

Workflow ORD 1- Using GIS Data For A Title Sheet Vicinity Map

This document guides you through the process of creating a title sheet vicinity map using GIS data. The GIS data has been compiled from a number of shape files into a single DGN file. Data attached to the elements is used to label the drawing for the title sheet vicinity map. This workflow replaces the **PW17 – Creating A Project Location Map Using The ProjectWise ArcGIS**

Connector workflow as the ArcGIS Connector is no longer available in ProjectWise.

Downloading the GIS Vicinity Map.DGN file

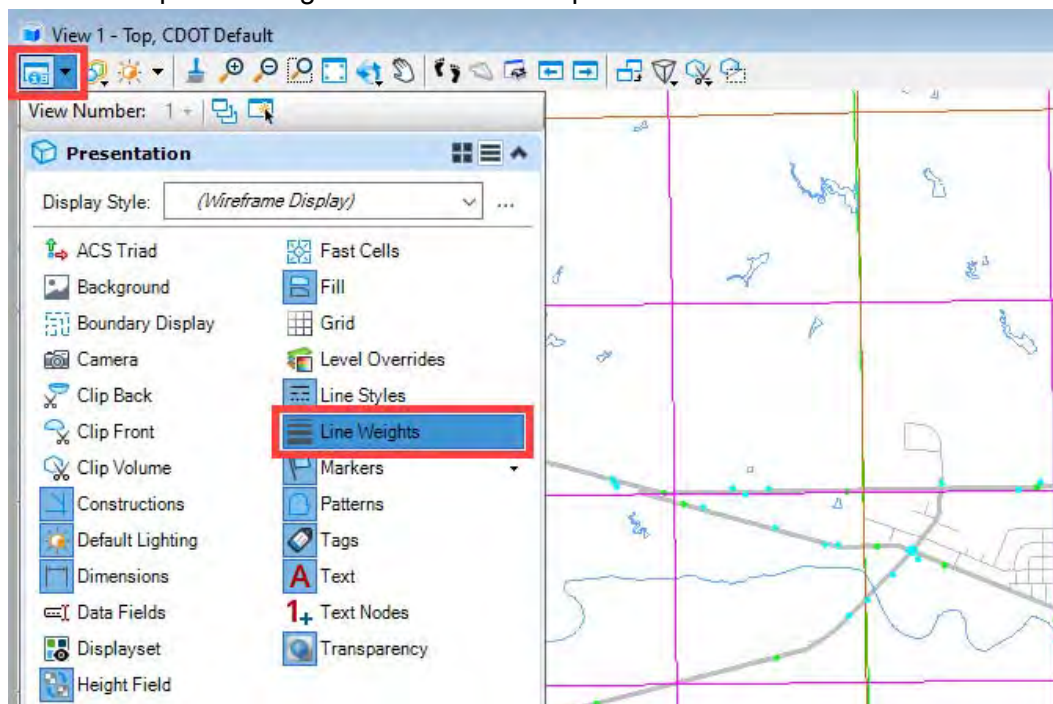
Use the link below to download the **GIS Vicinity Map.DGN** file:

<https://www.codot.gov/business/designsupport/cadd/ord/ord-page>

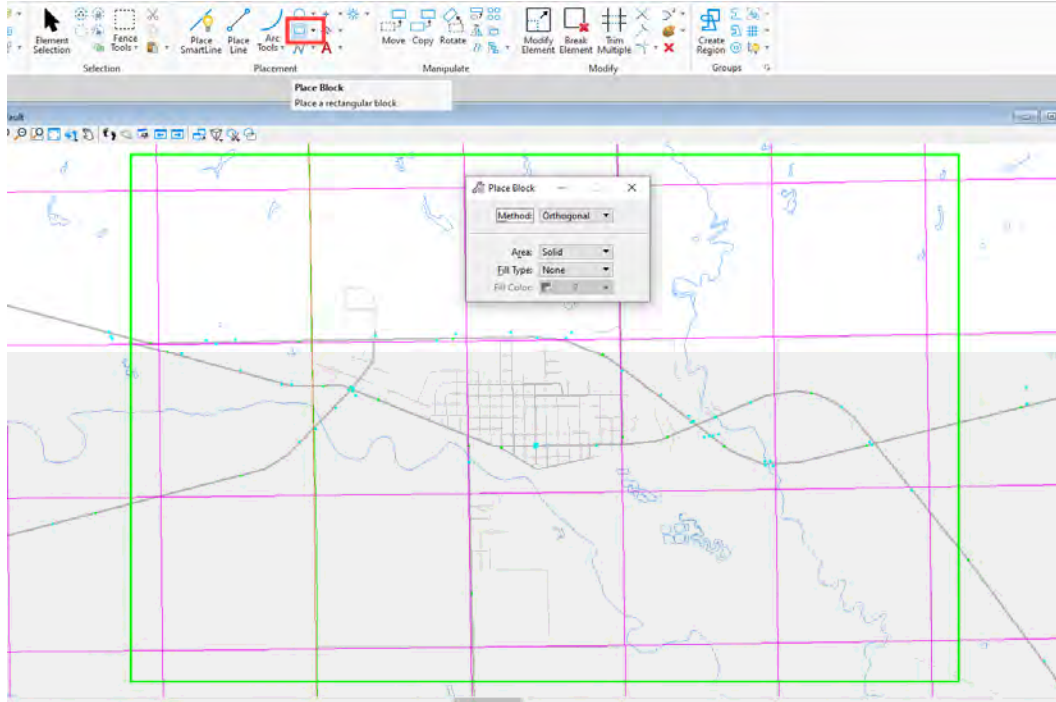
Look under the ORD Training Resources header. Select the file for the version of ORD that you are using. Save the downloaded file to your project perspective work area folder in ProjectWise.

Labeling The Vicinity Map

1. Open the **GIS Vicinity Map.DGN** file.
2. Select the **View Attributes** icon from the **View** toolbar and turn on the **Line Weights**. This will help in locating structures and milepoints.

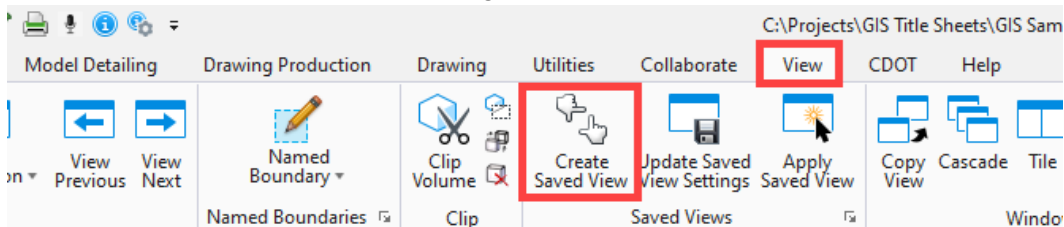


3. Zoom into the area to be used for the vicinity map for your project limits.
4. Select one of the **DRAFT_No Plot-color** levels as the Active level.
5. Place a rectangle around the area to be labeled using the **Place Block** command. Note: This is optional, but it will help to keep annotations within the area of the vicinity map as levels are turned on and off during the labeling process.

