# 7   SIGNING TOOLS

## OBJECTIVE

In this chapter the following topics will be covered:

- Draw Sign program

- GuidSIGN

## INTRODUCTION

This section covers the sign applications available in the Traffic Plans Menu. There are Signing Web Pages included, containing all sign cells from the *M.U.T.C.D*. and *Standard Highway Sign* book. These cells can be placed anywhere within the design file.

At this point, the designer may have an inventory of existing signs for their project. The designer has to decide which signs need to be removed, relocated, or replaced. This work should be done in the proposed design file, *dsgnsp01.dgn*, created in Chapter One.

The Draw Sign program is another source for placing proposed and existing sign cells. It allows the designer to browse through a selection of standard cells, place them in the design file, and link them to D&C Manager items for computation.

GuidSIGN, is a sign design program available from Transoft Solutions, and is included in this section and briefly explained.

## DRAW SIGN PROGRAM

Available from FDOT Menu, the Draw Sign program is designed to assist in the placement of standard sign panels and posts in the signing and marking plans. This tool was written by Bentley Systems, Inc. and uses GEOPAK Adhoc attributes to assist you in automated quantities through D&C Manager. All the signs that are in the *Standard Highway Sign Book* and the *Florida Roadway and Traffic Design Standards* have been included in the setup.
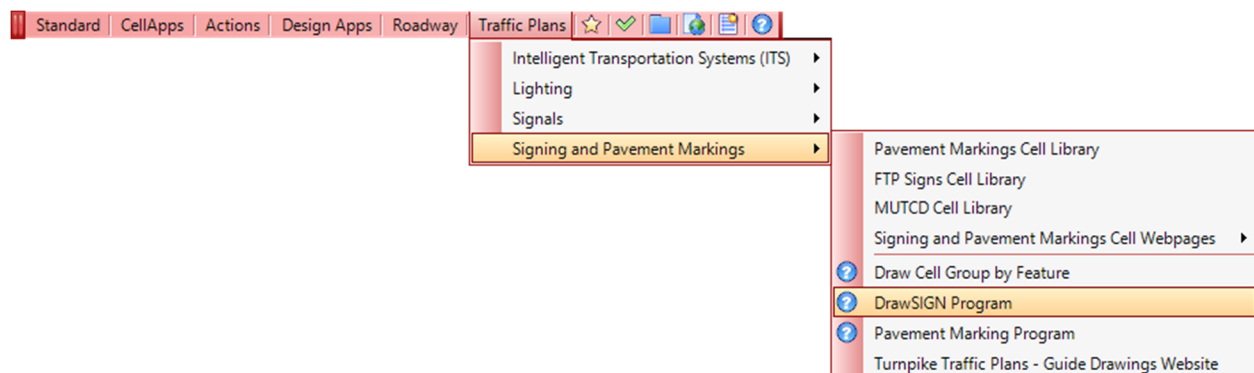
The Draw Sign program can also be accessed from the FDOT Plans Development > Traffic Plans task menu or from the MicroStation menu, GEOPAK > ROAD > Plans Preparation > Draw Signs.
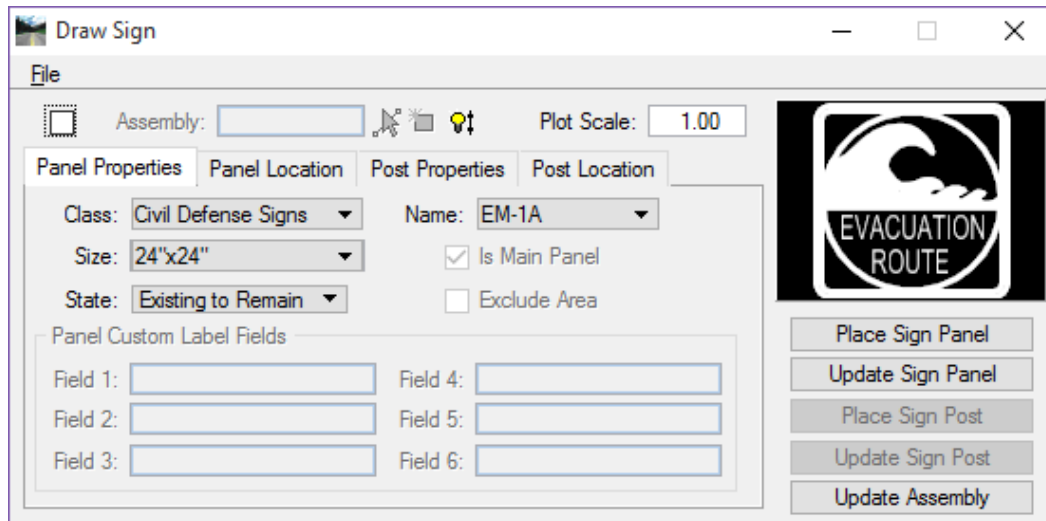


The Draw Sign File menu has three options: **Preferences** is described in the following section, **Select GPK** which opens the Job Number dialog to select a different GPK file and **Exit** which closes the Draw Sign Program.

## PREFERENCES

Preferences are set based on variables defined when the FDOTSS4 software is installed.
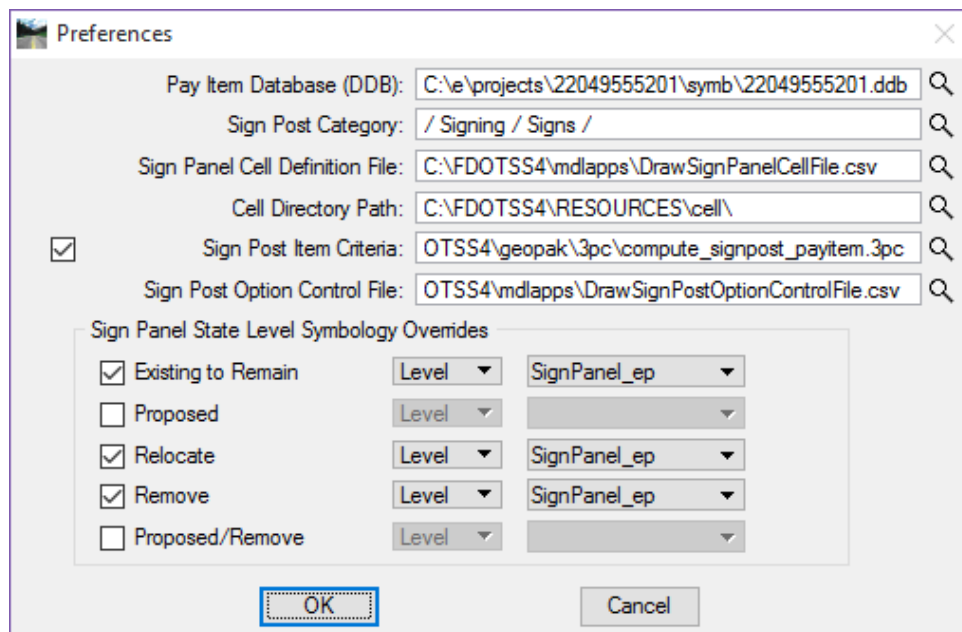


- **Pay Item Database (DDB):** Path to the *FDOTSS4.ddb* or project specific DDB. The path will be different for most users between districts depending on the type of installation performed for the FDOTSS4 software. If a project specific DDB is available it should be selected as shown in the image above.

- **Sign Post Category:** Defines the category in the DDB from which the program searches for the items containing the Sign Post Symbols when the 'Auto-Select' button is used to initiate the 3pc compute sign post criteria file.
- **Sign Panel Cell Definition File:** Shows the path to the .csv definition file. This file defines the valid signs and sizes for all sign panels.
- **Sign Post Item Criteria:** This should always be selected. Otherwise, the 'Auto-Select' function will not operate and will require the user to manually select the correct post. This field shows the path to the .3pc file the DrawSIGN program uses to calculate the appropriate support according to panel sizes and installation method.
- **Sign Post Option Control File:** Shows the path to the support file that controls the selections on the Post Properties tab for Installation Method, Mounting, State and Sign Type.
- **Sign Panel State Level Symbology Overrides:** This is where to set symbology overrides for the individual States of the Sign Cell. The options are to override the Level, Color, Weight and Style. This allows the same cell library to be used for all states. Thus, the level can be changed to SignPanel_ep for existing signs and the rest of the symbology is automatically set.

## ASSEMBLY

The assembly check box must be checked on to be able to create a new sign **Assembly**. The field to the right of **Assembly Toggle** is for the **Assembly Name**. The name will default to the name of the sign panel selected in the Panel Properties tab.
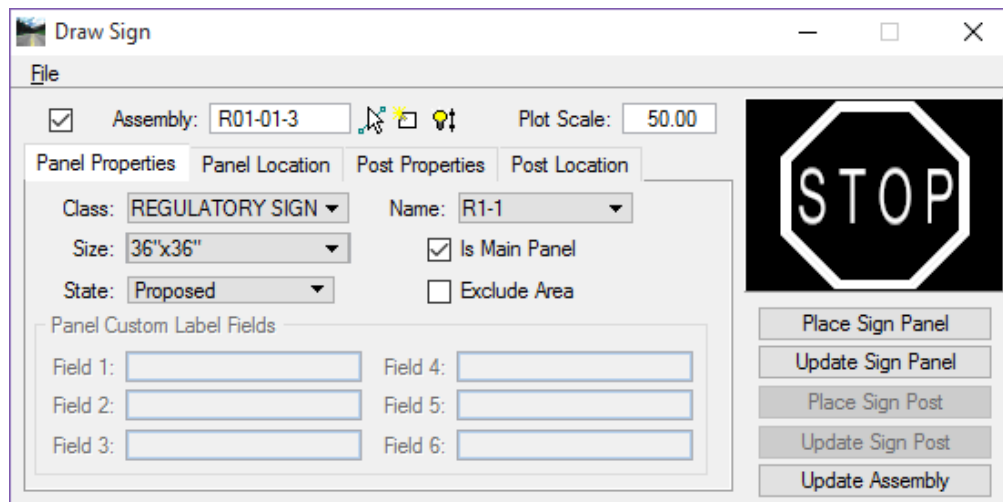


-  **Identify Existing Sign Assembly** – Used to select an existing sign assembly. To use this function, click on the icon and select an existing sign assembly in the design file. This will display the **Named Group** name in the Assembly field and highlight the grouped elements in the design file allowing you to modify or update the selected Assembly.
-  **Create New Sign Assembly** – Once the **Panel Properties** have been filled in the designer has to click this icon to apply a name to the group to create an assembly. If this button is not clicked all panels placed will be attached to the previously created assembly. This will cause erroneous pay items to be calculated.

-  **Create Assembly by Selection Set** - This gives the designer the ability to select multiple sign panels that have been placed without GEOPAK Adhoc attributes, and create a **Named Group** Assembly from the selected elements in the design file. In addition, the designer can select a previously placed assembly, copy the assembly using MicroStation tools, place the assembly at another location in the design file and create a new **Named Group** Assembly. The designer can then use the Update Assembly function to update the new Assembly with the correct location information such as the Station.

-  **Plot Scale** – controls the size of the sign assembly graphics and the text labels placed with the Draw Sign program. When placing signs created by GuidSIGN this will need to be adjusted for correct scaling of the special signs.

## PANEL PROPERTIES TAB
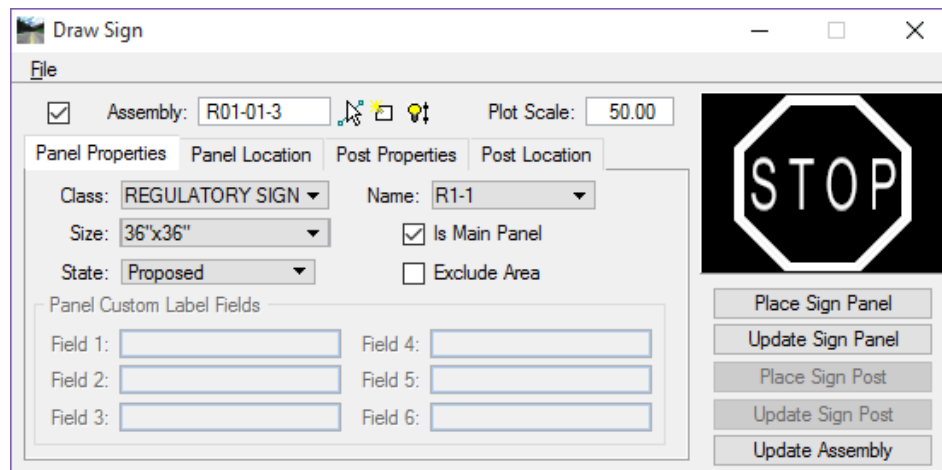


- **Class** – This option allows the designer to select the class of sign panel to place, i.e. Regulatory, Warning and so on.
- **Name** – The Name menu shows all of the available signs based on the selected Class. The names appear as they are in the MUTCD. This name will be carried up to the Assembly name when the **Create New Sign Assembly** option is selected. If the sign selected contains text fields that require user input the **Panel Custom Label Fields** at the bottom of this tab become active and the required key-in fields are accessible.
- **Size** – This menu allows the designer to select the size of sign panel to place. Selecting the size also controls the size label and the sign panel square footage used for calculating wind area and width. It is the designer's responsibility to know what size sign to use, do not assume this tool has the intelligence built in to determine the correct size to set for the sign panels of the project.
- **Is Main Panel** – This must be checked on for all panels that are defining the width of the sign assembly. There will be some sign configurations that have more than one sign panel but only one of those panels may be considered the Main Panel. The figure below shows this scenario, M1-4 is the **Main Panel.** M3-1 is not part of the main panel definition. However, both of these signs make up the assembly.
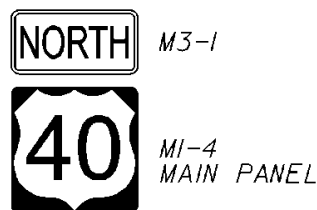
- **Excluded Area** – This is checked on when placing a sign panel whose area is to be ignored when calculating square footage for a sign assembly. Example, in the configuration below, Exclude both signs on the back. In other words, do not include the signs on the back in the area for wind calculations. The wind calculation area is used to determine the pay item number, i.e. single post (700-1-AB) vs. multi-post (700-2-AB).
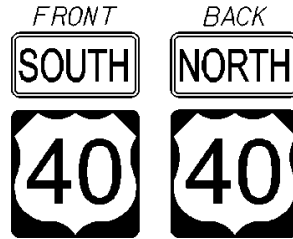


- **State** – This option sets the sign panel to the selected state. There are five options as seen in the figure below.
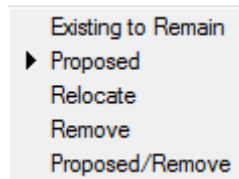


- **Panel Custom Label Fields** – This is where to fill in any open fields on a sign panel. Example, the Speed Limit sign has one field that needs to be filled in. When the Speed Limit sign is selected Field 1 becomes active to enter the speed. This will change the preview display to show the new speed. If a sign is selected with more than one field in it the Draw Sign tool will recognize this and the appropriate number of fields will become active.

  The figure below shows a sign with four fields active.
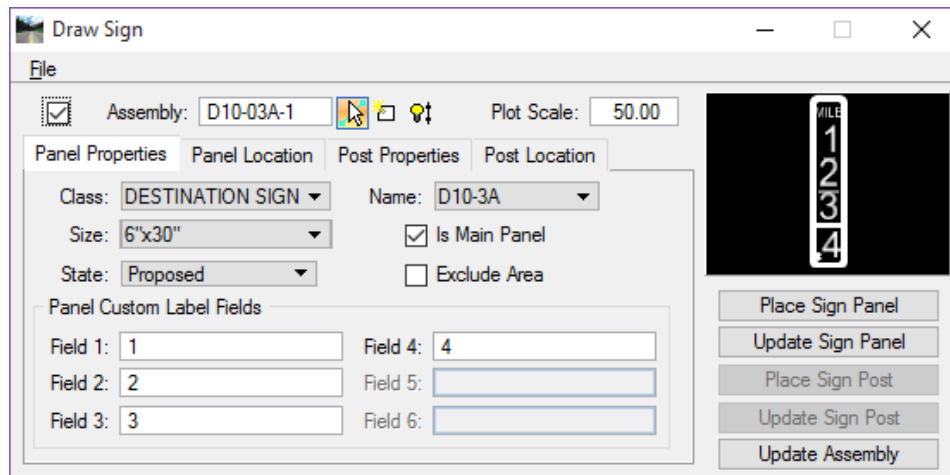
# PANEL LOCATION TAB
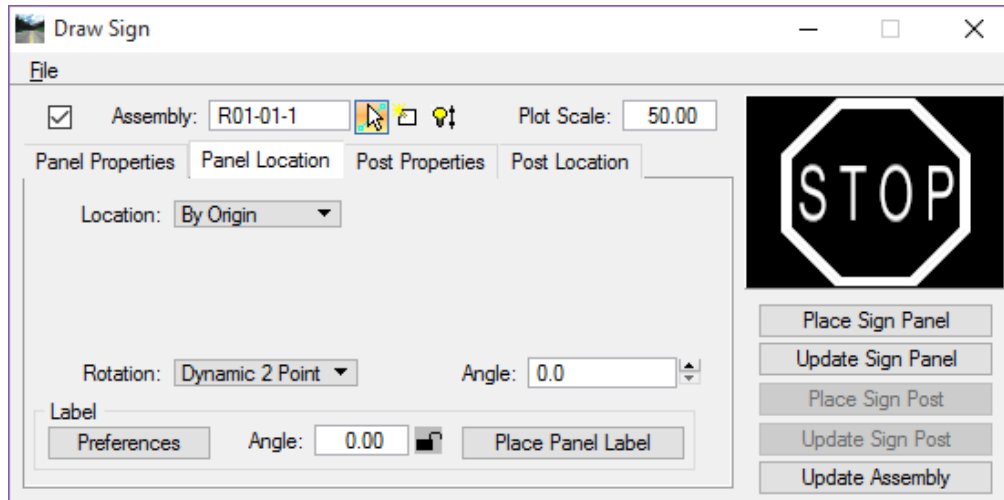


- **Location** – This determines where and how the sign panel will be located. Keep in mind the sign panel location is only for graphic representation. It is not critical that it be placed at a specific station and offset. There are two options:

  o **By Origin** – Places the Sign Panel by the origin of the cell.

  o **Along Element** – This expands the Panel Location tab as seen below.
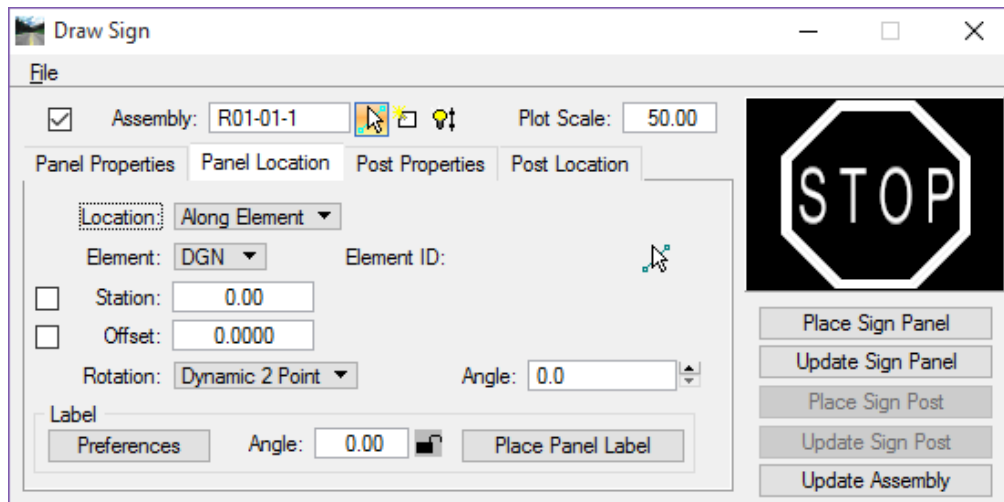


  ✓ **Element** – There are two options, DGN or Chain. The options are described below.

