# Corridor Key Stations to Geometry Event Point Lists

Key stations are used when editing a corridor to force a template drop at a particular station. Key stations will affect the triangulation of the resulting mesh or terrain created from the corridor. When creating civil cross sections, the points and stations associated with the geometry are what control special stations for cross section display and affect the cross section end area volume calculations.

If you will be using cross sections to calculate end area volumes, it is important to understand how you can control the special stations for cross sections.

This document will take you through the steps to create key stations in a corridor, then add those stations as an event point list to the corridor's centerline geometry.
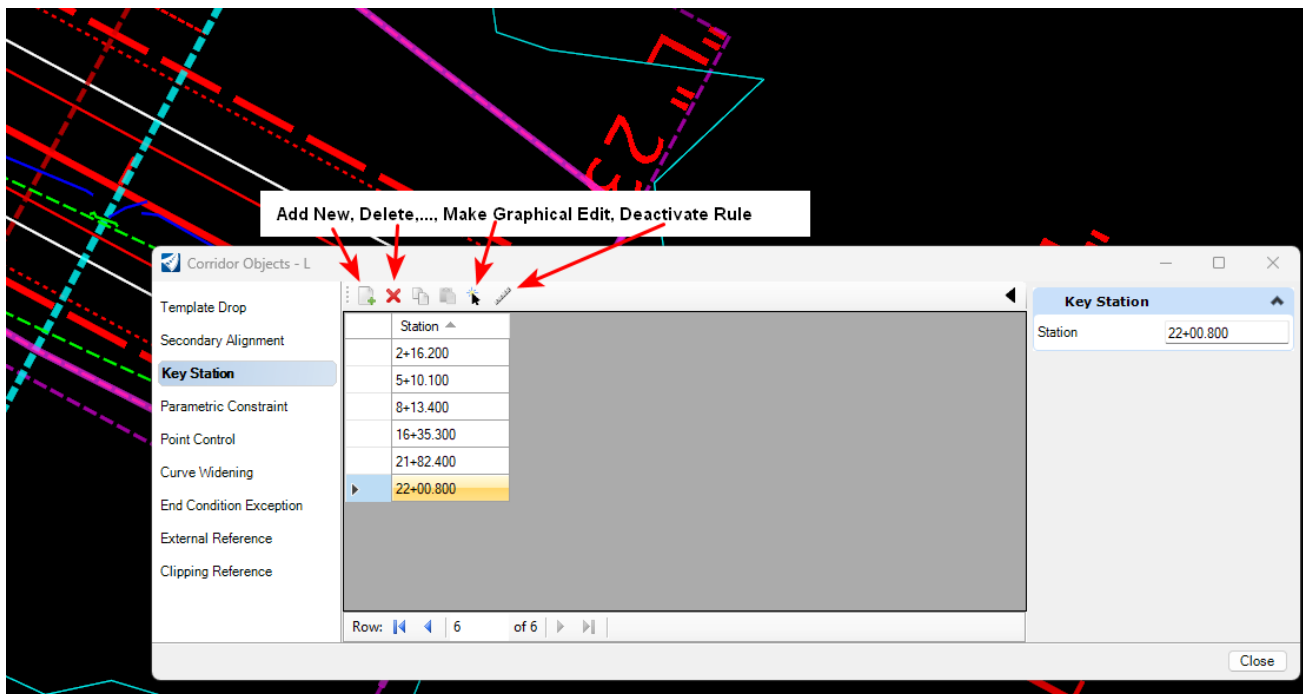
Create Key Stations in the Corridor

