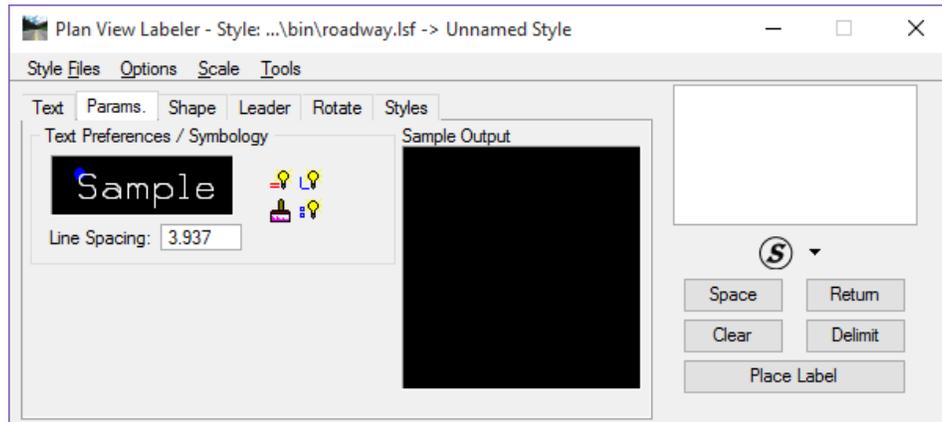
This tab composes the contents of the label. Various types of text values can be extracted from MicroStation elements using a GEOPAK files such as the GPK file and TIN file. Custom User Inserts are also available. FDOT provides a basic file for designers.

- **Job No.** The working alignment definition fills this option from the project .gpk file. Use the Select button to browse and pick the .gpk from a list.
- **Chain** The alignment utilized for labeling, filled in by the working alignment definition.
- **TIN File** GEOPAK binary TIN file name utilized for Z Elevation in the computed text options. Click the File button to open a TIN file dialog box and select the specified file.
- **Label Features -**

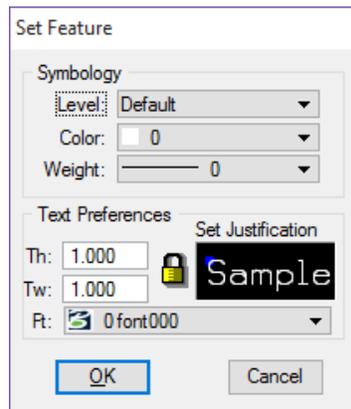


- ✓  **Select GEOPAK or MS Element** – Prompts the designer to select the GEOPAK or MicroStation element. From this selection the designer can retrieve the geometry and place that information in MicroStation.
 - ✓  **Data Point Location** – Prompts the designer to snap to or issue a data point in the design file. Usually used when placing station and offsets.
 - ✓  **2 GPK Point Line** - Works with visualized points from COGO. When the points are selected, a display line is drawn between the points and a circle is placed at the midpoint. The bearing of that line is displayed and can be placed in MicroStation.
 - ✓  **3 GPK Point Arc** - Works with visualized points from COGO representing the P.C. and P.T. of the curve. When the points are selected, a display curve is drawn and the designer is prompted to enter the chord direction point, which is identified dynamically. Now any element of the curve's geometry can be displayed or placed in MicroStation.
- *Inserts* Two options are available, *Computed Inserts* and *User Inserts*. The list will change depending on the type of element selected on the Label Features portion of the dialog. If the value is a number, the rounding or number of decimal places shown is controlled with the drop down at the bottom right of the list. Double clicking on a list item will copy the value to the Label preview window on the far right of the dialog.

PARAMS. TAB



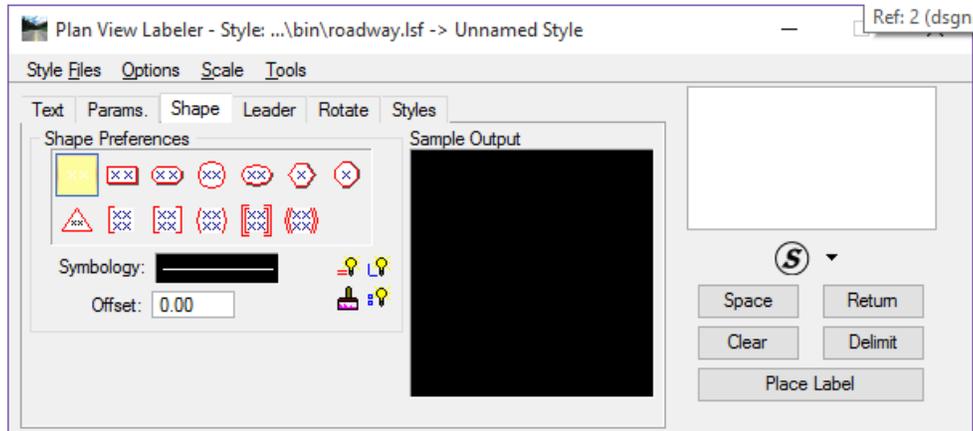
Tab used to set up the text preferences and symbology. Double clicking on the Sample box opens the Set Feature dialog box.



