

CDOT Annotating Horizontal and Vertical Alignments



This document demonstrates the procedure for displaying annotation for horizontal and vertical alignments. It further presents the workflow for annotating horizontal alignments that contain spiral components.

InRoads can display most alignment annotation as per the M&S standards. However some annotation will require editing and/or repositioning using standard MicroStation commands.

Annotating a Horizontal Alignment

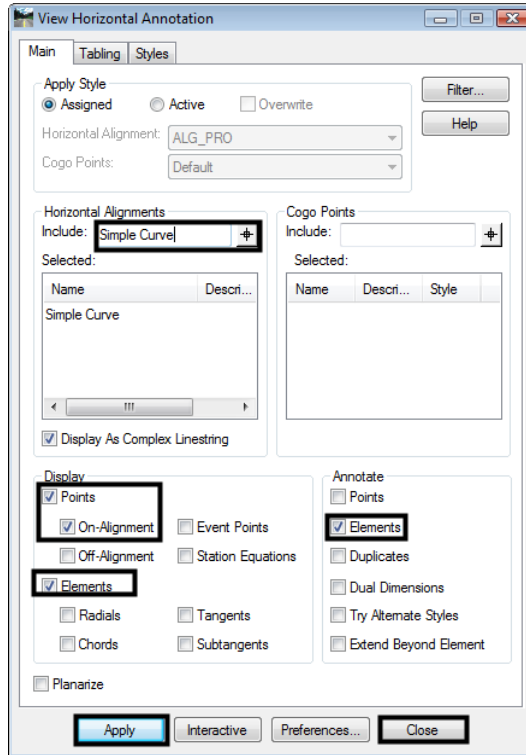
Two InRoads commands are required to annotate a horizontal curve in the CDOT format. The first command (horizontal annotation) is used to display the linework and annotate the tangents. The second command (horizontal curve set annotation) is used to display the PI symbol, short tangents, and curve data. Once the InRoads annotation tools have been used the user needs to modify the text content and positioning to have it appear as per the M&S standards.

Annotating a Horizontal Curve –Circular Curve

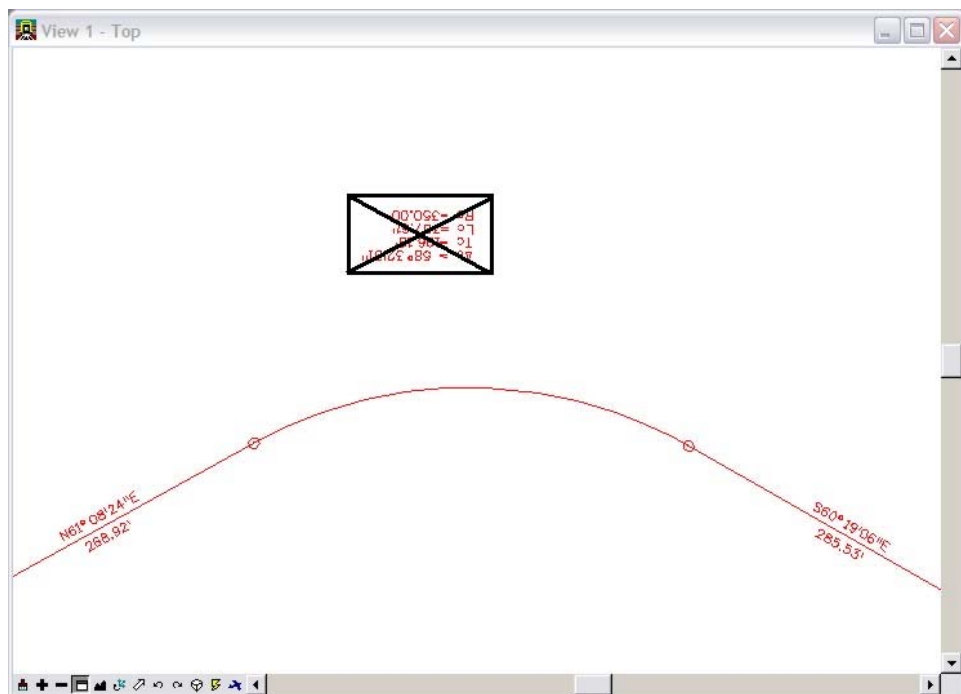
This first example illustrates annotating a circular curve. This is followed by the workflow required for annotating circular curves with spiral transitions.