When Key Stations are created in a corridor, a red, dashed line will be drawn on the D_CORR_KeyStation level. To quickly add a key station by clicking in the DGN file, it may be easiest to right-press a corridor handle and select **Corridor Creation Tools>Key Station** to run the command as shown in the picture below. Uncheck the lock in the tool settings dialog and left-click to immediately add a key station.
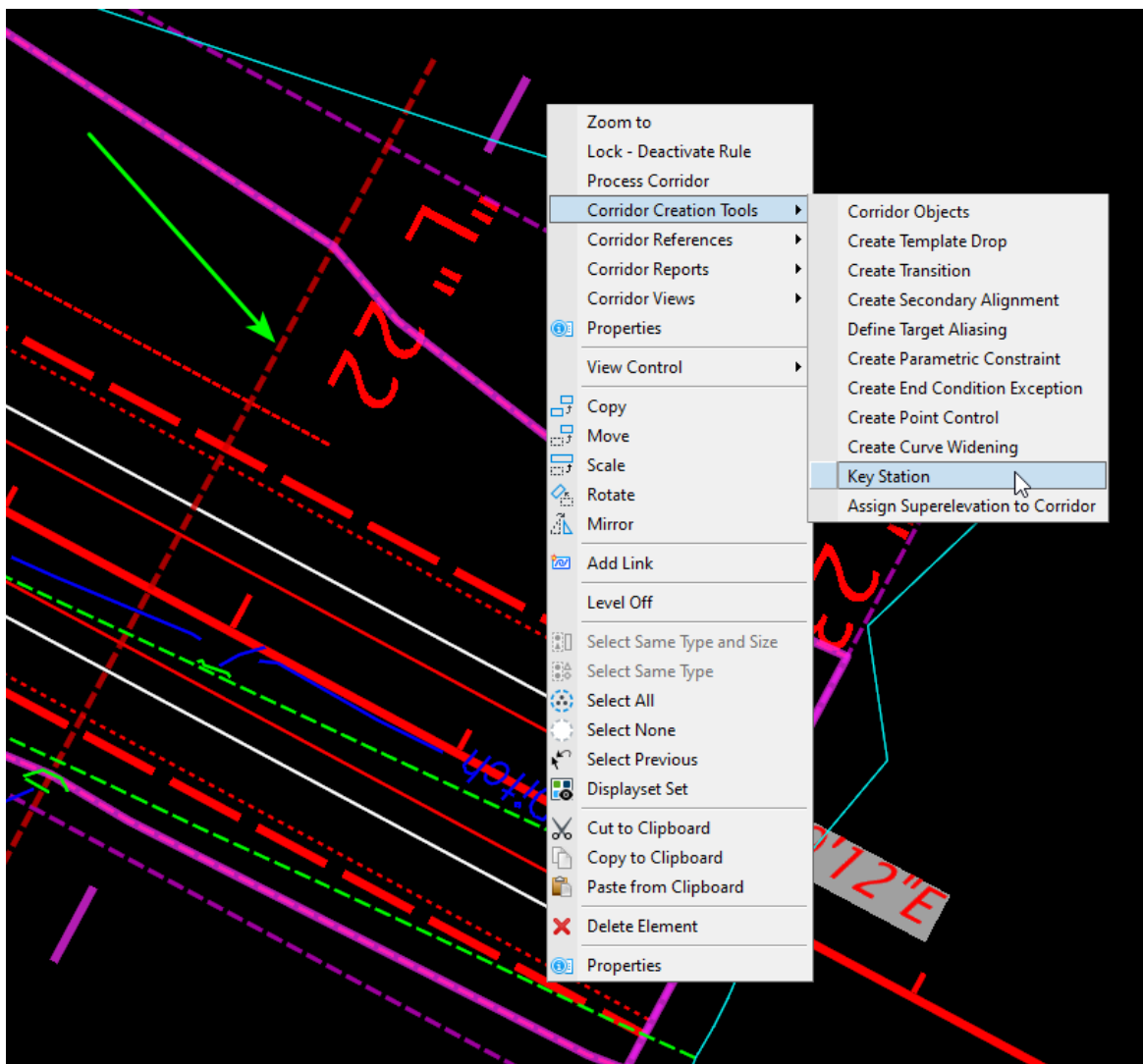
The key stations may be reviewed, added to, or removed using the **Corridor Creation Tools>Corridor Objects** choice from the right-press corridor pop up or selecting the bucket icon from the Corridors>Edit group on the OpenRoads Modeling ribbon workflow.
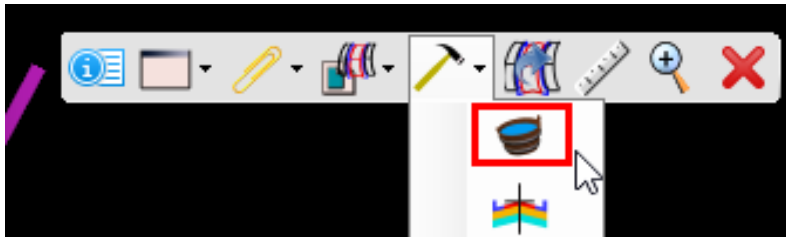
To modify the key station value, select the row in the Corridor Objects window and the *station value will highlight for replacement*, type in the new value. In the picture below, the key station has been modified to the nearest tenth for easy identification in the full corridor results report.

