

FDOT Civil 3D Labeling

Examining concepts of labels and label styles,



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TRANSPORTATION

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FDOT Civil 3D Labeling

This class will focus on labels styles and concepts such as the creation of label styles, how to use the Label Style Composer and its various settings, override individual labels with other label styles, create new label sets, create and use expressions, style control and display properties of Label Styles that are included with the FDOT State kit and manipulation of the Label location settings.

Prerequisites:

- The most current/latest version of the FDOT Civil 3D State kit should be installed. This will ensure you that you have the label styles demonstrated in this session.

Session Objectives:

- **Styles In General** – Learn how aspects of the software is controlled through the Prospector and Setting tab on the Toolspace palette.
- **Object Styles** – Briefly explore the collection of Object Styles on the Setting Tab.
- **Label Styles** – Discuss and learn about the many factors that go into the creation of labels.
 - Label Style Composer and its various settings that the control look and display.
 - Creation of label styles.
 - Create and use expressions.
- **Label Sets** – Combined individual Label styles that can combined together.
- **Label Location** – Applying labels and location manipulation.

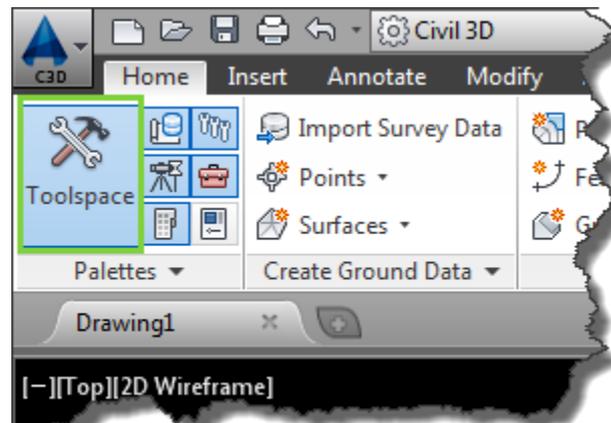
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Styles In General

Every aspect of Civil 3D is now controlled through Tool Space, a collection of data, settings and styles are stored IN the drawing. Civil 3D does not store data in external databases as other Autodesk software has done previously.

First off lets take a look at Tool Space a briefly explore its functionality.

1. To launch Tool Space, select the Home Tab.
2. Under the Palettes panel the first and largest icon you see is the Toolspace icon.

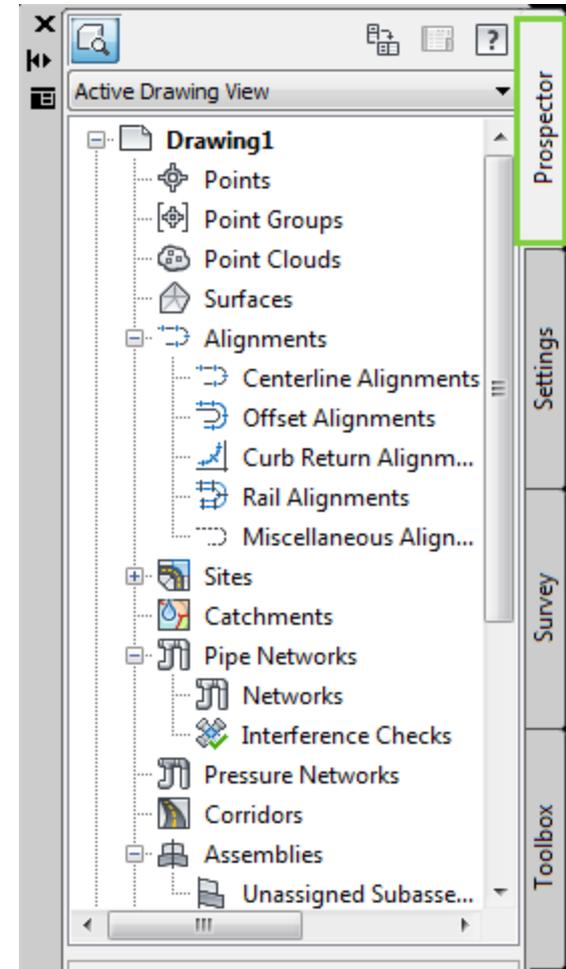


Styles In General

Toolspace: Prospector tab

The Prospector tab is a collection of data objects that are present in the active drawing (DWG) file. The collections are organized in a tree structure with overall collection categories and object data within those collection. The primary collections displayed include points, point groups, surfaces, sites, pipe network, corridors, assemblies and subassemblies.

To access any of the data within the Toolspace, simply expand each collection item to expose the object data.

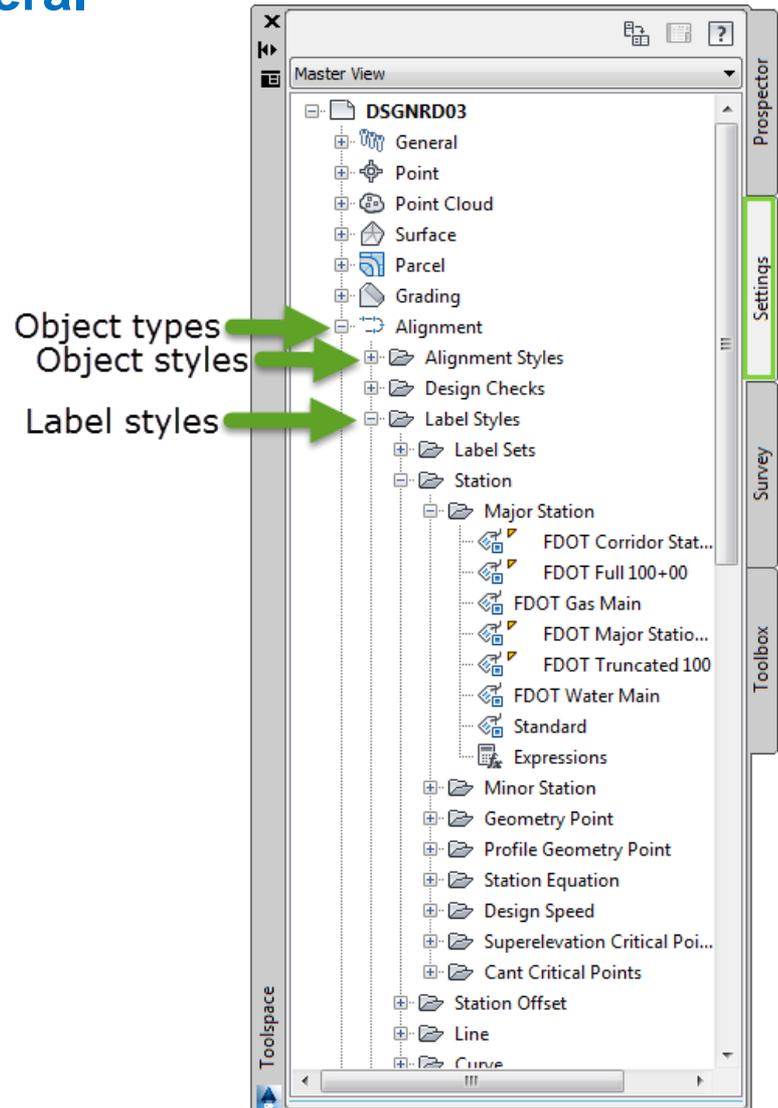


Styles In General

Toolspace: Settings Tab

The Settings tab is a collection of styles that Civil 3D utilizes to control objects, labels, tables, commands and other settings. On this tab, styles are organized for different object types. You can modify these object types and then save as a template for future use or for developing your standards.