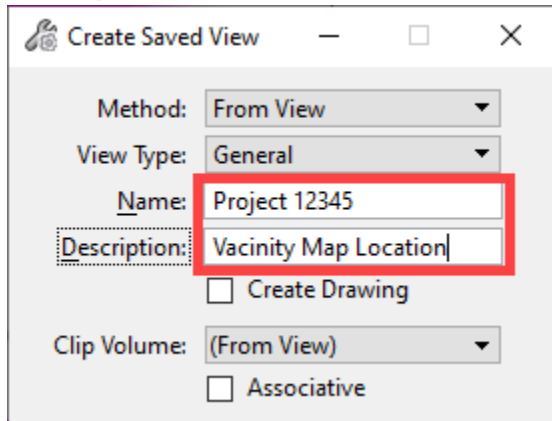


A Saved View can also be created for the Project Location.

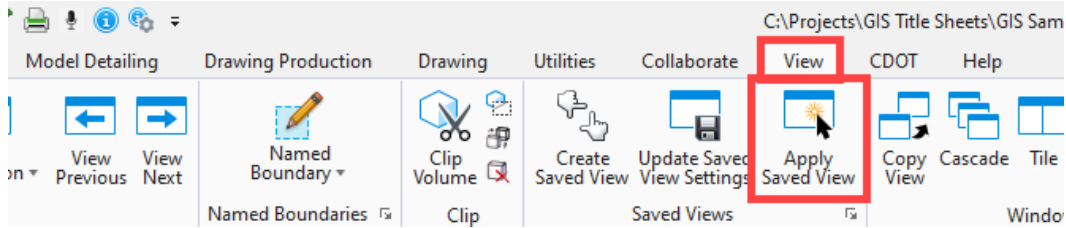
6. Select the **View** tab > **Saved Views** group > **Create Saved View** command.



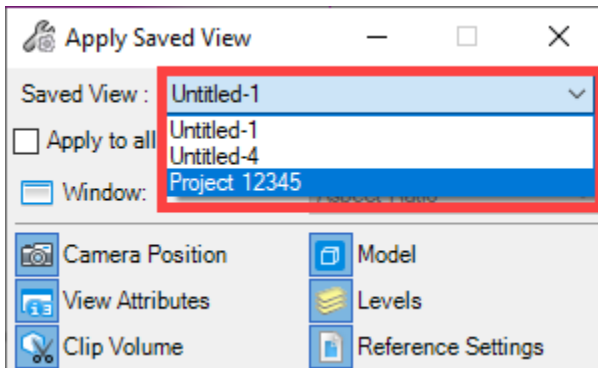
7. In the **Create Saved View** tool settings box, key in the **Name** for the view. A **Description** can also be entered, if desired.



8. Left Click in the view to create the saved view.
9. To recall the Saved View, select the **View** tab > **Saved Views** group > **Apply Saved View** command.



10. In the **Apply Saved View** tool settings box, select the **Saved View** then Left Click in the view.



The following items can be annotated:

- Structures – Drainage structures, bridges, lighting, etc.
- County lines
- Engineering regions
- Highways
- Major roads
- Minor roads
- Railroads
- Lakes
- Rivers and streams
- Townships
- Sections

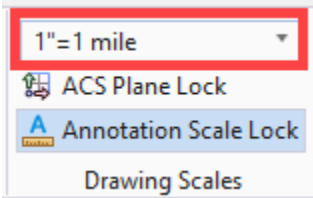
These can be labeled in any order desired. Highways, Major Roads, Minor Roads, and Streams should be labeled using the in-line option. The remaining items should be labeled using the Horizontal option. An example of each option is given below.

Note: Several items listed above share a common location (such as Sections and townships, county lines and engineering regions, etc.) because of this, levels not currently being labeled are turned off to make it easier to select the desired items.

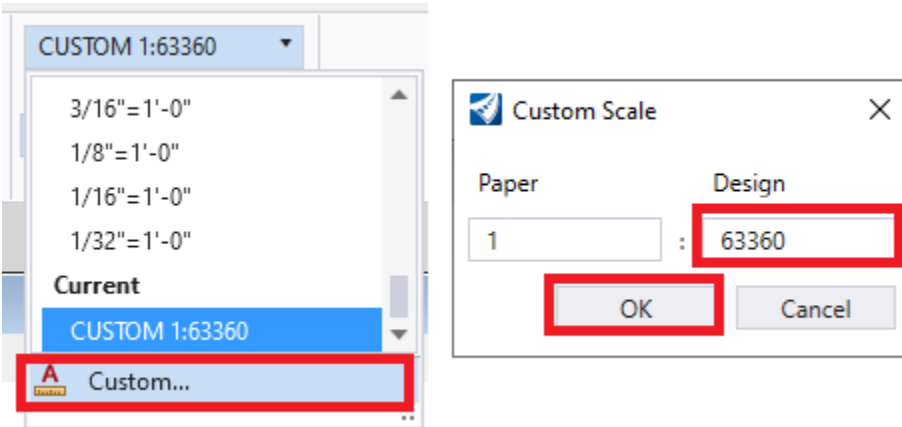
In-Line Labeling

In-line labeling is used for roadway labels and stream names.

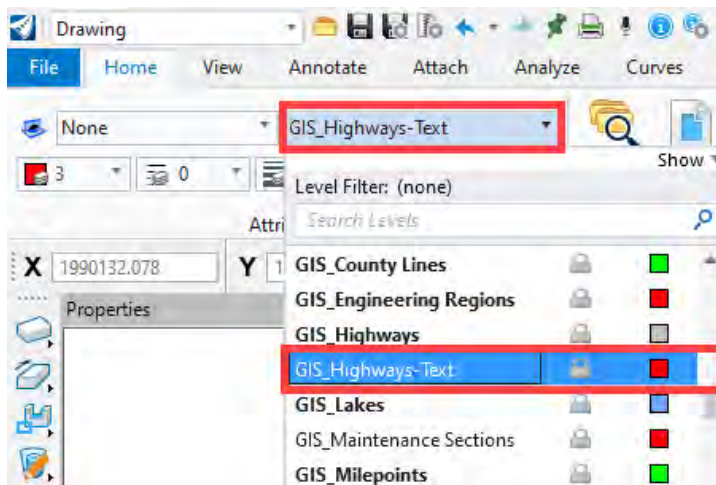
- Set the **Annotation Scale** to **1"=1 mile**.



