



NHDOT CAD/D Connect Documentation

CONNECT DOCUMENTATION

[Connect Edition Introduction](#)

Geometry

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OpenRoads Design – Geometry

Horizontal Geometry

Training

SIG - Fundamentals of Horizontal Design <https://event.on24.com/wcc/r/2186799/CA4FC23886823D081C512BF456AC8A41>

OpenRoads Designer Help [Let's Begin with OpenRoads Designer \(bentley.com\)](#)

Short Version [Geometry \(bentley.com\)](#)

Open the 12345-Geometry.dgn, *Default* model, attach references and modify the View as needed. May need to save settings and reopen the dgn if the terrain's *Default-3D* model is not displaying in the *Default* window.

Set *Feature Definition* from the Feature definition toggle bar and set to use active.

Use the OpenRoads **Modeling** Workflow **Geometry** tab **Horizontal** tools. Place individual lines and arcs for element design and then complex them together or use the *Complex Geometry by PI* to place a linked Alignment.

To display the Alignment curve data, ticks, and stations, use the Annotate element tool from the OpenRoads Modeling > **Plan Production** tab

Vertical Geometry

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Before You Begin

Before working on a Vertical design, a Horizontal Alignment must have been created. The Set Active Terrain Model tool can be found on the Tasks menu in either General Geometry or in the Terrain Model menus. Using the Context Sensitive menu, first select the Terrain with the Element Selection tool, then hover over the Terrain to summon the Context Sensitive menu. Select the Set As Active Terrain Model button and then follow the Heads-Up prompt. Setting the Terrain Model as Active enables the existing ground to automatically appear in the Profile Model.



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Process Description

- To begin a Vertical design, select the Open Profile Model button from the Vertical Geometry Tasks menu. The Open Profile Model button can also be found on the Context Sensitive menu. Either way, follow the Heads-Up prompt to Select the Horizontal Geometry and then Click in an Open View.
- When using the Profile Complex By VPI command, the Vertical Curve Length can be changed on the Heads-Up prompt prior to placing the next VPI. If the curve does not display while placing the next VPI, then the current curve is probably overlapping the previous curve.
- Use the tools found on the Vertical Geometry Tasks menu to create a Profile. The Vertical Geometry Tasks operate very similar to the Horizontal Geometry Tasks. It is recommended to issue a Save Settings and a Save prior to starting a profile as well as when you are finished designing. Check out the Vertical Essentials video to learn more.
- set active profile When finished designing, set the desired profile to be the Active Profile. This step is necessary because more than one profile may exist in a single profile model. Therefore, it is mandatory to designate which is the intended profile for the Horizontal Geometry. The Set (As) Active Profile tool is found either on the Vertical Geometry Tasks menu or on the Context Sensitive menu. Afterwards, Save the DGN if not set to automatically do so.
- Profiles should look the same as the Horizontal features that they represent. If your profile does not look like it's Horizontal counterpart, then select the profile with the Element Selection tool. Next, open Element Information and expand the General category. Change the Feature definition to match the Feature Definition assigned to the Horizontal component of the alignment. This should change its attributes to match. Also set the profiles name.

Geometry from SS4 OpenRoads

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Before You Begin

This process is assuming you have OpenRoads SS4 Horizontal and Vertical geometry alignments that need to be brought forward into ORD to use in design.

Copy the SS4 Alignments into the New Drawing

Attach the *Default* model of the SS4 alignment drawing to the *Default* model of the project's *Geometry.dgn* file. Also attach the *Default-3D* model of the SS4 alignment drawing to the *Default-3D* model. If the referenced alignments have elevations, set the



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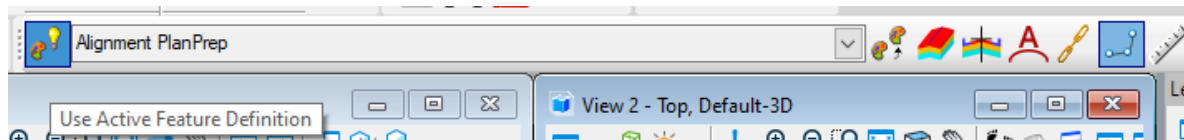
Default-3D model as the active model and select the alignment(s) to be updated. If they do not have elevations, perform these steps with the *Default* model.

Copy the alignment(s) into the new drawing.

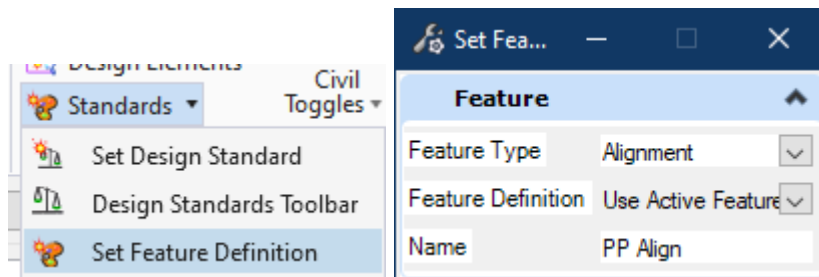
Update the Feature Definition

Turn off display of the reference attachment.

Set the *Feature Definition* to **Alignment Mainline** (or other appropriate feature).



On the Geometry tab of the OpenRoads Modeling workflow



The geometry will update to the correct symbology, but the stations will not be shown.

To display the Stations and Curve data you must use the *Element Annotation* tool from the Drawing Production tab. With the element selected click on the tool and *data point* on the screen to *accept*. The stations, ticks, pc/pt's, bearings and curve data will all be added to the drawing.

Set the Existing Terrain as active prior to opening the profile.

The active profile should already exist, but its feature definition is not defined. Go to the Geometry tab, and **select Open Profile Model** from the Vertical section or select the Alignment hover and select it from the popup menu. An easy way to bring up a profile if you only have the *Default* model in view 1 is to use the *Right Click* hold menu > *View Control* > *Views plan/profile*. Next select the horizontal alignment and then the view for it to go in.



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Use *Element Selector* to select the profile and change its feature definition to match it's horizontal feature definition. Set it active if not already.

Your alignment is good to go!

Repeat for each alignment.