1. Display the horizontal alignment using **Geometry > View Geometry > Horizontal Annotation**. The *View Horizontal Annotation* dialog will appear.
2. Key in the desired **alignment name** for display in the **Include** field of the *Horizontal Alignments* area. The target button can be used to select the alignment.

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3. In the *Display* area, toggle on the check boxes for *Points*, *On-Alignment Points*, and *Elements*.
4. Toggle on the check box for *Elements* in the *Annotate* area.
5. <D> Apply then <D> Close.

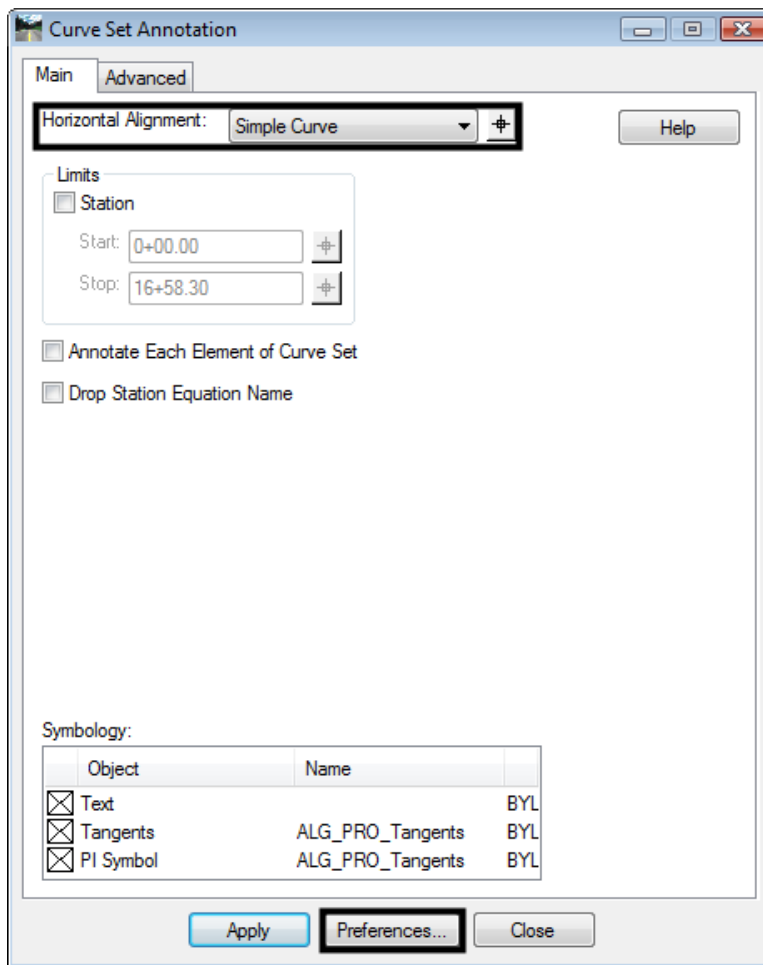


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6. Use the MicroStation **Delete Element** command to remove the curve annotation from the display, as this information will be redisplayed in the following steps.

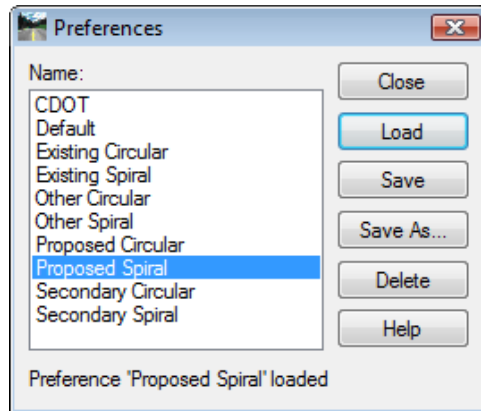
Note: Prior to deleting the curve information, the MicroStation **Graphic Group** lock must be disabled (**Settings > Locks**). Otherwise the entire alignment will be deleted.

7. Display the Curve Annotation using **Geometry > View Geometry > Curve Set Annotation**. The *Curve Set Annotation* dialog will appear.
8. In the **Main** tab, select the correct alignment name (*Simple Curve* in this example) from the **Horizontal Alignment** drop down list.