    ▪ *DGN* – This is a MicroStation element like an edge of pavement or lane line. When selected this option gives a numeric value based on the length of the element selected to place the offset from. The Element ID will show the numeric value of the element.

    ▪ *Chain* – This is a GEOPAK chain stored in COGO. This option opens another drop down menu for selecting the chain. Once the chain is selected, the station field will be filled in with beginning station of the chain. Key-in a specific station and offset by checking on either of the options and typing the value in the field.

- **Rotation** – This controls the rotation of the sign panel. There are three options:

  o **Dynamic 2 Point** – This allows for a 2 Data Point placement. The first Data Point is to place the Sign Cell by the Sign Cell origin. Then rotate the Sign Cell around until the desired angle is met. The second Data Point is to place the Sign Cell at that set location and angle.

  o **Absolute** – This Uses 1 Data Point and the Sign Cell will be placed by origin at the angle that is keyed into the Angle field.

  o **Relative** – This option is only supported when Along Element for location is used. The angle of rotation is based on the selected element.

- **Angle** – This controls the sign panel angle before the sign panel is placed.
- **Label** – This section controls what to label when the sign panel is placed and Angle of the label.

  o **Preferences** – This opens the Sign Panel Label Preferences dialog.
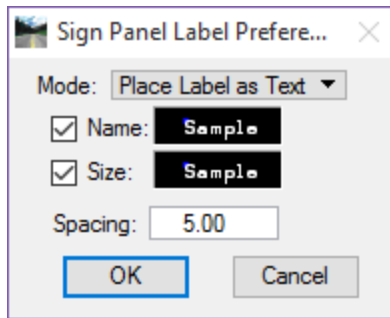


  ✓ *Mode* – There are two options for the Mode:

  ▪ *Place Label as Text* – This option places the label as MicroStation text. Set the symbology of the text by double clicking in the Sample text field for the Name and the Size. In order to place the text for the Name or Size the box must be checked on. When placing two text labels, the Spacing refers to the space between the origins of the two text labels.

  Double clicking on the Sample text field opens the Sign Panel Name Label Preferences dialog where you can set the Level Symbology and Text Preferences.

  The figure below shows what the text label looks like, both the Name and Size are shown
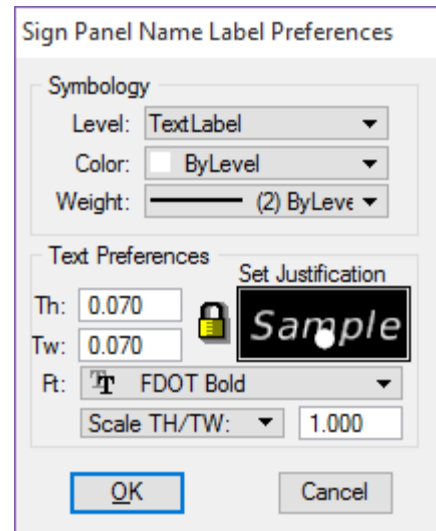


$$RI-I$$
$$36"x36"$$

▪ *Place Label as Cell* – This option requires selecting a cell for the Name and Size label. If an oval around the Sign Number is desired or required by the district, this is the option to use.
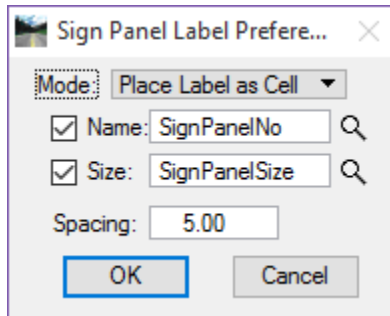


The magnifying glass icons next to the *Name* and *Size* allow the designer to browse to the cell library and select the appropriate cell. If checking both the Spacing allows for setting the space between the two cells.
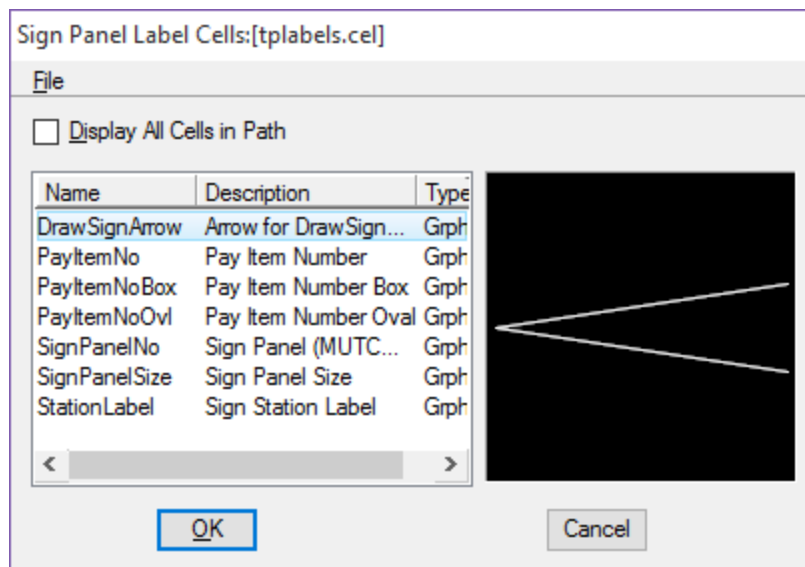


o **Angle** – This is the angle of the text label not the sign panel. This locks in by selecting the paddle lock icon. This angle also has an allowance for manual key in.

o **Place Panel Label** – Used to place a label on a panel previously placed or on a panel replaced. Clicking on this option prompts you to select a sign panel.

# POST PROPERTIES TAB

This tab is for setting up the type of sign support to be used for a specific sign assembly. It is broken into several options as described below.
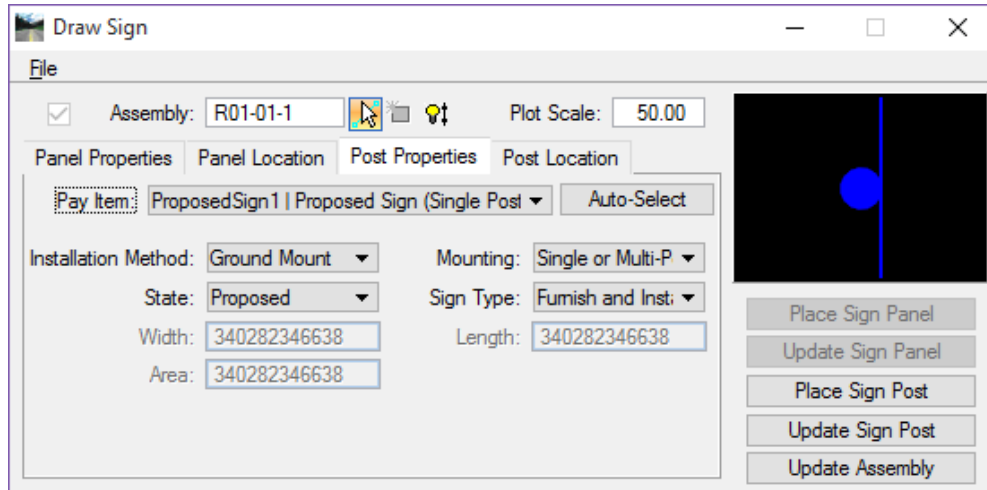


- **Pay Item** – This is the pay item associated to a sign support. From the drop down list select a specific support. The options available under the DDB category defined in the Preferences and generates this list.
- **Auto-Select** – This initiates a 3pc program that will calculate the type of support to be use based on the Sign Panel Selected in the Panel Properties and the installation method and mounting defined. Always verify that the correct post is selected.
- **Installation Method** – There are six options that are based on a CSV file defined in the Preferences.

  o *Ground Mount*

  o *Overhead*

  o *Panel Only*

  o *Electronic Display*

  o *Dynamic Message Signs*

  o *Internally Illuminated Signs*

- **Mounting** – the mounting options available are based on the Installation Method selected, according to valid Department pay items and standards.
- **State** – this option defines the condition of the support. There are five options:

  o *Existing to Remain*

  o *Proposed*

  o *Relocate*

  o *Remove*

  o *Proposed/Remove*

- **Sign Type** – Based on the selected Installation Method, a list of valid options is available from a drop down menu for mounting the sign panels according to the FDOT design standards
- **Width, Length, Area** – They are ghosted out unless overhead support is selected as the installation method and a mounting type of Truss or Cantilever is selected, as these values are required to define the correct pay item for these support types.

# POST LOCATION TAB

This defines where the post is to be located. The term post is a generic term referring to all types of sign supports. There are several options and methods for the placement of the post.
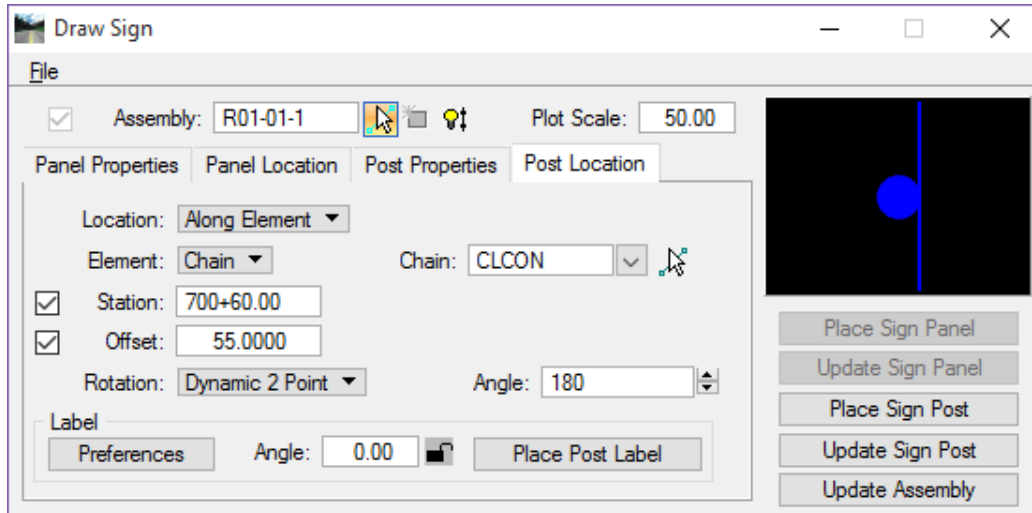


- **Location** – There are two options for defining the location of the post.

  o **By Origin** – Places the post dynamically by the origin of the cell.

  o **Along Element** – This option locates the post based on a referenced element. There are two options.

    ✓ **Element** – There are two options, DGN or Chain. The options are described below.

      ▪ **DGN** – This is a MicroStation element like an edge of pavement or edge line. The Station field with this option refers to the length of the element selected. The offset is how far from the MicroStation element to place the post.

      ▪ **Chain** – This is a GEOPAK chain stored in COGO. The Station and Offset in this option refers to the actual station along the chain and offset from the chain.

- **Rotation** – This is for the rotation of the sign post. There are 3 options for rotation.

  o **Dynamic 2 Point** – The first **Data Point** is to place the Post cell by the cell origin. Then rotate the Post cell around until the desired angle is achieved. The second **Data Point** is to place the Post cell in the design file.

  o **Absolute** – The post is placed horizontally plus the specified angle keyed into the Angle field.

  o **Relative** – This option is only supported when Along Element is used. The angle of rotation is based on the selected element.

- **Label** – This section controls what to label when the sign Post is placed and Angle of the label.
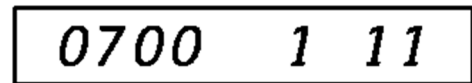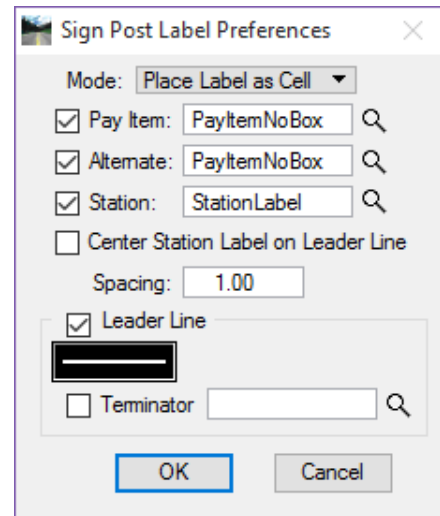
  ○ *Preferences* – This opens the Sign Post Label Preferences dialog.

  - ✓ *Mode* – This is the same as discussed in the Sign Panel Label Preferences.

    If the Mode is set to **Place Label as Cell**, the designer will be required to browse to the cell library and select which pay item cell to place.

  - ✓ *Pay Item – This is the Pay Item number text* displayed with the sign panel.

    The figure below shows the Pay Item placed as a cell. This places a box around the pay item number.



**Sign Post Label Preferences**

Mode: Place Label as Cell ▾
☑ Pay Item: PayItemNoBox 🔍
☑ Alternate: PayItemNoBox 🔍
☑ Station: StationLabel 🔍
☐ Center Station Label on Leader Line
Spacing: 1.00
☑ Leader Line
☐ Terminator [        ] 🔍
OK    Cancel

0700    1  11

  - ✓ *Alternate –* This is set up to place an Alternate label if configured for one, for example if the state is Proposed / remove it will place two pay items; one for the new sign assembly and one for removal of the existing sign assembly.

  - ✓ *Station* – This is the Station label. (This is not valid unless the Along Element / Chain option was used to place the post).

    Double clicking inside of the Sample text field (available when the mode is set to Place Label as Text) opens the Set Feature dialog where you can customize the symbology and text preferences as discussed for the Sign Panel labels.

  - ✓ *Center Station Label on Leader Line* – Toggle on to center the station on the leader line. Note the Leader Line section toggle must be on in order for this option to be accessible. The figure below shows the Station label centered on the leader line



36+87.00 R 1

STOP

R1-1
36"x36"
0700    1  11
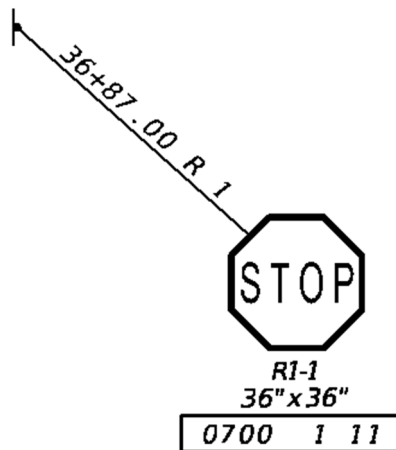
✓ *Spacing* – If more than one option is selected, this is the distance between the lines of text in the multi-line label. Example: Pay Item Number and Station.

✓ *Leader Line* – If selected this will draw a leader line from the origin of the sign post to a point selected by the designer. Double click inside the symbology field to open Leader Line Symbology dialog, which is used to set the level symbology of the leader line.
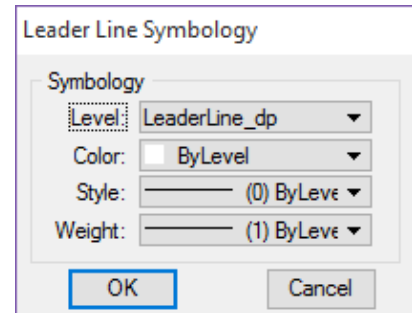
✓ *Terminator* – If selected this will draw an arrow head at the end of the leader line at the sign post.

*Note*      *Each district has their own preference on how the signs are to be labeled, make sure to communicate with your project manager prior to setting up the label features.*

o **Angle** – This is the angle of the text label not the sign post. This can be locked by selecting the paddle lock icon also the angle can be keyed in manually.

o **Place Post Label** – This is used to place a label on a post that was previously placed or on a post that was replaced. Clicking on this option prompts you to select a sign post.

## DRAW SIGN BUTTONS

- There are the buttons along the right side of the Draw Sign dialog below the sign preview window. These buttons are used to place sign panels and posts, update panels or posts, and update an assembly. The available options depend on the which tab is active.

o **Place Sign Panel** – This is accessible when the Panel Properties or Panel Location tab is active. Clicking this button will place the Sign Panel.

*Note*      *Make sure you have created a new sign assembly first before placing the sign panel when a new sign assembly is started.*

o **Update Sign Panel** – This is accessible when the Panel Properties or Panel Location tab is active. Use this option to update a previously placed Sign panel with new sign panel info. Example: If you placed a sign panel with the wrong size, use this option to update the panel with the new size. There is no need to delete and place a new sign panel.

o **Place Sign Post** – This is accessible when the Post Properties or Post Location tab is active. This places the sign post symbol.

o **Update Sign Post** – This is accessible when the Post Properties or Post Location tab is active. This option updates a sign post previously placed with new information. Example: if placing a sign post at a station and the post is moved using MicroStation tools, move the post then click this button and the station label and leader line will automatically adjust to the new location.

o **Update Assembly** – If the designer has to move an assembly in the design file because of placement error or revision to the design, use this to update the assembly with the new location information.