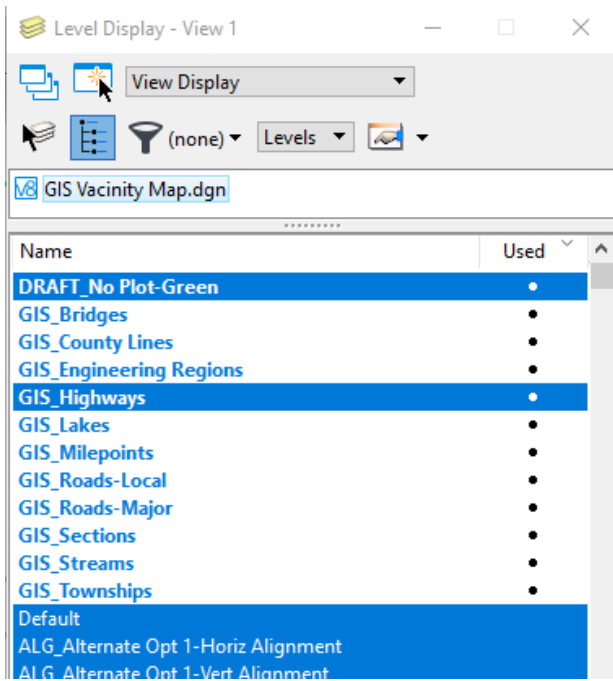
For ORD 10.08, set the annotation scale as shown below:



- Set the active level to the desired Text level (in this example, **GIS_Highways-Text** is used). If the data type does not have a GIS Text level, use the **DRAFT_Text-Notes** level.

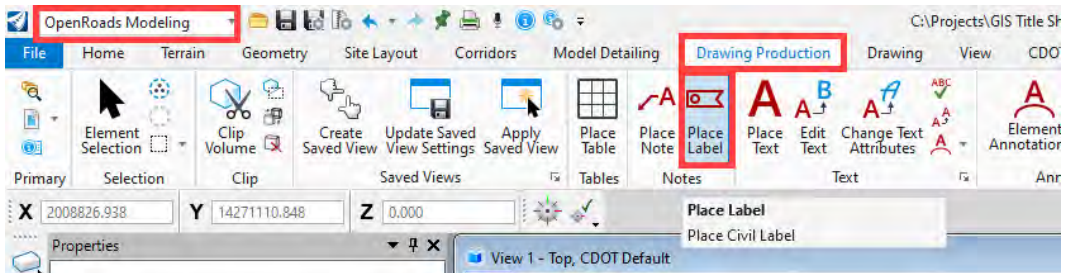


- Turn off all the levels not being labeled except for the level to be annotated and no plot level. The illustration below shows the levels used in the example.



Note: The GIS_Highways-Text level is also on (and active). It is not shown above as there is nothing on that level yet.

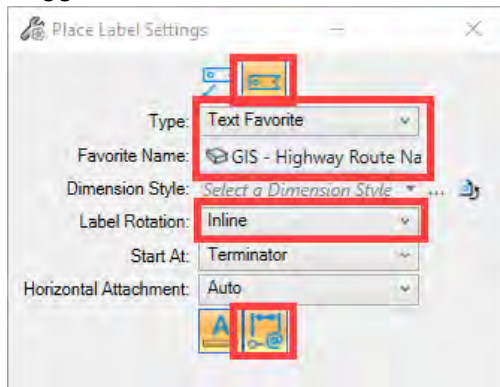
- Using the **OpenRoads Modeling** workflow > **Drawing Production** tab, select the **Place Label** command.



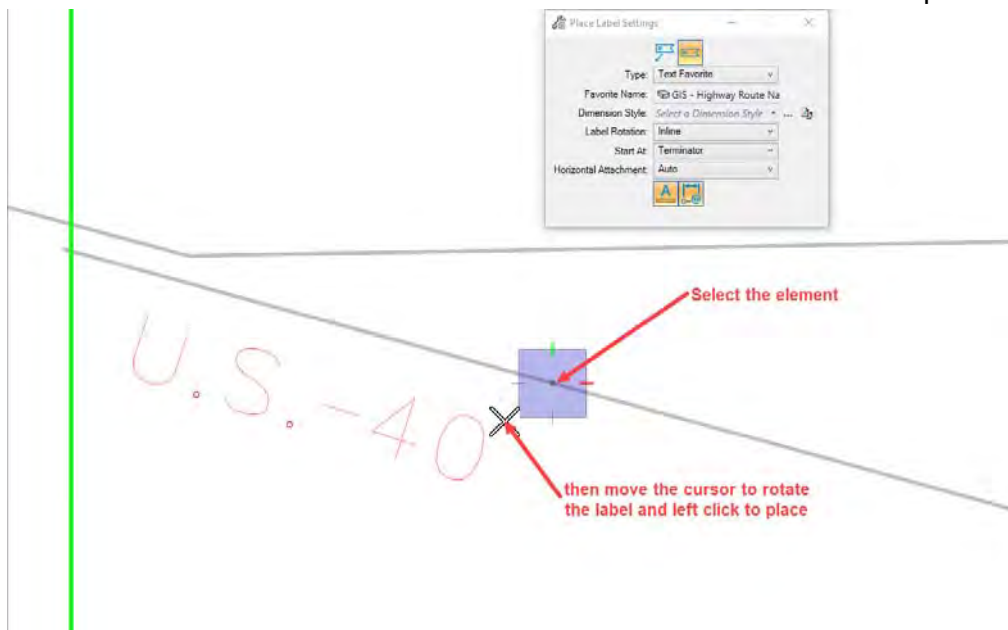
- In the **Place Label** tool settings dialog, select the **Place a label without a leader icon**.
- Set the **Type** to **Text Favorite**.
- Select the desired text favorite from the **Favorite Name** dropdown. In this example **GIS – Highway Route Name** is used.

18. Set the **Label Rotation** to **Inline**.

19. Toggle on the **Enable to create relative associations to elements** icon.



20. **Left Click** on the element to be annotated near where the label is to be placed. Move the cursor to rotate the label to the desired direction then **Left Click** to place the label.



