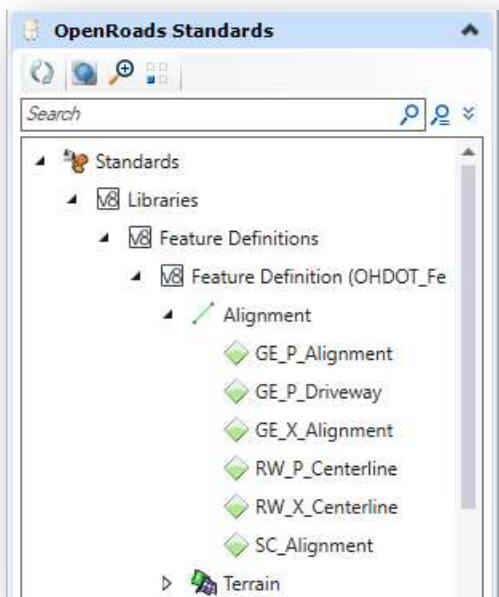




OpenRoads Designer: 304 Alignment Annotation

Alignment Feature Definitions

Alignment elements are assigned a **Feature Definition**, which controls the symbology of the element (level, color, line style, and line weight) as well as the annotation properties of the element. The OHDOT Standards include feature definitions for alignments, which can be reviewed from the *Project Explorer* dialog, as shown below.



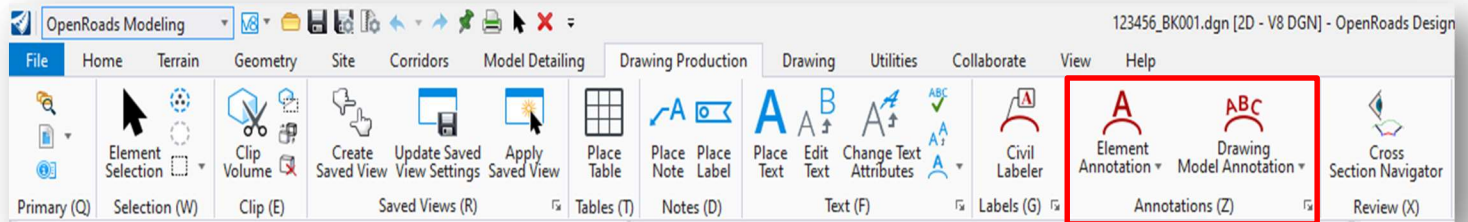
Note that the alignment feature definition controls the symbology and annotation settings for both the horizontal geometry and the proposed vertical alignment.



Alignment Annotation

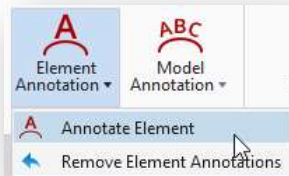
When geometric alignments are placed in the file, the annotation is not automatically generated by the software. The user must identify the alignments that are to be annotated either individually, by selecting the specific alignments, or by annotating all of the alignments contained in the active model, or all models in the active file.

Annotation commands are selected from the **OpenRoads Modeling** WorkFlow in the **Drawing Production** tab, as shown below.



Element Annotation

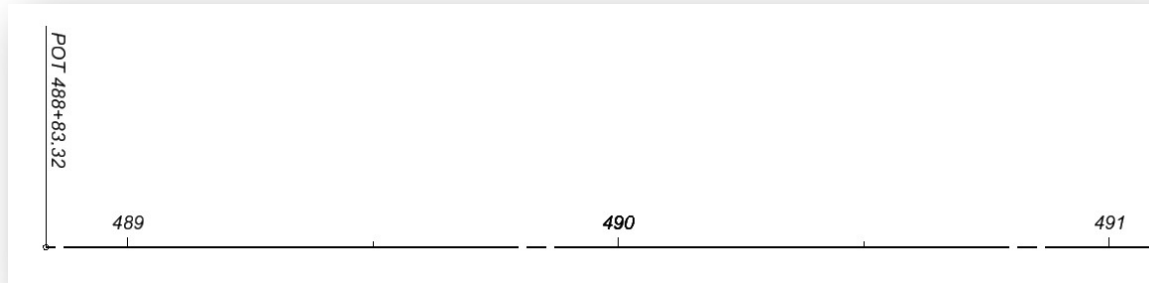
Individual elements are annotated by selecting the **Element Annotation** command from the **Drawing Production** tab. Two commands are available as shown below.



