# 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.
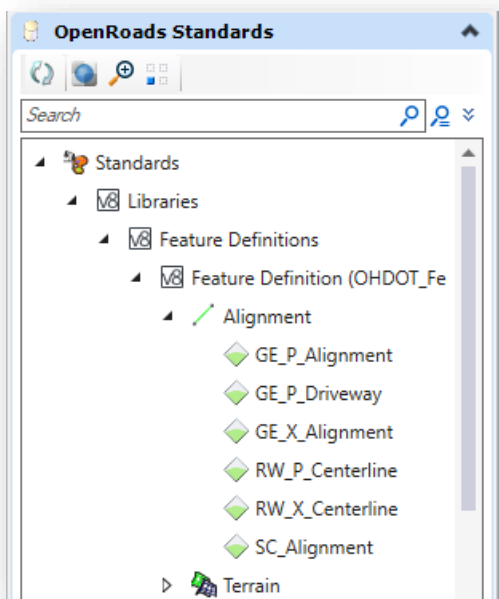

Note that the alignment feature definition controls the symbology and annotation settings for both the horizontal geometry and the proposed vertical alignment.

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.
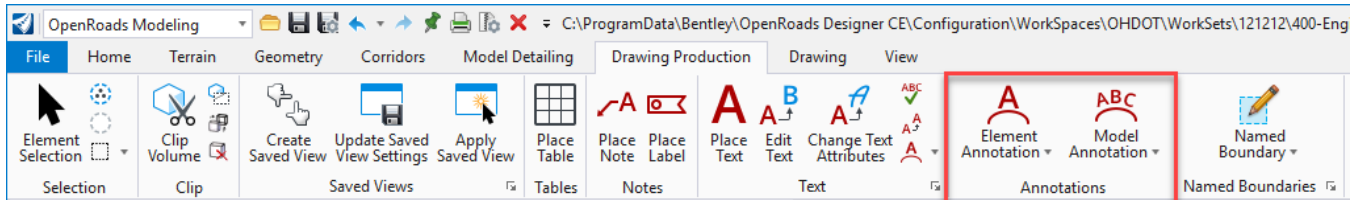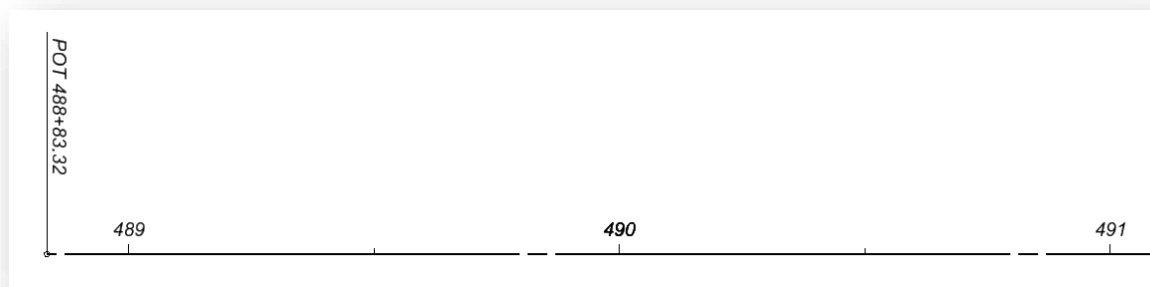

Element Annotation
Individual elements are annotated by selecting the **Element Annotation** command from the **Drawing Production** tab. Two commands are available as shown below.
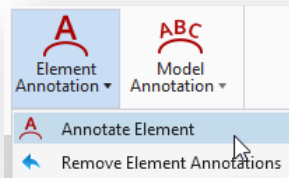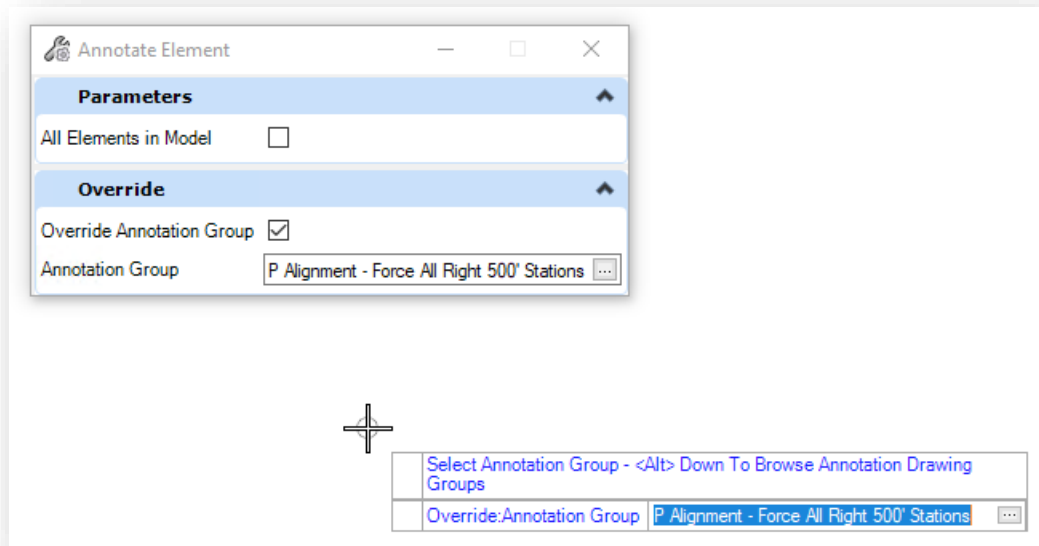

