Plan and Profile Annotation for Rail

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Introduction

OpenRail Designer Annotation driven by the workspace and available to customize

- Automated annotation of horizontal and vertical geometry
- Greenfield and Brownfield annotation



Agenda

- Introduction to Annotation in OpenRail Designer CONNECT Edition
- Creating a Text Favorite
- Creating Annotation Definitions
- Exploring the Annotation Manager
- Linking an Annotation Group to a Feature Symbology
- Feature Definition Wizard

Introduction to Annotation





Annotated during or after creation



Annotation Updates in real time



Drawing scale aware



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Automated Horizontal Geometry Annotation

Automated Horizontal Slue Annotation





Automated Horizontal Cant Annotation



Automated Profile Annotation

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Automated Vertical Geometry Annotation (New Design)



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Automated Vertical Geometry Annotation (Renewal Design)

Overview of Annotation and Labeling

There are several tools that can be used for labeling in OpenRoads:

- Place Text Places user defined static text.
- Place Label Places user defined static and computed text (limited options w Text Favorite or Cell)
- Place Note Places user defined static text with a leader line.
- Element Annotation Uses Annotation Groups to define text/labels for a particular element. The default Annotation Group is a property of the Feature Definition but can be overwritten.
- Drawing Model Annotation Uses Annotation Groups to define text/labels for the drawing model created when creating sheets. A default Drawing Annotation can be set in the Sheet Seed but can be overwritten.
- Civil Labeler Supports complex labels computed from one or multiple targets. Labels can



Elements Needed for Creating Labels and Annotations

- Text Styles Defines a group of text attributes, such as, font, text size (height/width), justification, spacing, and color. Enables consistency and standards when placing text.
- Dimension Styles Defines a group of settings (terminators, units, formats, and symbology) for leader lines and dimensioning.
- Text Favorites A reusable bit of text. The text can include static text and computed text.
- Annotation Definitions Annotation settings for labels used within an Annotation Group.

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Text Favorites



What is a Text Favorite?

A reusable bit of text Sta. 10+000

- Static Text (Sta.)
- Computed Text (10+000)

Creating Text Favorites

- 1. Open the Text Favorite Manager.
- 2. Set the Text Style.
- 3. Type any "static" text.
- 4. Add the computed text by choosing the Field and Sub Field Type -OR- use the Select Element Option.
- 5. Save the Text Favorite.

A Text Favorite Manager				-	
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Creating Text Favorites

Text Favorite Tips:

- Text Favorites are stored and pulled into the Workspace through a .dgn library (*.dgnlib*) file.
- Text Favorites can be created and tested in any working .dgn file and then copied into a .dgnlib file.
- The Select Element button can be very useful (especially for DU).
- Organize and use good naming schemas when creating custom Text Favorites.
- Text Favorites can be *static text* only.
- Can be easily tested with the *Place Label* tool.
- Use delivered examples as a starting point.



Creating a Text Favorite



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Annotation Definition





Annotation Groups

- Annotation Definition details and settings of the annotation.
- Annotation Group collection of Annotation Definitions.
- Accessed through Project Explorer.
- Categorized into Sheet Types and Element Sub Types.





Annotation Groups

- Default annotation groups can be assigned to Elements through *Feature Definitions (Feature Symbologies)*.
- Default annotation groups can be used and assigned to Drawing Models (for creating sheets) in the Drawing Seeds.
- The default annotation groups can be overwritten.

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- Open Explorer and navigate to *OpenRoads Standards > Annotation Groups*.
- 2. Determine the Type and Sub Type needed for the Annotation Group.
- 3. Right-click to create a *New* annotation group.
- 4. Right-click on the annotation group to *Manage* the group of definitions.



- Create new or copy existing annotation definition(s) and establish the settings accordingly.
- 6. Close the *Manage Annotations* dialog to save the changes.



Annotation Group Tips:

- Annotation Groups are stored and pulled into the Workspace through a .dgn library (*.dgnlib*) file.
- Annotation Groups can be created and tested in any working .dgn file and then exported/imported into a .dgnlib file.
- Annotation Definitions can be used across multiple Annotation Groups, so be careful when copying and editing the definition settings.
- ORD 2021 R2 has text location management.
- Organize and use good naming schemas when creating custom Annotation Groups.
- Use delivered examples as a starting point.