## Exercise 6.1     *Place Single Post Sign*

➢ **Panel Properties**

1. Open the *Dsgnsp01.dgn* file and zoom in near Sta. **702+20.**

2. From FDOT Menu, select **Traffic Plans > Signing and Pavement Markings** > Draw Sign. This opens the Draw Sign Program.
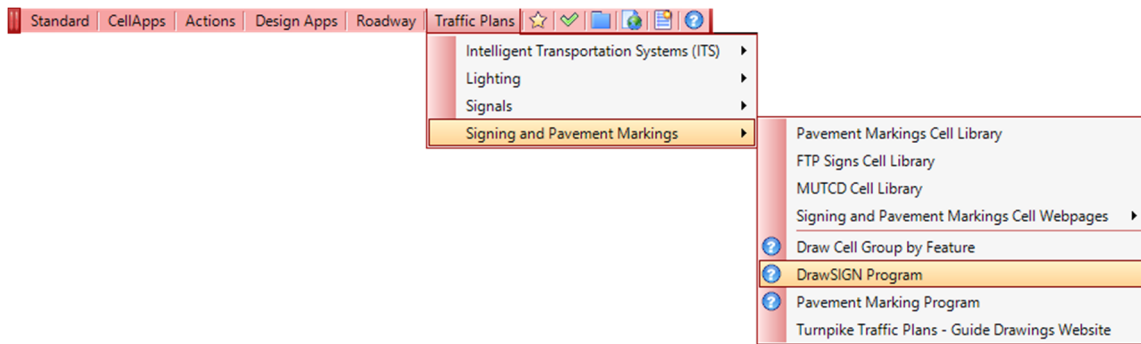


3. In Draw Sign, check **On** *Assembly.*

4. Set the *Plot Scale* to **50.00**. (This should match the plot scale of the plan sheets.)

5. In the Panel Properties tab:

   a. Set the *Class* to **ROUTE MARKERS**.

   b. Set the *Name* to **M1-4S**.

   c. *Size* is **30"x24"**.

   d. Check on **Is Main Panel**. Do not check Exclude Area.

   e. Set the *State* to **Proposed**.

   f. For *Field 1* key-in **319** and click the tab key on the key board. (This will change the preview to reflect the state road number.)

6. At the top of the Draw Sign dialog, click the **Create New Sign Assembly** button ▣. This is the middle button. This will fill in the *Assembly name* field with the name **M-1-04S-1**.
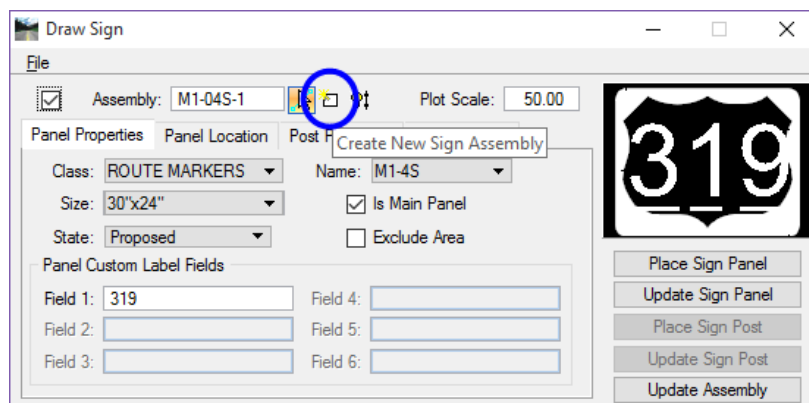
7. Remove the **'S'** from the name so the Assembly name will be **M-1-04-1**. When the Sign panel is placed, this will also create a Named Group with the same name.
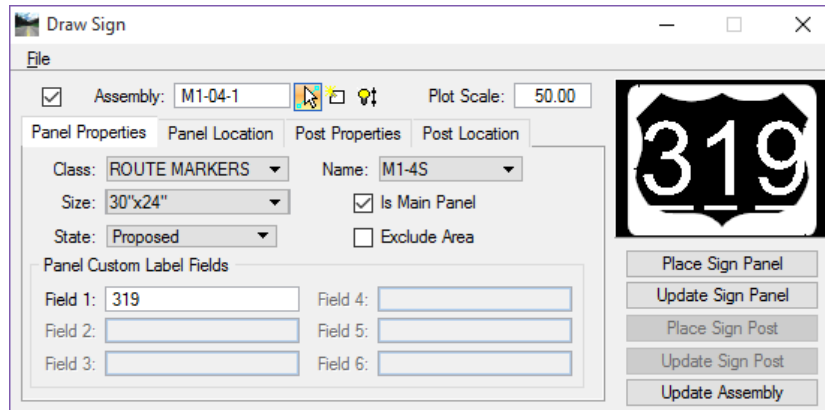


➢ *Panel Location*

1. Open the **Panel Location** tab.
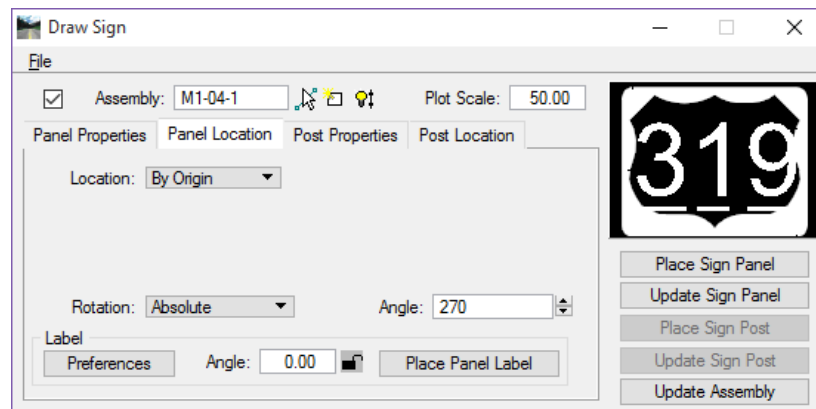


2. If the view is not rotated so that the CL Const is horizontal on the screen, rotate the view by two points using the tick marks as reference points.

3. Set the *Location* to **By Origin**. Keep in mind that the location of the sign panel is not the critical element, the post is. The panel needs to be placed in a location of clear visibility and far enough away from the Post so that the station text will fit on the leader line.

4. Set the *Rotation* to **Absolute**. This locks in the rotation angle of the panel.

5. Set the *Angle* to **270.0**. Use the Up and Down arrows to adjust the value or key it in. This is a dynamic function, it can be adjusted as the panel is being placed.

6. Under *Label*, click **Preferences**. This opens the Sign Label Preferences dialog.

7. Check **Off** *Name* and *Size*. This turns the labels off. The labels will be placed in another exercise.

➢ *Place Sign Panel*

1. Click the **Place Sign Panel** button.

2. Move the cursor onto the screen and place a **Data Point**. Position the sign far enough away from the roadway to accommodate a leader line with a station on it.

3. Next, you will place the **Route Marker NORTH** on top of this sign. Go back to the **Panel Properties** tab:

   a. Select the *Name* **M3-1** sign.
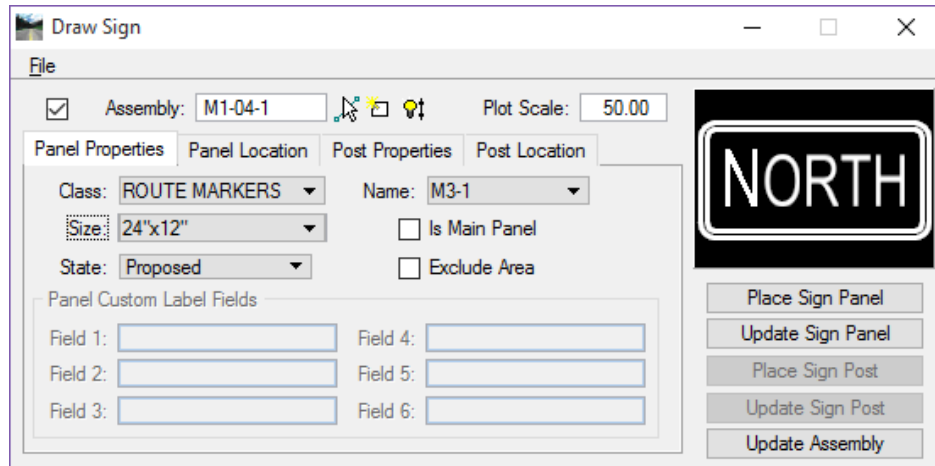


   b. Set the *Class* to **ROUTE MARKERS**.

   c. Select the *sign* **M3-1**. This is the sign Name.

   d. *Size* is **24"x12"**.

   e. Toggle **Off** *Is Main Panel*. It is not necessary that this sign panel be the Main Panel.

   f. *State* is **Proposed**. The Assembly Name stays the same, both of the sign panels are in the same sign cluster/assembly.

4. Go to the **Panel Location** tab: Everything in *Panel Location* stays the same as it was for the first sign.

5. Click the **Place Sign Panel** button.

6. Select the MicroStation **Midpoint** snap and tentative snap to the center top side of the sign panel (rotated it's the right side).

7. Hit the **O** key on the keyboard to place an offset command **in AccuDraw**.

8. Move the cursor to the right of the M1-4S sign panel and type **0.33 (approx. 4')** in the **AccuDraw X** field.

9. Place a **Data Point** to place the **Sign.** If the North (M3-1) panel, esthetically, looks too small, use MicroStation tools to increase the size or change the Plot Scale of the sign on the Draw Sign dialog.
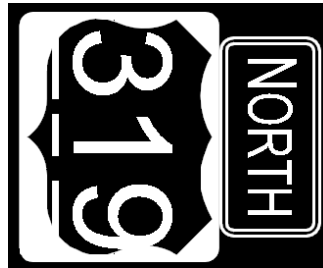


➢ *Place Sign Panel Labels*

1. On the **Panel Location** tab, under *Label,* click **Preferences**. This opens the Sign Panel Label Preferences dialog.
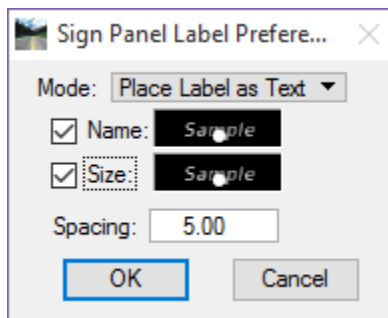


2. Set the *Mode* to Place Label as Text.

3. Check **On** *Name*.

4. Double-click on the *Sample* text. This opens the Sign Panel Name Label Preferences dialog.
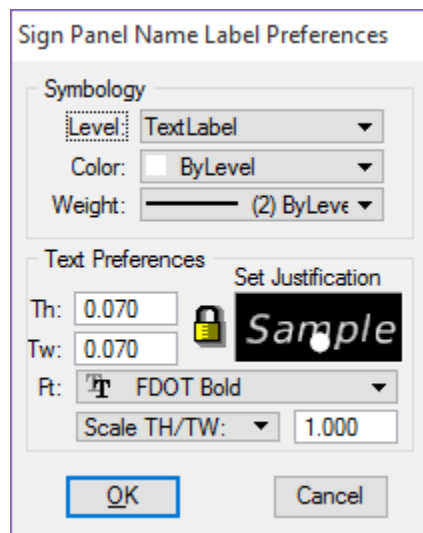


a. In the *Symbology* section, set the *Level* to **TextLabel**.

b. Set the *Color* and *Weight* to **ByLevel**.

c. Set the *Text Height* and *Width* to **0.070**. (This is the desired text size at a scale of 1, the drawing scale will adjust this to the correct size.)

d. Set the *Justification* to **Center Bottom**.

e. Set the *font* to **FDOT Bold**.

f. Set the *Scale* to **TH/TW** and size to **1.0**.

g. Click **OK**.

5. Check **On** Size.

6. Right-click on the *Name Sample Text* and select **Copy**.

7. Right-click on the *Size Sample Text* and select **Paste**. (This is a quick way to setup the *label preferences* for both the **Panel Labels** and the **Post Labels**.)

8. Set the *Mode* to Place Label as Cell.
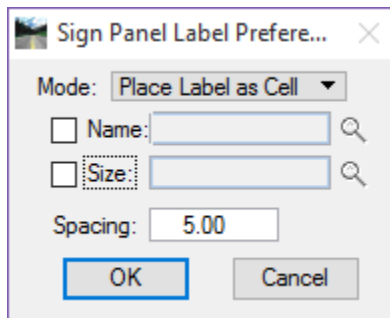
a. Toggle on the Name option and click the **magnifying glass** icon.
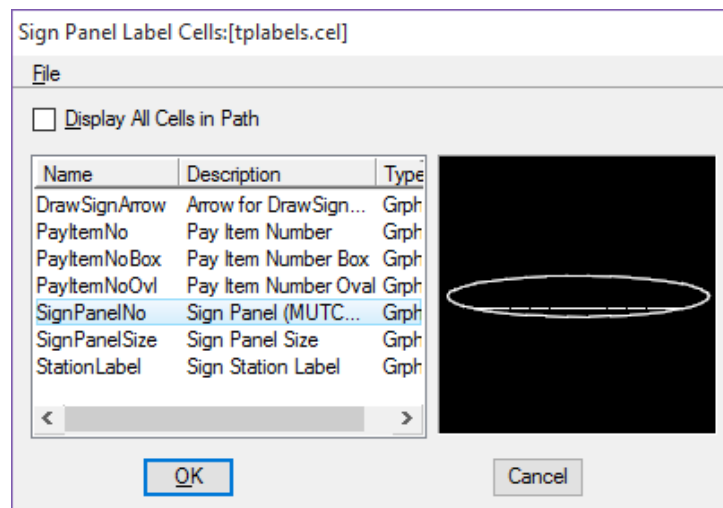
b. Select the **SignPanelNo** cell from the list and click the **OK** button.

c.   Toggle on the Size option and click the **magnifying glass** icon.
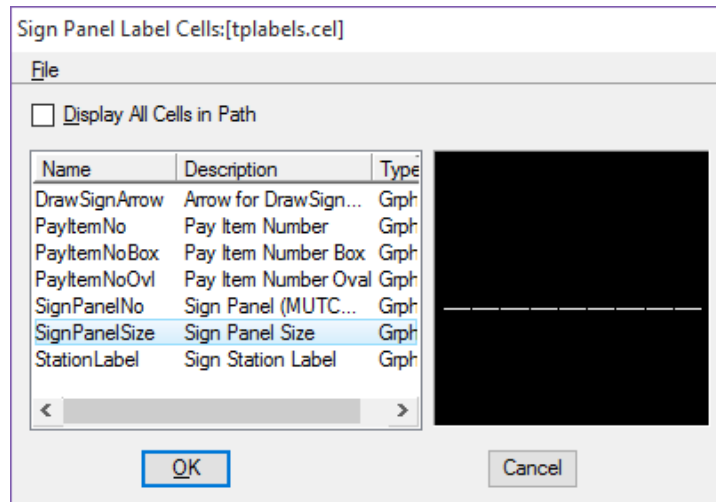


d.   Select the **SignPanelSize** cell from the list and click the **OK** button.

e.   Set the *Spacing* to **12.00**.
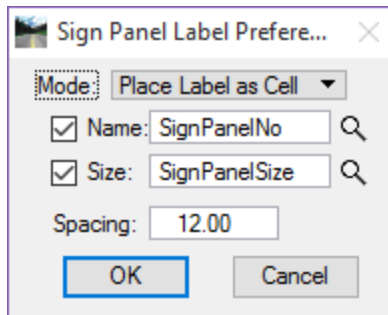


*Note*      *This is the space between the Sign Name and Sign Size cells and will need to be adjusted for scaling and personal preference.*

f.   Click **OK** on the Sign Panel Preferences dialog.

9.   In Draw Sign, Panel Location tab, set the *Label angle* to **149.59** and lock it.

*Note*      *The angle 149.59 is the measured angle of a horizontal line drawn from the BL Const in an un-rotated view.*

10.  Click the **Place Panel Label** button.

11.  Select the **M3-1 (North)** panel and place the labels below the sign panel assembly.

12. Click the **Place Panel Label** button and select the **M1-4S (US319)** panel. Place the label below the North panel label.
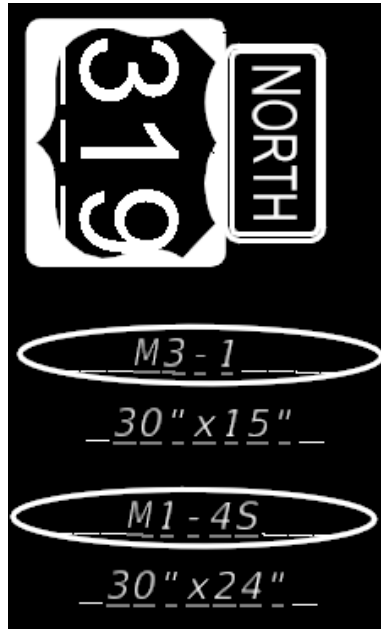
*Note*     *This is more or less a personal preference. Be consistent with how you place sign labels so the plans look professional. Use **Power Selector** and **AccuDraw** to move the **Sign Names** and **Sizes** so they are centered under the sign panels and are stacked from top to bottom.*

13. Use the MicroStation *Fill In Single Enter-Data Field* tool to remove the 'S' from the **M1-4** label.

➤ **Set Post Properties**

1. Go to the **Post Properties** tab.



2. Set the *Installation Method* to **Ground Mount**.

3. Set the *Mounting* to **Single or Multi-Post**.

4. Set the *State* to **Proposed**.

5. Set the *Sign Type* to **Furnish and Install**.

6. Click the **Auto-Select** button. (This will calculate the sign panels placed and set the sign post based on these calculations and set the pay item number.)



7. Select **Single_Sided** from the prompt. (This will select the cell and will tag that cell with adhocs associated with the placement of a single sided single column post assembly.)

8. Click the **OK** button.

9.  Go to the **Post Location** tab.



10. Set the *Location* to **Along Element**.

11. Set the *Element* to **Chain**.

12. Set the *Chain* to **CLCON**.

13. Toggle on the Station and enter 702+20.

14. Toggle on the *Offset* and enter **47.50**. (For the offset, you are required to set the post a minimum of 4.5' (2' + 2.5' sign width) from the face of curb based on index 17302 Case III. This would be 45', however 47.5' will put the post 6" behind the sidewalk.)

