



Draw Sign

FLUG

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5 Signage Tools

OBJECTIVE

In this chapter, the following topics will be covered:

- FDOT Draw Sign program
- GuidSign
- Placing Notes and Text
- Sheet Clipping with GEOPAK

INTRODUCTION

This section covers the sign applications available in the Traffic Plans SiteMenu. A new Signing Web Page is 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, you may have an inventory of existing signs for your project. You have 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 Section One.

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

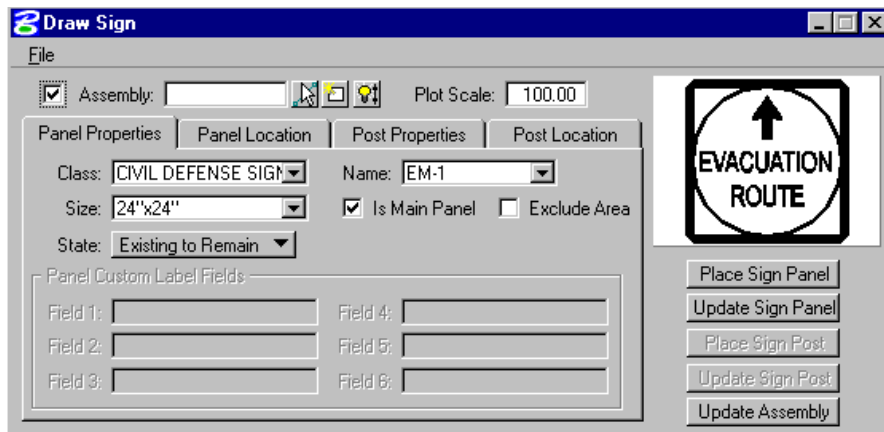
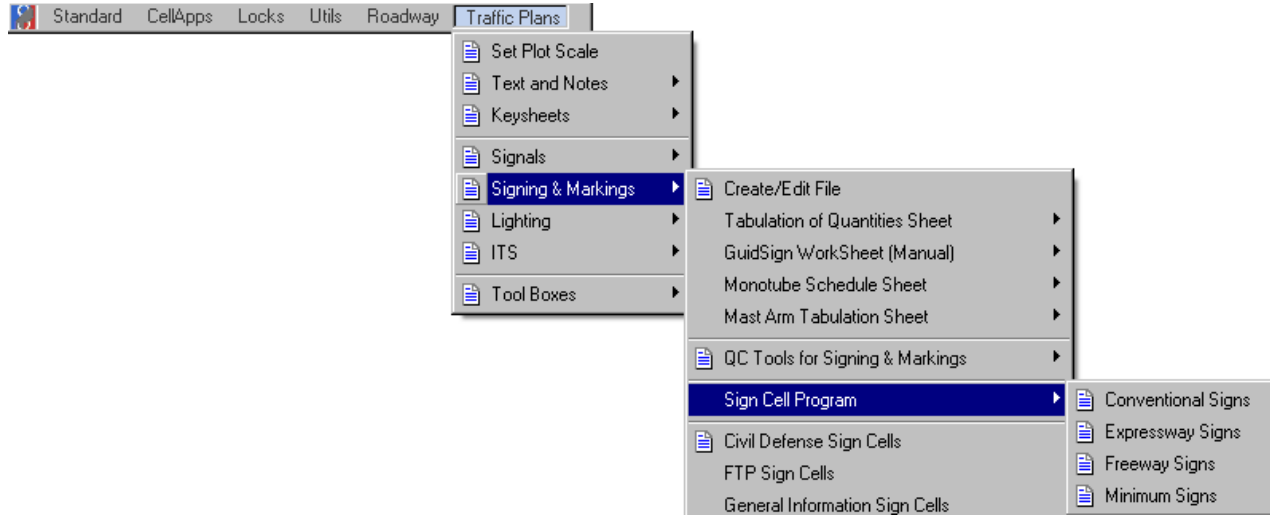
GuidSign, a sign design program available from Transoft Solutions, is included in this section and briefly explained.

When labeling, GEOPAK Plan View Labeler allows us to place many styles of customized labels, from simple annotation to the pay items box label. We will use the Plan View Labeler to label the locations of the proposed signs that we place in the design.

QC tools for signing are also included to make sure that Signing & Pavement Marking Plans are in accordance with FDOT standards.