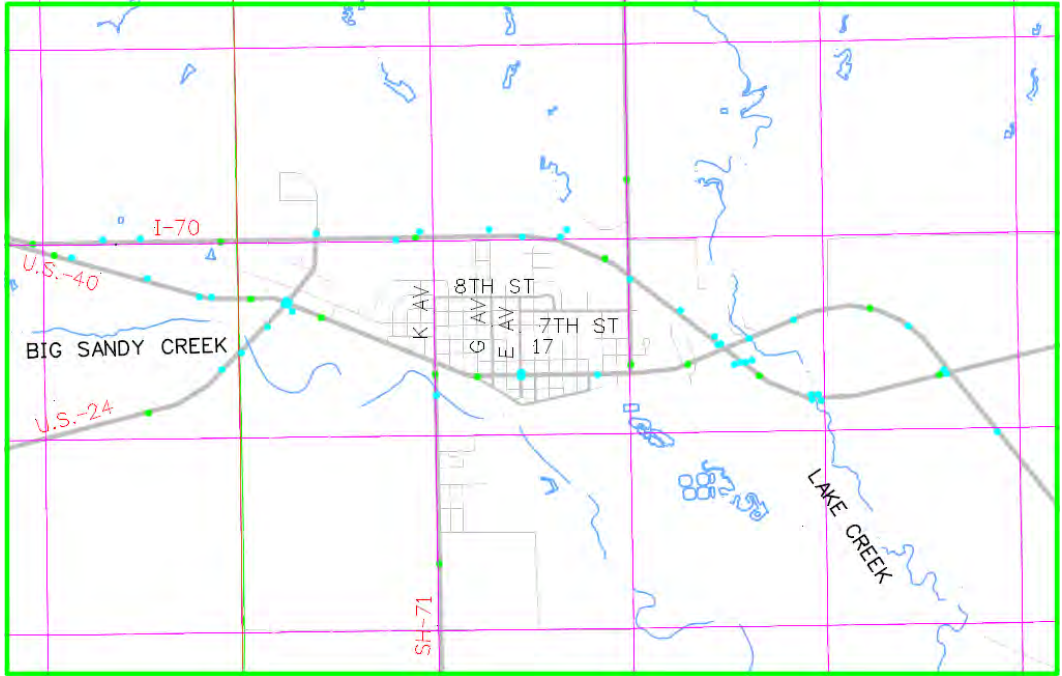
21. Repeat step 12 for each element to be annotated.

Note: When the **Place Label** command is dismissed then reopened, the tool settings are automatically reset to **place a label with leader** and **Label Rotation** to **Horizontal**.

22. Once all the labels have been placed for a data type, set the Active Level to the next data type's Text level. Turn on that data type's level.

23. Repeat steps 6 through 13 for the selected data type.

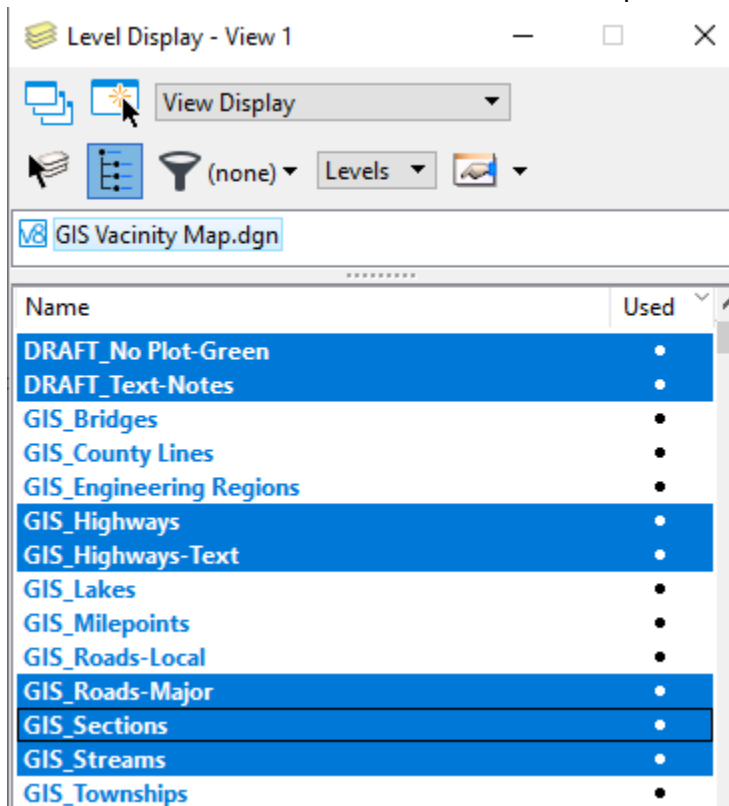
In the illustration below, Highways, Major Roads, and Streams have been annotated.



Horizontal Labeling

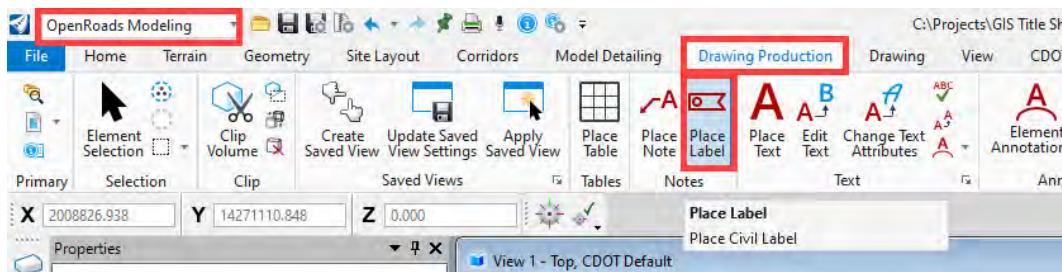
Horizontal labeling is used for all other labels. The example below uses the Place a label without a leader option, however, a leader can and should be used where it will improve clarity.

24. Set the active level to the desired Text level (in this example, **GIS_Sections-Text** is used). If the data type does not have a GIS Text level, use the **DRAFT_Text-Notes** level.
25. Turn on the level for the data type to be annotated. The levels that have been previously annotated are left on so that new labels can be placed in an open area.

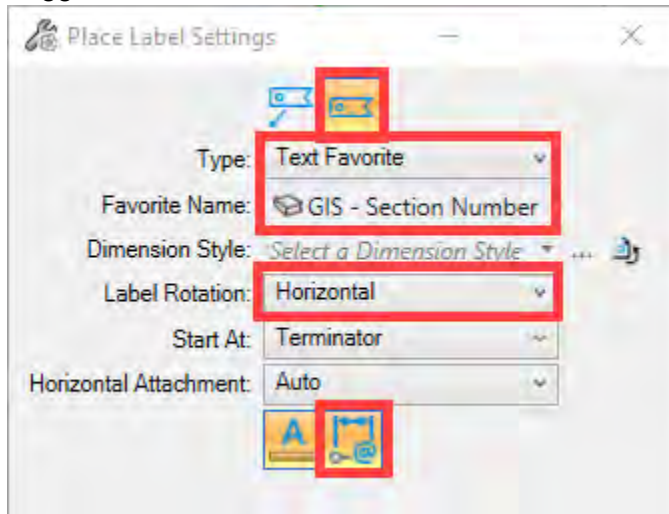


Note: The GIS_Highways-Text level is also on (and active). It is not shown above as there is nothing on that level yet.