Annotate Element
The **Annotate Element** command is used to annotate one of more selected elements. The command prompts to select the OpenRoads element to be annotated. Multiple elements can be selected. Reset (right-click) to complete the selection process and initiate the annotation placement.

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

OpenRoads version 10.10 includes the ability to add additional annotations to the selected geometry element using the Override Annotation Group setting, shown below.


With this enhancement, ODOT has changed the Annotation Groups for the OHDOT_v2 WorkSpace. See the discussion in the Alignment Annotation Levels section of this document for more information.

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.
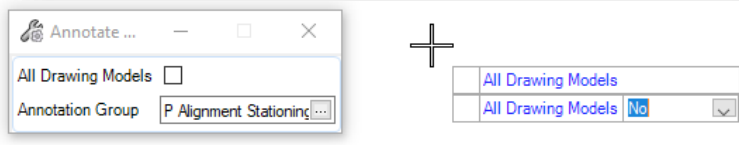
Model Annotation

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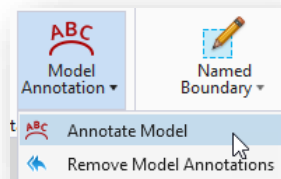
Annotate Model

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, annotation is frequently displayed at different intervals 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.

The **Feature Definition** assigned to the alignment also includes an **Annotation Group** definition. In order to facilitate differing station intervals, the ODOT Alignment Annotation Group definitions are configured to place three sets of annotations in the design file using three different groups of levels for each. The following groups of levels for alignment annotation are defined in the OHDOT Standards:

- 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

When the alignment is attached as a reference, each group of levels may be turned on or off to display the stationing at the appropriate interval for the plan sheet scale.

