Workflow 2: Creating Proposed Vertical alignment using Component Based Vertical Alignment Design Tool

The new method to create vertical alignment introduced with Geopak 2000 is the Component Based Vertical Alignment Design Tool. This method allows for vertical alignment to be created graphically and stored using Store Graphics command, similar to the horizontal alignment Store Graphics command. The Component Based Vertical Alignment Design Tool requires COGO to be active as well as an Active Chain and Active Profile Cell. Component Based Vertical Alignment Design Tool requires the use of Active Chain Control, a method introduced with Geopak 2000. Active Chain Control can be used in place of the 3 port viewer.

1. *Select the Active Chain Control tool by Selecting Application>Geopak Road >Active Chain Control*
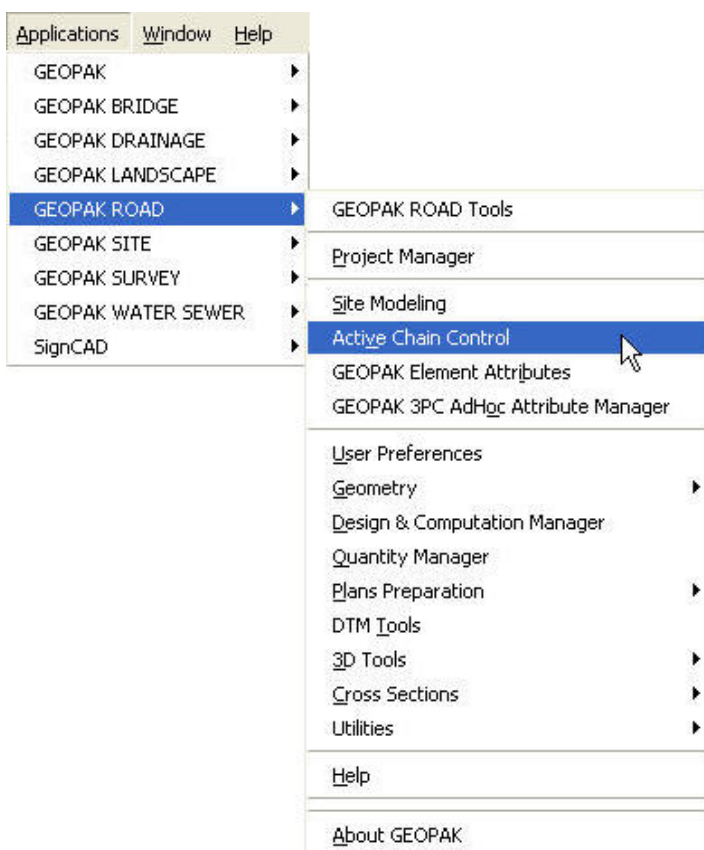

Figure 7-48: Accessing Active Chain Control

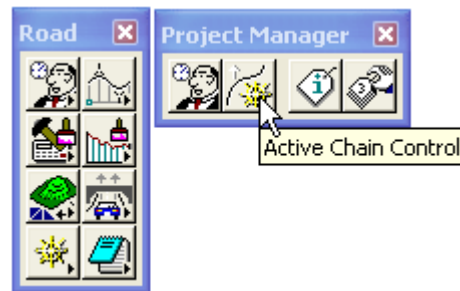*Or by selecting Active Chain Control button from the Geopak Main dialog box.*

Figure 7-49: Accessing Active Chain Control through Road Tools Icon

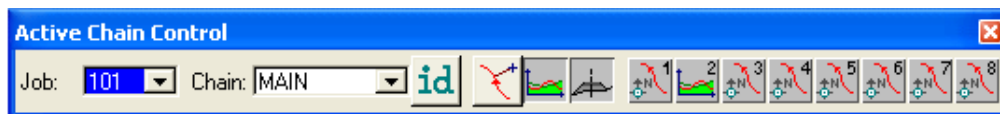*Selecting the button will invoke the Active Chain Control dialog.*

