

Short Projects on Long Highway Alignments

In a project with no roadway realignment, it may be advantageous to use a RW located or resolved centerline for a long stretch of highway even though the project is relatively short. Perhaps it is a new guardrail run or a pavement preservation project with spot improvements, where an entirely new alignment is not required. The designer could employ a horizontal Single Offset Partial with a Zero Offset as their design alignment where the short design alignment is ruled to another, longer alignment in a different file. If there are several spot areas needing horizontal & vertical alignments, a GEOM file can be created for each area with unique horizontal alignment naming; a single GEOM file can also contain several alignments all ruled to one long alignment.

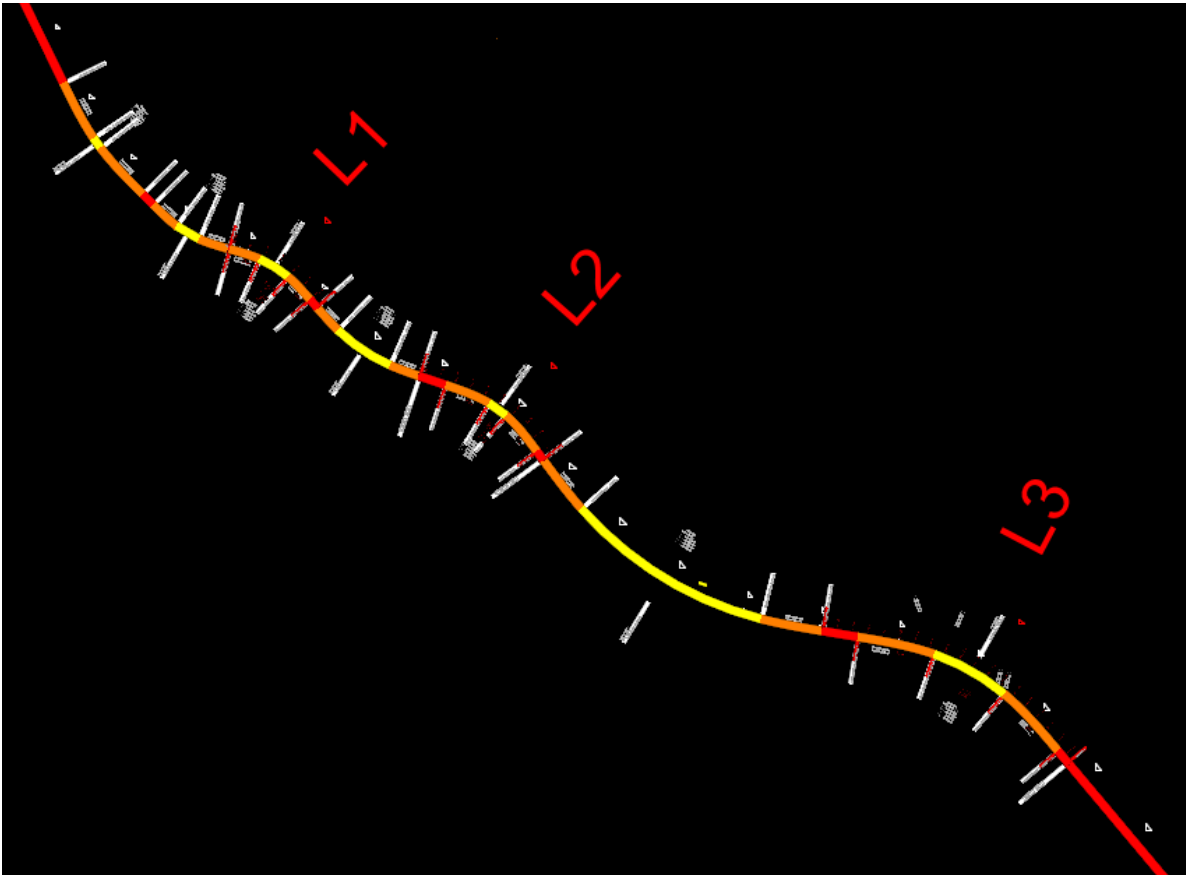
Create a Partial Zero Offset Alignment in a GEOM_L_pub File

It is a good practice to create a separate geometry file (GEOM_XXX_pub from a 2D seed) to hold short project alignments ruled to a long highway alignment. When the longer alignment is miles long, there can be a significant delay in display. The long highway alignment (RW or Survey) should be attached as a reference to a Roadway GEOM published file and the Roadway published file delivered to the project using a “No Nesting” reference attachment to the Roadway Geometry Base Container File. The display performance will be significantly improved for downstream users because the long highway alignment is not civilly accessed or displayed when the Roadway container file is referenced.

In the steps below several short alignments for spot areas will be ruled to one long alignment named L.

1. Create a new file from a 2D seed to hold the zero-offset geometry. (R_K#####_GEOM_L_pub_###.dgn, described as <L1, L2, & L3> Geometry Published File).
2. Attach a reference to the existing terrain and **Set As Active Terrain** to create the managed 3D model.
3. Attach a reference to the existing RW centerline geometry. (S_K#####_GEOM_rw_bas_CF_###.dgn, Live Nesting, Depth = 1 to see the GEOM_erw_pub file).
4. Create a zero offset alignment named L1 that uses the CL_Main feature definition. [**OpenSite/Roads Modeling>Geometry>Horizontal>Offsets and Tapers>Single Offset Partial**].
5. Verify that the horizontal alignment was created and named as you specified by expanding the Explorer>OpenRoads Model, looking at the properties, and by toggling off the display of the referenced RW geometry.
6. Set the new alignment's Start Station to the stationing displayed by the reference to the long alignment. [**OpenSite/Roads Modeling>Geometry>Horizontal>Modify>Start Station**]
7. Verify stationing with element annotation. Red-colored CL_Main annotation can easily be distinguished from white-colored RW_CL_Prim annotation in the picture below.

Repeat the steps above for other spot areas to create L2 and L3 in the same DGN file.



Create Profiles When Needed

With spot areas of construction, the most commonly needed profile is the existing ground elevations. Open a Profile Model for each alignment and use Quick Profile from Surface. [**OpenSite/Roads Modeling>Geometry>Vertical>Create Profiles>Quick Profile From Surface**]

Use **Set As Active Profile** in each profile model to create 3D Linear Elements in the managed 3D model.

Note: The command “Set As Active Profile” **creates** a 3D Linear Element in the Default-3D model that uses the name of the horizontal alignment and reports the name of the profile used to create it. Setting a different profile as active does not affect previously created 3D Linear Elements. You must manually delete old, unwanted 3D Linear Elements if you do not want them to appear in profiles and cross sections.