Below the Sample box, the line spacing can be set. Remember this is based on the Scale that has been set for the labels.

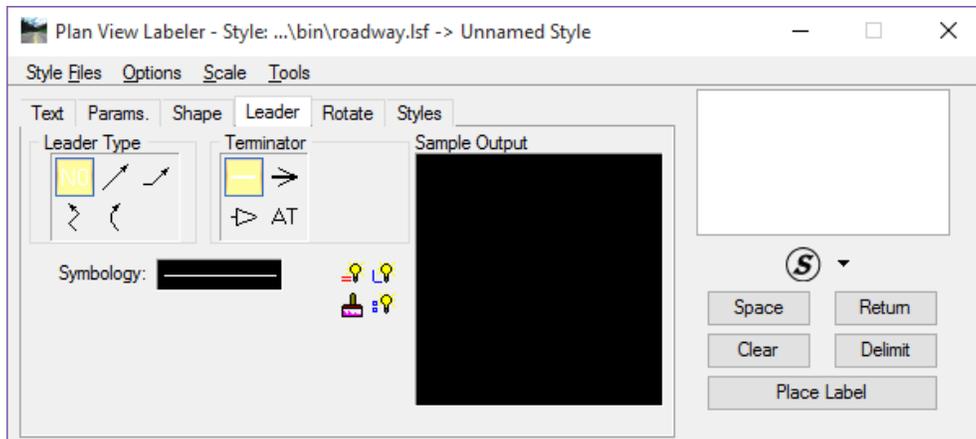
-  *Set By Current* Populates the Level, Color, and Weight from the active level symbology in MicroStation.
-  *Set By Element* Populates the Level, Color, and Weight from a selected element in MicroStation.
-  *D&C Symbology* Populates the Level, Color, and Weight from an item selected in Design & Computation Manager.
-  *Set All Parameters* Populates the current tab symbology settings to the other tabs, Shape and Leader, with the current settings. This saves having to repeat this process on the next two tabs.

SHAPE TAB



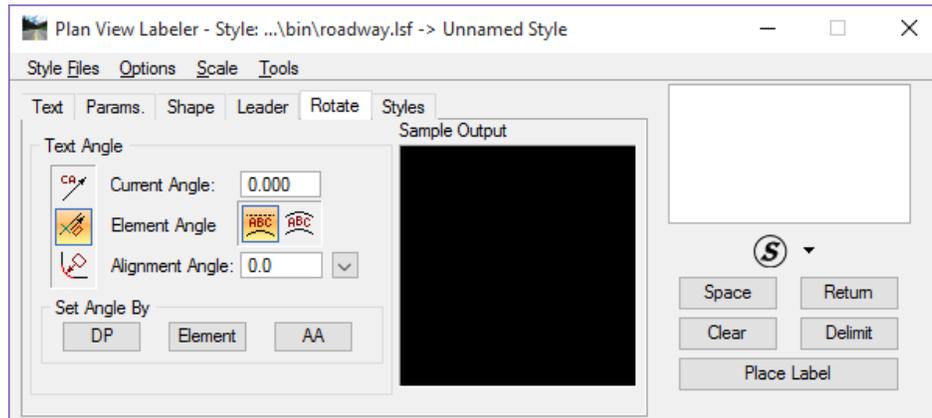
The Shape tab is used to define shapes around the label, symbology for these shapes and the offset or margin from the text to the shape.

LEADER TAB



The Leader tab is used to define a leader line and terminator for the label. The Leader Type defines the type of line drawn. The Terminator options define the terminator to be used. AT is the active terminator set in the file. Double clicking on AT will open the cell library to select the terminator to use. Note that the cell library needs to be attached when defining the active terminator. The symbology for the leader line is also defined on this tab.

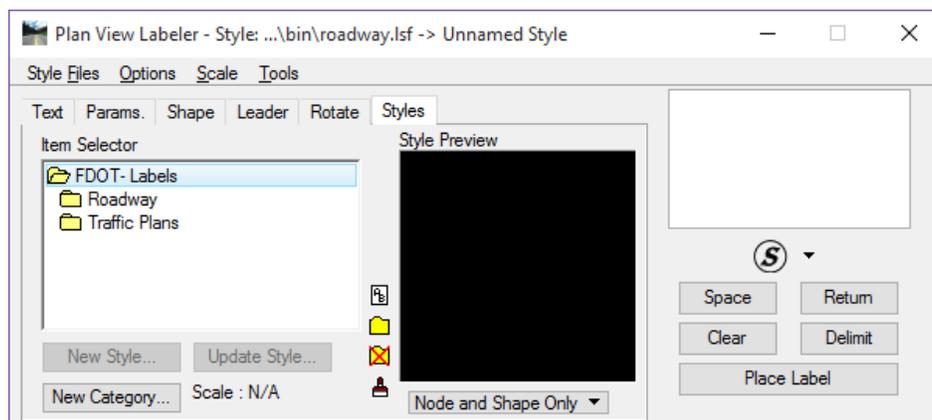
ROTATE TAB



The Rotate tab provides multiple options for defining how the text label should be rotated during placement.