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9. <D> Preferences, as shown above, and choose the appropriate *Spiral* preference (*Proposed Spiral* as shown below). <D> Load and then <D> Close.

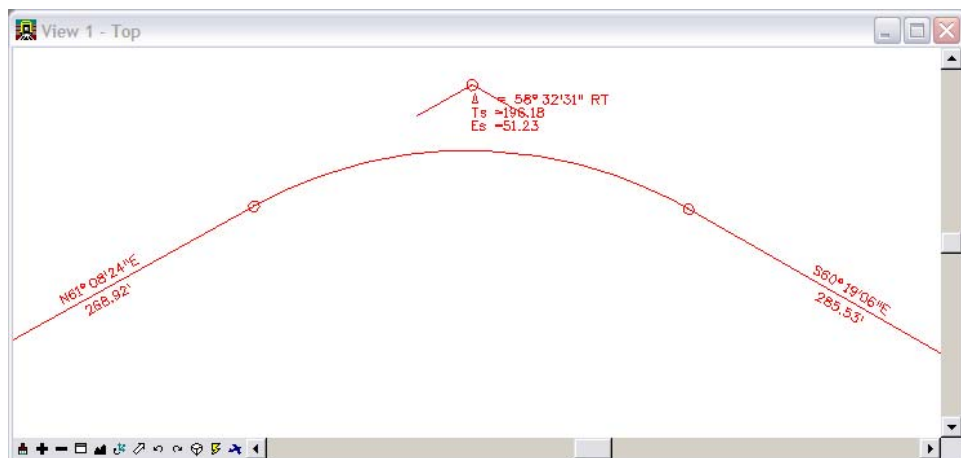


Note: The preferences established for spirals serve the dual purpose of annotating curves with either circular or spiral components. The central curve information required is common between the two types of geometry.

The InRoads **Write Lock** must be set to **PEN** mode prior to the next command. The curve requires the annotation to be displayed twice and **PEN** mode will retain previous annotation displays.

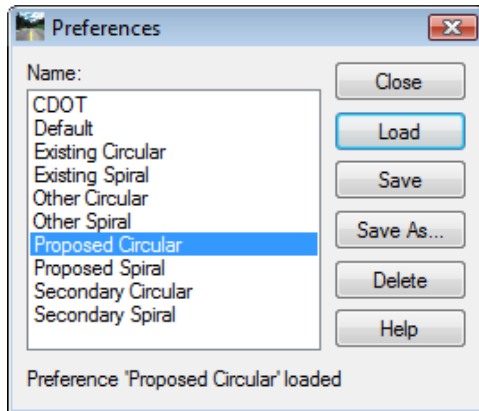


10. <D> Apply on the *Curve Set Annotation* dialog. The central curve is annotated.

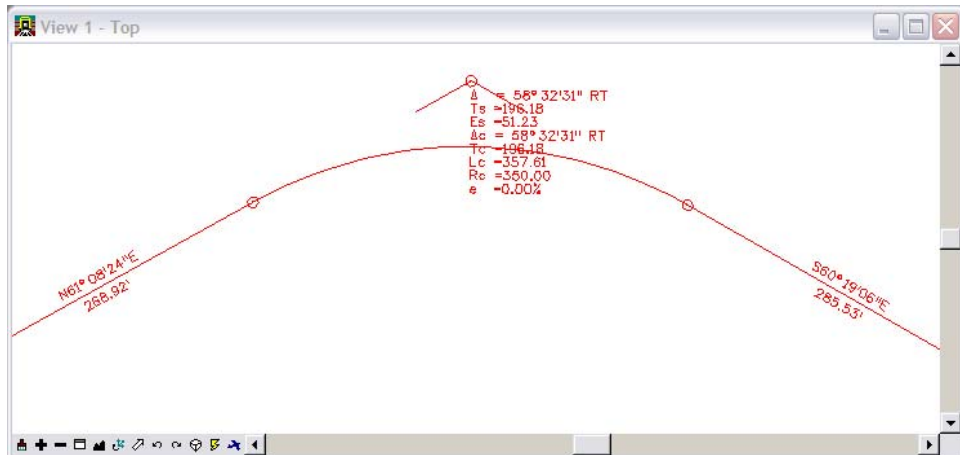


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11. <D> Preferences again and choose the appropriate *Circular* preference (*Proposed Circular* as shown below). <D> Load then <D> Close