Figure 7-50: Active Chain Control Dialog

2. *Using the Active Chain Control dialog box, eight MicroStation view are available to set the graphical data for Plan, Profile and Cross Section.   In the dialog box shown below, View 1 is the plan view, View 2 is the profile view and View 3 is the cross section view. To use the Component Based Vertical Alignment Tool, assign your profile to a view by right clicking on one of the eight MicroStation views and selecting the Profile.*
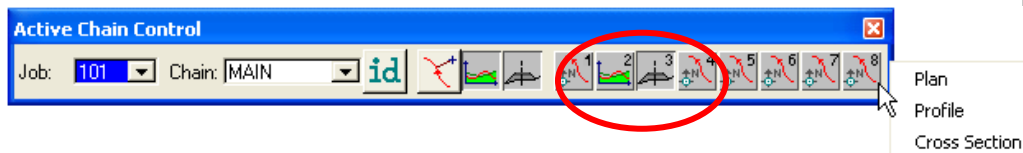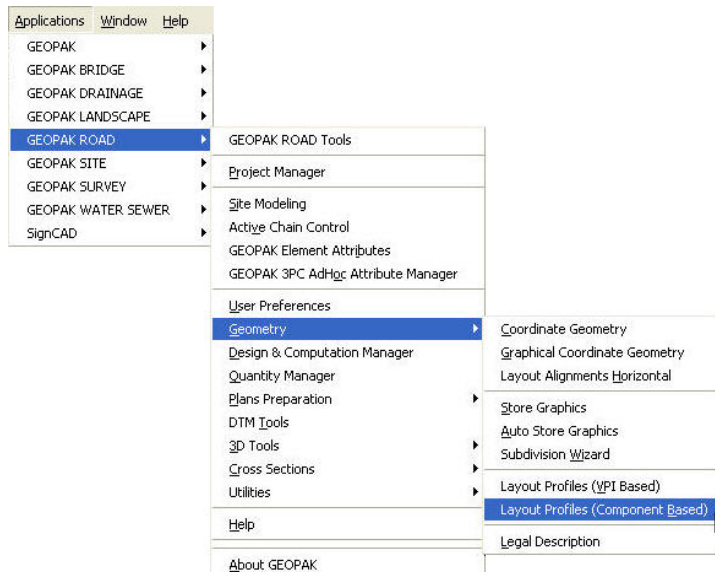

**Figure 7-51: Assigning Profile View**

3. *Select the Component Based Vertical Alignment Tool by Selecting Application>Geopak Road >Geometry>Layout Profiles (Component Based)*

Figure 7-52: Accessing Component Based Vertical Alignment Tool

Or by selecting Component Based Vertical Alignment Tool from the Geopak Main dialog box. Component Based Vertical Alignment Tool is not available through the Project Manager Workflow dialog box.
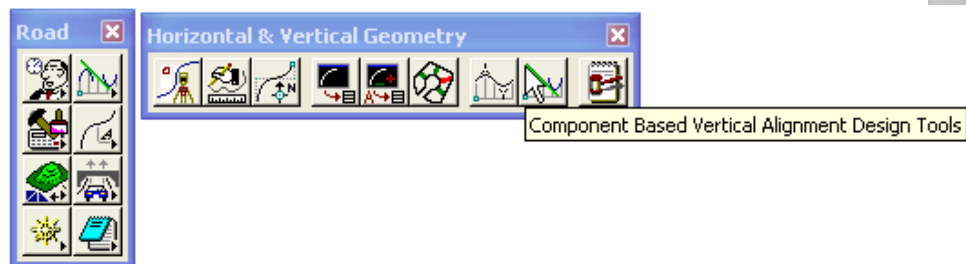
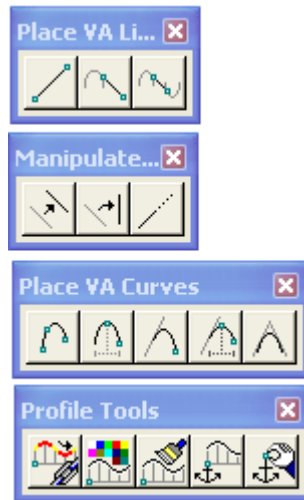**Figure 7-53: Accessing Component Based Vertical Alignment Tool through Road Tools Icon**

4. *Once selected the main Component Based Vertical Alignment Tool frame is activated as shown below. The tool frame contains tool boxes to place vertical alignment lines, manipulate vertical alignment elements, place vertical alignment curves and profile tools.*