The buttons on the Key Station toolbar affect this "page" of the corridor objects window only.

Add New – collapses the Corridor Objects window and presents the Create Key Station tool settings dialog for graphically selecting a location or checking the Station lock to key-in a station value. Corridor Objects reappears when new value is entered, or the mouse is right-clicked.

**Delete** – deletes the selected key station value in the Corridor Objects window.

Make Graphical Edit – *acts on the selected row only* - collapses the Corridor Objects window and presents the Create Key Station tool settings dialog for changing the selected station value by graphically selecting a location or checking the Station lock to key-in a station value. Corridor Objects window reappears when new value is entered, or the mouse is right-clicked.

Deactivate Rule– *acts on all key stations* – clicking the grayed-out ruler icon will cause the key station graphics to not respond to edits in the corridor objects window or graphical edits to the manipulators. When the key station rules are deactivated, only manually reprocessing the corridor will cause the key station graphics to sync up with the values. Typically, Deactivate Rule is used while the Corridor Objects window is open when there are several edits to make and you want to suppress processing until all the edits have been made; then, you would click Unlock- Activate Rule.

Create Event Point Lists in the Geometry

It can be very useful to create Event Point Lists that are attached to your geometry for creating cross section drawings that occur at special corridor template drop stations. Only one Event Point List may be selected at a time when using the Place Named Boundary Civil Cross Section command seen below. The Event Point List allows you to add cross section drawings at stations that are not cross section interval stations. The option to "Include Control Points" only adds **horizontal cardinal stations** to the cross section interval stations, nothing else.

Adding horizontal and vertical cardinal stations to an Event Point List in a geometry DGN file takes one mouse click each. It is more difficult to add critical sections from horizontal or vertical densification if you have chosen those options in the corridor feature definition. Combining the vertical cardinal points and the key stations into one Event Point List stored in the GEOM_XXX_pub file will be covered here.
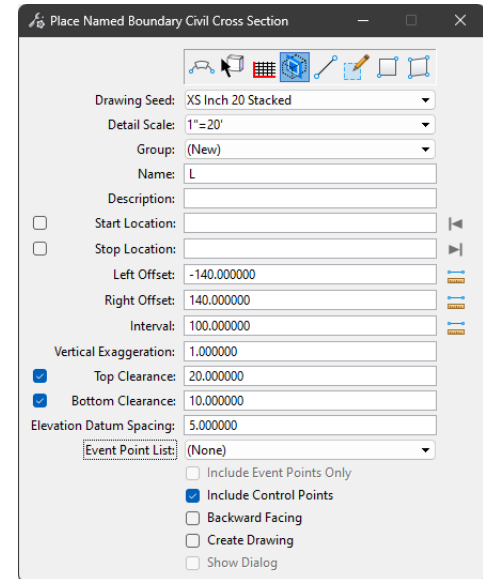
The picture below shows a GEOM_XXX_pub file with the corridor attached as a reference. All the corridor levels have been toggled off except D_CORR_KeyStation.