Annotate Element

The **Annotate Element** command is used to annotate one or more selected elements. The command prompts to select the OpenRoads element to be annotated. Multiple elements can be selected. Reset (right-click) to complete the selection process and initiate the annotation placement.

An example of annotation at the beginning of an alignment is shown below.



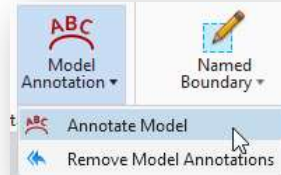
The annotation definition is part of the Alignment feature definition. The default annotation for alignment annotations using the OHDOT Standards places station labels every 100' like the example above.

Remove Element Annotations

The **Remove Element** Annotations command is used to remove the annotation from selected elements. When prompted, select the elements to remove the annotation. Reset (right-click) to end the selection process and initiate the removal process.

Model Annotation

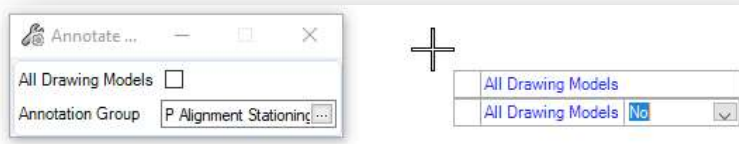
The **Model Annotation** command is used to annotate all of the elements in the active model, or all models, by selecting a specific Annotation Group. Two options are available as shown below.



Annotate Model

Select this command to annotate all the elements in a model, or in all models, by selecting a specific Annotation Group.

When the command is selected, the user is prompted as shown below. Issue a data point (left mouse-click) to initiate the process.



Remove Model Annotations

Select this command to remove all annotations from the active model or all models in the active file.



Alignment Annotation Levels

For a typical ODOT plan set, the annotation for centerline stationing is displayed at different intervals along the alignment depending on the type of sheet showing the alignment information and the scale of the sheet (20-scale plan vs. a 500-scale schematic sheet for example). Depending on the sheet scale, the annotation may need to display stations at 100', 500', or 1000' intervals. These different station intervals are used to reduce clutter on the plan sheets.

The **Feature Definition** assigned to the alignment also includes an **Annotation Group** definition. The annotations are placed on separate levels as detailed below.

- GE_P_Alignment_XXX_Bearings
- GE_P_Alignment_XXX_Cardinal_Points
- GE_P_Alignment_XXX_Curve_Data
- GE_P_Alignment_XXX_Distances
- GE_P_Alignment_XXX_Stations

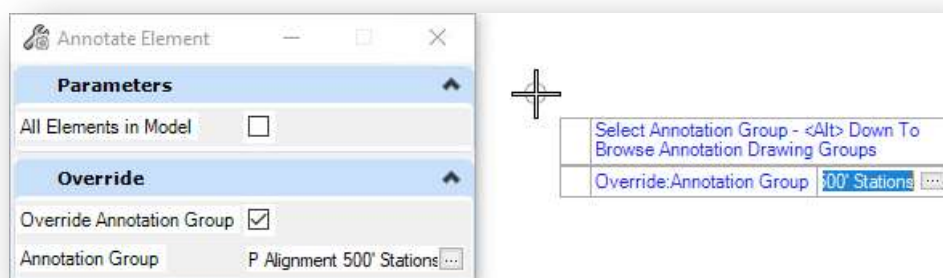
Where XXX = the station interval (100, 500, or 1000).

There are also three groups of levels for existing alignment annotation.