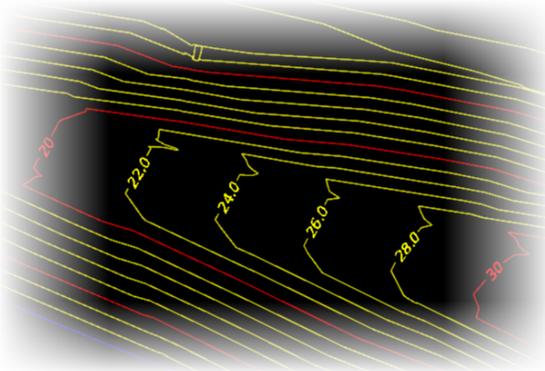
To access any of the styles or commands within the settings tab, simply expand each collection item to expose .



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Object Styles

What is a style? It basically defines how Civil 3D objects look.



It also simplifies the process of knowing where to go to change objects or labels.

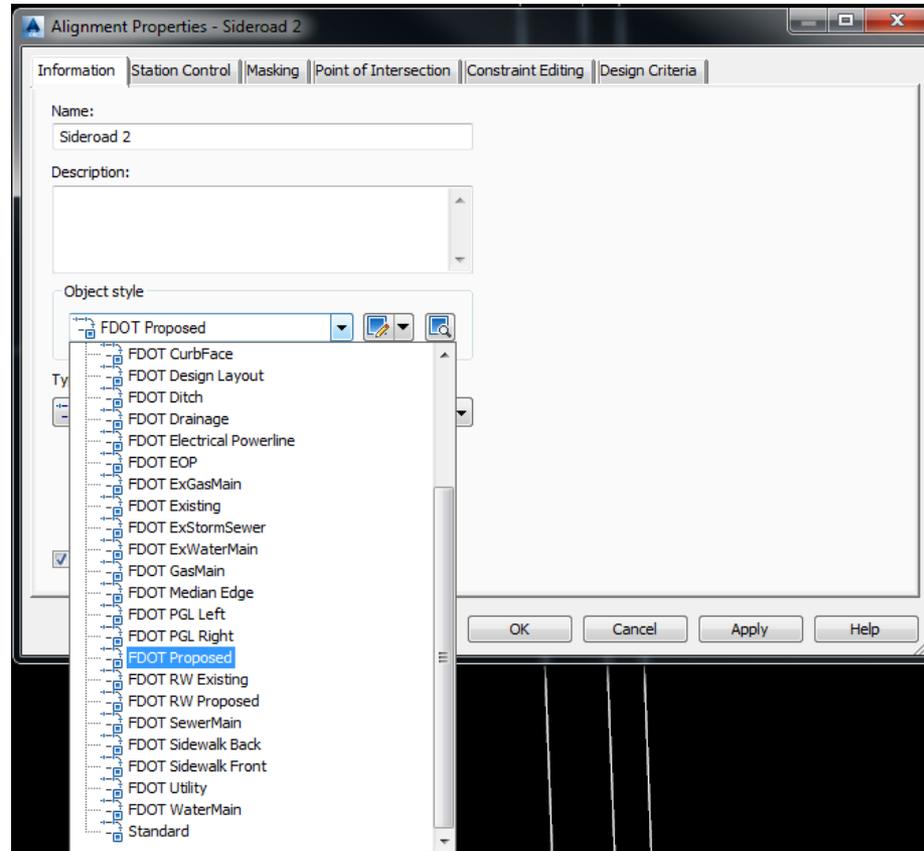
The following table summarizes the navigation path shown in the screenshots:

Screenshot	Menu Item
1	Surface Properties...
2	Alignment Properties...
3	Corridor Properties...
4	Subassembly Properties...
5	Match Line Properties...

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Object Styles

Every Civil 3D object property has style field with a style assigned.



Because the style is now a property rather than a series of procedures, users can simply assign predefined style to their objects to meet FDOT requirements instead of following pages of procedures and workbooks.

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Label Styles

Label Styles – Discuss and learn about the many factors that go into the creation of labels.

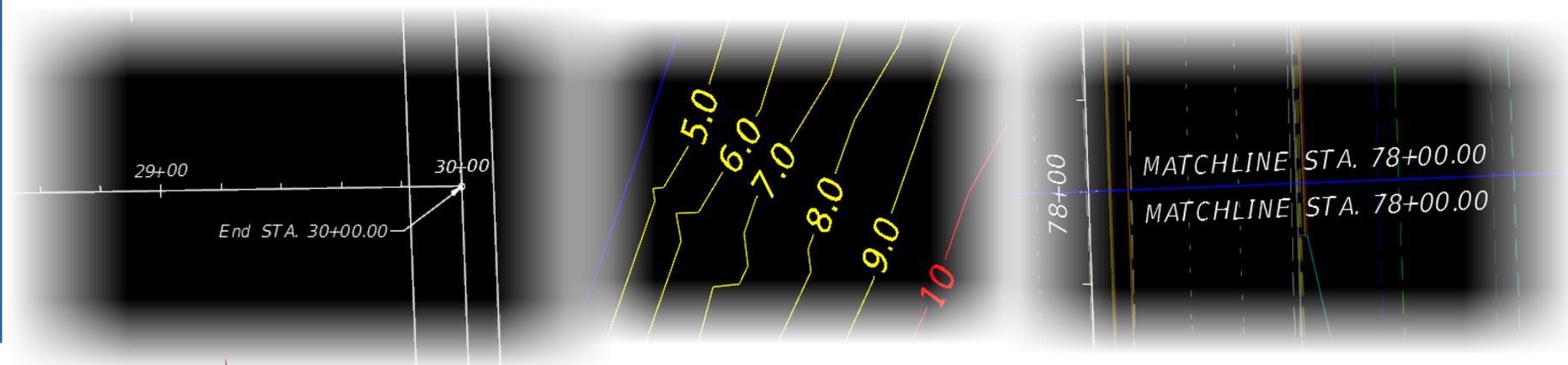
Before you begin creating a style, ask your self...

What is it that I want to label?

How do I want the label to look like or display?

Do I want the label to be plan or model space readable?

Label styles control the annotation of object data within a drawing.
All label styles are created using the Label Style Composer.