- *Current Angle* Sets the angle to the current angle.
- *Element Angle* Sets the angle relative to the selected MicroStation element.
- *Alignment Angle* Uses the chain specified in the text tab to rotate the label at an angle relative to the chain. Use this option before or during the placement of a label.
- *Set Angle By* Sets the label angle by selecting two data points in the drawing using the (DP) option or picking a MicroStation element with the (Element) option or setting the rotation to the current angle with the (AA) option.

STYLES TAB



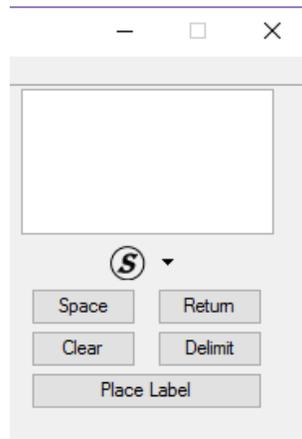
The Styles tab creates, sets, and manages label styles.

- *Item Selector* List view of the available style in the attached style file library. The list is shown with folders, or categories, providing a way to organize styles.
- *Categories* options available when selected.
 - ✓ Rename Style/Category
 - ✓ Create Style Category
 - ✓ Delete Style Category
 - ✓ Refresh Style List

- *Styles* options available when selected.
 - ✓  Select Style Item – makes the selected style active and populates all the tabs with the style settings.
 - ✓  Delete Style Item
 - ✓  Copy Style Item
 - ✓  Rename Style/Category
 - ✓  Refresh Style List
- *New Style* Once a new style has been created and placed in the design file, select the category to save the new style, then select the New Style button. The Create Style dialog opens to set the name and scale for the new style.
- *New Category* Opens the Create Category dialog to set the name for the new category. It creates the new category under the selected category in the same way categories are created within the D&C Manager.
- *Update Style* Once a label has been placed in the file, the Update Style option can be used to update or modify existing styles in the library.

Note *It is very important to note that before a style can be created or updated, the label MUST first be placed in the design file. How closely the label is zoomed into directly affects the Style Preview. When zoomed out too far, the text cannot be read in the preview windows.*

LABEL BUILDER (SHOWN ON ALL TABS)



- *Window* Shows the preview of the label.
- *Insert Symbol* Provides a drop down list of symbols that can be inserted into the label.
- *Space* Places a space in the label at the position of the cursor.
- *Return* Places a return to start a new line of text in the label.
- *Clear* Clears out the contents of the label to start a new label.
- *Delimit* Places a line between lines of text.
- *Place Label* Attaches the label to the pointer for placement in the drawing.

Exercise 10.1 Create a Custom Text Label

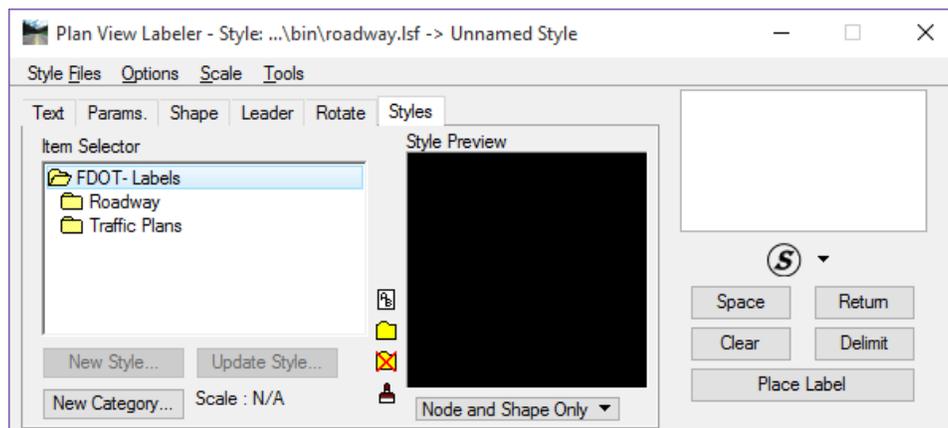
In this exercise, the designer will create a custom label for Light Poles as shown in the next figure.



1. Open the *DSGNLT01.dgn* file located in the *lighting* folder.
2. Zoom to *station 701+00*.
3. Un-rotate the view.

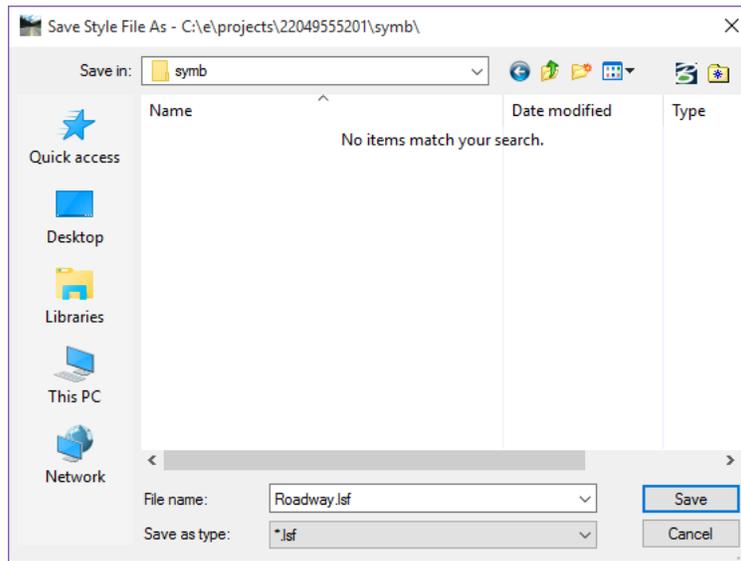
Note The label preview functionality of this tool will show the label at an un-rotated view angle not honoring the rotated view in which it is created. For a cleaner library, it is best to un-rotate the view before creating custom labels.