- GE_X_Alignment_XXX_Bearings
- GE_X_Alignment_XXX_Cardinal_Points
- GE_X_Alignment_XXX_Curve_Data
- GE_X_Alignment_XXX_Distances
- GE_X_Alignment_XXX_Stations

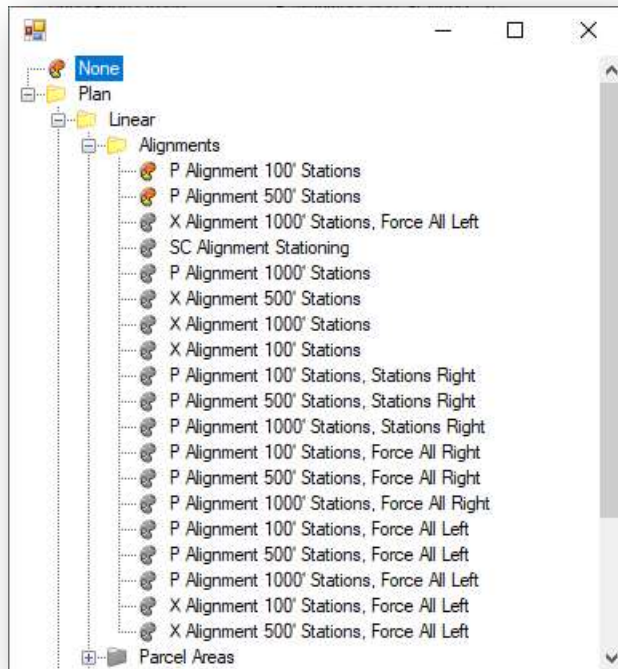
In older versions of the OHDOT CADD Standards that are compatible with OpenRoads version 10.09 and earlier, the default annotation definition was configured to place three sets of annotations on the 100, 500, and 1000 level groups at once. With this workflow, users were required to turn on/off the levels that they want to use for the plans depending on the desired station annotation interval.

This workflow has been changed with the OHDOT CADD Standards for OpenRoads version 10.10 and higher. By default, alignments are now annotated with only one set of annotations with stations shown at 100' intervals. If annotations are required using either the 500' or 1000' station interval, the default annotation definition can be overridden by toggling on the new **Override Annotation Group** setting as shown below.





ODOT provides several annotation definitions as shown below.



Note: Annotating an alignment with the **Override Annotation Group** option toggled on does not remove any previous annotations from the file. Use the **Remove Element Annotations** command to remove any previously placed annotations before re-annotating the element using an override.

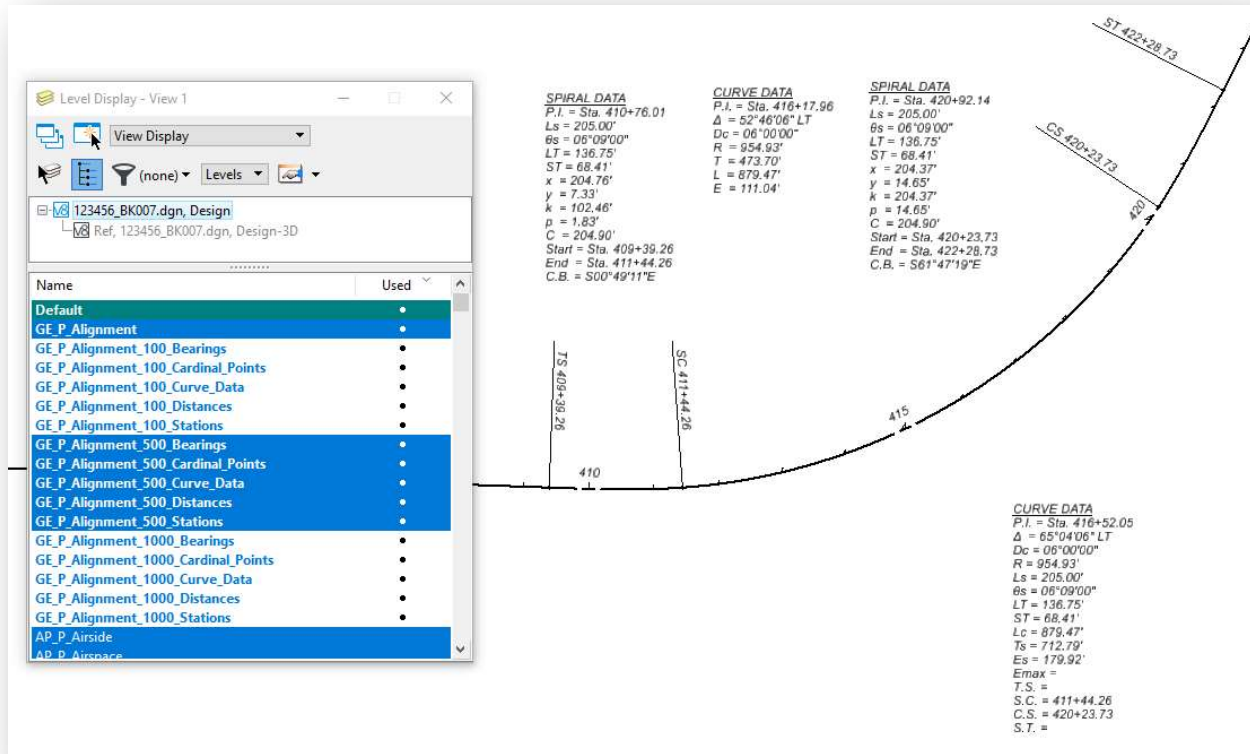
The various annotation groups are summarized below. Annotation groups starting with the letter “P” are configured for proposed alignments. Annotation groups starting with the letter “X” are configured for existing alignments.

