Road Alignment in MiTS: A Guide to Using Visible Alignments Without IPs

Road · https://mes100.com/docs/road-alignment-in-mits-a-guide-to-using-visible-alignments-without-ips/

Motivation

How can we efficiently generate a road centerline in MiTS using just a visible alignment, *without any IPs*?

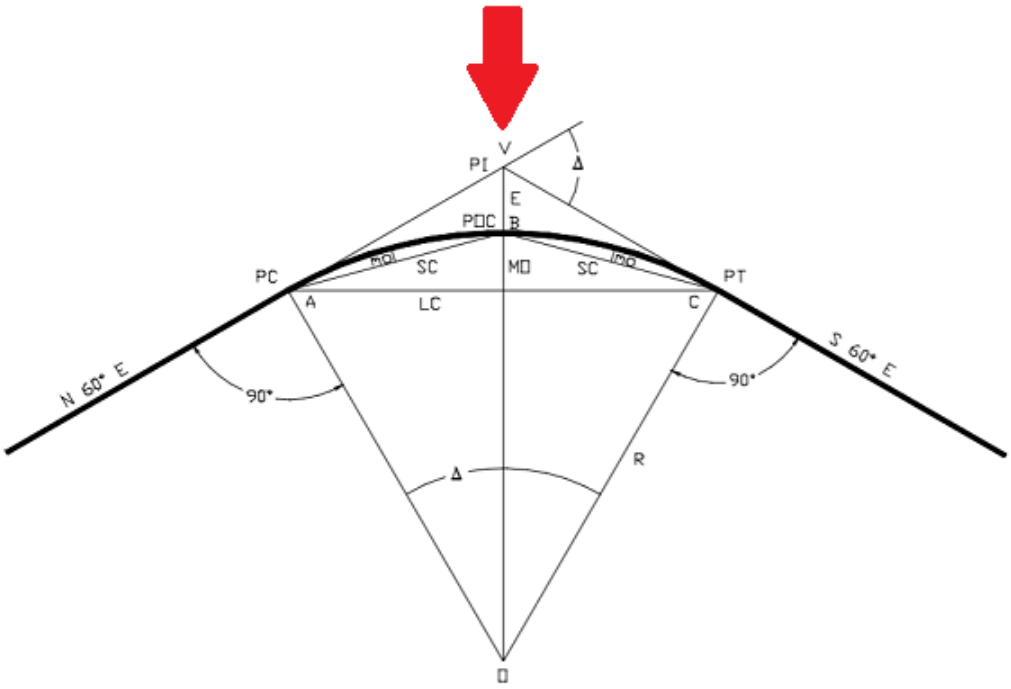
Engineers may face this issue when duplicating the alignment in MiTS for road analysis. To properly design for alignments, we need IP points to govern the curves and lines of the road. So, this is essentially a reverse design application -- given the final alignment, how to infer the IPs?

This guide will walk you through how to achieve this exactly.

What is an IP?