12. <D> Apply on the *Curve Set Annotation* dialog. The remainder of the central curve information is annotated



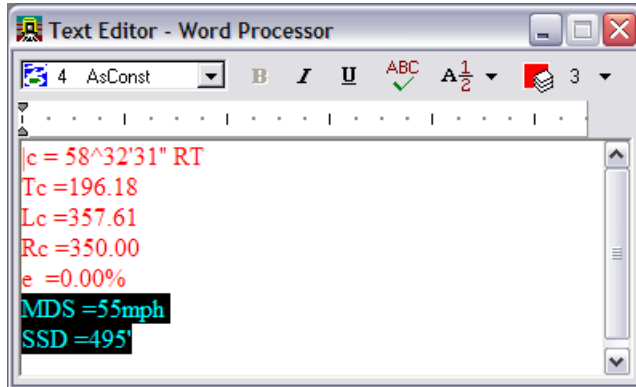
Note: The M&S standards specify that curve information should include the Mean Design Speed (MDS) and Stopping Sight Distance (SSD) information. This information is not annotated by InRoads and will have to be added with MicroStation.

13. Select the MicroStation Edit Text command

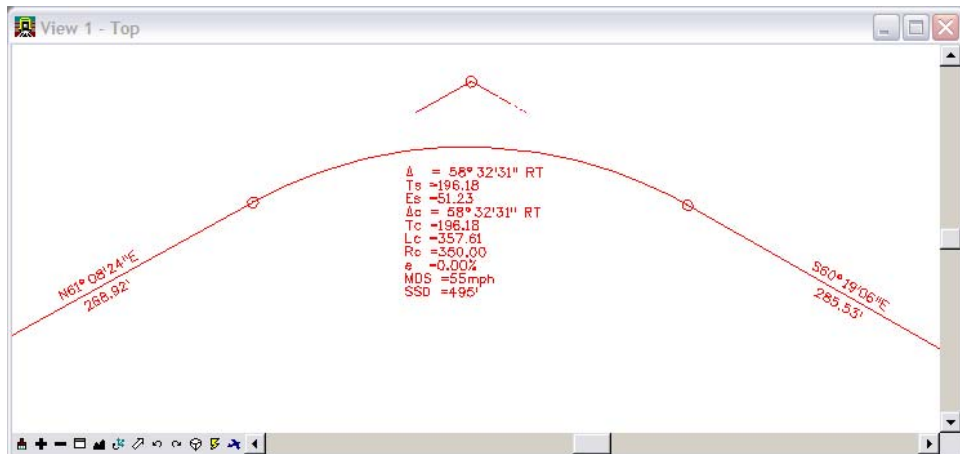


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14. Select the desired text. The text editor will appear allowing the user to add the required information for MDS and SSD.