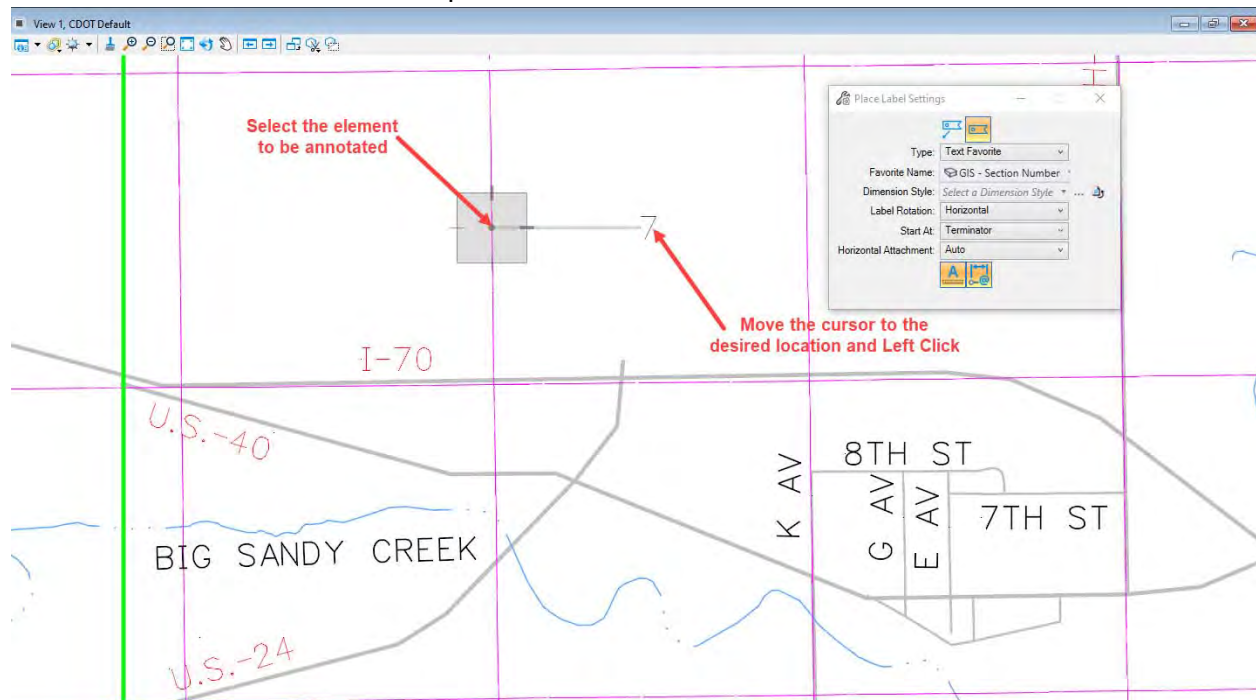
26. Using the **OpenRoads Modeling** workflow > **Drawing Production** tab, select the **Place Label** command.



27. In the **Place Label** tool settings dialog, select the **Place a label without a leader** icon.
28. Set the **Type** to **Text Favorite**.
29. Select the desired text favorite from the **Favorite Name** dropdown. In this example **GIS – Section Number** is used.
30. Set the **Label Rotation** to **Horizontal**.
31. Toggle on the **Enable to create relative associations to elements** icon.



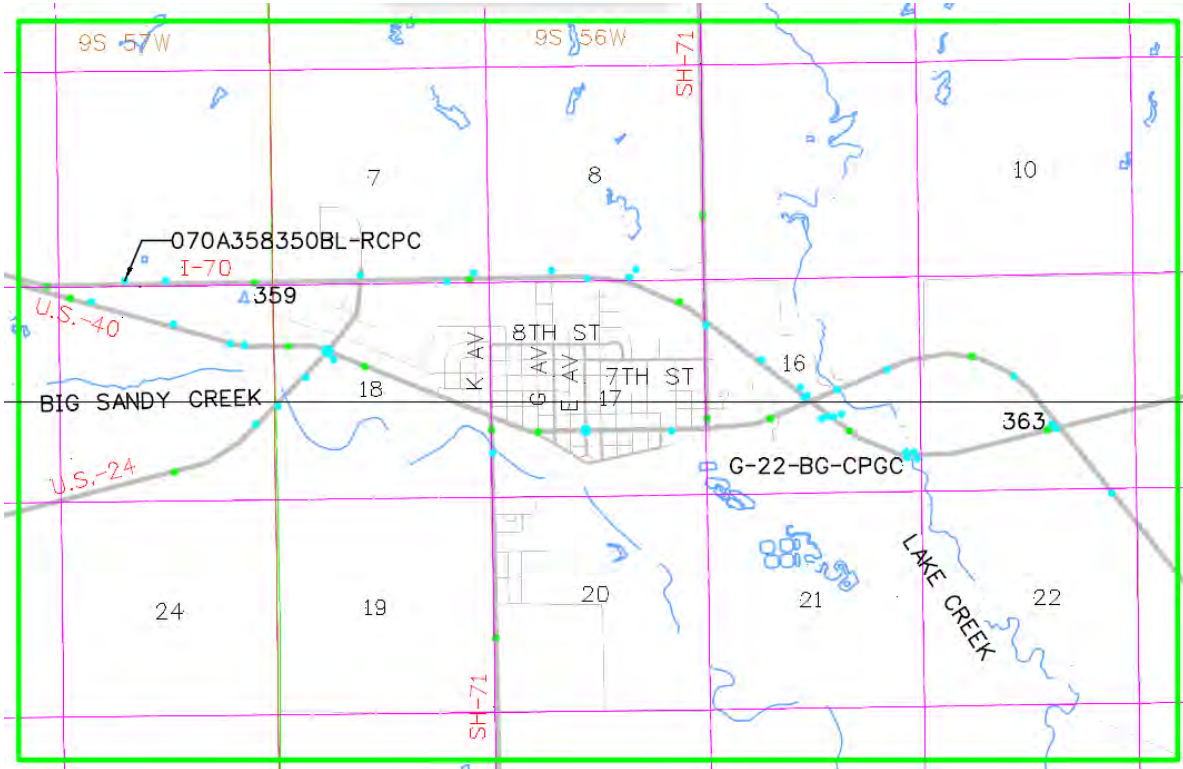
32. **Left Click** on the element to be annotated. Move the cursor where the label is to be located then **Left Click** to place the label.



33. Repeat step 24 for each element to be annotated.

34. Once all the labels have been placed for a data type, set the **Active Level** to the next data type's Text level. Turn on that data type's level.
35. Repeat steps 16 through 25 for the selected data type.