4. Open Plan View Labeler. Either from the Road tools palette or from the GEOPAK menu.

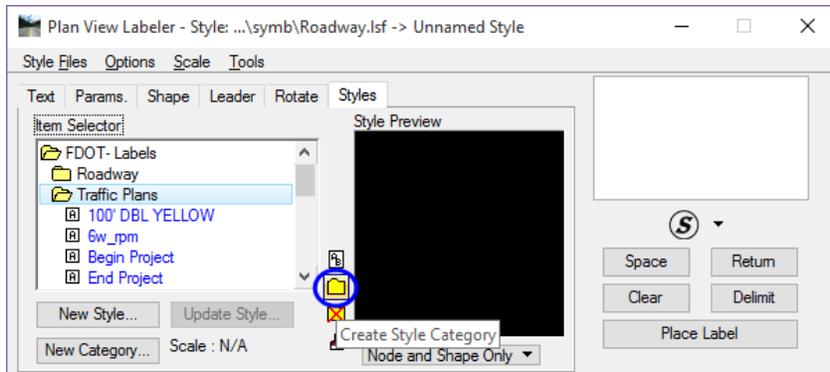


5. From the *Style Files* pull down menu, select **Save As**.

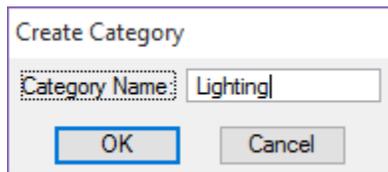
- Navigate to the Project *ymb* folder.



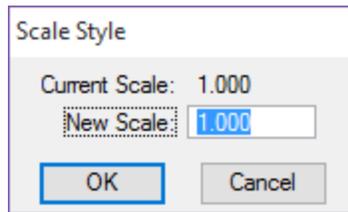
- Click **Save**.
- In the *Styles* tab, double-click on the **Traffic Plans** category. (This expands the category and shows the standard labels delivered by FDOT.)
- Click on the **Create Style Category**.



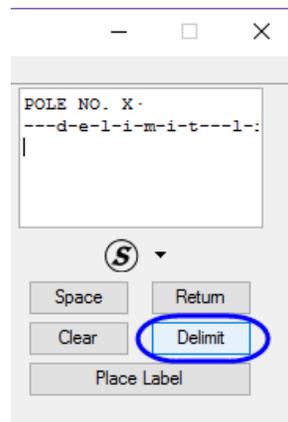
- On the **Create Category** dialog box, type in **Lighting** and click **OK**.



11. Select the *Scale* menu and select **Change Scale**. This opens **Scale Style**.



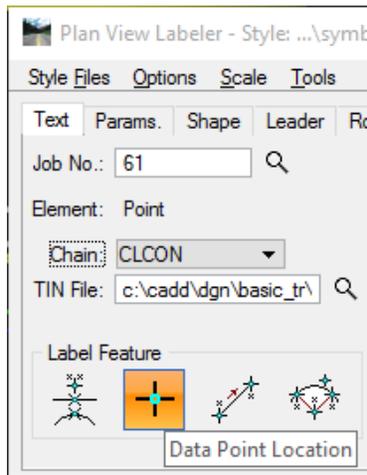
12. Set the *New Scale* to **1.00**. (Allows the designer to create a custom label that can be used at any scale.)
13. Click **OK**.
14. Open the **Text** tab.
15. Using the magnifying glass icon, set the *Job No.* to **61**.
16. Set the *Chain* drop down menu to **CLCON**.
17. In the *Label Builder window*, type POLE NO. X.
18. Click the **Delimit** button. (This will draw the leader line between to two lines of text in the label.)



19. Type in **STA**, and then click on the **Space** button.

Note To insert most spaces, the space bar on the keyboard can be used. However, it is important to use the *Space* button to add spaces before computed text inserts. If the keyboard is used, it will break the automation.