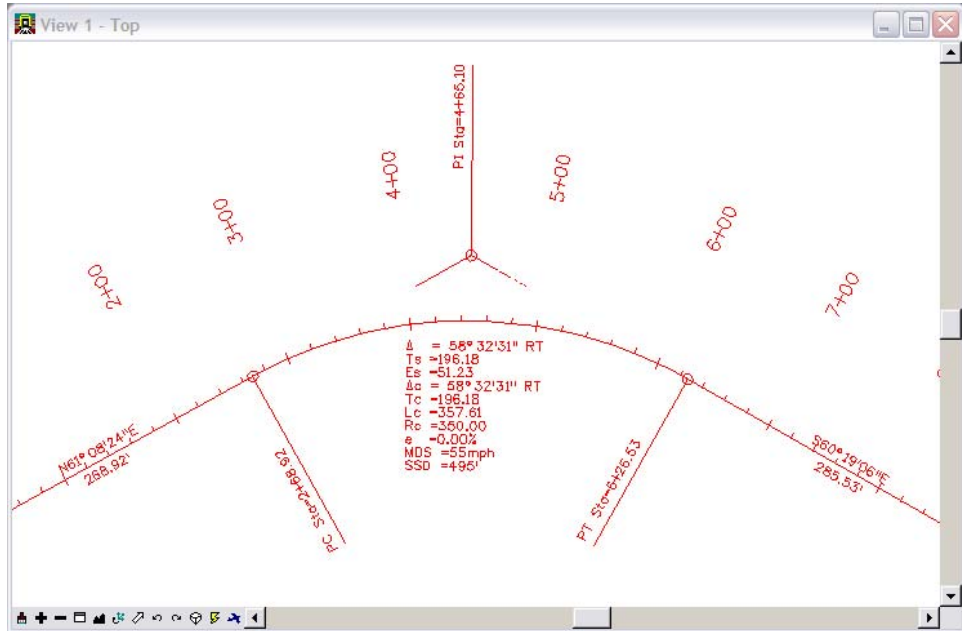


15. Use MicroStation commands to reposition the text as desired.



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16. If necessary, display the alignment stationing by selecting **Geometry > View Geometry > Stationing**.

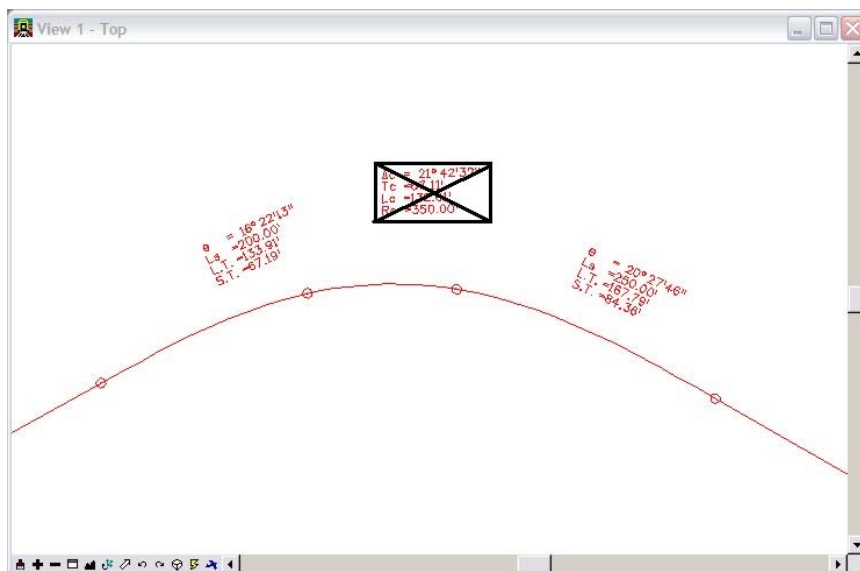
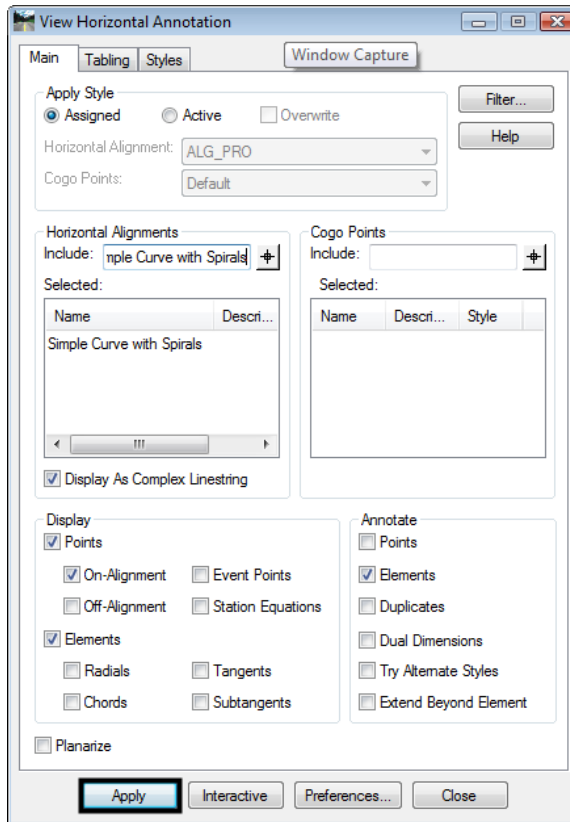


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Annotating a Horizontal Curve – Spiral Curve

The workflow is almost identical to the above steps 1-16. The exceptions are noted below.