In the illustration below, townships, sections, mile points and Structures have been annotated.



The table below shows the GIS levels and corresponding Text Favorite.

GIS Data Level	Text Favorite
GIS_Bridges	GIS – Structure ID-Type
GIS_County Lines	GIS – County Name
GIS_Engineering Regions	GIS_Engineering Region Name
GIS_Highways	GIS_Highway Route Name
GIS_Lakes	GIS – Lake Name
GIS_Milepoints	GIS – Milepoint Reference Number
GIS_Roads-Local	GIS_Local Rds Name
GIS_Roads-Major	GIS_Major Rd Name
GIS_Sections	GIS_Section Number
GIS_Streams	GIS_Stream Name
GIS_Townships	GIS – Townships Name

Tips and Notes for Annotating GIS Data

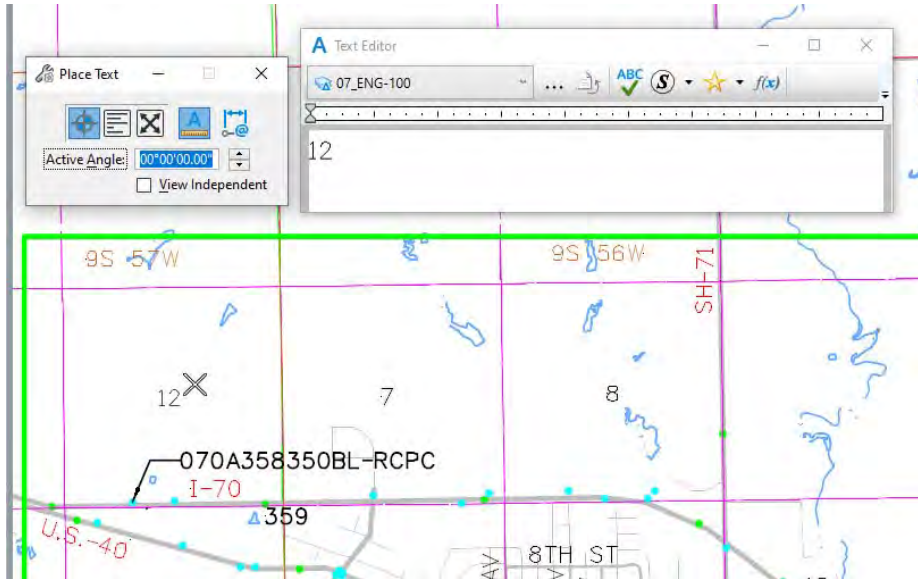
The Place Label command does not allow a reset to pick items under another overlapping item. It will also not work with pre-selected items. This issue is most apparent when labeling items sharing a common border, such as sections, townships, and counties.

To work around this issue, use the following steps:

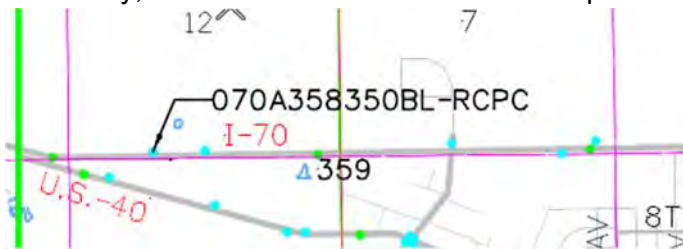
1. Set the desired level.
2. Open the **Properties** dialog box.
3. Select the **Element Selector** tool and select the desired element. Right Click to select underlying elements.
4. Look in the **Properties** dialog box for the data needed. The illustration below shows the **Properties** for a **Section**.

PLSS_SECTIONS	
FID	04130
LABEL	12
LINKKEY	CO06T0090S0570W
OBJECTID	233591.0000
OBJECTID_1	197788
SECDUP	
SECFRT	
SECTIONKEY	012
SECTN	012
SHAPE_area	2581421.7830
SHAPE_len	6426.7511
SHAPE_LENG	6426.7510
TNAME	T09SR057W
Raw Data	
Element ID	498538
> Range Low	1998774.772', 14264569.194'
> Range High	2004103.571', 14269896.906'

5. Use the **Place Text** command to label these items.

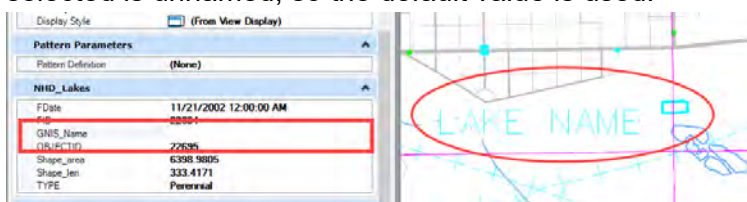


For clarity, the **Place a label with a leader** option can be used.

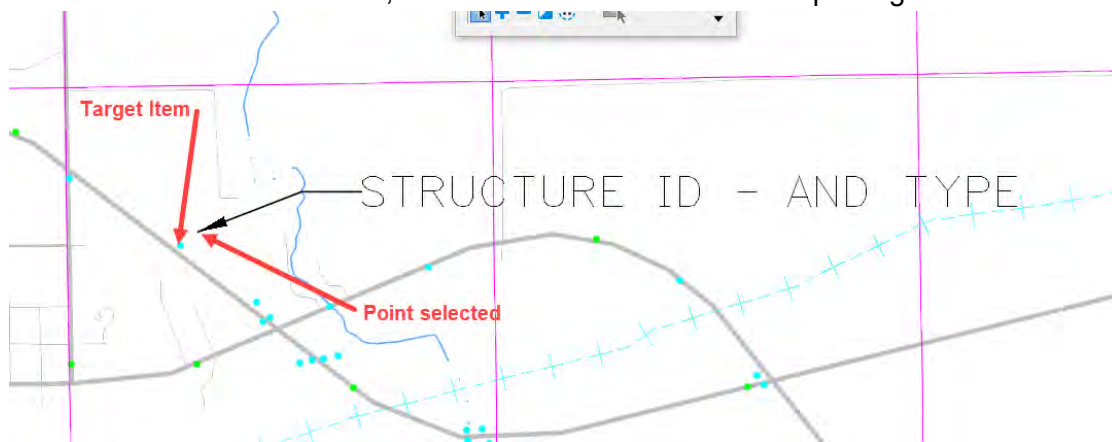


Please note when a GIS item does not have a value associated with it, the Place Label command will return a default value.