20. In *Label Feature* select **Data Point Location**.

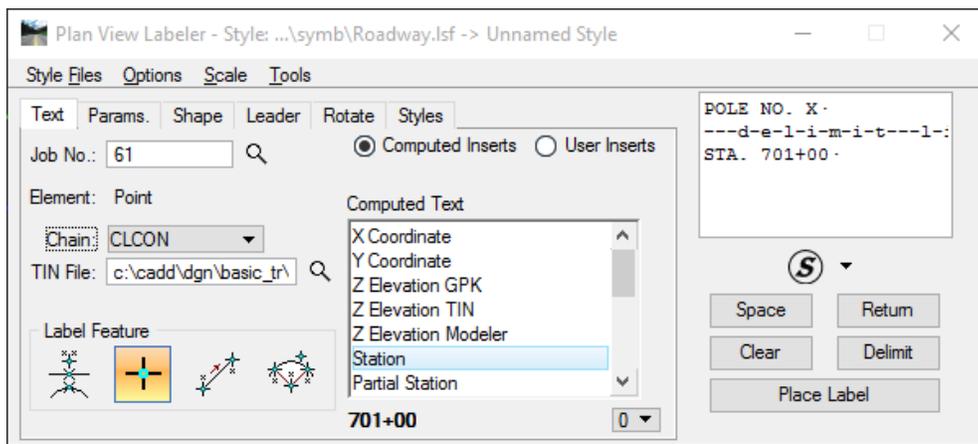


21. Set the *snap* option to **Origin** and snap to the first light pole on the left side of the road at *Station 701+00*.

22. In *Computed Text* single click to select **Station**. (Do Not double-click on *Station*.)

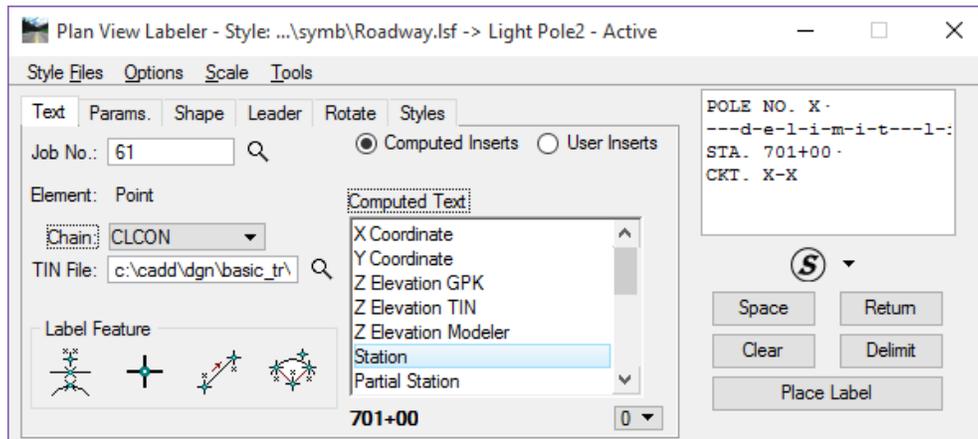
23. Set the *Station rounding* to **0**.

24. Double-click on **Station**. This pushes the station text over to the Label Builder window.



25. Click the **Return** button or hit **Enter** on the keyboard.

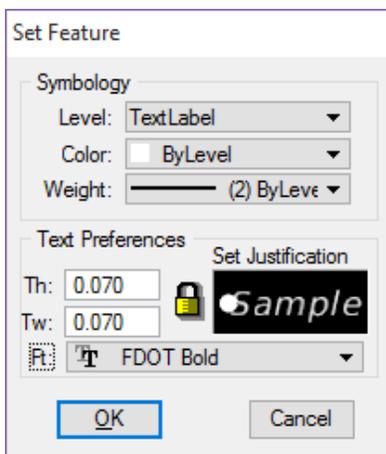
26. Type in **CKT. X-X**.



27. Open the **Params** tab. (This is where the designer will set the *text size* and *symbology*.)

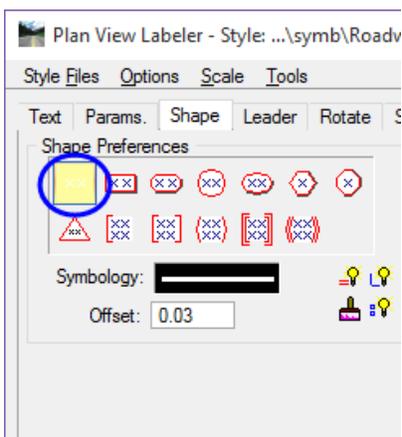
28. Double click on the **Sample window** to access the Set Feature dialog.