Label Styles

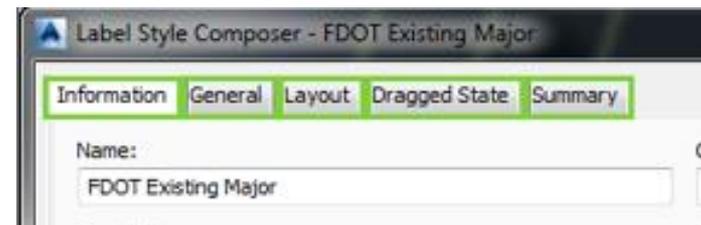
- **Label Styles** - Label Style Composer and its various settings.

The Label Style Composer is a collection of tabs that control label creation and display characteristics. It is consistent throughout the entire program making the interface easy to navigate and simplifies the creation process.

You can edit the label setting at the drawing level, the object level and the label style level.

The Label Style Composer is comprised of five Tabs:

- Information-
- General-
- Layout-
- Dragged States-
- Summary-



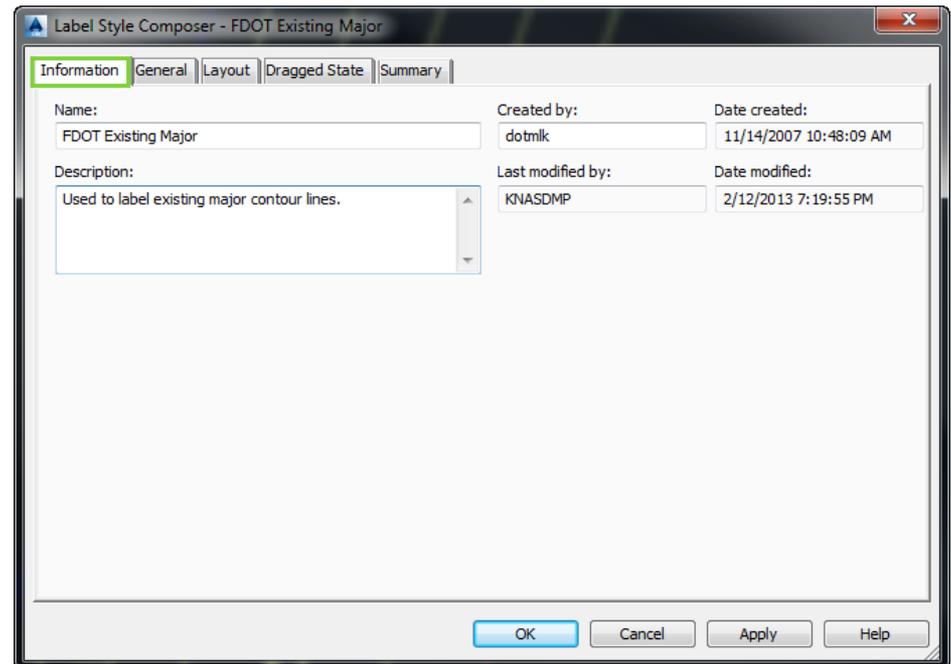
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Label Styles

- **Label Styles** - Label Style Composer and its various settings.

Information: This tab controls the name of the style, a brief description, and information regarding who created or modified the style.

The style has to have a name. The “Created by” and “Date created” fields are automatically filled in. Description does not have to be filled out, but since it’s there... why not use it?



Label Styles

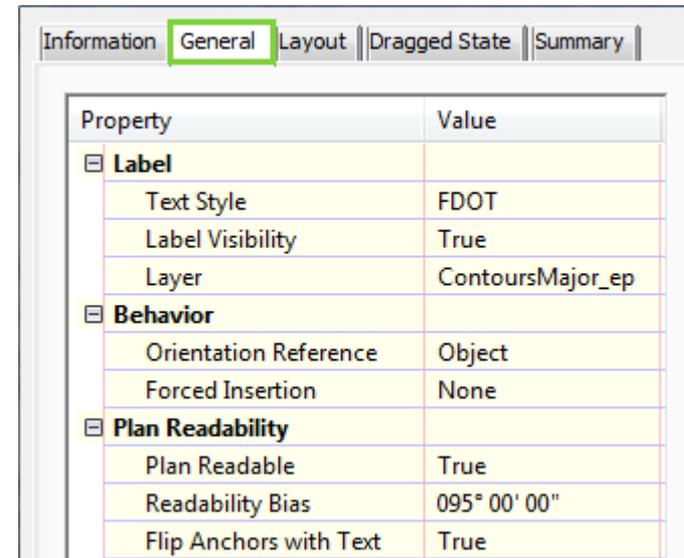
- **Label Styles** - Label Style Composer and its various settings.

General: Use this tab to specify the Text style, layer visibility and orientation. FDOT text styles have been applied to all FDOT label styles. These fonts are annotative. The text size change based on the drawing scale assigned.

Label: Text style assigned, whether or not the label is visible in the drawing and the layer assigned.

Behavior: Specifies the orientation reference of the label.

Plan Readability: Specifies the text rotation to insure all text components in labels can be read easily in plan view.



The screenshot shows the 'General' tab of the Label Style Composer. The 'General' tab is selected and highlighted with a green border. The table below lists the properties and their values:

Property	Value
Label	
Text Style	FDOT
Label Visibility	True
Layer	ContoursMajor_ep
Behavior	
Orientation Reference	Object
Forced Insertion	None
Plan Readability	
Plan Readable	True
Readability Bias	095° 00' 00"
Flip Anchors with Text	True

Label Styles

- **Label Styles** - Label Style Composer and its various settings.

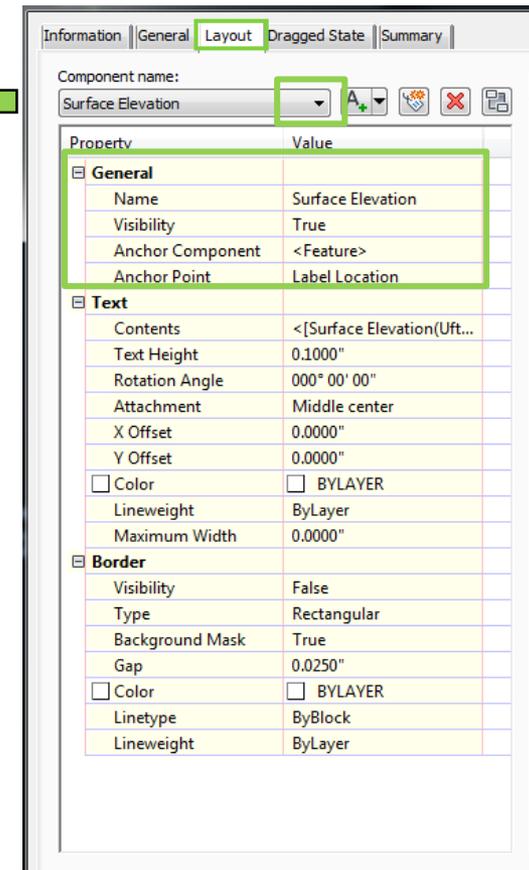
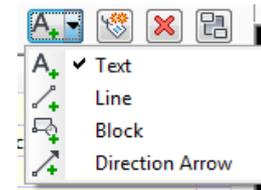
Layout: The layout Component properties define the appearance, location, and orientation of that particular component.