SPECIAL NOTE *- The referenced key station graphics are not snappable elements – and that's a little frustrating. It is recommended that if you have a number of key stations to add as event points, to use References>Merge Into Master on the corridor reference with only D_CORR_KeyStation level displayed, which will copy the referenced key station elements as regular lines that are snappable! Then you can use AccuSnap Defaults of "Intersection" to add the event points.*

The first time you run the Event Point List command (**OpenRoads Modeling>Geometry>Common Tools>Event Point List**) for a particular alignment you will be prompted to create the first event point list. It is recommended to check the box to "Include Vertical Cardinal Points" with the Placement Method of Station Offset as shown in the picture below.
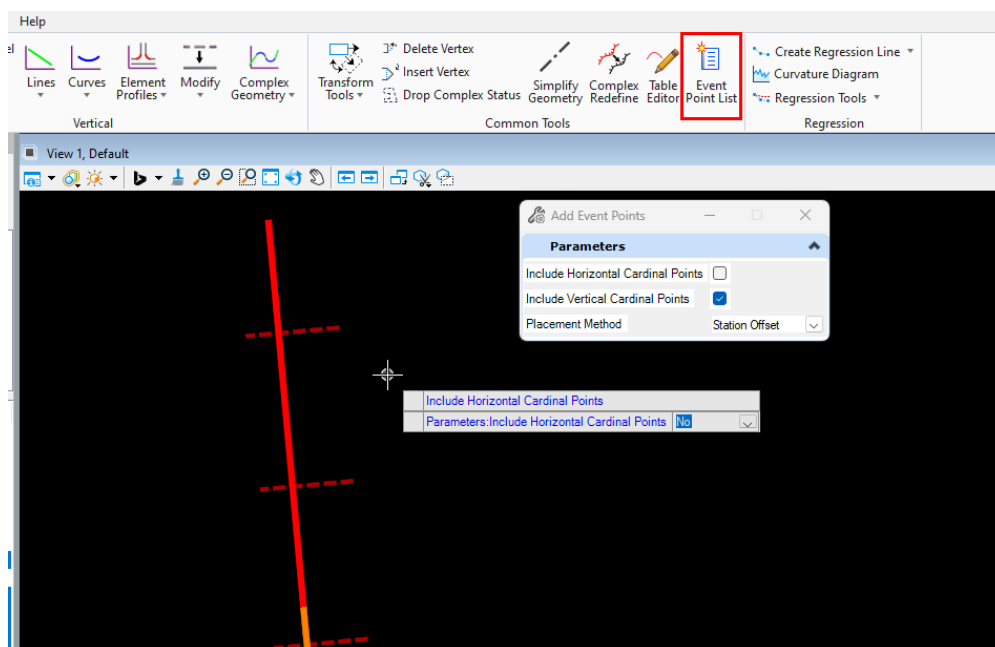
Left-click to accept the settings in the heads-up prompt and the Event Point List dialog will open with the new list created and named for the alignment. Several tools are outlined in the picture below in red and further explained.
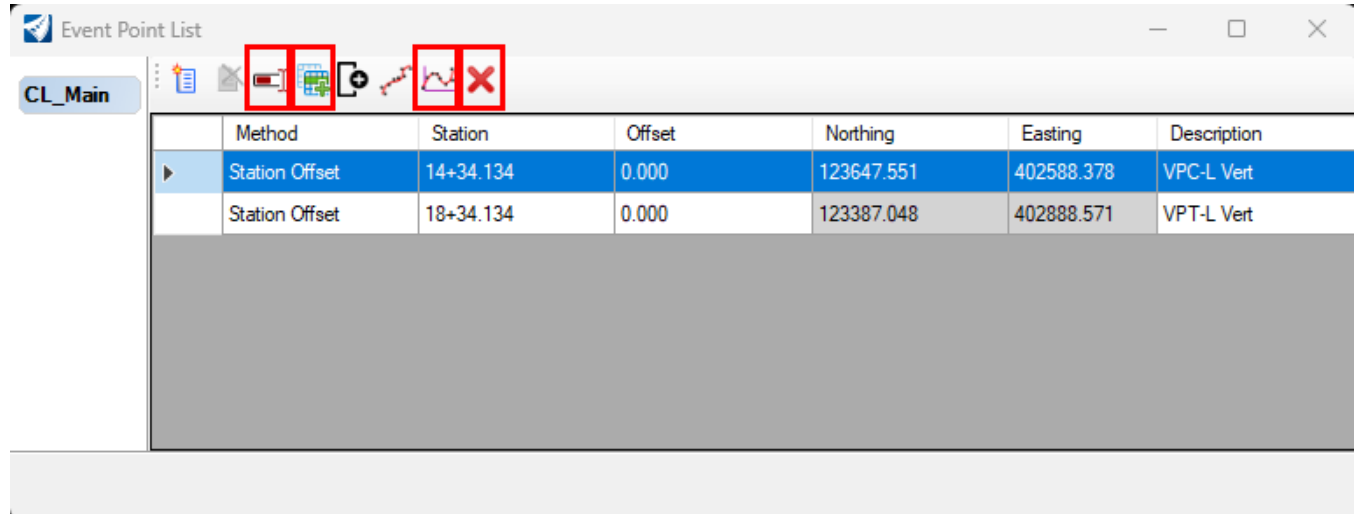