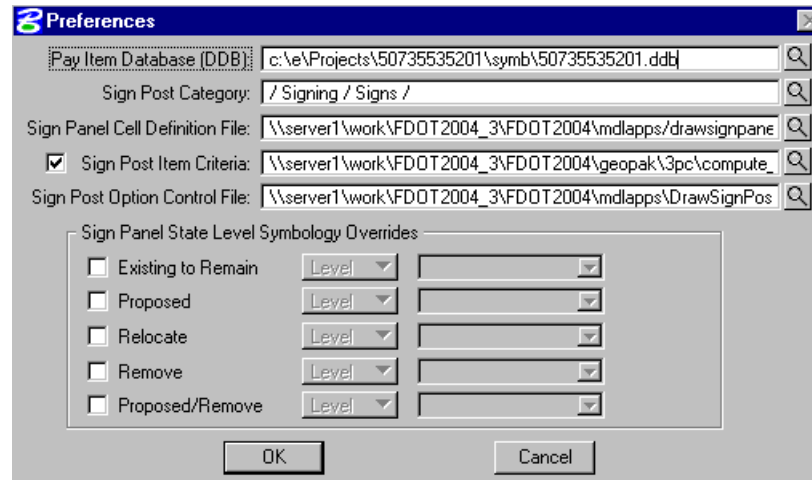
DRAW SIGN PROGRAM

Available from SiteMenu, the **Draw Sign** program is designed to assist in the placement of standard sign panels and post location in the signing and marking plans. This tool was written by Bentley Systems, Inc and uses Geopak adhoc attributes to assist the user 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 DRAWSIGN FILE MENU CONTAINS TWO ITEMS:

1. **Preferences** - These preferences are set based on variables defined when the FDOT2004 software is installed.



Pay Item Database (DDB): Path to the FDOT2006.ddb. The path will be different for most users between districts depending on the type of installation performed for the FDOT 2004 software. If a project specific database is available, it should be selected.

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 signpost 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. The definition file is broke out into four separate files. These files include Conventional, Expressway, Freeway and Minimum. This is to assist the user in narrowing down the sizes of the Sign Panels depending on the type of road.

Sign Post Item Criteria: This should always be toggled on. Otherwise, the 'Auto-Select' function will not operate and the user is required 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.

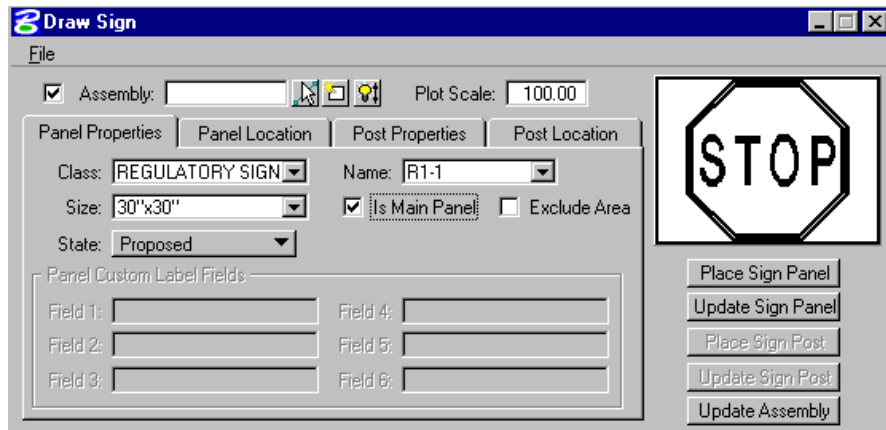
Sign Post Option Control File: Shows the path to the support file that controls the selections on the Post Properties Tab for Installation Method, Mounting, State and Sign Type.


Sign Panel State Level Symbology Overrides: The user can set symbology overrides for the individual States of the Sign Cell. The user has the option 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.

2. **Exit** – Closes the **Draw Sign** tool.


ASSEMBLY

This is where it all begins. This must be checked on to be able to create a new sign **Assembly**. The field to the right of **Assembly** is for the **Assembly** name. The name will default to the name of the sign panel selected in the Panel Properties tab.