Component Name: You can use an arrangements of components to create an appropriate label.

Delete a component by selecting the “X”. All the properties configured are applied to each component separately.

The Anchor Component: Allows the user to attach a component to a feature (Object) or another component.

The Anchor Point: Defines the justification of the label that its applied to.



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Label Styles

- **Label Styles** - Label Style Composer and its various settings.

Layout: Continued-Text: This section is where you control the size, rotation, placement and the display of text

Contents:(See Next Page).

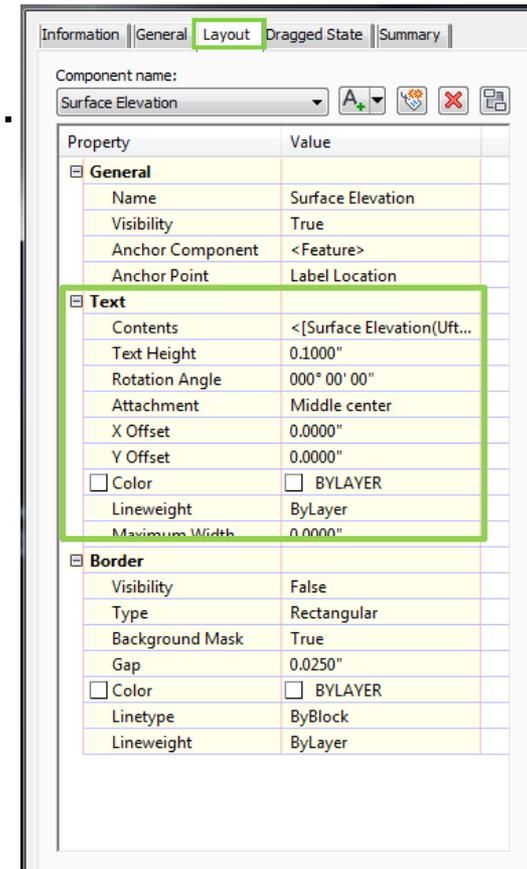
Text Height: Represents the text size in plotted inches.

Rotation Angle: Angle is based upon the Anchor Component, Anchor Point, and Text Attachment.

Attachment: Defines the justification of the label that its applied to.

X,Y Offsets: Modify the offset distances by applying a +/- value in inches.

Misc. Object Properties: By Layer allows the Layer Manger to control color and Line weight based on the layer specified on the General tab.



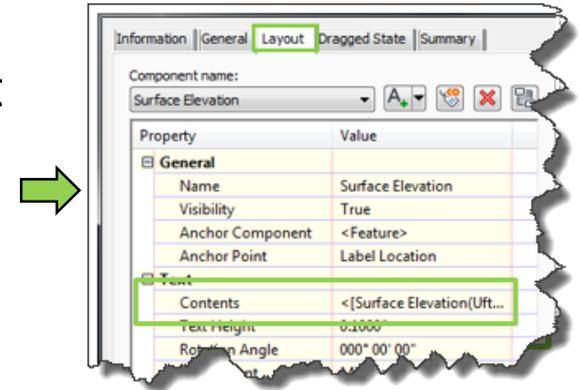
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Label Styles

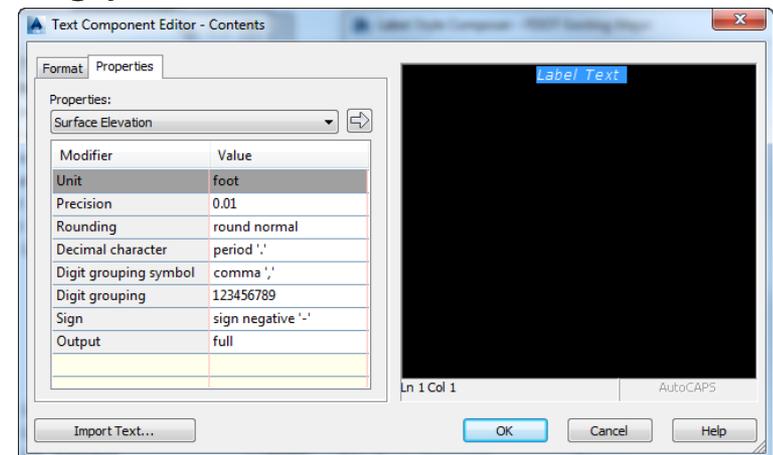
- **Label Styles** - Label Style Composer and its various settings.

Layout: Continued...

Contents: Click in the Value cell to the right of Contents to access the Text Component Editor. The Text Component Editor is a collection of object data values used in labeling. The values obtained from the objects create an appropriate label. Text may be entered in conjunction with a property value. The Modifier parameters associated with the chosen property type will change accordingly.



Delete the current property in the preview window first then select a new property from the pull down menu. After adjusting the Modifier values, select the ⇨ icon to place the property component in the preview window.



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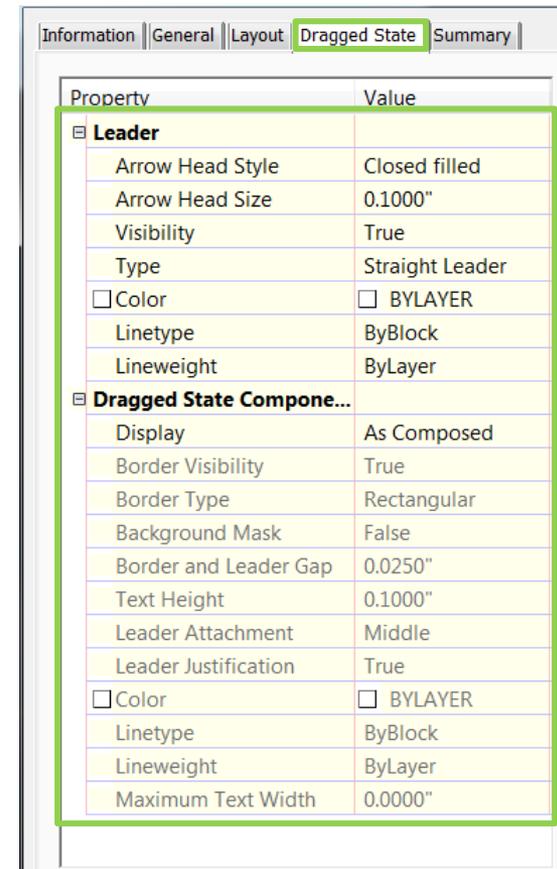
Label Styles

- **Label Styles** - Label Style Composer and its various settings.

Dragged State: Use this tab to define properties for labels when they are dragged away from their insertion points.