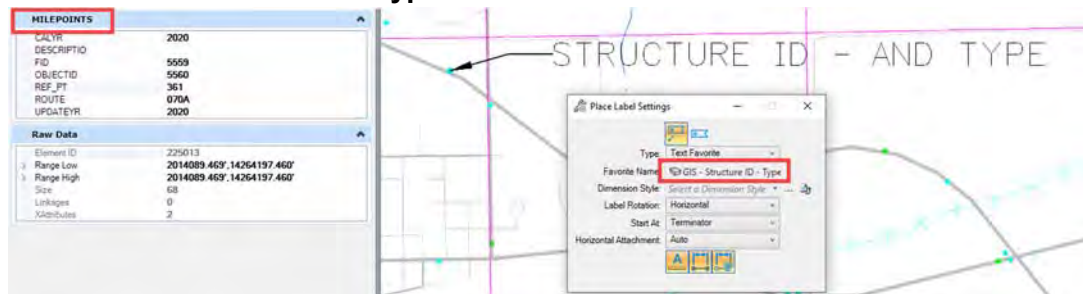
The item selected does not have data for the label. In the illustration below, the lake selected is unnamed, so the default value is used.



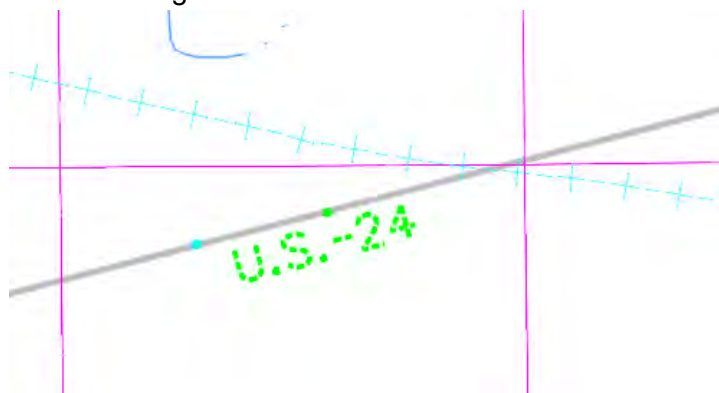
Another situation that displays a default value is if the item was missed when placing the label. In the illustration below, the structure was missed when placing the label.



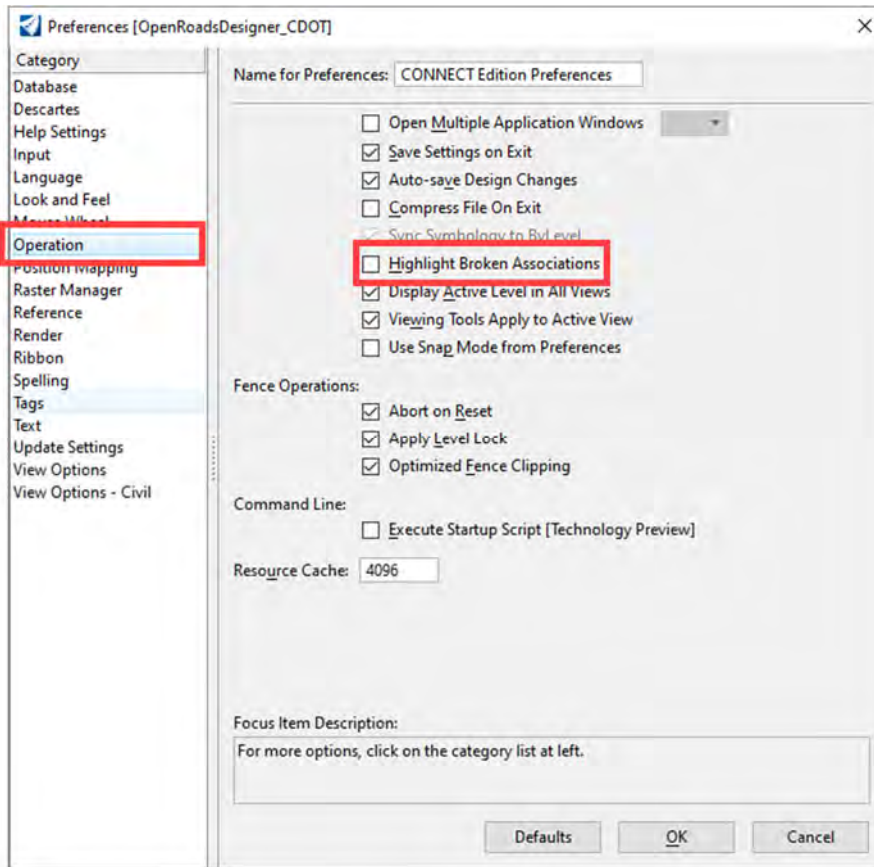
If the wrong text favorite is used for the selected item the default value to the selected text favorite is displayed. In the illustration below a milepoint was selected but the text favorite is set to GIS – Structure ID – Type.



Rotating or moving a label will break the Association to the parent item. The display of the label is changed as shown below.



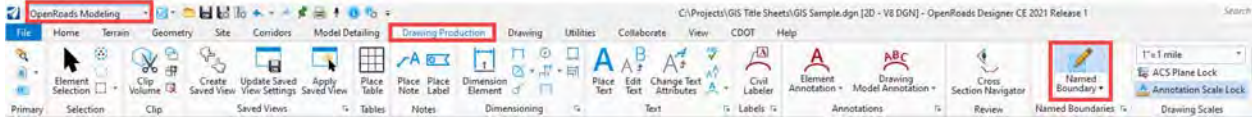
This does not affect the print output but it does bother some users. If you do not like seeing the broken associations but need to move labels, you can turn off the **Highlight Broken Associations**. Select **File > Settings > User > Preferences**. In the Preferences dialog box, select Operation from the list on the left side. Toggle off **Highlight Broken Associations**. Left Click the **OK** button to accept the change.



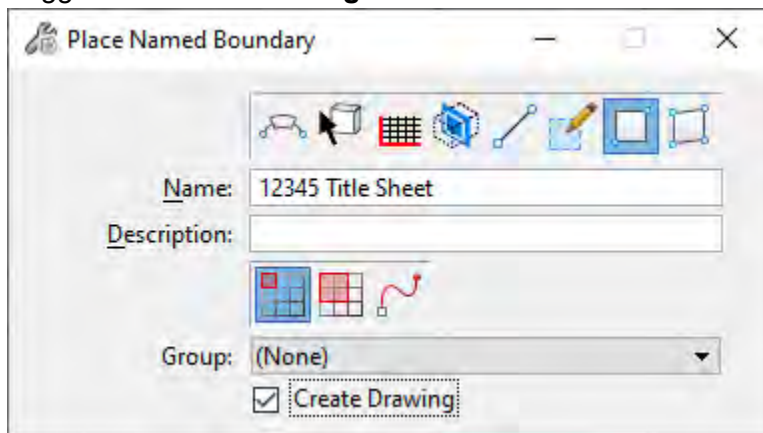
Creating The Title Sheet

The following steps describe how to create the title sheet model.