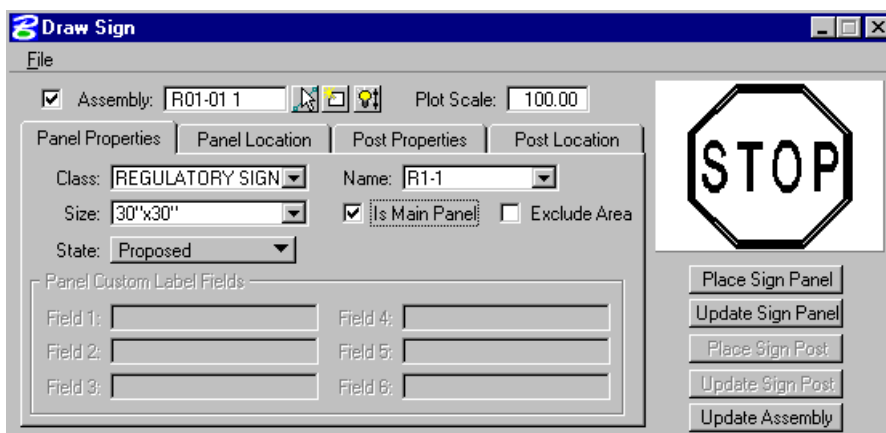
 **Identify Existing Sign Assembly** – Used to select an existing sign assembly. To use click on the icon and select an existing sign assembly in the design file. This will display the **Named Group** name in the Assembly field and highlight the grouped elements in the design file allowing the user to modify or update the selected Assembly.

 **Create New Sign Assembly** – Once the **Panel Properties** have been filled in click this icon to apply a name to the group.

 **Create Assembly by Selection Set** - This gives the user 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 user 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 user can then use the Update Assembly function to update the new Assembly with the correct location information such as the Station.

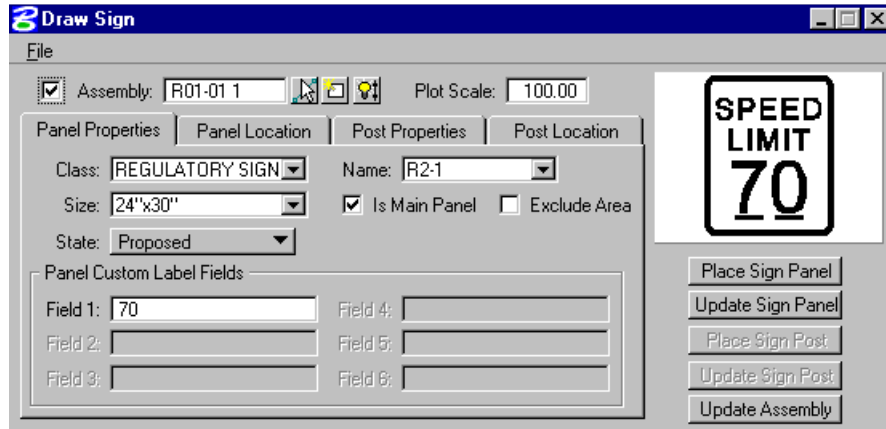
Plot Scale – controls the size of the sign assembly graphics and the text labels placed with the **Draw Sign** program.

PANEL PROPERTIES TAB



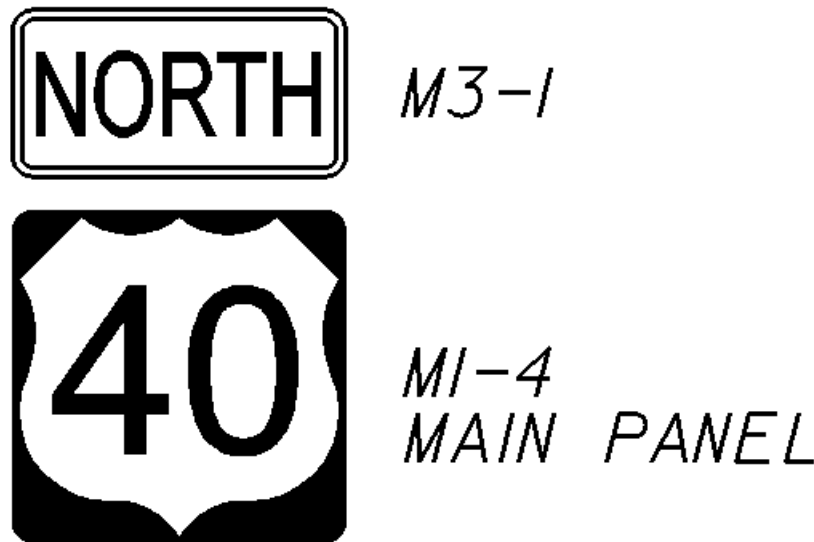
Class – This option allows the user to select the class of sign panel to place, i.e. Regulatory, Warning and so on.