15. Set the *Rotation* to **Absolute**.

16. Set the *Angle* to **180.0**. Key this in or use the Up and Down arrows.

➢ *Set Label Preferences*

1.  Go back to the **Panel Location** tab and click the **Label Preference** button to access the Sign Panel Label Preferences dialog.

2.  Right-click on the *Name field sample text* and select **Copy**.

3.  Close the Sign Panel Label Preferences dialog and go back to the **Post Location** tab.

4.  Under *Label,* click the **Preferences** button. This opens the Sign Post Label Preferences dialog.

5.  Set the Mode to Place Label as Text and right click on the *Pay Item, Alternate* and *Station fields* and select **Paste**. This is a quick way to setup the *label preferences* for both the **Panel Labels** and the **Post Labels**.

    *Note*    The text mode needed to be setup prior to placing the labels in cell mode to setup the text parameters so the text in the cells are placed correctly.

6.  Set the *Mode* to Place Label as Cell.

7. Click the **magnifying glass** icon next to the *Pay Item* for both the *Pay Item*.
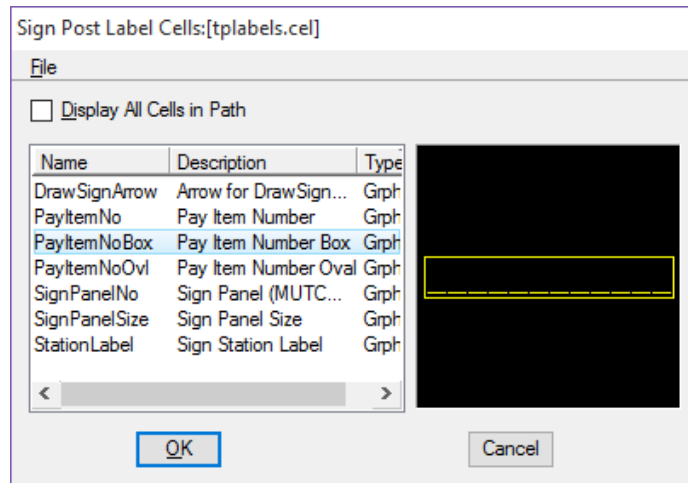


8. Select the **PayItemNo**Box *cell* from the list and click the **OK** button.

9. Repeat steps 7 & 8 for the *Alternate* field.

10. Click the **magnifying glass** icon next to the *Station* field.
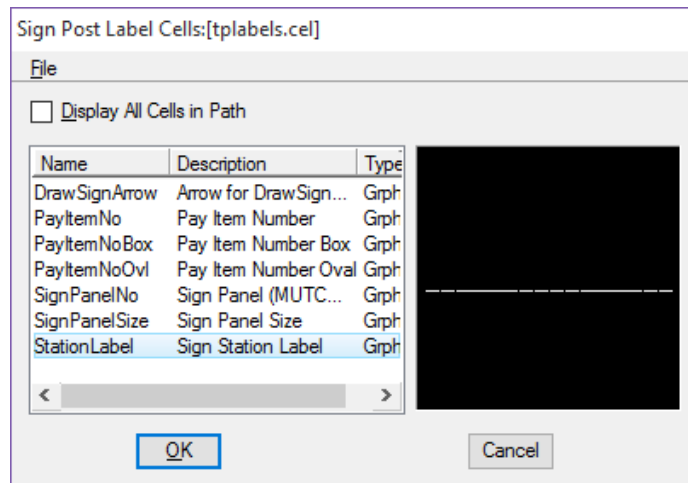


11. Select the **SignStationLabel** *cell* from the list and click the **OK** button.

➤ **Set the Station and Leader Line Symbology**

1. Set the *Spacing* to **6.0**. (This is the space between the pay item label and the station label.)

2. Check **On** *Leader Line*.

3. Double-click on the symbology box under Leader Line. This opens Leader Line Symbology.

4. Set the Level to **LeaderLine_dp**.

   a. Set the *Color*, *Style* and *Weight* to **ByLevel**.

   b. Click **OK** on Leader Line Symbology.
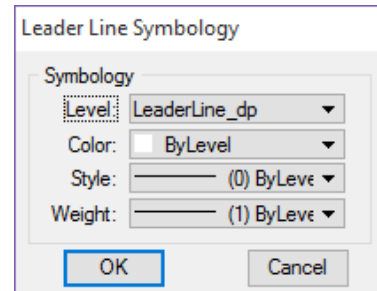
5. In Sign Post Label Preferences, click **OK**. No Terminator is used.
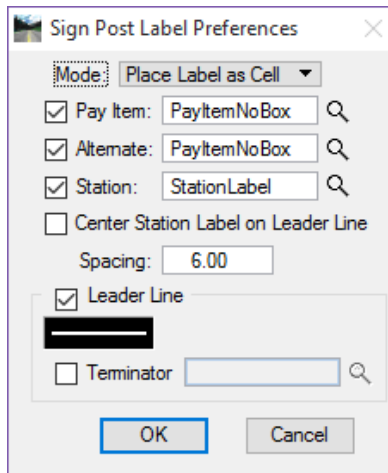
6. Next to the *Preferences* button, set the *Angle* to **149.59** and lock it. This is the same as the angle used when placing the sign panel text.
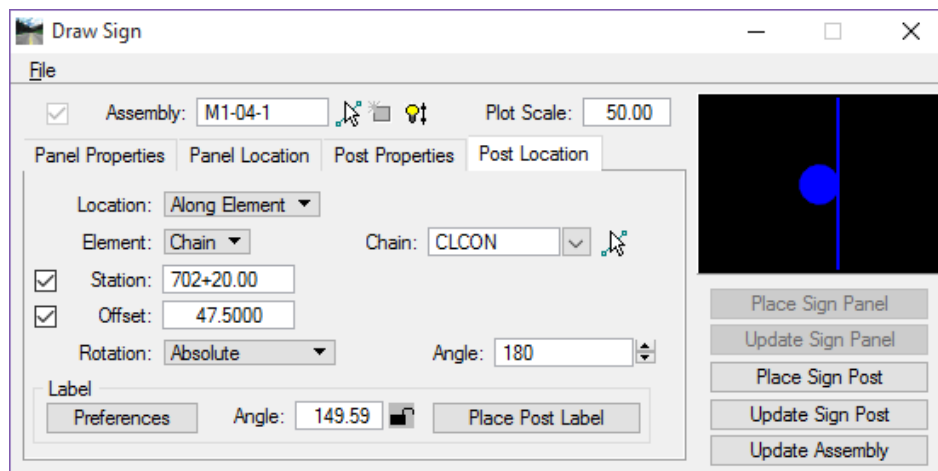
➢ *Place the Sign Post and Label*

1. Under the *Preview* window, click **Place Sign Post**.

2. Place a **Data Point** on the sign post, this will become the hinge point for the leader line. Because you have Station and Offset locked, you will see the post at that location.

1. Move the cursor under the previously placed sign text and place the label by issuing a Data point.

2. Now the leader line is attached to your mouse, snap to the left side of the main sign panel and place a **Data Point**.
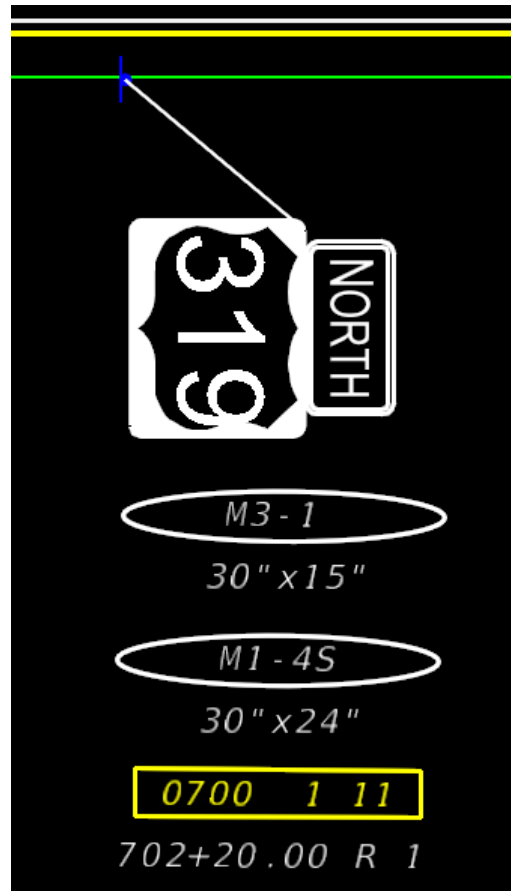


| Note | The figure, which is the same as what is now in your design file, has several personal preferences applied to it. The location of the panel text and whether or not to use a leader line with or without the station label is purely personal/district specific. Prior to starting work on a project be sure to address these places with the project manager, this will save hours of cleanup. |

## Exercise 6.2    *Update Sign Post Location*

In this exercise, the student will use the Update Sign Post function. This allows you to move a previously placed sign post then automatically update the leader line and station label.

> ### ➢ *Move Sign Post and Update Label*

1. Continuing in *Dsgnsp01.dgn* select the MicroStation **Move Element** command.

2. In the Draw Sign dialog, click the **Identify Existing Sign Assembly** button. This is at the top of the dialog next to the *Assembly name*, the first button.

3. Identify the **Sign Post** placed. Notice the whole assembly will highlight, this is correct.

   *Note*      *This is a very important step when there is more than one sign assembly placed in the design file. The correct sign assembly Must be selected.*

4. Using AccuDraw, move the previously placed **Sign Post 15'** to the left. This is an arbitrary number. Use AccuDraw to maintain the offset.

5. In Draw Sign, click the **Update Sign Post** button. Click OK on the prompt for the Post Option. (This will adjust the leader line to the new post location.)

   *Note*      *In order to update the station label information, delete the existing label and use the Place Post Label option on the Post Location tab.  The option to place the label on the leader line allows for the stationing to update when the leader line is adjusted with the Update Sign Post option.*

6. Go to **Edit > Undo** and **Undo** the update and move of the post so the *station* is set to **702+20**.

## Exercise 6.3    Place Multi-Post Sign

In this exercise, the student will use the same process as in the previous exercise to place a slightly more complicated sign assembly.

➢ **Panel Properties**

1. Continuing in *Dsgnsp01.dgn* Zoom to near **Sta. 703+00**.

2. Open the Panel Properties tab and set up as shown.
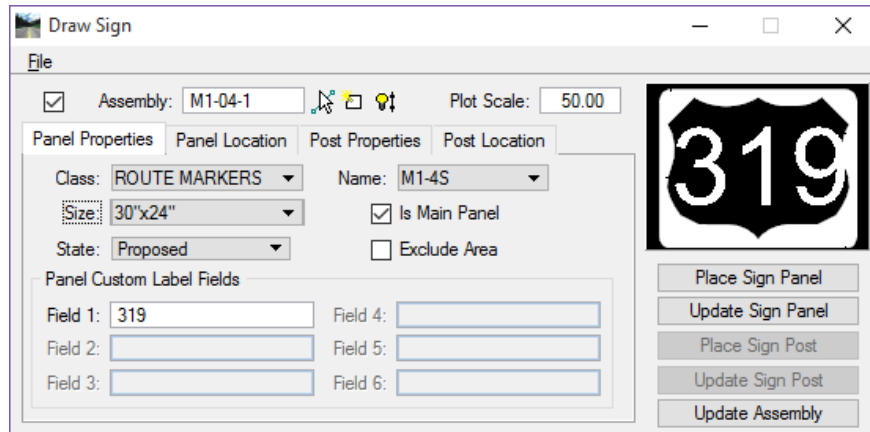


3. At the top of the Draw Sign dialog, click the **Create New Sign Assembly** button . This is the middle button. This will fill in the *Assembly name* field with the name **M-1-04S-1**. Modify the name to **M-1-04-2**. When the Sign panel is placed, this will also create a Named Group with the same name.



➢ **Panel Location**

1. Open the **Panel Location** tab.

2. Set the *Location* to **By Origin**.

3. Set the *Rotation* to **Absolute**.

4. Set the *Angle* to **90.0**.

5. Under *Label*, click **Preferences**. This opens the **Sign Label Preferences** dialog.

6. Toggle off Name and Size. (This turns the labels off. The labels will be placed in another exercise.)

➢ **Place Sign Panel**

1. Click the **Place Sign Panel** button.

2. Position the sign far enough away from the roadway to accommodate a leader line with a station on it and place a **Data Point**.

➢ *Panel Properties – M1-4*

1. Set the *Name* to **M1-4**.

2. *Size* is **24"x24"**.

3. Toggle off **Is Main Panel**. Do not check Exclude Area.

4. Set the *State* to **Proposed**.

5. For *Field 1* key-in **98** and click the tab key on the key board. This will change the preview to reflect the state road number.

6. Click the **Place Sign Panel** button.

7. Place the US98 sign to the left of the US319 sign panel and place a **Data Point**.
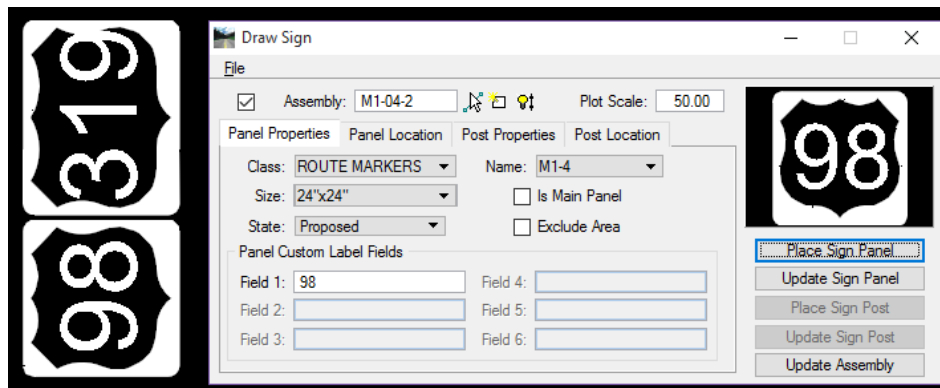


➢ *Panel Properties – M6-1R*

1. While still on the Panel Properties tab, Set the *Name* to **M6-1R**.

2. *Size* is **21"x15"**.

3. Toggle off **Is Main Panel**. Do not check Exclude Area.

4. Set the *State* to **Proposed**.

5. Click the **Place Sign Panel** button.

6. Using Accudraw, *Tentative Snap* to the bottom center of the **US319** sign panel and hit the **O** *key* on the keyboard.

7. In the Accudraw, **X** coordinate field, type **20** and place a **Data Point**.

➢ *Panel Properties - M6-4*

1. While still on the Panel Properties tab, Set the *Name* to **M6-4**.

2. *Size* is **21"x15"**.

3. Toggle **Off** *Is Main Panel*. Do not check Exclude Area.

4. Set the *State* to **Proposed**.

5. Click the **Place Sign Panel** button.

6. Using Accudraw, **Tentative Snap** to the bottom center of the **US98** sign panel and hit the **O key** on the keyboard.

7. In the Accudraw, **X** coordinate field, type **20** and place a **Data Point**.



➢ *Set Post Properties*

1. Go to the **Post Properties** tab.

2. Set the *Installation Method* to **Ground Mount**.

3. Set the *Mounting* to **Single or Multi-Post**.

4. Set the *State* to **Proposed**.

5. Set the *Sign Type* to **Furnish and Install**.

6. Click the **Auto-Select** button. (This will calculate the sign panels placed and set the sign post based on these calculations and set the pay item number.)

7. Select **Single_Sided** from the prompt. (This will select the cell and will tag that cell with adhocs associated with the placement of a single sided single column post assembly.)

8. Click the **OK** button.

9. Go to the **Post Location** tab.

10. Set the *Location* to **Along Element**.

11. Set the *Element* to **Chain**.

12. Set the *Chain* to **CLCON**.

13. Toggle on the *Station* and enter **702+87**.

14. Toggle on the *Offset* and enter **-48.50**.

15. Set the *Rotation* to **Absolute**.

16. Set the *Angle* to **0**. Key this in or use the Up and Down arrows.
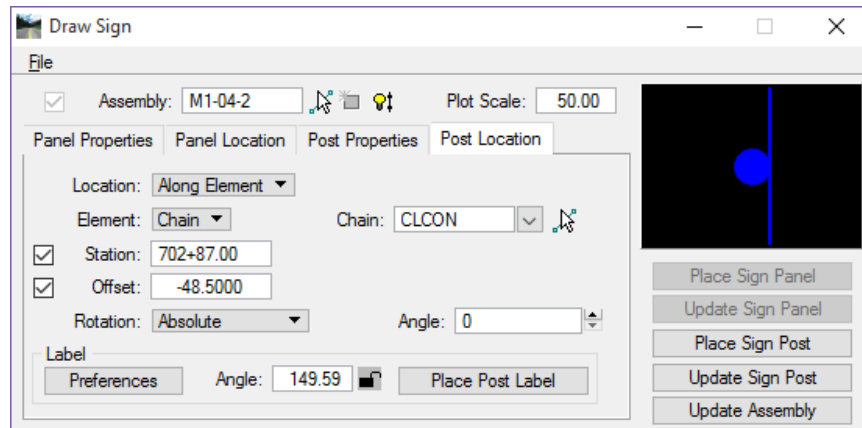


➤ **Set Label Preferences**

1. Under *Label*, click the **Preferences** button. This opens the Sign Post Label Preferences dialog.

2. Double check that the preferences are set as shown.
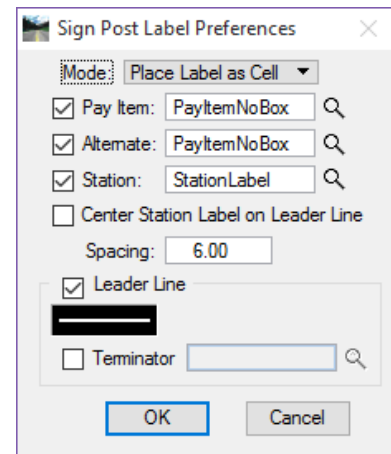


➤ **Place the Sign Post**

1. Under the preview window, click **Place Sign Post**.

2. Place a **Data Point** on the sign post, this will become the hinge point for the leader line. Because you have Station and Offset locked, you will see the post at that location. Next place the Pay *Item* Number and Station Label

3. Place the label by placing a **Data Point** above the sign panels.

4. Now the leader line is attached to your mouse, snap to the left side of the main sign panel and place a **Data Point**.