Annotation Group Name	Description
P Alignment – 100’ Stations P Alignment – 500’ Stations P Alignment – 1000’ Stations	These are the normal annotation groups for most plan sheet applications. Station annotation is placed on the left side of the alignment. Spiral and curve key-point annotations are placed towards the curve center.
P Alignment – Force all Left 100’ Stations P Alignment – Force all Left 500’ Stations P Alignment – Force all Left 1000’ Stations	These annotation groups force all station and key-point annotations to the left side of the alignment.
P Alignment – Force all Right 100’ Stations P Alignment – Force all Right 500’ Stations P Alignment – Force all Right 1000’ Stations	These annotation groups force all station and key-point annotations to the right side of the alignment.
P Alignment – Force Stations Right 100’ Stations P Alignment – Force Stations Right 500’ Stations P Alignment – Force Stations Right 1000’ Stations	Station annotation is placed on the right side of the alignment. Spiral and curve key-point annotations are placed towards the curve center.

Annotation Groups for existing alignments are also available for each of the group definitions detailed in the table above starting with the letter “X” instead of “P”



In the example below, the **Annotation Scale** value is set to 1:100 with the levels for 500' station intervals toggled on.



Additional Notes:

- The levels are named according to the station label intervals (100', 500', and 1000'), not the annotation scale value. For example, the **GE_P_100** group of levels are appropriate for multiple annotation scale values (1:10, 1:20, 1:50).
- In the event a Spiral-Curve-Spiral (SCS) is encountered, the SCS data is annotated at the location of the intersection of tangents. An example is shown at right. This data has been configured to include as much of the SCS annotation at the software currently allows. The text can be edited to include additional information for the Emax, T.S., and S.T. information. The individual spiral data is still paced in the file even when the combined SCS data is included.

CURVE DATA
P.I. = Sta. 416+52.05
 $\Delta = 65^{\circ}04'06''$ LT
Dc = 06°00'00"
R = 954.93'
Ls = 205.00'
 $\theta_s = 06^{\circ}09'00''$
LT = 136.75'
ST = 68.41'
Lc = 879.47'
Ts = 712.79'
Es = 179.92'
Emax =
T.S. =
S.C. = 411+44.26
C.S. = 420+23.73
S.T. =



OpenRoads Software Version

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Contacts

For any questions, suggestions, or problems with this document please contact the ODOT Office of CADD and Mapping Services by use of the following form on the ODOT website:

https://odot.formstack.com/forms/cadd_servicerequest