Name – The Name menu shows all of the available signs based on the selected Class. The names appear as they would 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.

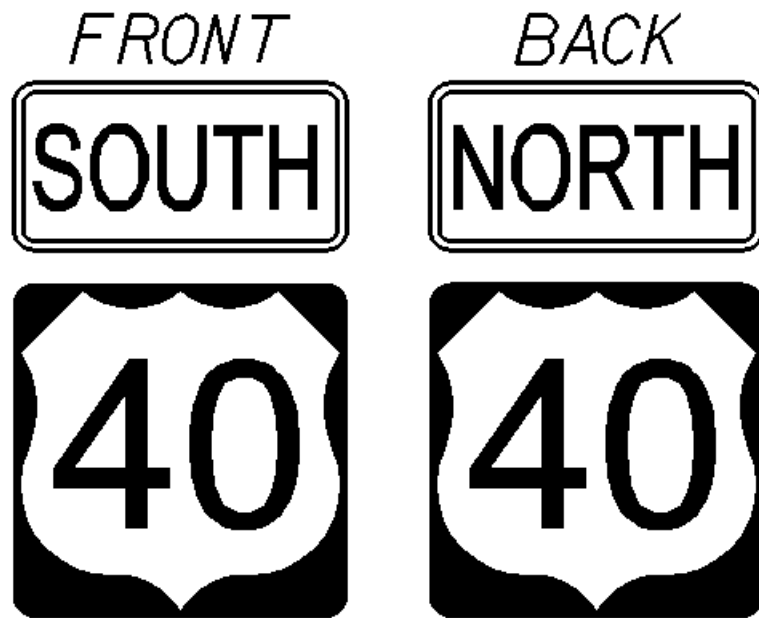


Size – This menu allows the user to select the size of sign panel to place. Selecting the size also controls the size label and the sign panel square footage used for calculating wind area and width. It is the designer’s responsibility to know what size sign to use, do not assume this tool sets this for you.

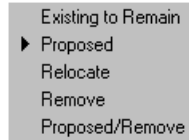
Is Main Panel – This must be checked on for all panels that are the defining width of the sign assembly. There will be some sign configurations that have more than one sign panel but only one of those panels is considered the Main Panel. The figure below shows this scenario; M1-4 is the **Main Panel**. 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 you would Exclude both signs on the back. In other words, do not include the signs on the back in the area for wind calculations.

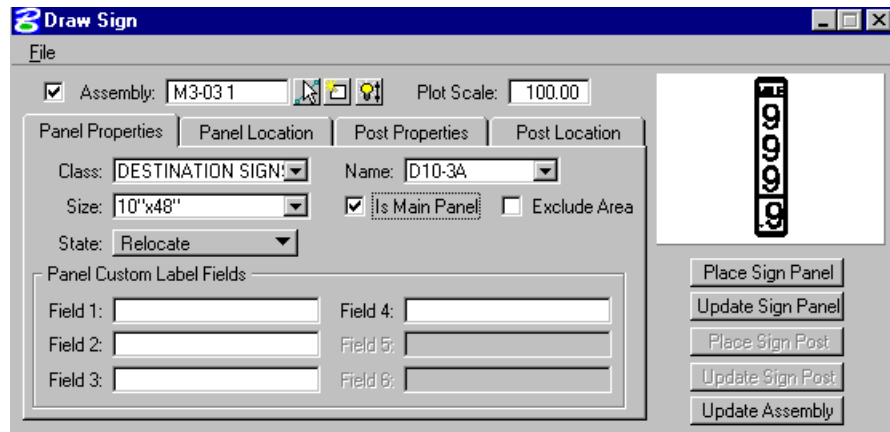


State – This option sets the sign panel to the selected state. There are five options to choose from as seen in the figure below.