Manage Annotations						-	_		
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 The annotation group manager uses the active drawing scale to control the size of the visualized text



 Use the Export/Import XML capability to copy between dgnlibs

Manage Appotations	
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Creating an Annotation Definition for Chainage/ Cant



Annotation Manager Review and Export to XML



Creating an Annotation Definition for a Profile



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Annotation Manager



- Context sensitive options based on the category
- Relies on text favorites to compute text such as station labels
- Uses the active drawing scale for temporary visualization graphics

- The Location property determines the position of the label(s)
 - Alignment Annotation
 - Increments
 - Stations
 - Horizontal Points
 - Vertical Points
 - In Horizontal Components

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- The Annotate property sets the type of label
 - Text
 - Cell
 - Line
- The template option allows the selection of an element template to control symbology

🛃 Manage Annotations	
Annotation Group: XS Grid	w/Annotation 🕂 🗶 금 🗘 🖓 ≟ 🖓 🖂
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XS Sheet Grid Annotation	Annotate
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XS Right Slope Annotation	Template Annotation\Sheets\XS\Draft_XS_Feature_Text
XS Left Fill Slope Annotation	Leader
XS Right Fill Slope Annotation	Placement
	Cell
	Text

- The Leader property enables an optional leader line with multiple options for terminators
 - Arrow
 - Circle
 - Square
 - Triangle
- The template option allows the selection of an element template to control symbology

🖉 Manage Annotations						
Annotation Group: Profile Annotation 🖣	ŀ	×	¢	금. 아 🖓	. 들 😴	
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- The Placement property sets the location of the label relative to the "where" property and includes:
 - Rotation options
 - Vertical offset options
 - Horizontal offset options
 - Perpendicular offset options
 - Tangential offset options
- Note, differing options will appear depending on the label type

🖉 Manage Annotations					
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rofile VPI Sag Sta / Elev Annotation			Tangential Offset	0.0000	
-					

 The Line property sets the length of the line when the Annotate With property is set to the line option

Manage Annotations



 The Cell property sets the cell name, scale, and application of the active cell scale when the Annotate With property is set to the cell option

Manage Annotations

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- For grids there are two distinct types:
 - Profile grid (shown here)
 - Cross section grid

Manage Annotations

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	Horizontal Axis Title	*
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	Horizontal Tick Labe	ls 🔹
	Vertical Tick Labels	*

- The profile grid sets the following:
 - Border
 - Major grid properties
 - Minor grid properties
 - Major grid line properties
 - Minor grid line properties
 - Horizontal axis title
 - Vertical axis title
 - Horizontal tick labels
 - Vertical tick labels

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- Frame annotation
- Allows for row annotation setup w/ collision intelligence

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			Suffix				
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Linking Annotation Definitions





Linking an Annotation Group to a Feature Symbology

- Defined in the Feature Symbologies
- Annotation group properties may be defined for:
 - Linear feature symbologies
 - Point feature symbologies
 - Profile feature symbologies
 - Surface feature symbologies



Linking an Annotation Group to a Sheet Seed Definition

- Typically used for profiles and cross sections
- Option 1
 - Predefine in the sheet seed definition file setup
- Option 2
 - Select when creating sheets

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Name:	131+63.97
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Annotation Group:	XS Grid w/ Annotation
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• A Wizard to assist in the creation of new Features

Feature Definition Wizard				122		×
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- Single Dialog
- Create/Copy
 - Feature Definitions
 - Feature Symbology
 - Element Templates
- Select
 - Levels, Colours, Styles, etc.

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- Annotation Groups
- Item Types

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- Create/Copy
 - Linear Feature Symbology

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- Create/Copy
 - Profile Feature Symbology

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• Feature Definition Properties

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Create New Feature



 Create New Feature from a Copy of an Existing Feature



OpenRoads Designer Workspace Setup (For CAD Administrators) Learning Path

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Moving	to OpenRoads Designer - Workspace Development	
OpenRoa	ds Designer is delivered with a workspace structure designed to be flexible and	
extendab	le for agencies, consulting firms, and users large and small. Different organizations have	
different	vork wore»	
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Definitio	ons Designer workspace Setup. Step 1 - onderstanding Feature	
Discover	the new types of Feature Definitions in OpenRoads Designer CONNECT Edition	

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Workspace Setup Videos

at Learn.Bentley.com

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Robert Nice Product Specialist (Rail)



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