Leader: Choose an arrowhead for the leader from the list. Specify the arrow head size, whether the leader is visible when dragged from its position. Specify if you would like a Straight Leader line or a curved Spline Leader line.

Dragged State Component: Choose how label content is displayed after it is dragged from its default position. Pick a Border, Background Mask or a different Text height once the label is dragged.



The screenshot shows the 'Dragged State' tab in the Label Style Composer. It contains two sections: 'Leader' and 'Dragged State Component...'. Each section has a list of properties and their values.

Property	Value
Leader	
Arrow Head Style	Closed filled
Arrow Head Size	0.1000"
Visibility	True
Type	Straight Leader
<input type="checkbox"/> Color	<input type="checkbox"/> BYLAYER
Linetype	ByBlock
Lineweight	ByLayer
Dragged State Component...	
Display	As Composed
Border Visibility	True
Border Type	Rectangular
Background Mask	False
Border and Leader Gap	0.0250"
Text Height	0.1000"
Leader Attachment	Middle
Leader Justification	True
<input type="checkbox"/> Color	<input type="checkbox"/> BYLAYER
Linetype	ByBlock
Lineweight	ByLayer
Maximum Text Width	0.0000"

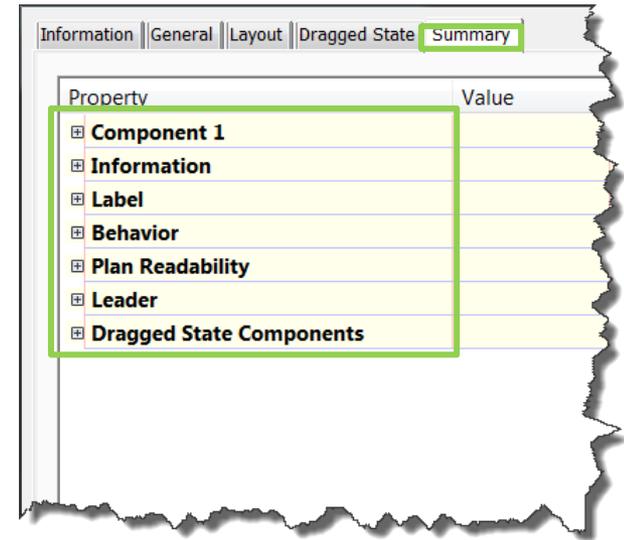
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Label Styles

- **Label Styles** - Label Style Composer and its various settings.

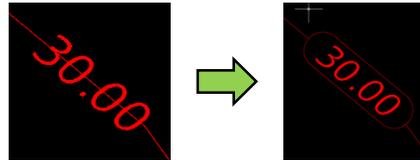
Summary: Use this tab to review all settings for a label style

Once you've made all the changes and various settings on the Information, General, Layout and Draggged State tab. You can quickly review these setting all from the Summary tab. You can also use this tab to make changes. This is a useful tab once you become more familiar with the various settings of a label. This is sort of a "One stop shop" setting tab.

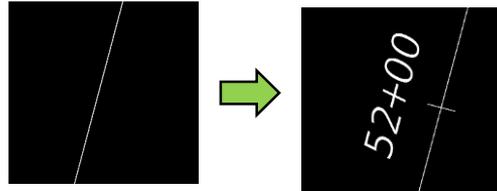


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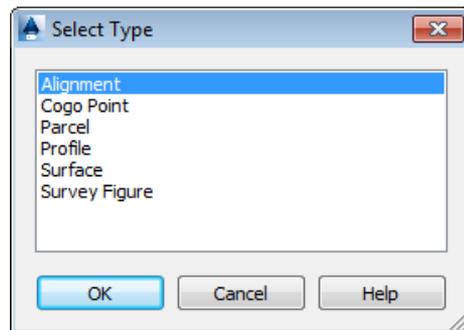
- **Label Styles** – Review examples for label style settings.
- Examine how to add a Border, Background Mask and change linetypes for Single Major Minor Contours.



- Examine how to create and assign Labels and Label Sets for alignments.

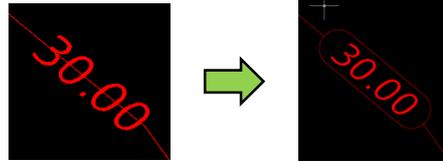


- Create an FDOTSta-Off-Elev label style using an Object Reference Text Component.

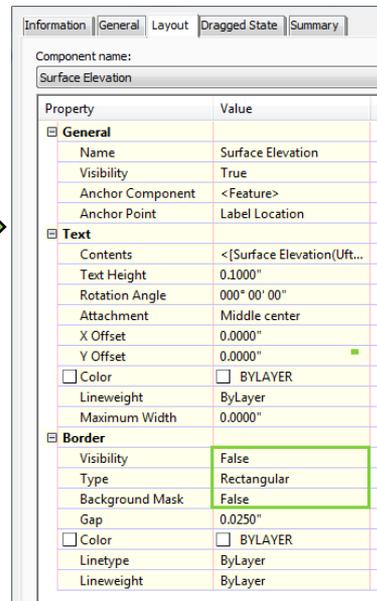
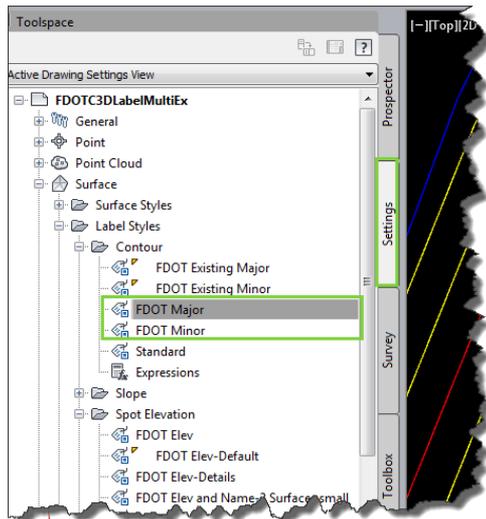


FDOT Civil 3D Labeling

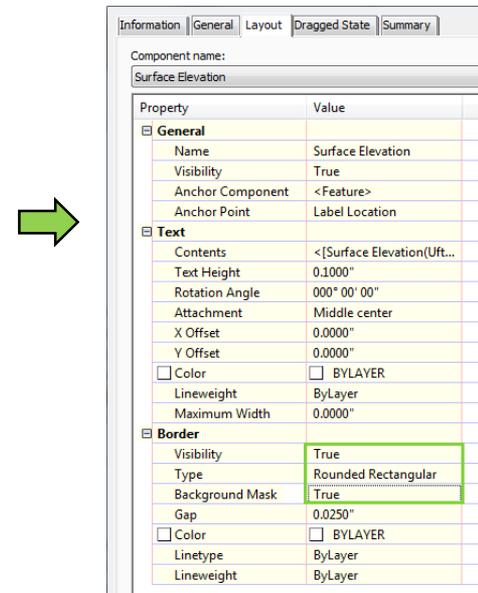
- **Example** - Examine how to add a Border, Background Mask and change linetypes for Single Major Minor Contours.