29. Set the dialog as shown below and click OK.

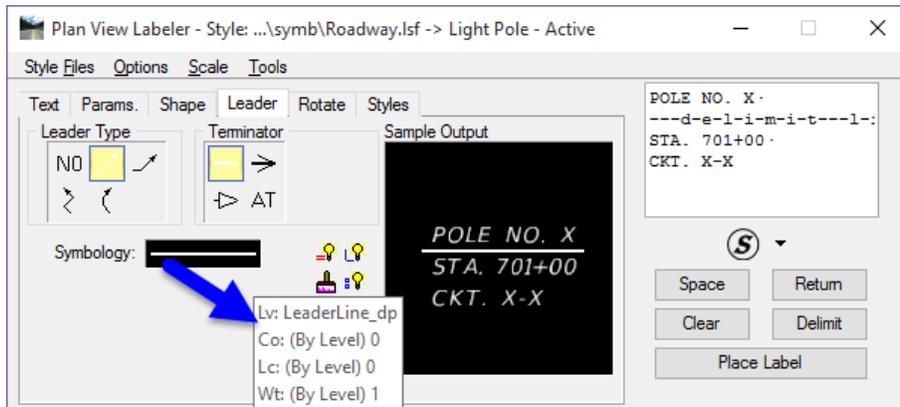


30. Open the **Shape** tab.

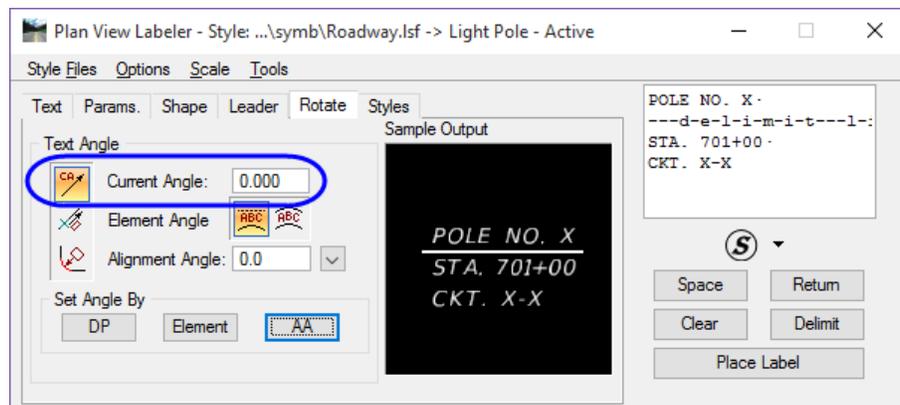
31. Select the first option: **No Shape**.



32. Open the **Leader** tab.
33. Set the *Leader type* to **One Point Leader**.
34. Set the *Terminator* to **No Terminator**.
35. Set the *Level* to **LeaderLine_dp**.
36. Set the *Color* and *Weight* to **ByLevel**.

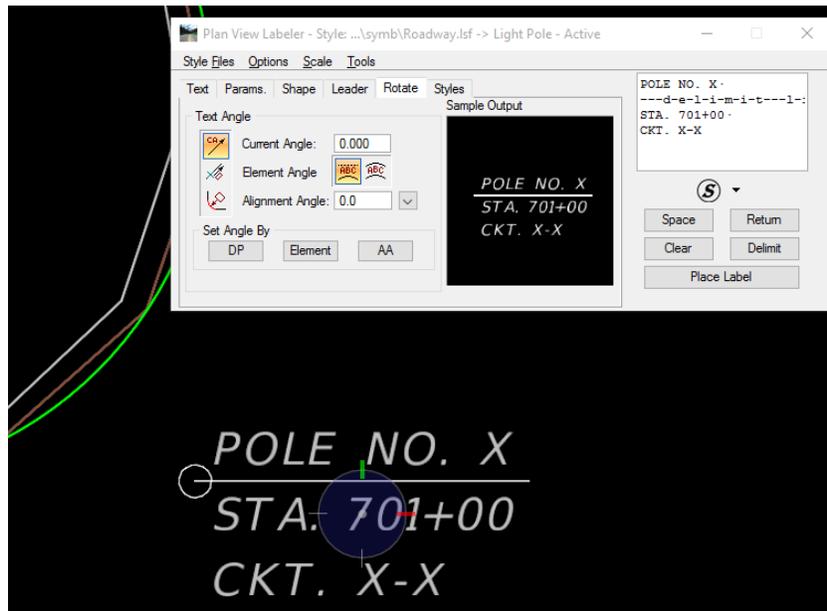


37. Open the **Rotate** tab.
38. Set the *Current Angle* to **0.00**. This is not critical at this point as the designer can change this as the labels are being placed.

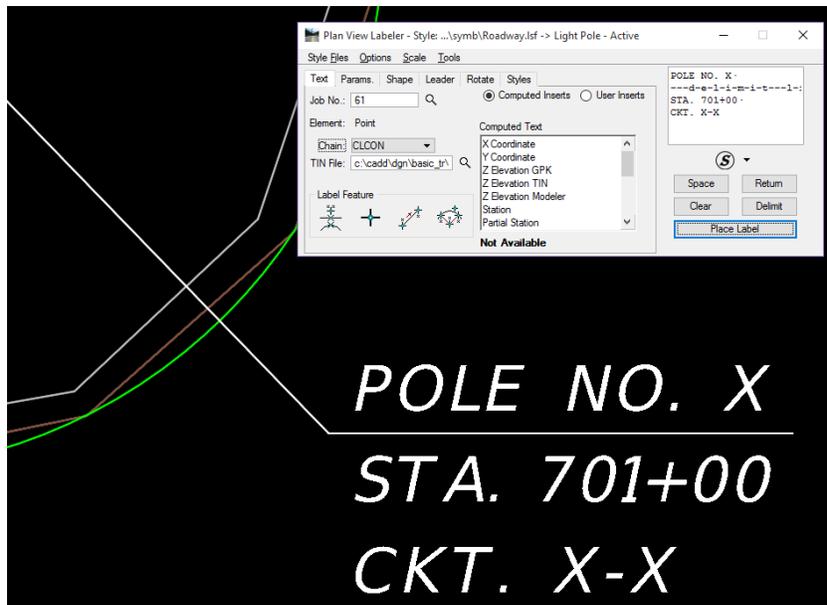


39. Zoom in very close to the *center of the light pole*. (This is necessary because the label being placed is at a scale of 1: 1. This is a temporary label.)
40. Click the **Place Label** button.