1. From the **OpenRoads Modeling** workflow > **Drawing Production** tab > **Named Boundary** group, select the **Place Named Boundary** command.

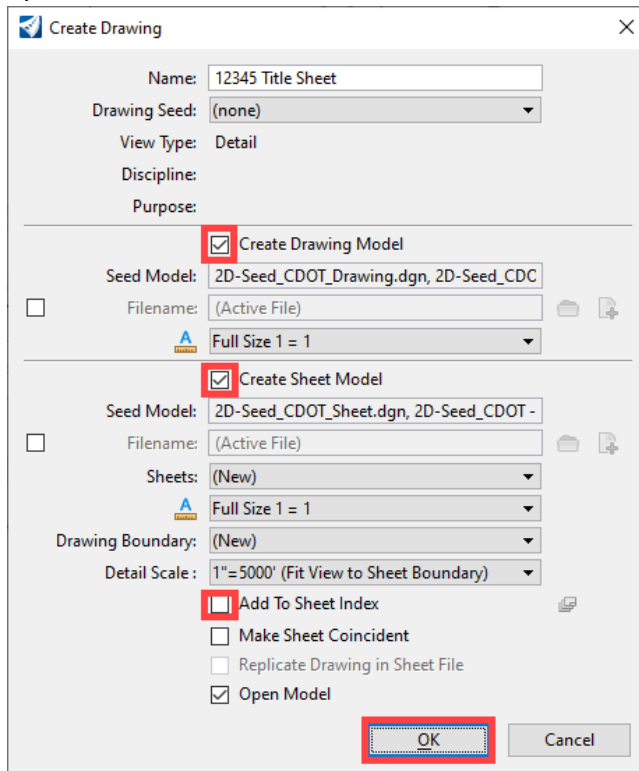


2. In the **Place Named Boundary** dialog, select the **By 2 points** icon.
3. Key in a **Name** and **Description**, if desired.
4. Select the **Place a single named boundary** icon.
5. Toggle on **Create Drawing**.

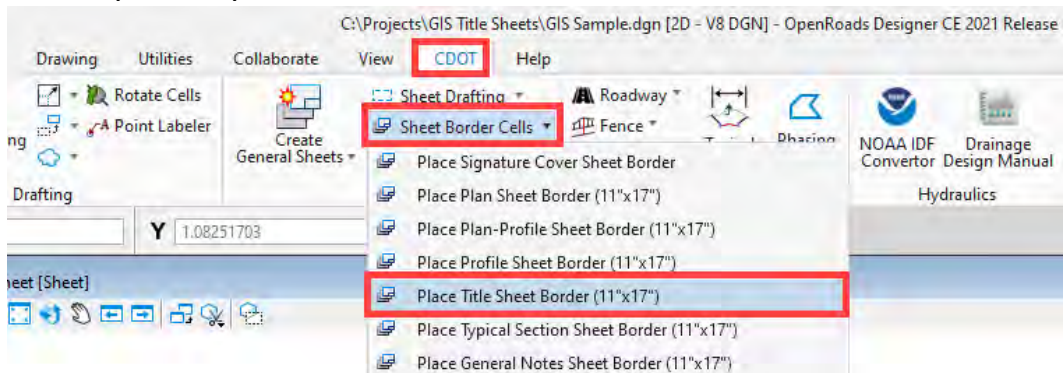


6. Left Click on the upper left corner of the vicinity map and then Left Click the lower right corner.
7. Left Click in the view to accept the defined area. This displays the **Create Drawing** dialog.

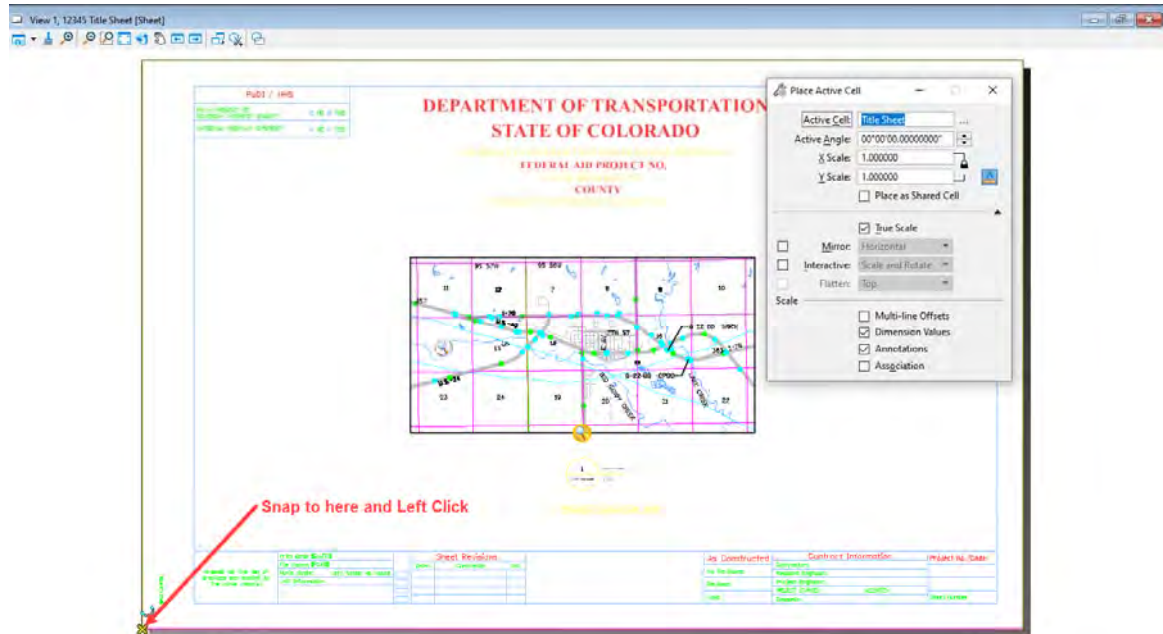
8. In the **Create Drawing** dialog, toggle on both **Create Drawing Model** and **Create Sheet Model**.
9. If desired, toggle on **Add to Sheet Index**.
10. Left Click the **OK** button. This creates the drawing model and sheet model and opens the sheet model.



11. From the **CDOT** tab > **Sheets** group, select **Sheet Border Cells** > **Place Title Sheet Border (11"x17")**.



- Snap the title sheet cell to the lower left corner of the sheet then Left Click to place the cell.



- Edit the border as usual.

Tips and Notes for Creating a Title Sheet

Do not attempt to label GIS data in the drawing model as this will be extremely slow or lock up. Other labeling, annotation, etc. should be placed in the drawing model.

When creating the sheet model, if your vicinity map will fit in the defined Named Boundary, then this option can be used. The **From Named Boundary** option places the title sheet border so it will not have to be placed separately.