1. One Toolspace>Settings Tab. Find the FDOT Major or FDOT Minor label style's. Right-click on either name and choose EDIT. Select the Layout tab. On the Border area make the following changes.



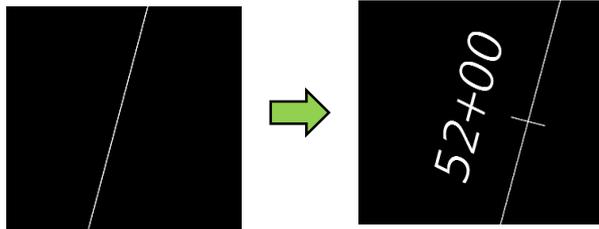
Property	Value
General	
Name	Surface Elevation
Visibility	True
Anchor Component	<Feature>
Anchor Point	Label Location
Text	
Contents	<[Surface Elevation(Uft...
Text Height	0.1000"
Rotation Angle	000° 00' 00"
Attachment	Middle center
X Offset	0.0000"
Y Offset	0.0000"
Color	<input type="checkbox"/> BYLAYER
Lineweight	ByLayer
Maximum Width	0.0000"
Border	
Visibility	False
Type	Rectangular
Background Mask	False
Gap	0.0250"
Color	<input type="checkbox"/> BYLAYER
Linetype	ByLayer
Lineweight	ByLayer



Property	Value
General	
Name	Surface Elevation
Visibility	True
Anchor Component	<Feature>
Anchor Point	Label Location
Text	
Contents	<[Surface Elevation(Uft...
Text Height	0.1000"
Rotation Angle	000° 00' 00"
Attachment	Middle center
X Offset	0.0000"
Y Offset	0.0000"
Color	<input type="checkbox"/> BYLAYER
Lineweight	ByLayer
Maximum Width	0.0000"
Border	
Visibility	True
Type	Rounded Rectangular
Background Mask	True
Gap	0.0250"
Color	<input type="checkbox"/> BYLAYER
Linetype	ByLayer
Lineweight	ByLayer

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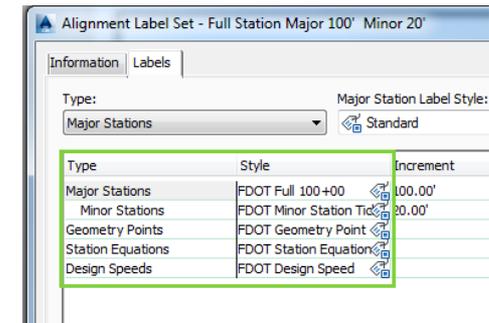
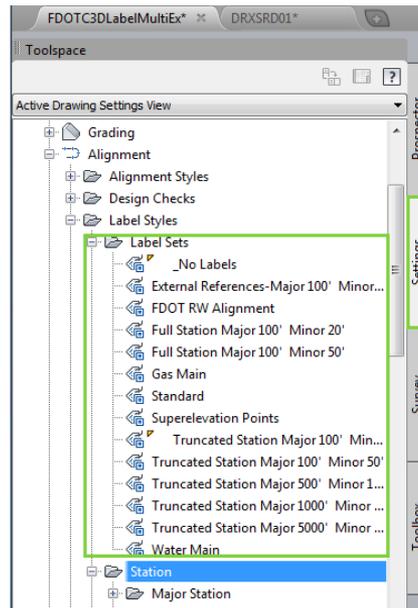
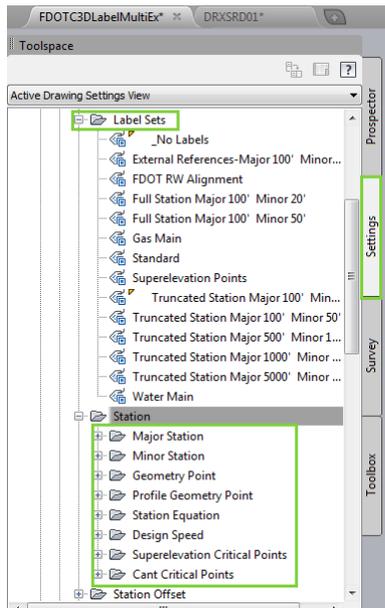
- **Example** - Examine how to assign Labels for alignments.



Individual Component Label Styles on the Settings Tab

Label Styles combined into sets from the Settings tab.

Label sets applied to objects.

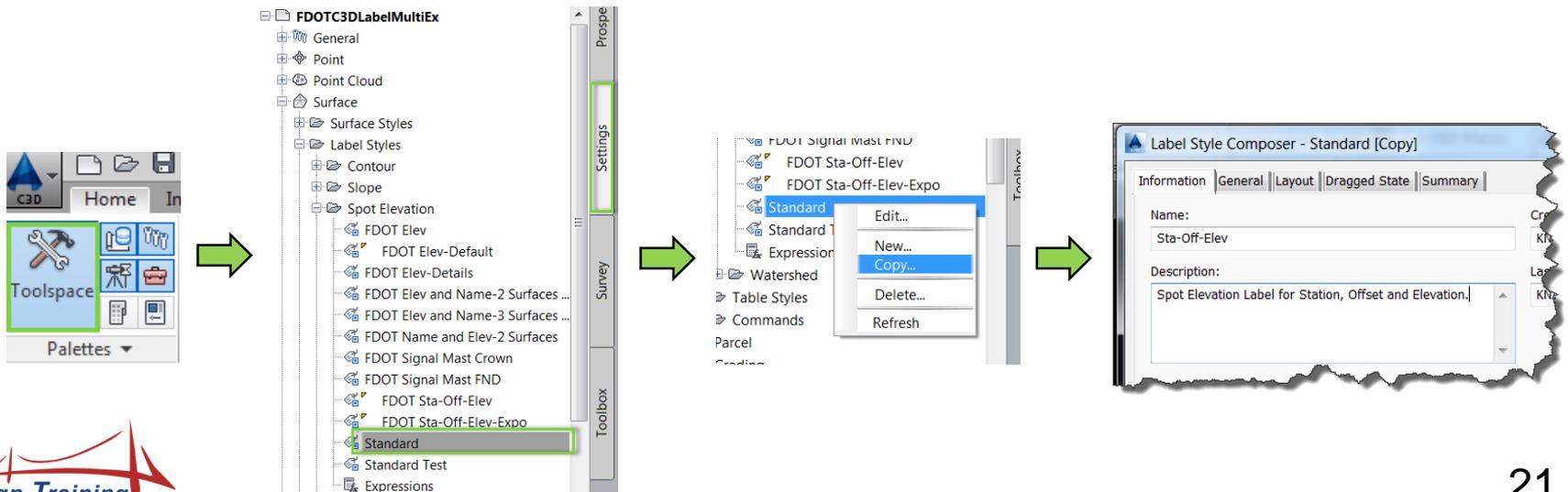


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- **Example** - Create an FDOTSta-Off-Elev label style using an Object Reference Text Component.