Figure 7-54: Component Based Vertical Alignment Tool Frame

5. *From the main Component Based Vertical Alignment Tool frame shown above, following additional tools can be accessed from each of the four main tool boxes.*
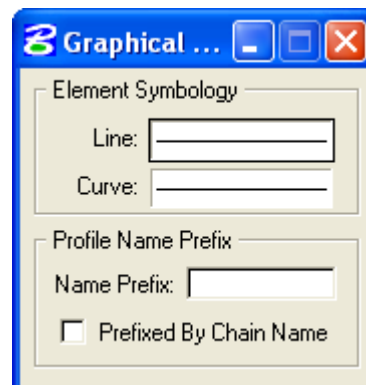

Figure 7-55: Component Based Vertical Alignment Tools

6. *Prior to using the Component Based Vertical Alignment Tools to draw, select the Dialog Graphical Profile Preference icon as shown below.*

Figure 7-56: Dialog Graphical Profile Preferences

7. *Set the Element Symbology for the Line and Curve. Setting the element symbology will allow for easier viewing when designing the vertical alignment using the Component Based Vertical Alignment Tools.*

Figure 7-57: Graphical Profile Preferences

8. *Use the Component Based Vertical Alignment Tools to graphically draw the vertical alignment.*
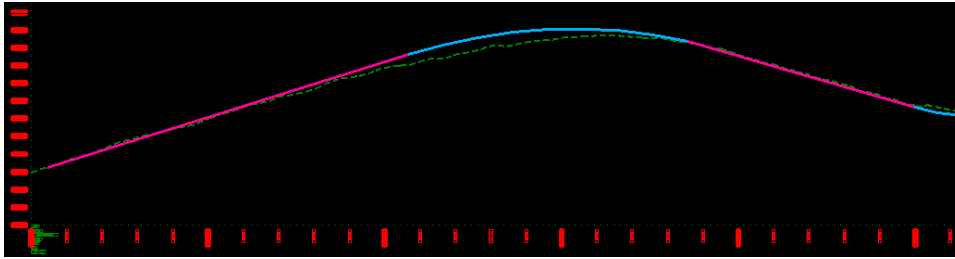

Figure 7-58: Draw Graphical Profile

9. *Once the vertical alignment is drawn using the Component Based Vertical Alignment Tools, vertical alignment can be stored. Select Store Vertical Alignment icon from the Profile Tools dialog to store the vertical alignment.*
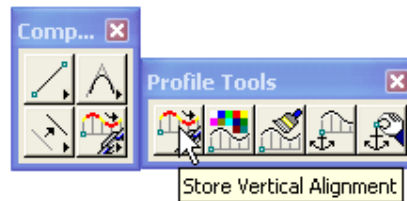

Figure 7-59: Store Vertical Alignment Icon

10. *Once the Store Vertical Alignment icon is selected, the following dialog will activate if the COGO dialog is not already activated. Select OK. The Component Based Vertical Alignment Tools requires COGO to be active.*
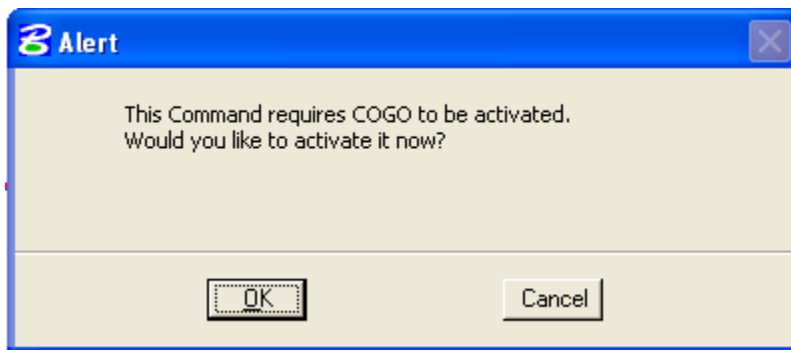

Figure 7-60: COGO Activation

11. *Selecting Store Vertical Alignment icon will activate the following dialog box. Input the profile name and select the elements to store.*

Figure 7-61: Store Vertical Alignment