➢ *Place Sign Panel Labels*

1. On the **Panel Location** tab, under *Label*, click **Preferences**. This opens the Sign Panel Label Preferences dialog.

2. Toggle **On** Name and Size.

3. Click **OK** on the Sign Panel Preferences dialog.

4. Click the **Place Panel Label** button.

5. Select the each panel and place the labels as shown in the sign panel assembly image below.
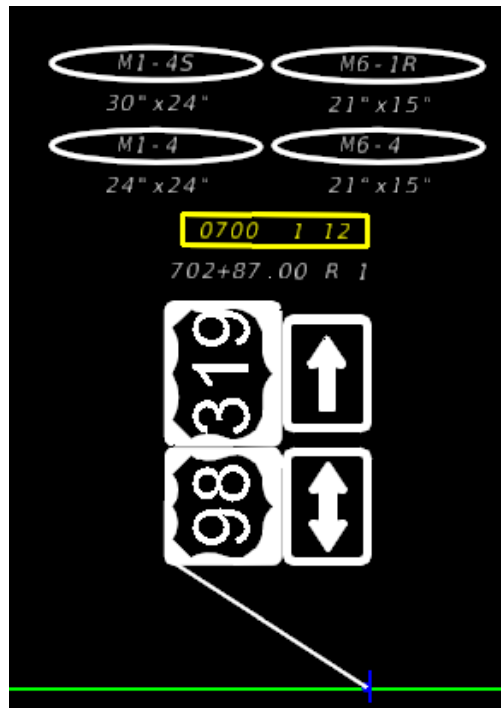


| Note | This is more or less a personal preference. Be consistent with how you place sign labels so the plans look professional. Use *Power Selector* and *AccuDraw* to move the Sign Names and Sizes. |
| --- | --- |

6. Modify the M1-4 sign panel name to read M1-4 using the Edit Text tool.

7. Take some time to place a few more sign panel assemblies along the project.

# GᴜɪᴅSIGN Pʀᴏɢʀᴀᴍ

GuidSIGN is an intuitive, user-oriented software program that automates the process of designing roadway signs. The program incorporates many user-suggested features and allows users to quickly create finished shop drawings, complete with title block, sign layout, and letter location tables. The designer can create Sign Panels with very little input. However, knowledge of sign standards is required. Letter shapes, spacing, sign sizes and symbols used in GuidSIGN are based on the following publications: *Standard Alphabets for Highway Signs and Pavement Markings, Standard Highway Signs (1979) (2004)* and *Manual on Uniform Traffic Control Devices (1988) (2003) and (2009)*.

GuidSIGN enables the designer to create signs with minimal input, using standard sizing controls, or by specifying controlling size parameters. Select a sign style, and the program automatically calculates the appropriate border, margins, fonts, layout, shape and size for the selected lettering.

GuidSIGN is loaded by selecting **Gs8i.ma** from **Utilities > MDL Applications** menu. You will need to browse to **C:\Program Files\Transoft Solutions\GuidSIGN 6** to locate this file. When the command is executed, the GuidSIGN toolbox appears as shown in the following figure. At the time of this writing, GuidSIGN version 6.1 was used for this training guide.



If the GuidSIGN Tool bar is closed inadvertently, the tool bar can be redisplay by typing in the key-in **GS TOOLS** during the current MicroStation session.
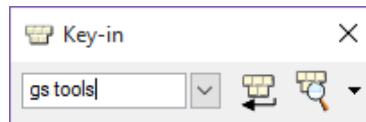


> *Hint*    Always design the largest sign panel first when using GuidSIGN.

It is ok to stop at practically any point of the Sign Design process and finish the sign design at a later time. It is not necessary to complete the process in one session. All sign panel preferences are stored with the sign panel, which allows the designer to start and stop, as needed.

For correct sheet placement and scaling please see the following **GuidSIGN Scale Conversion Factor table** (0.109 x sheet scale).

| GuidSIGN Scale Conversion Factor | |
|---|---|
| Sheet Scale | Plot Scale |
| 10 | 1.09 |
| 20 | 2.18 |
| 25 | 2.72 |
| 30 | 3.25 |
| 40 | 4.35 |
| 50 | 5.43 |
| 60 | 6.5 |
| 75 | 8.16 |
| 80 | 8.7 |
| 100 | 10.85 |

## Exercise 6.4    *Creating the GuidSIGN Work sheet (Part 1)*

➤  **Create a new design file and load GuidSIGN**

In this exercise, the student will create a new design file using the FDOT Create File/Project tool and then load the GuidSIGN program.

1.   From the FDOT Menu, select **Actions > Create Files**.  Select the option for Guide Sign Work Sheet and Details from the Signing & Pavement Marking Files (DGN) File Group.
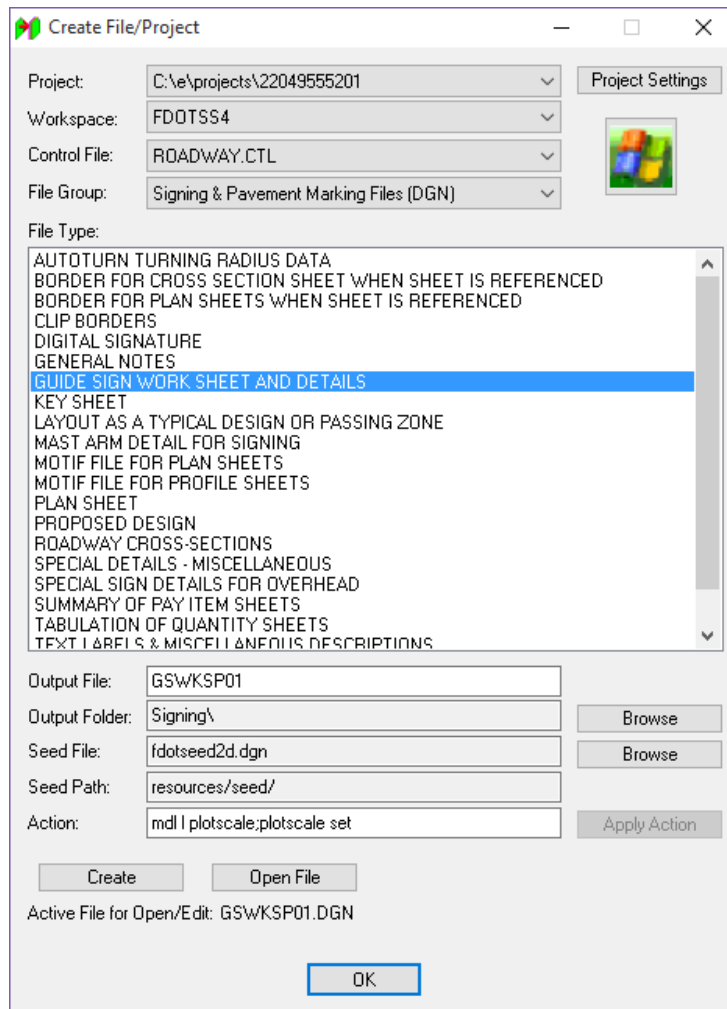


2.   Create and Open the file **GSWKSP01.dgn** in the *signing* folder.

3.   Close the Create File/Project tool.

4.   Set the *Plot Scale* to **50**. The scale of the sheet border will be adjusted with the GuidSIGN program.

5.   From MicroStation, select **Utilities > MDL Applications**. This opens the MDL dialog.

> *Hint*      A function key can be programs for loading GuidSIGN.  The key-in command is
> mdl load "c:\Program Files\Transoft Solutions\GuidSIGN 6\Gs8i.ma".  The user must
> include the quotes.

6. Click the Browse button and navigate to the c:\Program Files\Transoft Solutions\GuidSIGN 6\ folder.

7. Select the *Gs8i.ma* file and click **OK**. This opens GuidSIGN.
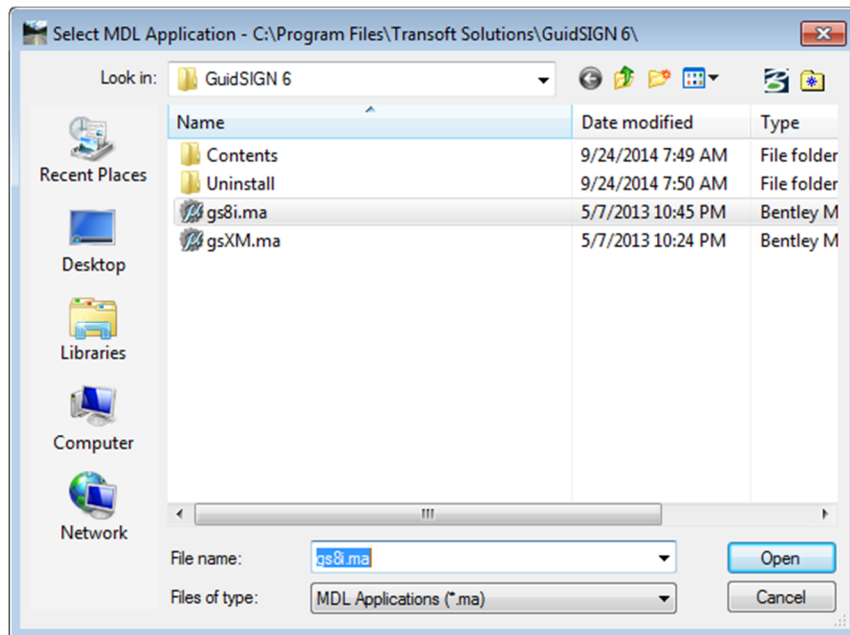


*Note*        *If this is the first time GuidSIGN is loaded the Welcome to GuidSIGN will open.*
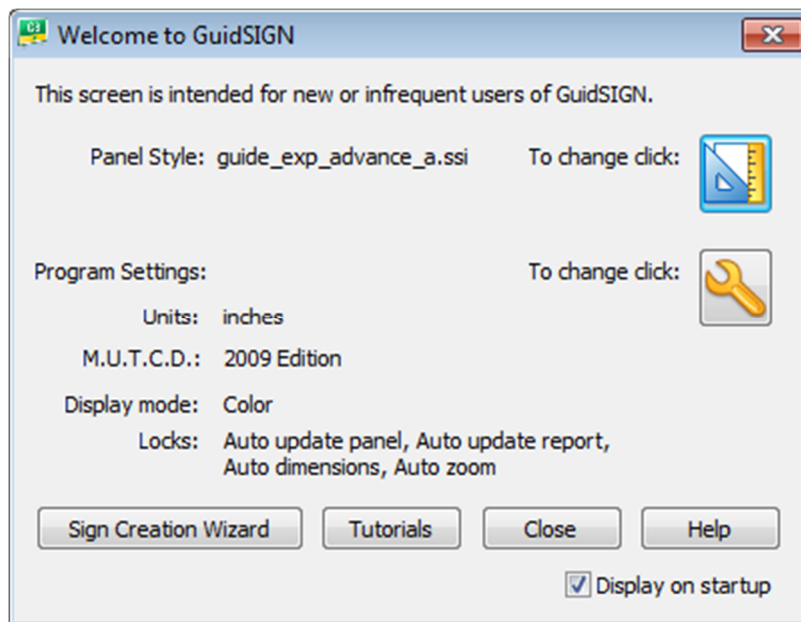
8. On the Welcome screen, click the **Program Settings** icon ⬜. This opens Program Settings dialog.
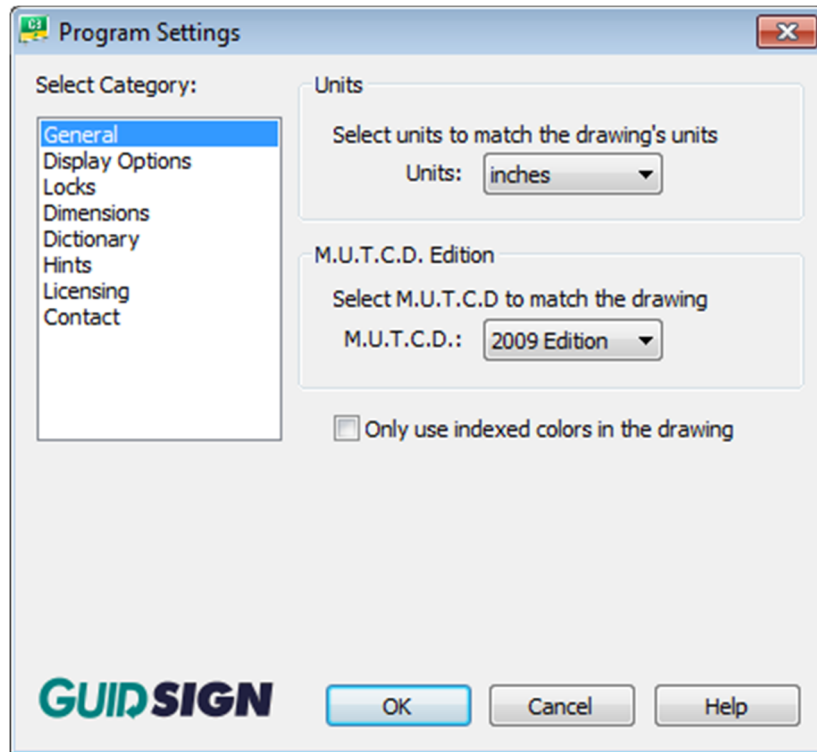


a. Under the *General* category set *Units* to **Inches**.

b. Set *M.U.T.C.D.* to **2009 Edition**.

c. **DO NOT** check On Only use indexed colors in the drawing.

d. Under the *Display Options c*ategory set the *Display Mode* to **Color**.

e. Under the *Locks* category ensure all **Locks** are toggled on.

f. Close the Program Settings dialog.

➢ *Set the GuidSIGN Preferences and Panel Style*

1. On the Welcome screen, click the **Panel Styles** icon . This opens Select Current Panel Style dialog. Select the **guide_con_destination** style.
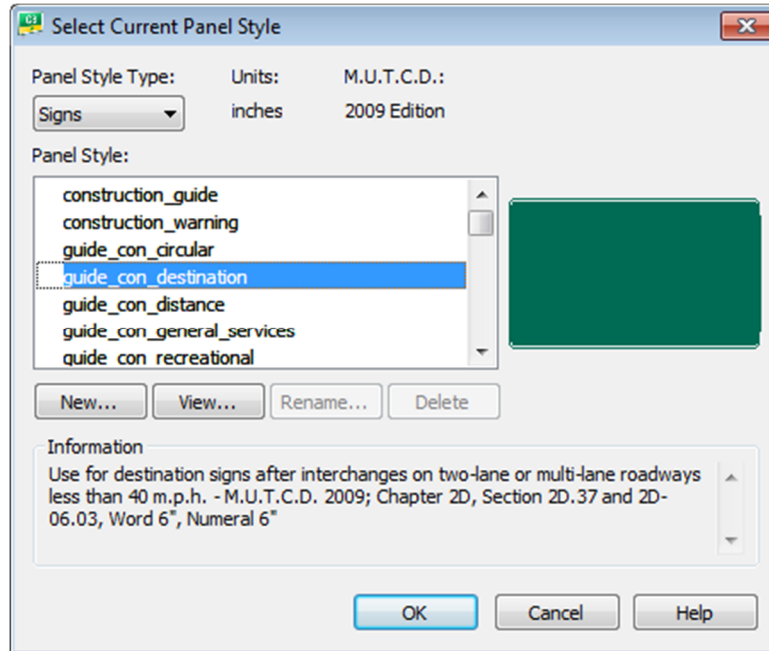


2. Click the **New** button. This opens the New Panel Style dialog.
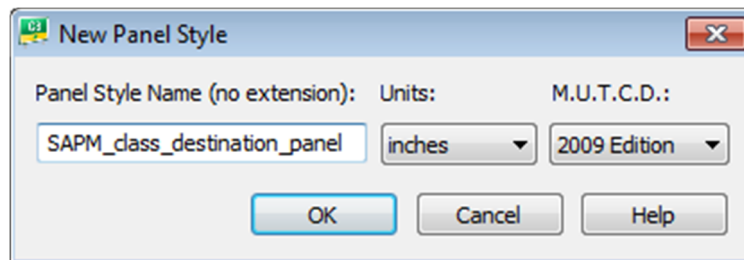


*Note*      *A panel style represents a set of parameters that specify the characteristics of a sign (sign shape, color, border radius, thickness, fonts, size of arrows and shields, and spacing between text and symbols). The highlighted panel style is used to create new panels.*

3. Type **SAPM_class_destination_panel** in the Panel Style Name field.

4.  Click the **OK** button to save the new *Panel Style* and open the Edit Panel Style dialog.
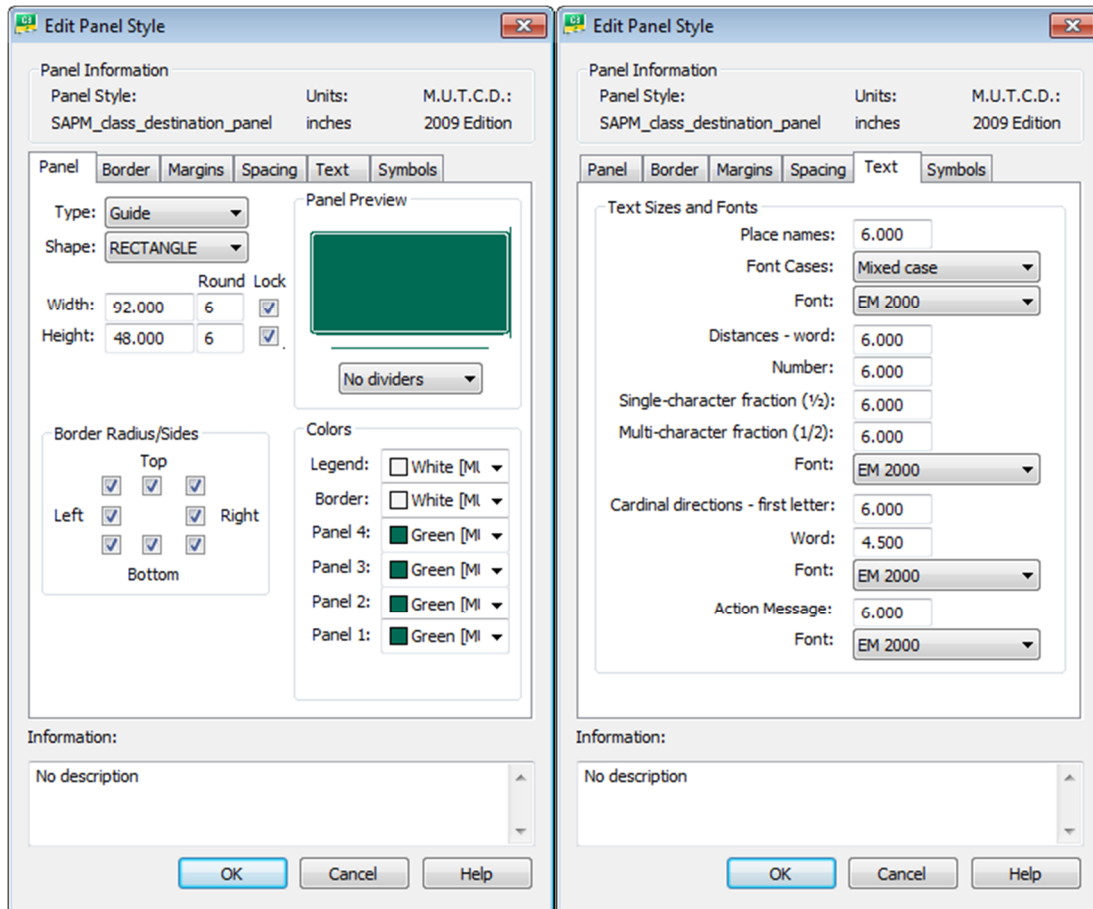