1. Display the horizontal alignment using **Geometry > View Geometry > Horizontal Annotation.**

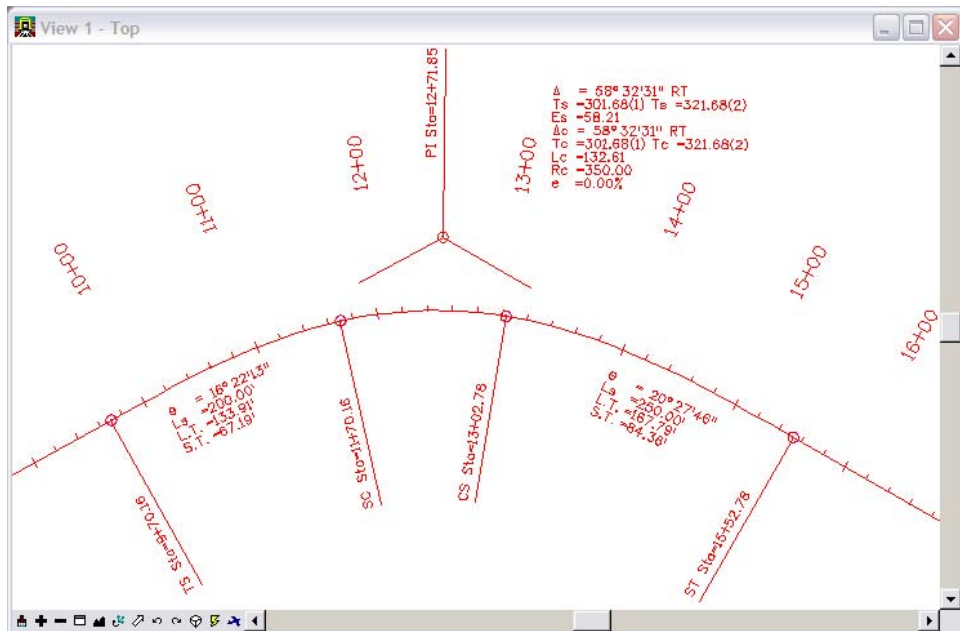


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2. Use the MicroStation **Delete** command to remove the central curve data leaving the spiral curve annotation intact.

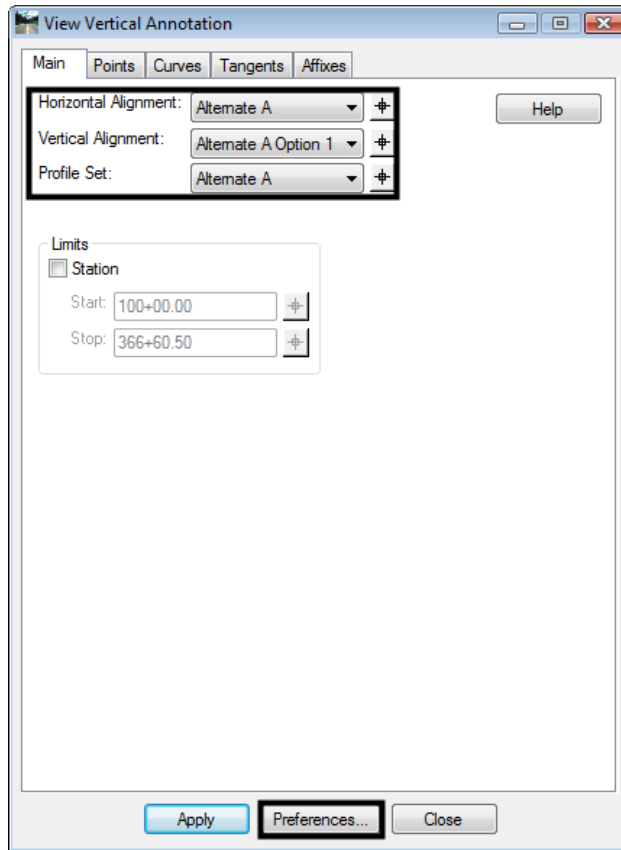
Note: Prior to deleting the curve information, the MicroStation **Graphic Group** lock must be disabled (**Settings>Locks**). Otherwise the entire alignment will be deleted.