1. Launch the C3D Toolspace palette. On the Settings tab navigate to Surface>Label Styles> Spot Elevation, right click on the label style name “Standard” and choose “Copy...” from the short cut menu. Name your new label style something that explains what the label is intended to do, for example FDOTSta-Off-Elev.



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2. In the Label Style Composer Dialog box, on the General Tab, make the following changes:

Property	Value
Label	
Text Style	FDOT
Label Visibility	True
Layer	TextElevLabel
Behavior	
Orientation Reference	Object
Forced Insertion	None
Plan Readability	
Plan Readable	True
Readability Bias	095° 00' 00"
Flip Anchors with Text	True



Assign the style FDOT for the Text style.



Choose TextElevLabel to assign layer designation.

3. Click on the Layout Tab and make the following changes:

Information | General | Layout | Dragged State | Summary

Component name:
Surface Elevation

Property	Value
General	
Name	Surface Elevation
Visibility	True
Anchor Component	<Feature>
Anchor Point	Bottom Left
Text	
Contents	EL <[Surface Elevatio...
Text Height	0.1000"
Rotation Angle	000° 00' 00"
Attachment	Top left
X Offset	0.0000"
Y Offset	0.0000"
<input type="checkbox"/> Color	<input type="checkbox"/> BYLAYER
Lineweight	ByLayer
Maximum Width	0.0000"
Border	
Visibility	False
Type	Rectangular

➔ Anchor Point = Bottom Left

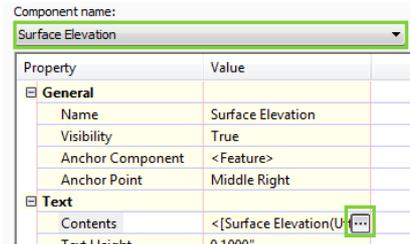
➔ Contents = (See next page for editing Contents)

➔ Text height = 0.1"

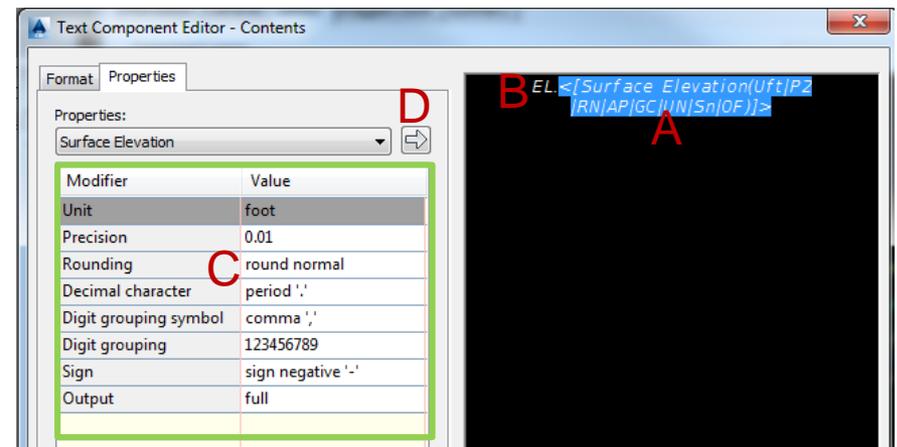
➔ Attachment = Top Left

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- Verify that Surface Elevation is selected for Component Name. Click in the Value Column for Contents to edit the Surface Elevation text.

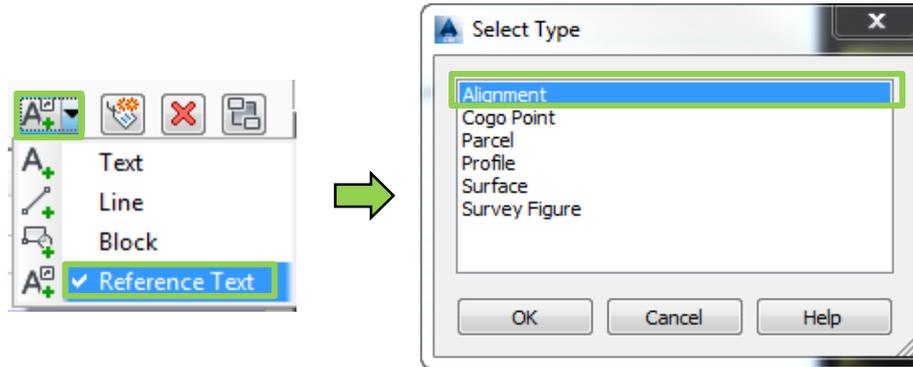


- In the Text Component Editor:
 - Delete the existing text in the preview window.
 - Type in EL. for the prefix before your Surface Elevation.
 - Verify the Modifier Values match the settings in the image.
 - Select the Arrow to transfer the new settings to the preview area on the left.
- Click OK.



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- Click the Create Component icon and select Reference Text. Select Alignment for type. This creates a Referenced Text component with property fields you can use to refer to alignment data in your label.



- Click in the Value for name and type Station and Offset for the component name.

The image shows two screenshots of a 'Properties' table. The left screenshot shows the table with the 'Name' field highlighted in green and the value 'Text.1'. A green arrow points from this table to the right screenshot. The right screenshot shows the same table, but the 'Name' field is now highlighted in green and contains the text 'Station and Offset'. The 'Visibility' field remains 'True' in both screenshots.

Property	Value
General	
Name	Text.1
Visibility	True

Property	Value
General	
Name	Station and Offset
Visibility	True

FDOT Civil 3D Labeling

9. Change the Attachment for the Text category to bottom left.

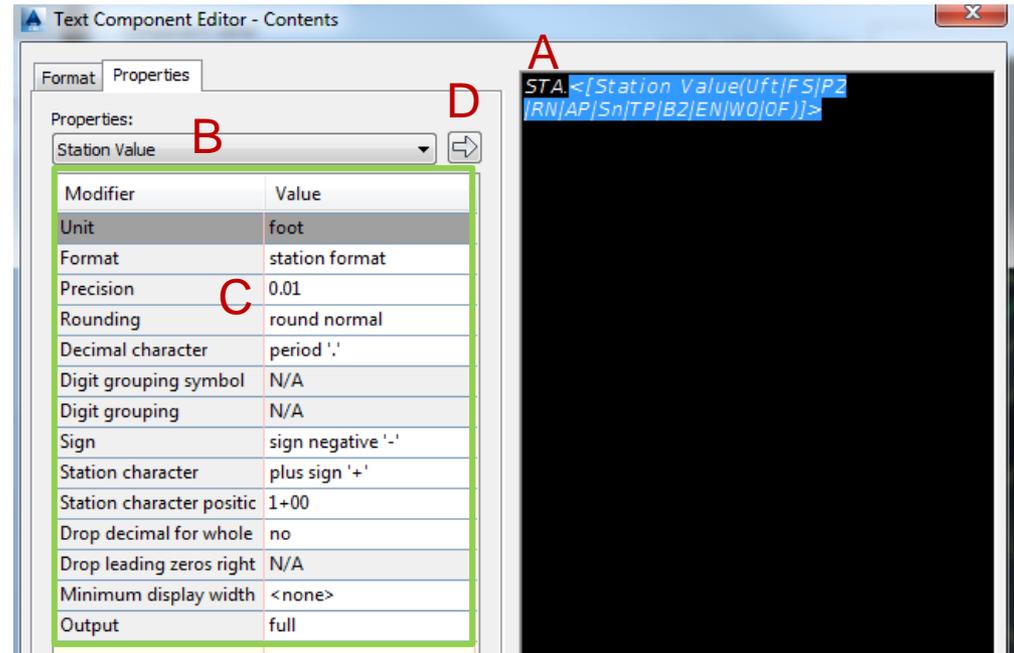
Reference Text Objec...	Alignment
Text	
Contents	Label Text 
Text Height	0.1000"
Rotation Angle	000° 00' 00"
Attachment	Bottom left
X Offset	0.0000"