5.  On the **Panel** tab, set the following:
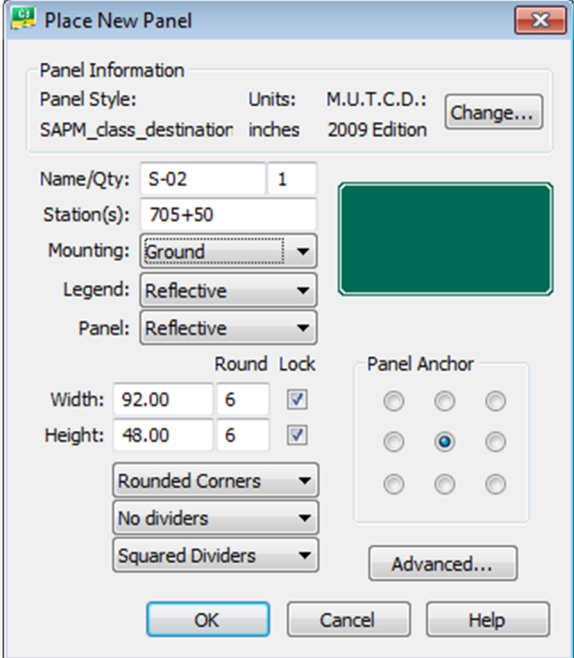
    > *Note*    The Height and Width fields throughout the GuidSIGN program accepts the user input in inches.

    a.  *Width*: **92.00** (7' 8") displayed in inches.

    b.  *Height*: **48.00** (4') displayed in inches.

    c.  *Round*: 6 (Will round to the nearest six inch incrementally.)

    d.  *Lock*: Toggle On. (Locks the sign size as set in the Height and Width fields.)

    e.  Set the *colors* to the name of the color for the Legend, Border and all the Panels. (**Green [MUTCD]** and **White [MUTCD]**.)

6.  Go to the **Text** tab:

    a.  Set all the *Font* drop down lists to the **EM 2000 Series Font**.

    b.  Click the **OK** button on the Edit Panel Style dialog.

7.  With the new *SAPM_class_destination_panel* style highlighted, click the **OK** button on the Select Current Panel Style dialog.

➢ *Place New Panel*

It is important to note that you should always start the sign design process with the largest sign that will be placed on the sheet. This sign will dictate the scale of the sheet.

1. Dismiss the Welcome to GuidSIGN dialog by clicking the **Close** button. (This is to have the maximum amount of screen real estate.)

2. Continuing with GuidSIGN, click the Place **New Panel** button. This opens the Place New Panel dialog.

3. Set the *Name* to **S-02** and *Quantity* to **1**. The name entered here will be the name that appears in the report on the Guide Sign Worksheet. This is typically a number.

4. Set the *Station(s)* to **705+50**.

> *Hint*    If you have multiple locations for this sign i.e. quantity more than 1, you use the Advanced option on this dialog to set multiple stations and these stations will show up on the report.

5. Set *Mounting* to **Ground**. The options are **Overhead** or **Ground**.

6. *Legend* to Reflective.

7. *Panel* to **Reflective**.

8. Panel *Width* and *Height* are already set by the style selected, the new ***SAPM_class_destination_panel*** *style*.

9. Set the *Panel* to **Round Corners and No Dividers**. (If your sign has dividers, there are other options on how to display the dividers.)

> *Note*    This data is stored with the sign and can be included in reports. The sign panels will dynamically resize, if the lock toggles are not checked, as text and symbols are added to the sign. You may have to come back and re-set the Rounding to 6" after the sign is placed in the sheet.

10. Click **OK**. The Sign Panel will be attached to the cursor.

11. Place a **Data Point** to place the empty sign panel in the design file.

➢ *Place Highway text*

In this part of the exercise, the student will place text in the sign panel. When complete the sign will look like that shown in the figure below. Keep in mind that each district may have specific sign standards, which need to be followed. Be sure to communicate with the Traffic Design personnel prior to starting the design process, this will save having to redo signs after a review.
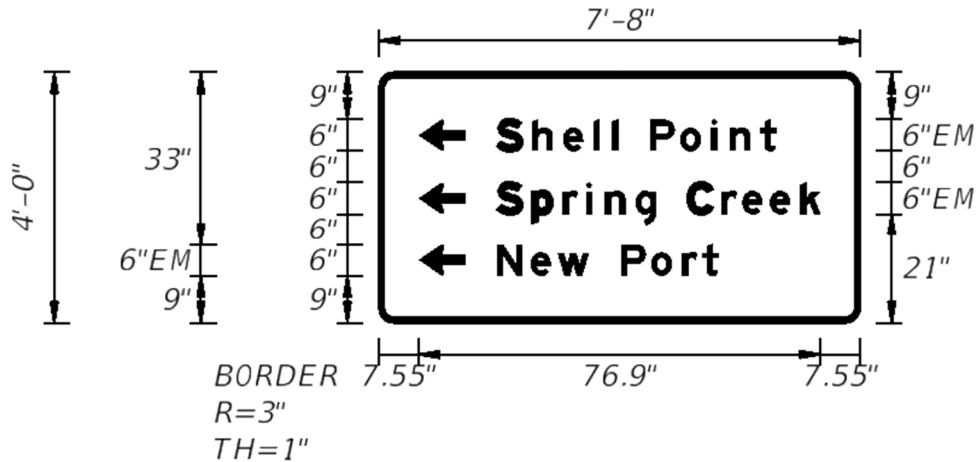


1. In the GuidSIGN, click **Place Highway Text** [A]. This prompts to select a point inside the sign panel.

2. Select inside of the sign panel. This opens Place Highway Text dialog.

3. Set the *Style* to **Name**. This should be set by default.

4. Set the *Hor. Align* to **Left**.

5. Under *Place Name* key-in **Spring Creek**.
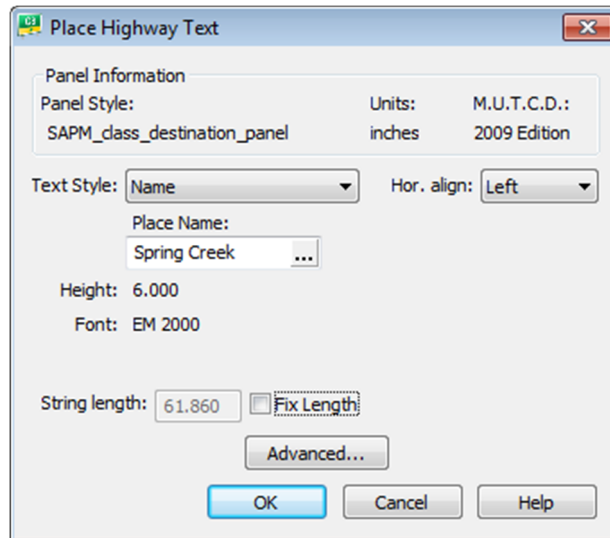
6. Click **OK**. The text box will be attached to the cursor and Place Object dialog opens.
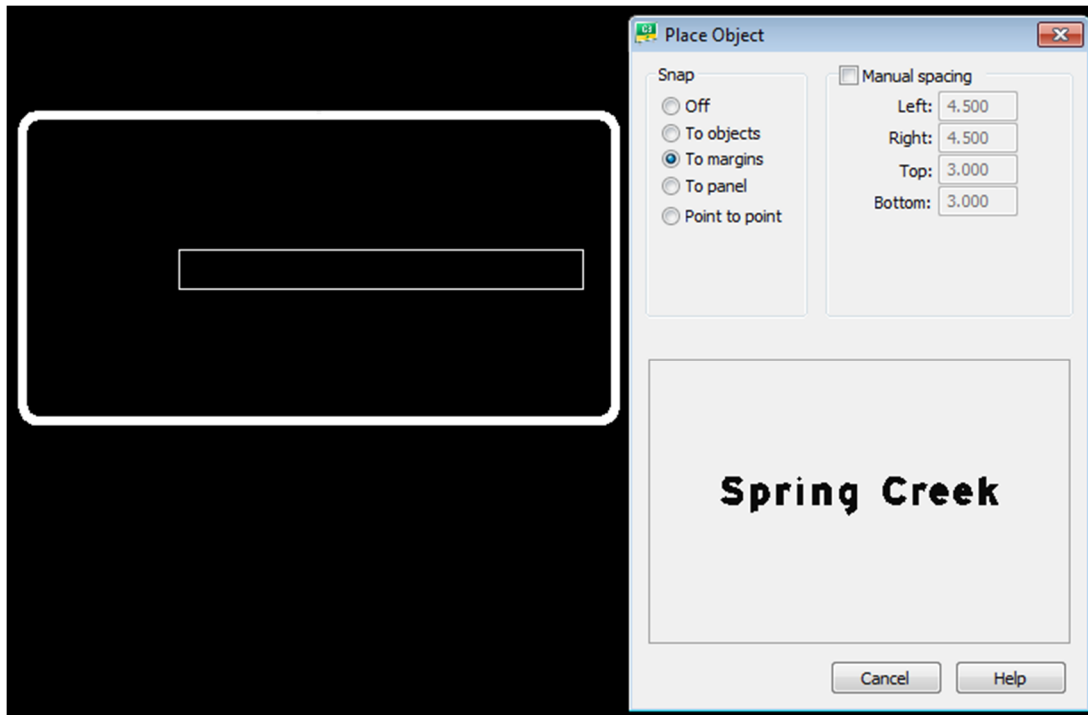


7. Under *Snap* set the option to **To margins**.

8. Line the **Text Object** box to the center right of the Panel.

9. Place a **Data Point** inside of the sign panel. The figure below shows what the sign should look like at this point.
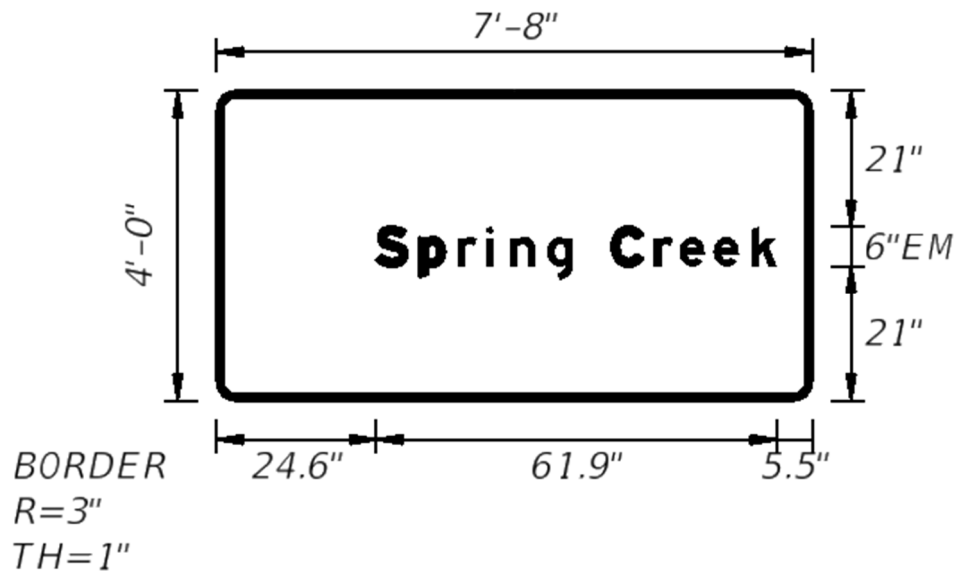
➢ *Place and Adjust Text and Arrow*

1. Click **Place Arrow** ⬇.

2. Select inside of the sign panel. This opens Select Arrow dialog.
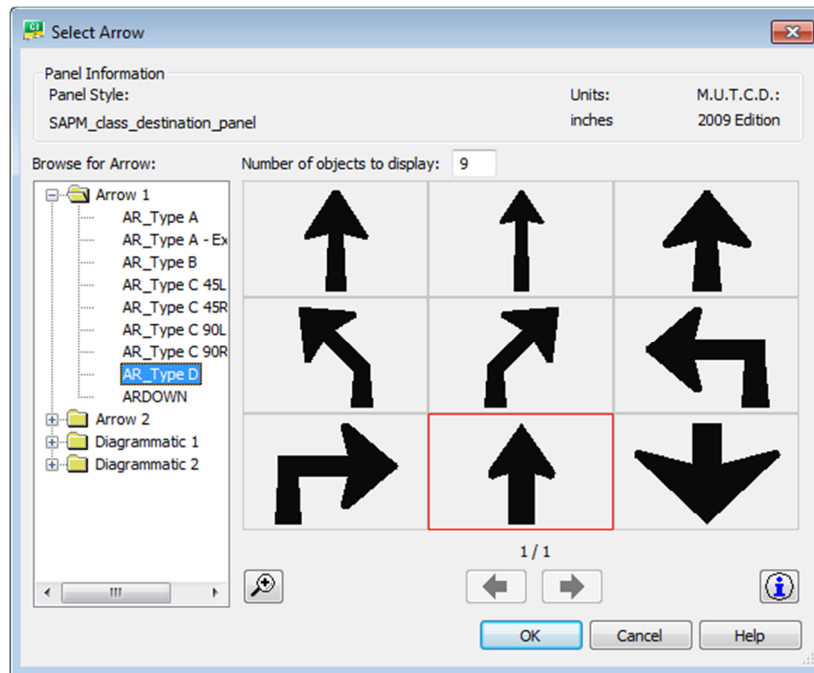


3. Select **Arrow 1 > AR_Type D** and click the **OK** button to set up the *Arrow Parameters*.
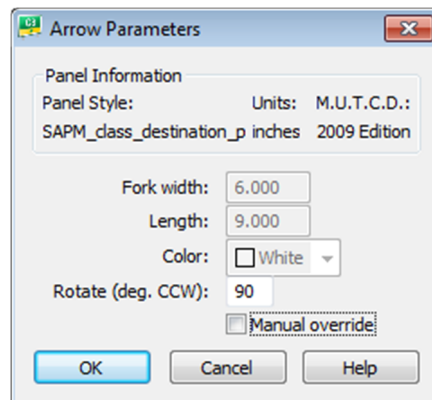


a. Set the Rotate (deg.CCW) to **90**.

b. Click the **OK** button.

4. Place Objects should be set on To Objects.
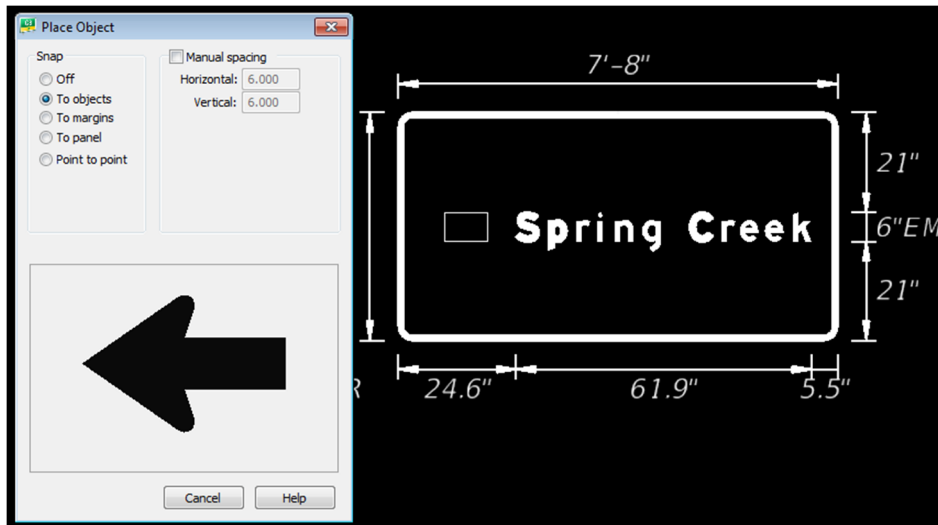


5. Place the cursor inside of the sign panel in front of the line of text and place a **Data Point**. The figure below shows what the sign should look like at this point.
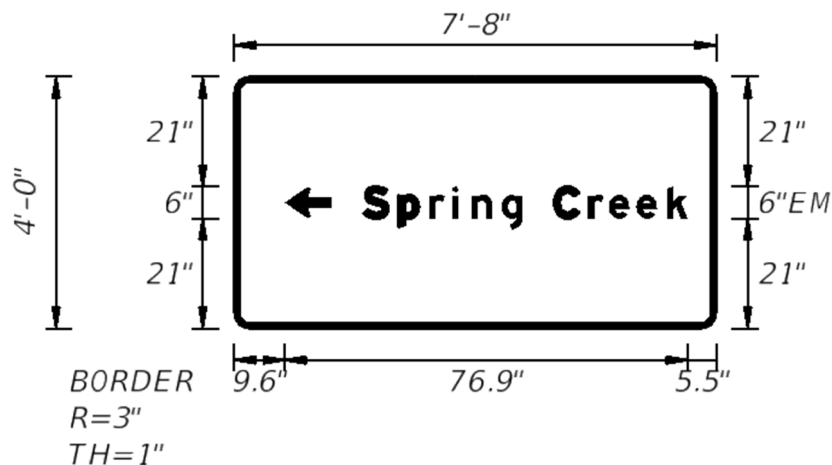


6. Next, adjust the text and arrow object to the margins of the sign panel.

   a. Click the Move Single Object tool ⬚ from the GuidSIGN toolbar.

   b. Select the **Arrow** placed on the sign panel.

   c. On the **Move Object** dialog, check on the **Manual spacing** toggle.