3. Follow [Annotating a Horizontal Curve – Circular Curve](#) steps 7-16 above to complete the annotation.

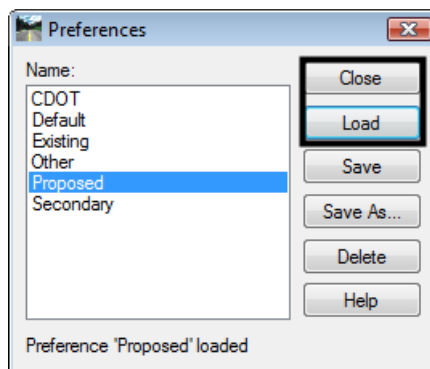


Annotating a Vertical Curve

1. The first step is either have, or generate a profile view along the alignment using **Evaluation > Profile > Generate Profile**.
2. Display the vertical alignment using **Geometry > View Geometry > Vertical Annotation**.
3. Select the appropriate **Profile Set**, **Horizontal Alignment**, and **Vertical Alignment**.

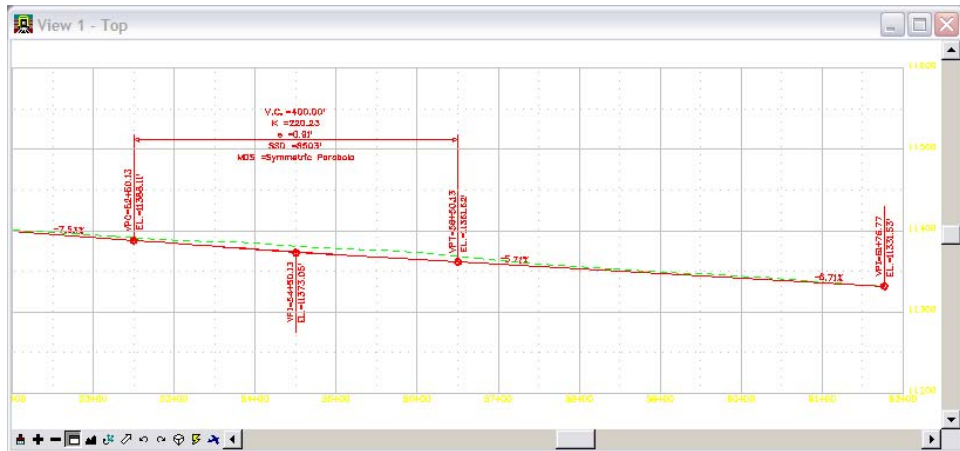


4. <D> Preferences and load the preference for the appropriate symbology (**Proposed** in example below). <D> Load then <D> Close.

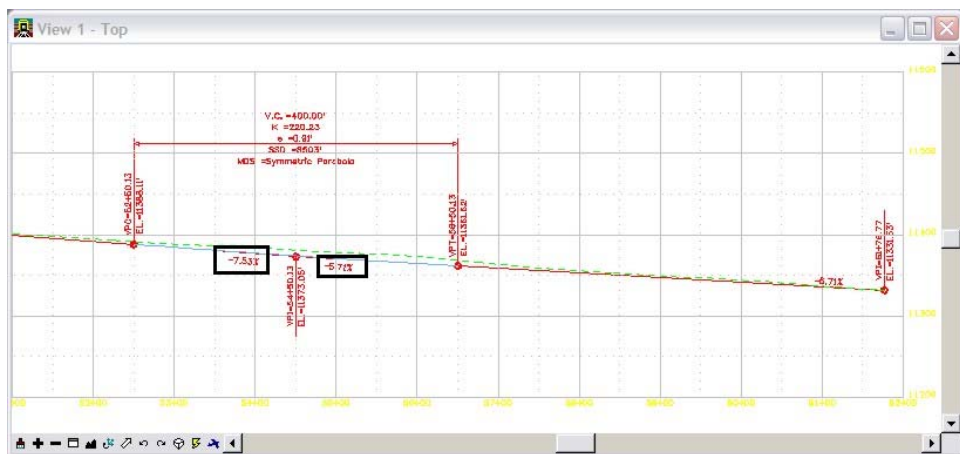


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5. <D> Apply on the *View Vertical Annotation* dialog, the annotation will be generated.



6. Using the MicroStation Move command, relocate the tangent grade annotation to the short tangent lines.



Known Issues

The arrowheads in the vertical annotation are not user definable. They are hard-coded by the software as open arrow heads.