10. Click on the “dice” icon to change the contents of the label.

Reference Text Objec...	Alignment
Text	
Contents	Label Text 
Text Height	0.1000"
Rotation Angle	000° 00' 00"
Attachment	Bottom left
X Offset	0.0000"

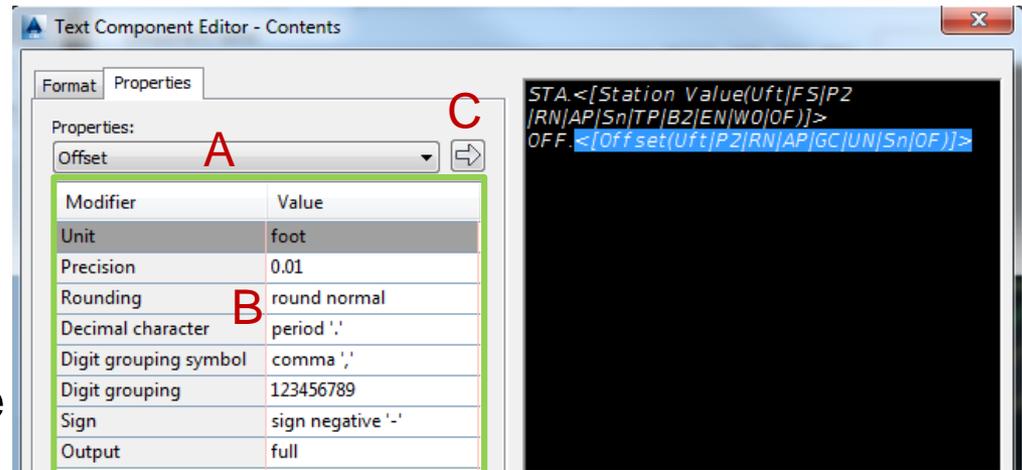
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11. In the Text Component Editor:
 - A. Delete the existing text in the preview window. Type in STA. for the prefix
 - B. Choose “Station Value” from the Properties pull down menu.
 - C. Verify the Modifier Values match the settings in the image
 - D. Select the Arrow to transfer the new settings to the preview area on the left.



FDOT Civil 3D Labeling

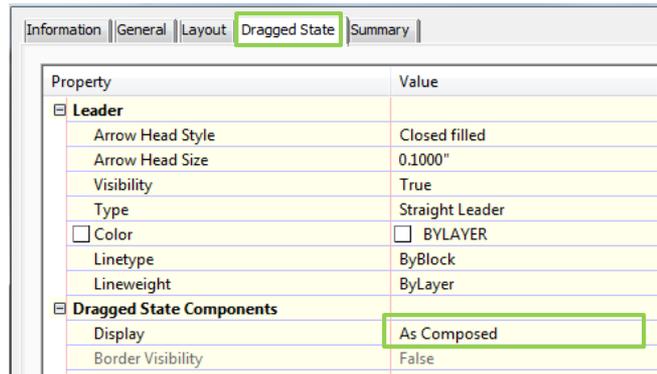
12. In the Text Component Editor:
 - A. Choose "OFFSET" from the Properties pull down menu.
 - B. Verify the Modifier Values match the settings in the image
 - C. Select the Arrow to transfer the new settings to the preview area on the left.



13. Verify that your preview matches the image as shown. Click OK to close the Text Component Editor.

FDOT Civil 3D Labeling

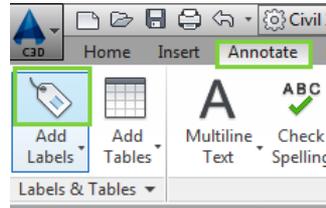
14. Select the Dragged State tab on the Label Style Composer dialog box.
15. Change Display for Dragged State Components to As Composed. This will ensure that the label maintains the original settings for composition and orientation when the label is dragged using grip



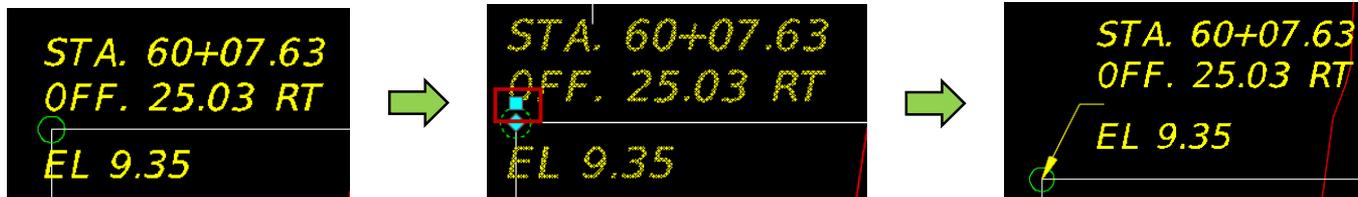
16. Click Apply and OK to apply the settings and close the Label Style Composer dialog box.

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17. To place the label choose the Annotate Tab, under the Labels and Tables Panel.



18. In the Add Labels dialog box for Feature choose Surface, for Label type choose Spot Elevation, for Spot elevation label style select FDOTSta-Off-Elev. Select Add to place your label.
19. Your drawing must contain a Surface and an Alignment. Follow the command prompts to place your new label. Select the label to display grips. Select the square grip to drag the label. Notice the dragged state of the label remains as composed.



Notes:

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____

FDOT Civil 3D Labeling

Thank You!

Are there any questions?

Are there any comments to improve your experience?

Email me at

Mike.Racca@dot.state.fl.us

The Civil 3D FDOT State kit is available for download at:

<http://www.dot.state.fl.us/ecso/downloads/software/FDOT2014CADDSoftware.shtm>

Mike Racca

CADD APPLICATIONS SUPPORT

Florida Department of Transportation (ECSSO)

Email: Mike.Racca@dot.state.fl.us



Florida Department of
TRANSPORTATION

Engineering/CADD Systems Office