   ☑ Manual spacing
   Left: 6.550
   Right: 16.000
   Top: 16.000
   Bottom: 16.000
   ☐ Fix X  ☐ Fix Y

   d. Type **6.55** in the Left field. (All other fields do not matter. This is just to get the left margin (right side of the sign panel) correct before placing the rest of the objects on the sign panel. This is calculated by the 1" border thickness and 6.55 for the left margin.)

   e. Place a **Data Point** on the Sign Panel to accept the move of the Arrow Object.
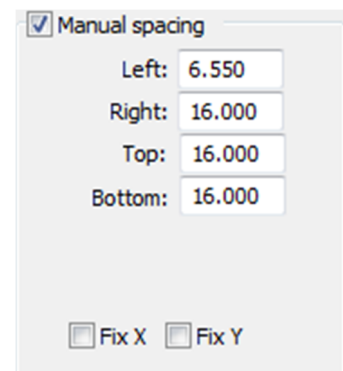
7. Click the Move **Single Object** tool  from the GuidSIGN toolbar.

8. Select the **Spring Creek** highway text placed on the sign panel.

9. On the Move Object dialog:

   a. Check on the **Manual spacing** toggle.

   b. Type **6.55** in the Right field. (All other fields do not matter. This is just to get the right margin (left side of the sign panel) correct before placing the rest of the objects on the sign panel. This is calculated by the 1" border thickness and 6.55 for the left margin)

   c. Place a **Data Point** on the Sign Panel to accept the move of the **Highway Text Object**. The figure below shows what the sign should look like at this point.
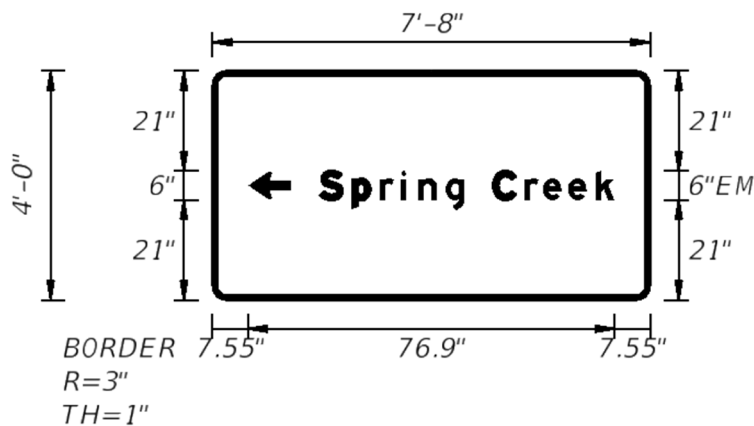


10. Now, since the margins for the largest sign panel objects (the arrow and highway text) are set correctly, the rest of the arrow and text objects can be easily placed and already aligned. Remember, the best method for placing objects on a sign panel with the GuidSIGN program is to start with the largest object first. When placing subsequent objects, again use the same concept. Place next largest object and so on.

➢ *Place Highway text*

In this part of the exercise, the student will place the next largest text object in the sign panel.

1. On the GuidSIGN toolbox, click Place Highway Text  . This prompts you to select a point inside the sign panel.

2. Select inside of the sign panel. This opens Place Highway Text dialog.

3. Set the *Style* to **Name**. This should be set by default.

4. Set the *Hor. Align* to **Left**.

5. Under *Place Name* key-in **Shell Point**.

6. Click **OK**. The text box will be attached to the cursor and Place Object dialog opens.
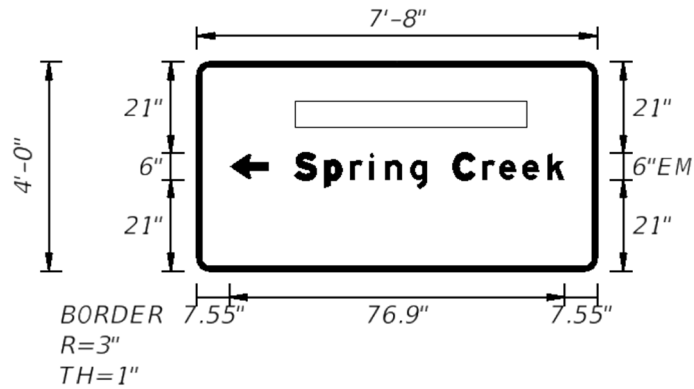


7. Under *Snap* set the option to **To Objects**.

8. Line the **Text Object** box to the **top** left side of the *Spring Creek Highway* Text Object.

9. Place a **Data Point** inside of the sign panel. The figure below shows what the sign should look like at this point.
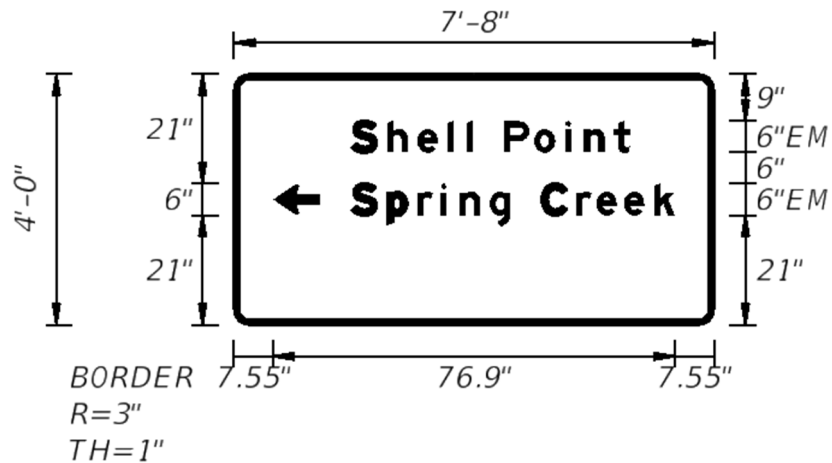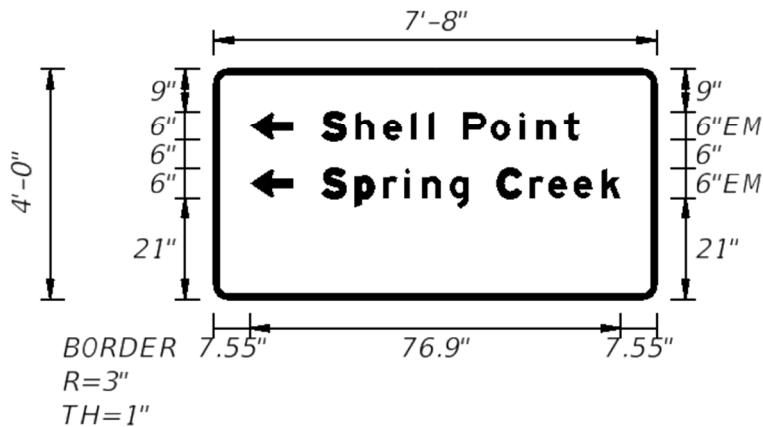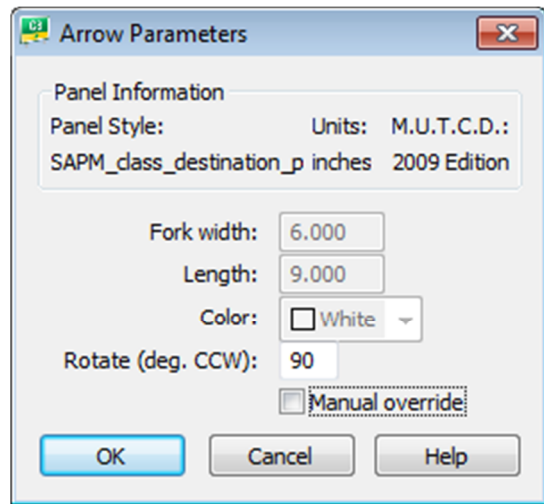
➢ *Place Arrow*

Next, you will place the direction arrow object on the sign panel.

1. Click **Place Arrow** ⬇ and select inside of the sign panel. This opens Select Arrow dialog.
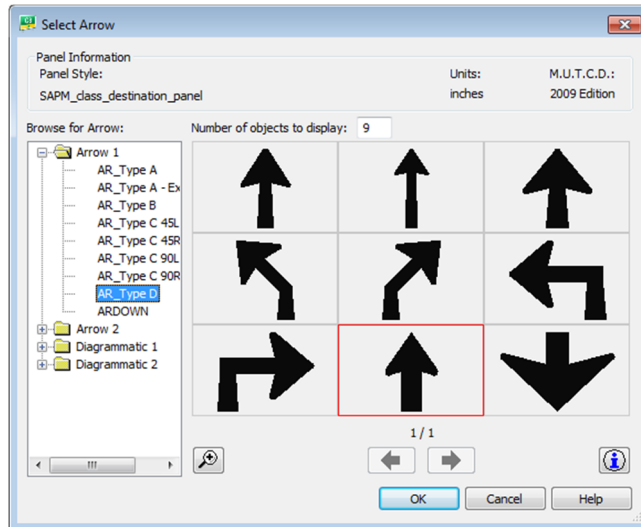


2. Select **Arrow 1 > AR_Type D** and click the **OK** button to set up the *Arrow Parameters*.

3. Set the Rotate (deg.CCW) to **90**.

4. Click the **OK** button.

5. *Place Objects* should be set on **To Objects**.

6. Place the cursor inside of the sign panel in front of the line of the **Shell Point** text object and place a **Data Point**. The figure below shows what the sign should look like at this point.

➢ *Place Highway text*

In this part of the exercise, the student will place the next largest text object in the sign panel.

1. On the GuidSIGN toolbox, click **Place Highway Text** 🅰 . This prompts you to select a point inside the sign panel.

2. Select inside of the sign panel. This opens Place Highway Text dialog.

3. Set the *Style* to **Name**. This should be set by default.

4. Set the *Hor. Align* to **Left**.

5. Under *Place Name* key-in **New Port**.

6. Click **OK**. The text box will be attached to the cursor and Place Object dialog opens.

7. Under *Snap* set the option to **To Objects**.

8. Line the **Text Object** box to the **bottom** left side of the *Spring Creek Highway* Text Object.

9. Place a **Data Point** inside of the sign panel.

➢ *Place Arrow*

Next, you will place the direction arrow object on the sign panel.

1. Click Place Arrow ⬇ .

2. Select inside of the sign panel. This opens Select Arrow dialog.

3. Select **Arrow 1 > AR_Type D** and click the **OK** button to set up the *Arrow Parameters*.

4. Set the Rotate (deg.CCW) to **90**.

5. Click the **OK** button.

6. *Place Objects* should be set on **To Objects**.

7. Place the cursor inside of the sign panel in front of the line of the **New Port** text object and place a **Data Point**. The figure below shows what the sign should look like at this point.
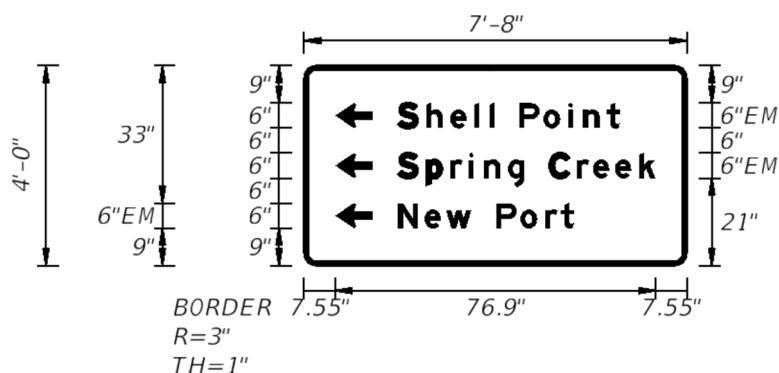
## Exercise 6.5 Creating the GuidSIGN Work Sheet (Part 2)

➤ **Place Sheet Border**

In this part of the exercise the student will place the FDOT standard sheet border using GuidSIGN. There are several standard sheet borders delivered with the GuidSIGN program.

1. On the GuidSIGN tool bar, click **Place Drawing Sheet** . This opens **Place Drawing Sheet** dialog.

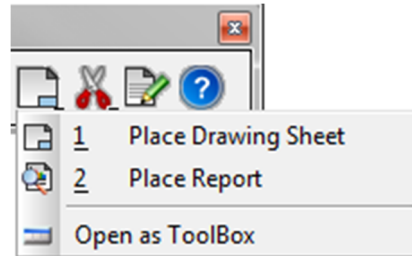2. Select inside of the sign panel. This places the sheet border.
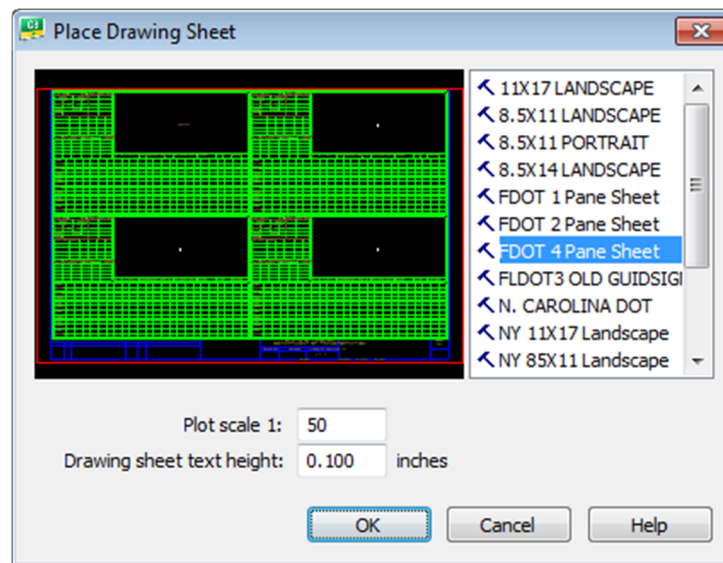


3. On the right side of dialog, select the sheet **FDOT 4 Pane Sheet**.

4. Set the *Plot Scale* to **50**.

5. Set the Drawing sheet text height to **0.10**.

6. Click **OK**.

> *Note*     The sheet will be placed at the Sign Panel Origin which is set in the style. In the class example the sign panel origin is in the center of the sign panel. The FDOT Sheets cells and Report cells are designed to be placed on the center of the sign panel. The user does not have to snap to the center of the panel. Just simply data point anywhere inside the sign panel for proper placement.
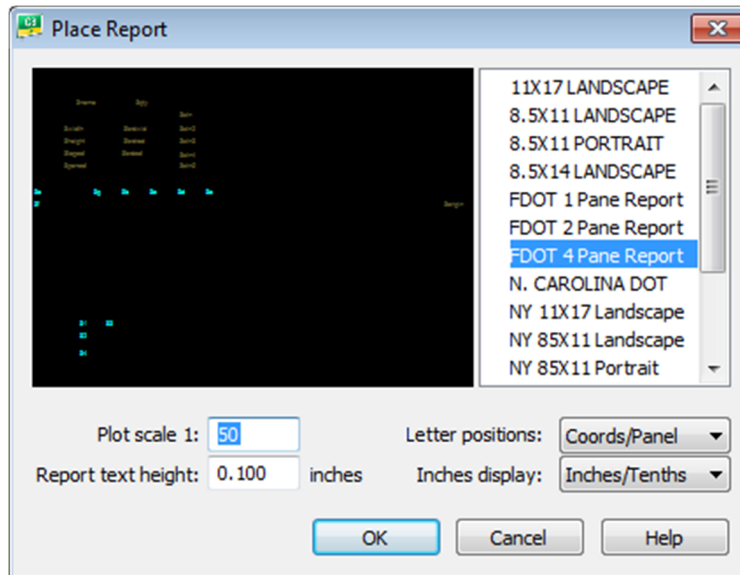
➢ *Place Report*

In this part of the exercise you will place the report associated to the selected border.