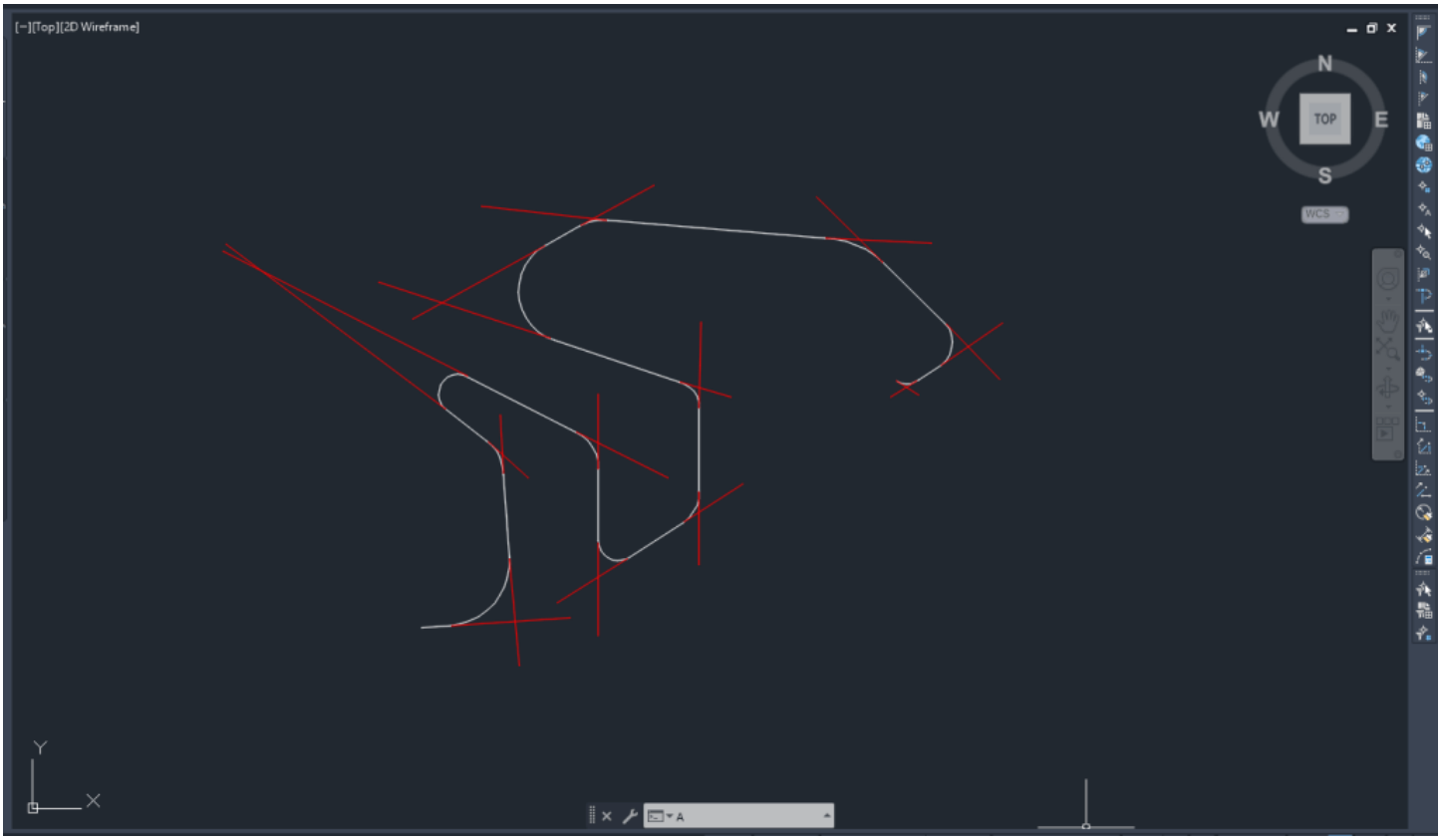
An IP, or Intersection Point, is the point at which the two tangent lines converge, forming a curve in the Horizontal Curve Design.

The image below provides a visual representation of a Horizontal Curve, highlighting the significance of the IP.



How can we solve this?

By utilizing MiTS in conjunction with AutoCAD as the complementary tool, placing the IPs following the existing alignment is much more efficient and helps minimize design inconsistencies. The IPs can be determined easily by creating tangent lines to the road curves, as shown in the image below.



Steps:

1. In the ACAD, you may create the tangent lines to the curve by,

- Click Line Function > Shift button + Right-click on the mouse > Select Tangent
- Move the cursor along the curve until you find the symbol for tangent-to-curve > Create the tangent lines for both left and right of the curve

2. Save the drawing and load the drawing as a tracing in the MiTS project file.

3. In the MiTS project file, you may create the road alignment by,

- Go to Road Module > Add the road under the Project View at the left grid > Click on the Horizontal-Line function
- Activate cursor > Click on the Start Point and continue with the rest of the IPs until the End Point

4. Continue with the Horizontal-Cuve design, followed by the RoadWidth, Superelevation, and Vertical Alignment to complete the road design for analysis

You may refer to the video provided below for detailed steps and tips for creating the alignment

Embedded media:
https://www.youtube.com/embed/REnnEYjJXyw?version=3&rel=1&showsearch=0&showinfo=1&iv_load_policy=1&fs=1&hl=en-US&autohide=2&wmode=transparent&enablejsapi=1

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Ngu Soon Hui

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You can also contact me at soonhui@mes100.com