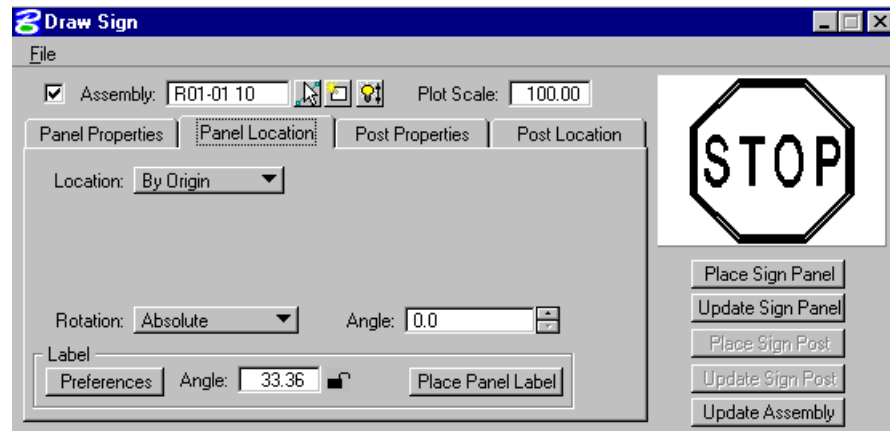


Panel Custom Label Fields – This is where the user fills in any open fields on a sign panel. Example, the Speed Limit sign has one field that needs to be filled in. When the Speed Limit sign is selected Field 1 becomes active for the user to enter the speed into. This will change the preview display 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. This is where the user enters the text to be placed on the sign. Example, a speed limit sign, **R2-1**, requires the user to enter the speed this is done in **Field 1** in this tab.

The figure below shows a sign with four fields available in it.

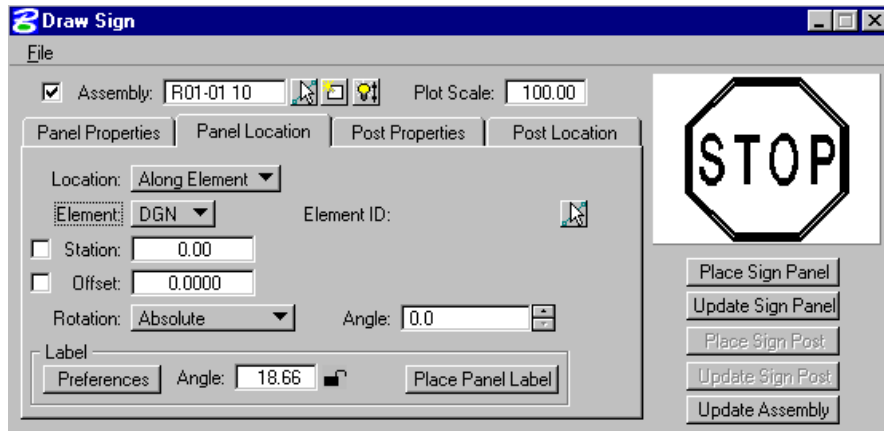


PANEL LOCATION



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:

1. **By Origin** – Places the Sign Panel by the origin of the cell.
2. **Along Element** – This expands the Panel Location tab as seen **below**.



Element – There are two options to choose from, 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. The user may key in a specific station and offset by checking on either of the options.

Rotation – This controls the rotation of the sign panel. There are three options to choose from:

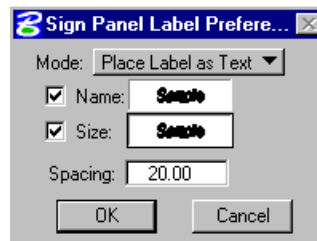
Dynamic 2 Point – This allows for a 2 data point placement. The first data point is to place the Sign Cell by the Sign Cell origin. The user can then rotate the Sign Cell around until the desired angle is met. The second data point is to place the Sign Cell at that set location and angle.

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.

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

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

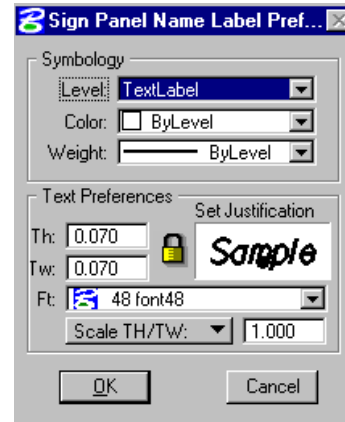
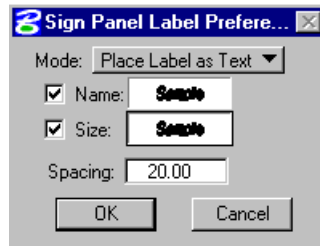
Preferences – This opens the **Sign Panel Label Preferences** dialog.