In the example below, stations and curve data for a sprial elemet are shown. The levels for the stations at 100' interval are turned on, while the levels for the 500' and 1000' stationing interval are turned off. The **Annotation Scale** value is set to 1:20.
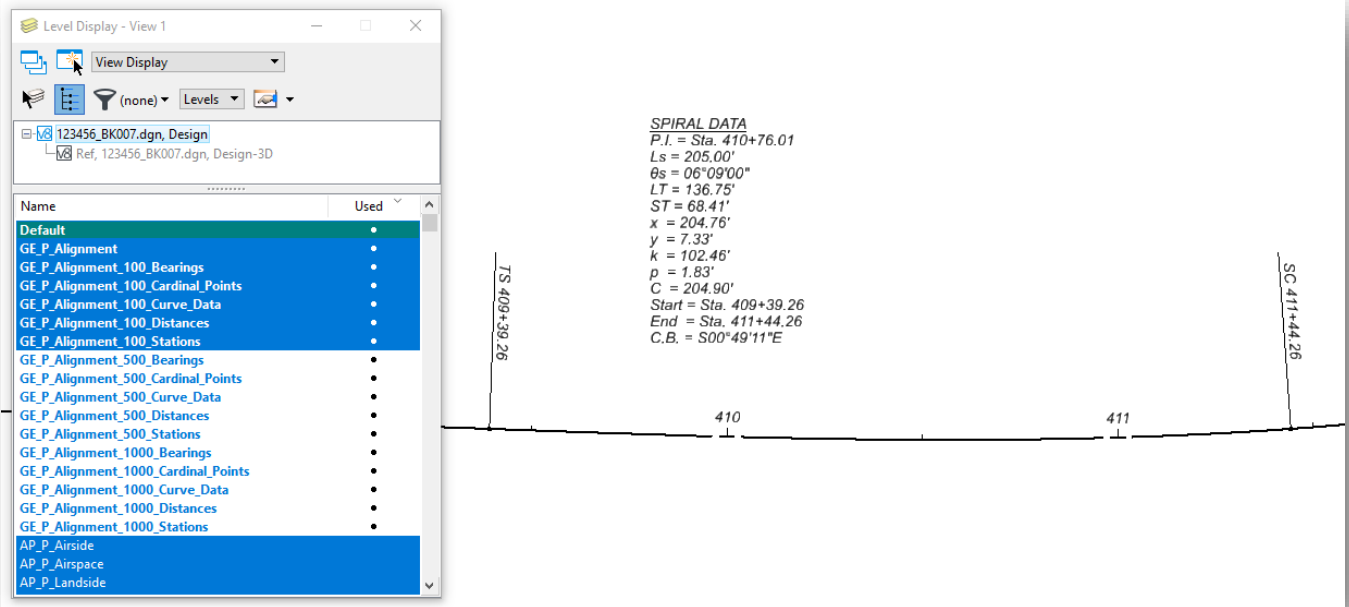
In the example below, the **Annotation Scale** value is set to 1:100 with the levels for 500' station intervals toggled on.
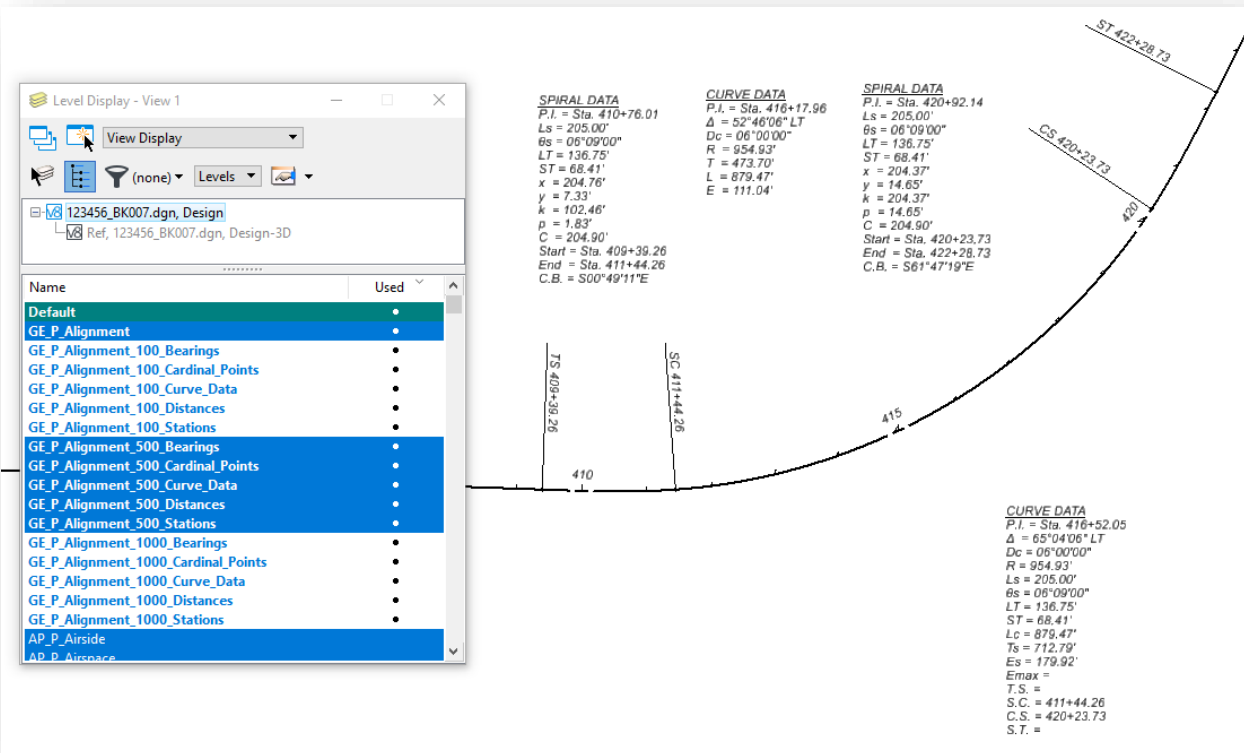
ORD version 10.10 adds the ability to override the default Annotation Group that is assigned to the Feature Definition when the alignment is annotated. With the OHDOT_v2 CADD Standards, the Annotation Groups have been modified to no longer place three separate groups of annotations. Only one group of annotations is placed using the 100' station interval.

Additional annotations for the 500' and 1000' station interval, if needed, may be added by use of the Override Annotation Group parameter as shown below.
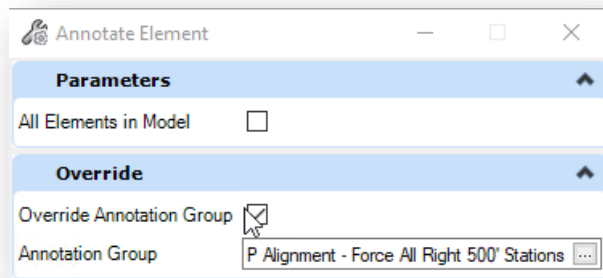
Several new Annotation Groups are available in the OHDOT_v2 CADD Standards, summarized below.

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 keypoint 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 keypoint annotations to the left side of the alignment.
P Alignment – Force all Right 100' Stations P Alignment – Force all Right 100' Stations P Alignment – Force all Right 100' Stations	These annotation groups force all station and keypoint 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 keypoint 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"

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
Δ = 65°04'06" LT
Dc = 06°00'00"
R = 954.93'
Ls = 205.00'
θs = 06°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

This document was prepared using following software:

OpenRoads Designer CONNECT Edition 2021 Release 1 Update 10 – Version 10.10.01.03

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