Rename List – opens a small, separate "Rename Event Point List" dialog. Enter a descriptive name like VtCardPts_KeyStations, then click [OK].

Add By Station Offset – collapses the Event Point List window and presents the Add Event Point tool settings dialog for selecting a station and offset value by graphically selecting a location or checking the Station lock to key-in a station value. The Event Point List window reappears when new value is entered, or the mouse is right-clicked.

Add Vertical Cardinal Points – adds the vertical cardinal points of the alignment (which you've already done). Use this after making changes to a vertical geometry. This is a static list.

Delete– *acts on selected rows* – deletes the row. Useful for deleting previous vertical cardinal points *before adding new ones*, if changes have been made to the profile.

The picture below shows the result of using the "Add Station by Offset" command, with AccuSnap Defaults set to intersection, on 5 key station lines that were merged into the geometry. 15 mouse clicks in all.
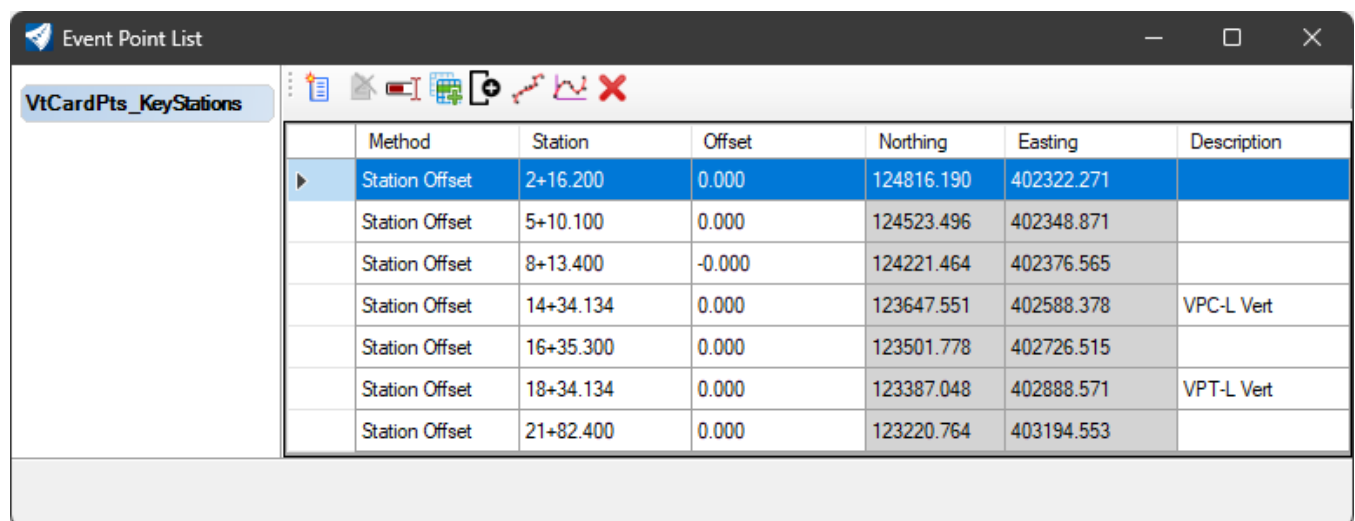
This geometry is now ready for creating cross sections that match the corridor event points.