Mode – There are two options for the Mode:

1. **Place Label as Text** – With this option, the label will be placed as MicroStation text. The user will have to 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. The Spacing refers to the space between the origins of the two text labels if both are placed.

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

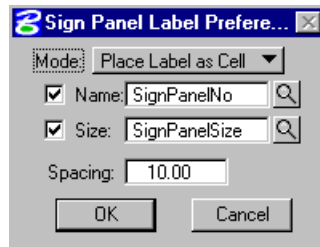


The figure below shows what the text label looks like, Name and Size are shown

both the

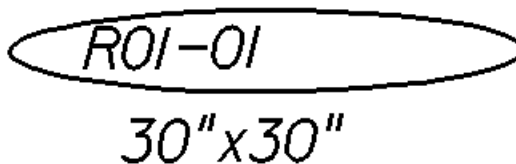
ROI-01
30" x 30"

2. **Place Label as Cell** – This option requires the user to select a cell for the Name and Size label. This is the option to use if you want an oval around the Sign Number. The magnifying glass icons next to the name and Size allow the user to browse to the cell library and select the appropriate cell. The Spacing is for setting the space between the two cells if both are checked on.



The figure below shows the Name and Size placed as a cell.

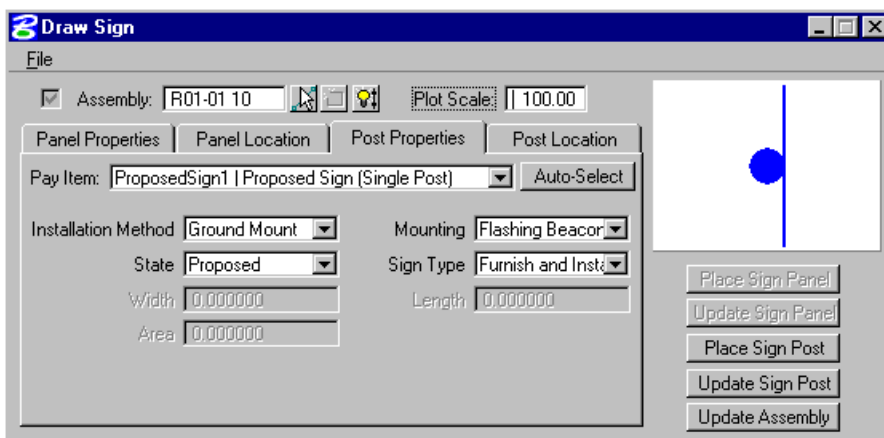
Note Currently, this option always left justifies the text. This will be changed in an upcoming version. In addition, once the preferences are set for labels they do not have to be edited again unless the resource file is deleted.



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

Place Panel Label – This is used to place a label on a panel that was previously placed or on a panel that was replaced. Clicking on this option prompts the user to pick a sign panel.

POST PROPERTIES



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. The user can select from the drop down list to select a specific support. This list is generated from the options available under the DDB category defined in the Preferences.

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 three options to choose from which are based on a CSV file defined in the Preferences.

1. Ground Mount.
2. Overhead.
3. Panel Only.

Mounting – the mounting options available are based on the Installation Method the user selects, according to valid FDOT pay items and standards.

State – this option defines the condition of the support. There are 5 options to choose from:

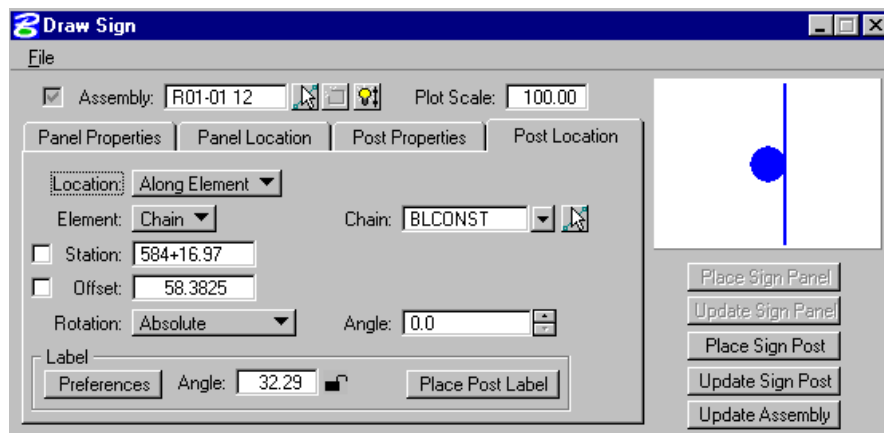
1. Existing to Remain.
2. Proposed.
3. Relocate.
4. Remove.
5. Proposed/Remove.