41. Move the cursor *near the light pole* and issue a **Data Point** to place it.

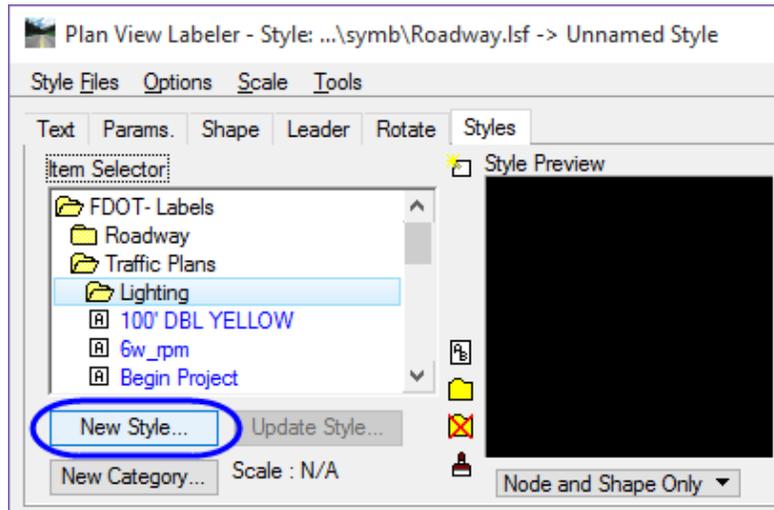


42. Move the cursor *left and right along the label*, notice how the hinge point changes as the cursor gets close to the ends of the label.
43. Issue a **Data Point** to connect the leader line to the light pole and complete the label placement.

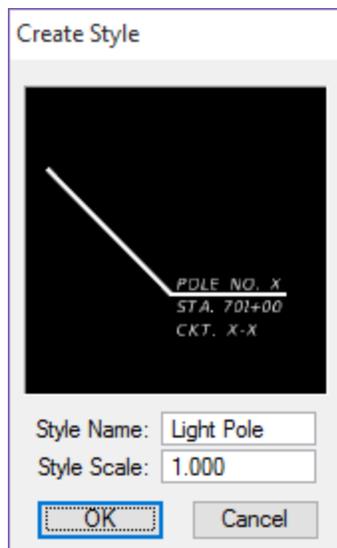


44. Right click to get out of the placement mode.
45. Open the **Styles** tab.
46. Select the **Traffic Plans > Lighting** category.

47. Click **New Style**. (This opens **Create Style**. The designer must place the temporary label before this option is available.)



48. Enter the *Style Name* **Light Pole**.

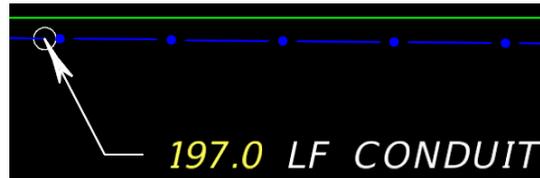
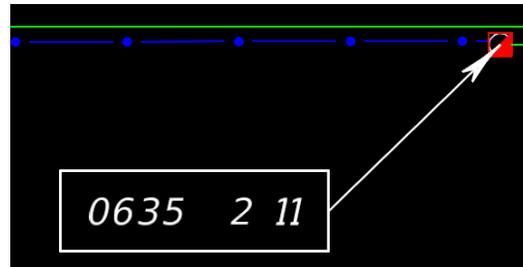


49. Leave the *Style Scale* to **1.0**.
50. Click **OK**. (This adds the new style to the *Item Selector* list.)
51. Click the **Styles Files** menu and select **Save**.
52. In MicroStation delete the temporary label just placed.

53. Other examples. Use the steps provided in this exercise to create the following labels. Highlighted text is computed inserts that will update depending on the data point location or type of element selected.

STA. 702+00, 52' LT Q SR 61
POLE NO. X, CKT. X-X

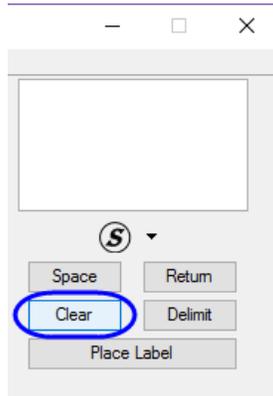
Hint To get the centerline symbol, type in "\161" in the Label Builder window.