1. On the GuidSIGN tool bar, click and hold the down arrow on the **Place Drawing Sheet** icon ▨ and select the **Place Report** selection from the menu**.**



2. The GuidSIGN Toolbar will now have the Place Report icon ▦ displayed. **Data Point** inside of the sign panel.



3. On the right hand side of the dialog, select the report **FDOT 4 Pane Report**.

4. Set the *Plot scale 1* to **50**.

5. Set the Report text height to **0.10**.

6. Set *Letter positions* to **Spaces Between**.

7. Set *Inches display* to **Inches/Tenths**.

8. Click **OK**. This plots the report into the sheet border.

| SIGN NAME | S-02 | | QTY | 1 | SIGN NUMBER | STATION(S) |
|---|---|---|---|---|---|---|
| PANEL | | BORDER | | | ___ | 705+50 |
| WIDTH | 7'-8" | WIDTH | 1" | | ___ | |
| HEIGHT | 4'-0" | RADII | 3" | | ___ | |
| LEGEND | White | COLOR | White | | ___ | |
| COLOR | Green | | | | ___ | |

| SYMBOL(S) | ANGLE | X | Y | WID | HT |
|---|---|---|---|---|---|
| AR_Type D | 90 | 7.5 | 33 | 6 | 9 |
| AR_Type D | 90 | 7.5 | 21 | 6 | 9 |
| AR_Type D | 90 | 7.5 | 9 | 6 | 9 |

| SIGN NUMBER | NUMBER OF POSTS | CLEARANCE Edge Of Lane | COLUMN SIZE | | AVERAGE LENGTH |
|---|---|---|---|---|---|
| ___ | ___ | ___ | ___ | ___ | ___ |
| ___ | ___ | ___ | ___ | ___ | ___ |
| ___ | ___ | ___ | ___ | ___ | ___ |
| ___ | ___ | ___ | ___ | ___ | ___ |

7'-8"

← Shell Point
← Spring Creek
← New Port

9"  6"EM  6"  6"EM  21"

4'-0"  33"  6"EM  9"

BORDER 7.55"  76.9"  7.55"
R=3"
TH=1"

| NO. OF LIGHT FIXTURES | ___ | FIXTURE SPACING | | ___ | PHOTOMETRIC CURVE | | ___ |

| COPY | S | h | e | l | l | | P | o | i | n | t | | L | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SPACE | 22.6 | 29.3 | 35.1 | 40.9 | 44.6 | 45.7 | 51.8 | 57.5 | 63.5 | 67 | 72.8 | | 53.3 | | | | | | |

| COPY | S | p | r | i | n | g | | C | r | e | e | k | | L | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SPACE | 22.6 | 29.3 | 35.1 | 39.6 | 43.2 | 49 | 52.9 | 59 | 65.5 | 69.4 | 74.7 | 80.5 | | 61.9 | | | | | | |

| COPY | N | e | w | | P | o | r | t | | L | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SPACE | 22.6 | 28.9 | 34.1 | 40.2 | 46.2 | 52 | 57.9 | 61.8 | | 42.3 | | | | | | | | |

*Note*    *If you need to make changes to the sign panel all you need to do is place the report again, the old report text is automatically deleted.*

➢ *Additional GuidSIGN Panels to Create for the Classroom Dataset*

1. If time permits, complete the following Sign Panels using the techniques learned in the previous exercises and by utilizing other GuidSIGN tools:
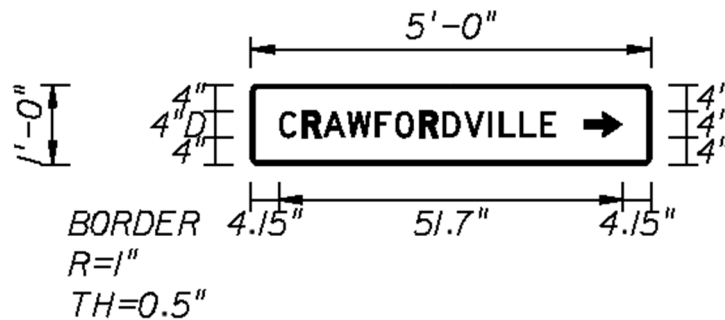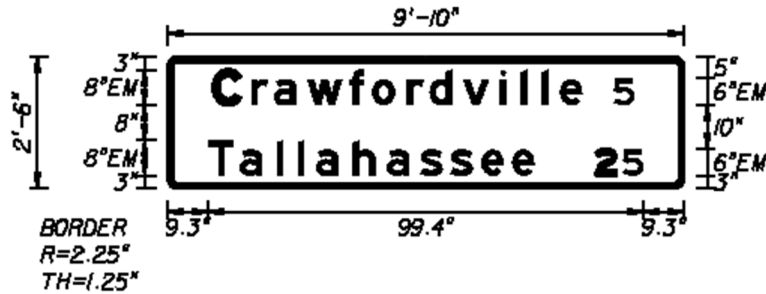


2. *Sign Name*: S-03                                          *Sign Name*: S-06

3. *Chain:* **CLCON**                                        *Chain*: **US98**

4. *Station:* **705+50**                                      *Station*: **36+20**

5. Use the **SAPM_class_destination_panel** *style* to create the new sign panel for S-03 and as a reference to create a new style for the new sign panel S-06.

6. For the S-03 sign panel the border radius should adjust to the above dimensions automatically, however, the first letter in the text objects will need to be adjusted in the advanced dialog when placing the highway text.

7. The border thickness and the font changes for the S-06 sign panel which will need to be configured in a new style.

*Note*      Keep in mind the recommended method of placing objects on sign panels.

## Exercise 6.6  *Place Guide Sign into Design File*

In this exercise the student will create a cell library then create a cell of the guide sign panel and finally place the cell using the Draw Sign program to place the guide sign panel in the signing and pavement marking design file.

➢ **Create a Guide Sign Cell Library**

1. Continuing in *GSWKSP01.dgn* navigate to FDOT Menu > **CellApps** > **FDOT Cell Libraries**. This opens the Cell Library dialog.

2. In the Cell Library, select **File > New**. This opens Create Cell Library dialog.

3. Set the Directory for the new cell library to **C:\e\Projects\22049555201\cell**. This location is critical for the Draw Sign program to work properly.

4. Key-in the name of the new *cell library* **GSWKSP.cel**. This library name is also critical for the Draw Sign program to work properly.
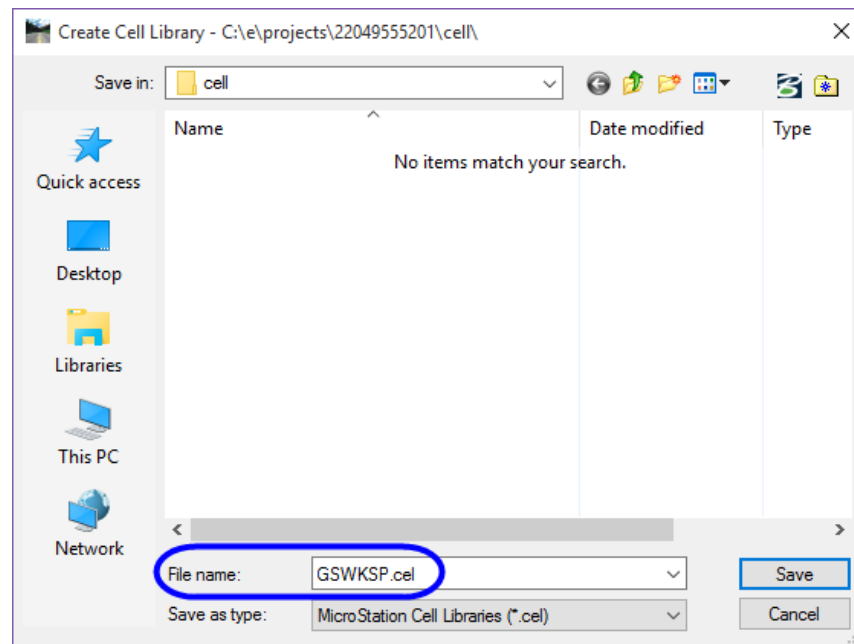


5. Click **Save**. This creates the new cell library and makes it the active cell library.
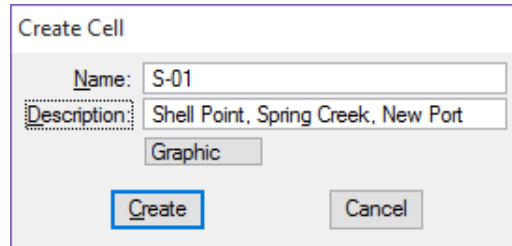
➢ **Create Guide Sign Cell**

In this part of the exercise you will create a new cell of the Guide Sign panel. The name of the cell is very important; it must match the name of the sign assembly in the Draw Sign program, which at this point you have not yet created. The Draw Sign program is looking for the name S-01 thru S-120.

1. Continuing in *GSWKSP01.dgn* zoom in around the first Guide Sign panel created.

2. If you closed the cell library, open the **gswksp.cel** library. It is critical to have the correct cell library open before creating a new cell.

3. On the GuidSIGN menu, click **Program Settings** icon ![icon].

4. In *Program Settings > Display Options* set the *Display Mode* to **Black and White**. This turns fill off and color off which makes the cell much more legible when placed in the design file.

5. Click **OK**.

6. Using either the *Fence* command or *PowerSelector*, select the **sign panel elements**. Do Not include the dimensions.

7. Set the *Cell Origin* by selecting the MicroStation **Define Cell Origin** tool from the FDOT Plans Development > Drawing task menu.

   *Note*    Set the origin on the bottom of the panel at the midpoint of the sign. The origin is critical for sign placement with *Draw Sign*.
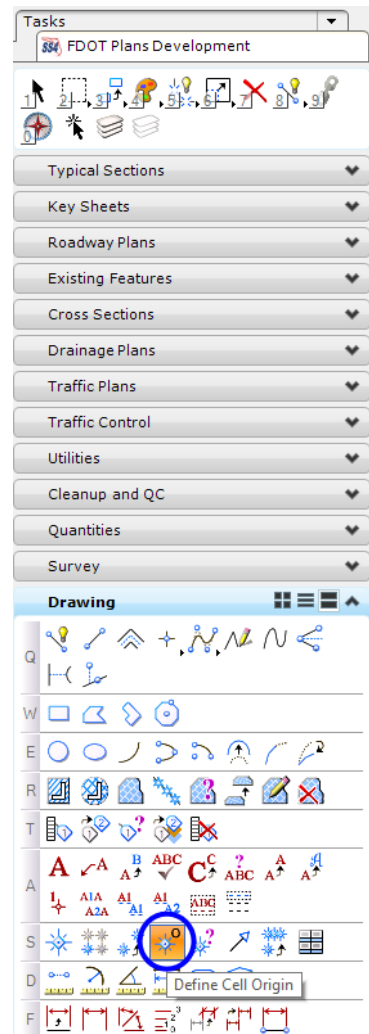
8.  In the Cell Library dialog, select **Create**.

9.  For the *Name* key-in **S-01**. This will also be the name of the sign assembly.

10. The *Description* is optional. It can be useful if there are several signs on the project.



11. Click **Create**. This adds the new cell to the cell library.
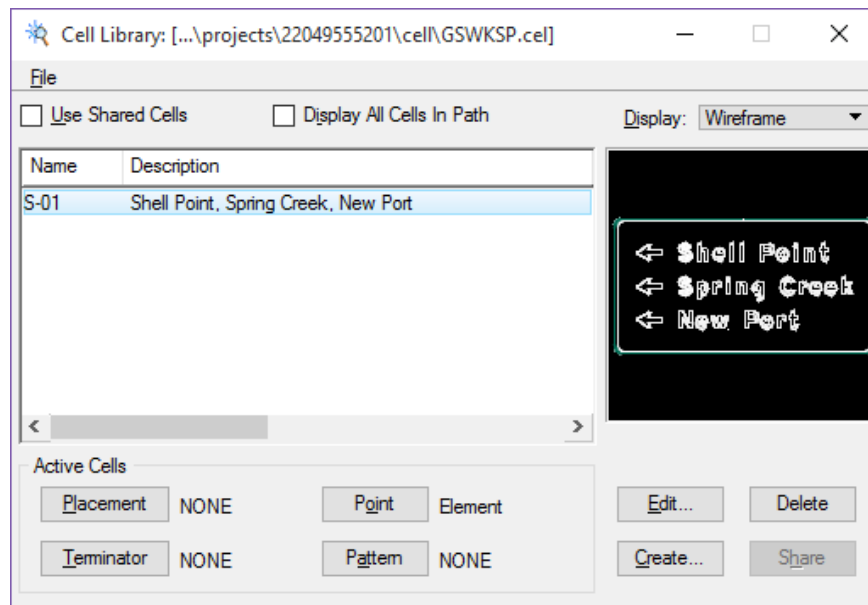


➢  ***Create New Sign Assembly for Guide Sign***

1.  Open *Dsgnsp01.dgn* file. Rotate the view if necessary.

2.  From FDOT Menu select **Traffic Plans > Signing and Pavement Markings**, load the Draw Sign program.

3.  In Draw Sign, toggle **On** *Assembly*.

4.  Open the Panel Properties tab.

5.  Set the *Class* to SPECIALS SIGNS S-01 Thru S-20.

6.  Set the *Name* to **S-01**.

7.  Click **Create New Assembly**.

8. Check the **Size** dropdown menu to see if the **92"x48" (7' 8" x 4') size** is there. If so, select it. If the size is not in the list, click on the size drop down list and click the **ESC** key on the keyboard. This will allow for the addition of a custom size to be entered. This is for all signs. The most common accepted format for a custom size is as follows. Example: 30"x30", 6.25, where 30"x30" is the *sign size* and 6.25 is the *square footage* for wind load calculations. In the exercise example, type **92"x48", 30.67**.
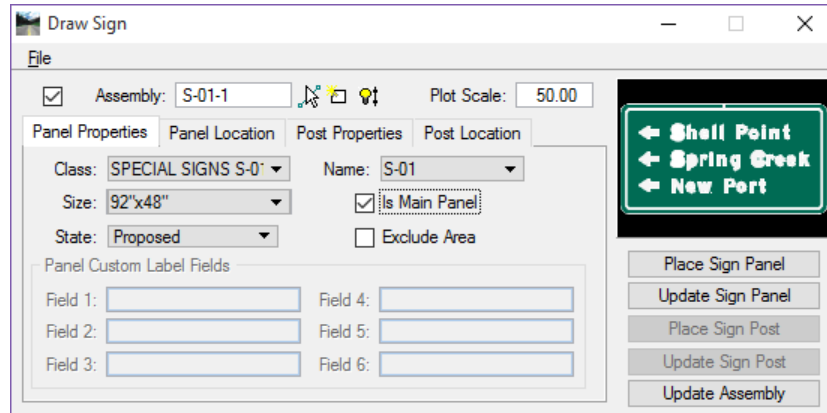


9. Click the **Enter** key or the **Tab** key on the keyboard to set the new custom size.

10. Click on the **Size** dropdown menu, scroll to the bottom of the list and select the *new custom size*. (This is only if the new size did not become set as the active size in the drop down.)

11. On the Draw Sign dialog, set the *Plot Scale* to **5.43**.

> *Note*    The conversion factor for GuidSIGN is located on page 6-32. The table indicates the dialog plot scale should be set to 5.43 for 50 scale design. This controls the size of the sign panel. The scale can be adjusted for a better esthetic look.
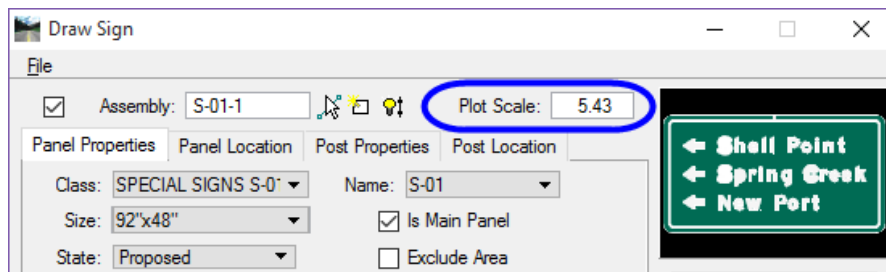


12. Toggle **On** Is Main Panel.

13. Set the *State* to **Proposed**.

➢ **Panel Location**

1. Open the **Panel Location** tab.

2. Set the *Location* to **By Origin**.

3. Set the *Rotation* to **Absolute**.

4. Set the *Angle* to **90.**

5. Under *Label*, select **Preferences**.

6. In the Sign Panel Label Preferences dialog, toggle **Off** both *Name* and *Size*.

7. Click **OK**.

8. Zoom into the area around **Station 705+50** on the left side of the **SR61 (CLCON)** roadway.

9. Place the **Sign Panel** a general location on the right side of the roadway.

10. **Data Point** to place the sign.

➢ **Post Properties**

1. Open the Post Properties tab.

2. Set the *Plot Scale* in this tab to **50.00**. (If the Active Scale has changed set it to 50, as well.)

3. Set the *Installation Method* to **Ground Mount**.

4. Set the *Mounting* to **Single or Multi-Post**.

5. Set the *State* to **Proposed**.

6. Set the *Sign Type* to **Furnish & Install**.

7. For the *Pay Item* click the **Auto Select** button.

8. At the *Prompt,* click OK to accept the **2_Post** option.

9. Ensure the *Pay Item* specifies ProposedSign2 | Proposed Sign (Multi-Post).
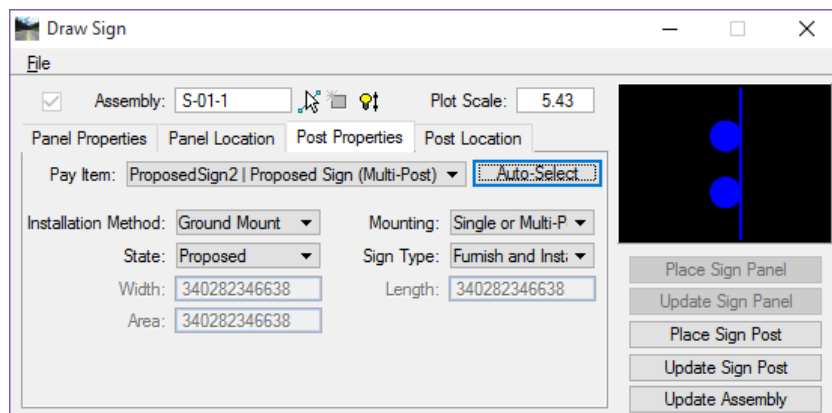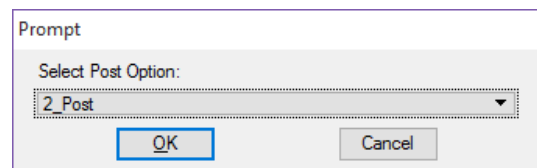
➢ **Post Location**

1. Go to the **Post Location** tab and set the *Location* to **Along Element**

2. Set the *Element* to **Chain**.

3. Set the *Chain* to **CLCON**.

4. Toggle on the *Station* and enter **705+50**.

5. Toggle on the *Offset* and enter **-50.00**.

6. Set the *Rotation* to **Relative**. This will place the sign post at a relative angle from the element or chain selected.

7. Set the *Angle* to **0**.

8. Change the *Plot Scale* to **50.00**.

9. Click the **Place Sign Post** button to place the post and place the **Post Label** and **leader line** accordingly.

➢ **Set Special Sign Panel Label Preferences and Place Label**

1. Under the **Panel Location** tab, click the **Preferences** button. This opens the Sign Panel Label Preferences dialog.

2. Set the *Mode* to Place Label as Cell.
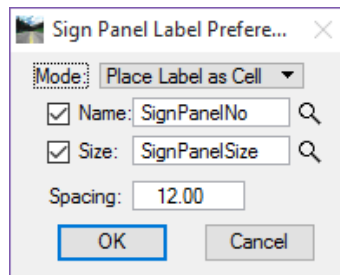


3. Toggle on **Name** and **Size**.

4. Click **OK** on the Sign Panel Label Preferences dialog.

5. Click on the **Place Panel Label** button.

6. Select the **S-01 Sign Panel** by double clicking the panel.

7. Place the panel label accordingly.

> *Note*    You can use the GuidSIGN program to change the attributes of the Sign Panels created with GuidSIGN to show as full color, black and white or outlined by accessing the Display Options from the Program Setting on the GuidSIGN tool bar.

8. Using the Guide Sign Worksheet as a guide, repeat Exercise 6.6 for the **S-03** and the **S-06** *sign panels*. (If time permits and if time permitted for the creation of the cells in Exercise 6.5.)