Sign Type – Based on the selected Installation Method, the user is given a list of valid options from a drop down menu for mounting the sign panels according to 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

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 to choose from for the placement of the post.



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

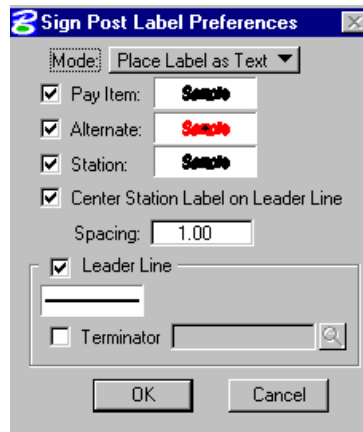
1. By Origin – Places the post dynamically by the origin of the cell.
2. Along Element – This option locates the post based on a referenced element. There are two options.
 - DGN – This is a MicroStation element like an edge of pavement or edge line. The Station field with this option refers to the length 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:

1. **Dynamic 2 Point** – The first data point is to place the Post cell by the cell origin. The user can 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.
2. **Absolute** – The post is placed horizontally plus the specified angle keyed into the Angle field.
3. **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**.

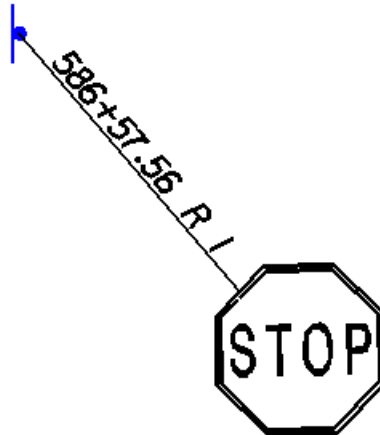
Pay Item – This is the Pay Item number text displayed with the sign panel.

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 opens the **Sign Post Label Preference** dialog where the user 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



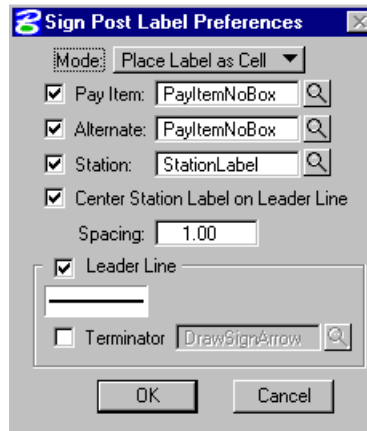
Spacing – If more than one option is toggled on, this is the distance between the lines of text in the multi-line label. Example, **Pay Item Number** and **Station**.

Leader Line – If toggled on this will draw a leader line from the origin of the sign post to a point selected by the user. Double click inside the symbology field to open Leader Line Symbology dialog that is used to set the level symbology of the leader line.

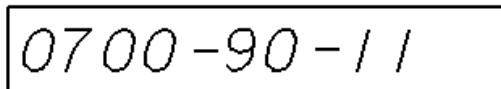
Terminator – If toggled on this will draw an arrow head at the end of the leader line at the sign post.

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.

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



The figure below shows the Pay Item placed as a cell. This places a box around the pay item number. Currently this option always left justifies the text. This will be changed in an upcoming version.



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.

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 the user to pick a sign post.

Draw Sign Buttons – These are the buttons along the right side of the draw sign dialog just below the sign preview window.



Place Sign Panel – This is accessible when the user is in the Panel Properties or Panel Location tab. Pressing this button will place the Sign Panel.

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

Update Sign Panel – This is accessible when the user is in the Panel Properties or Panel Location tab. 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 pane with the new size. There is no need to delete and place a new sign panel.



Place Sign Post – This is accessible when the user is in the Post Properties or Post Location tab. This places the sign Post symbol.

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

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