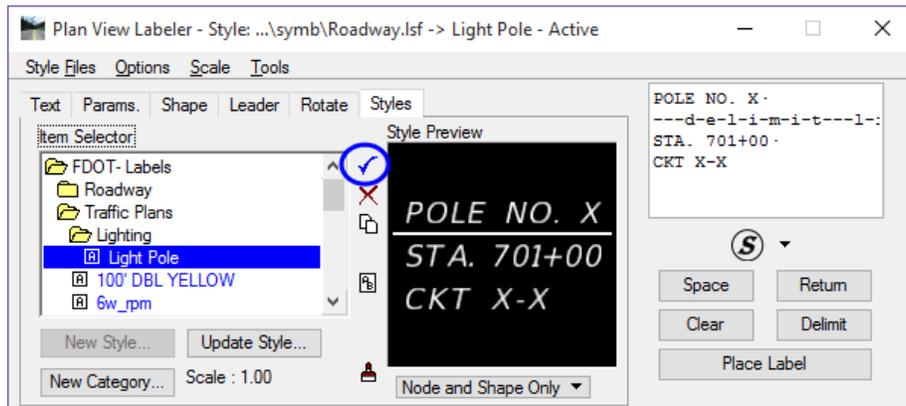
Exercise 10.2 *Place Custom Text Label*

In this exercise the designer will place the new custom label created in the previous exercise.

1. Rotate the view by **2 point**; use the *station tick marks 701+00* and *702+00* as the 2 points.
2. Click the **Clear** button.

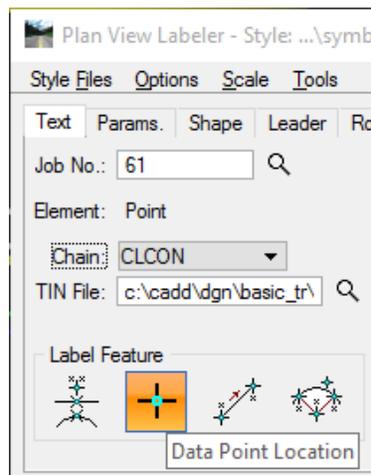


3. In the *Item Selector*, select the new style **Light Pole**.
4. Double-click on the *style* or click the **Blue** check mark icon.

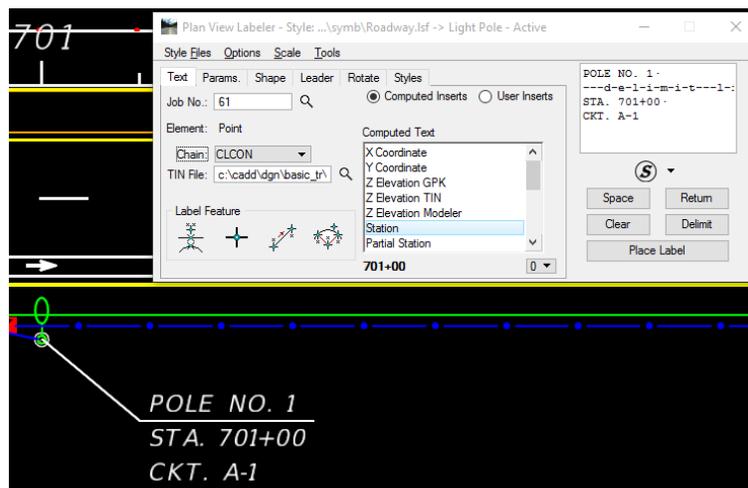


5. On the *Scale* pull down menu, select **Change Scale**.
6. Change the *Scale* to **50.00**.
7. Click **OK**.
8. Zoom out so the label will fit in the view.
9. In the *Label Builder* window, edit the *Pole Number* to be **POLE NO. 1**.
10. Edit the *Circuit* to be **CKT. A-1**.
11. Open the *Text* tab.

12. In *Label Feature* select **Data Point Location**.

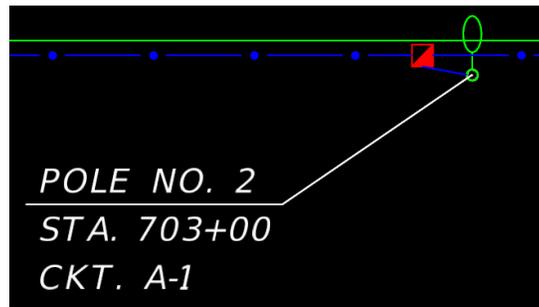


13. Set the *snap* option to **Origin** and snap to the first light pole on the left side of the road at Station 701+00.
14. Click Place Label.
15. Move the cursor to the *right and below the light pole* and issue a **Data Point**.
16. Move the cursor to the *left of the label* and issue a **Data Point**. This completes the label placement.



17. Pan to the second light pole on the right side of the road at Station 703+00.
18. Open the **Text** tab.
19. Click the Data Point Location button.
20. Snap to the **Origin** of the second light pole. Notice the station dynamically changes.
21. In the *Label Builder* window, edit the *Pole Number* to be **POLE NO. 2**.
22. Click Place Label.
23. Move the cursor to the *left and below the light pole* and issue a **Data Point**.

24. Move the cursor to the *right of the label* and issue a **Data Point**.



25. Repeat this process on the remaining light poles, modifying the label variables. (Circuit 2 is on the left side of the roadway on the even stations.)
26. Close Plan View Labeler.