How to simulate roundabout in Road

Road · https://mes100.com/docs/simulate-roundabout-mes-road/



Image taken from Zutobi.com

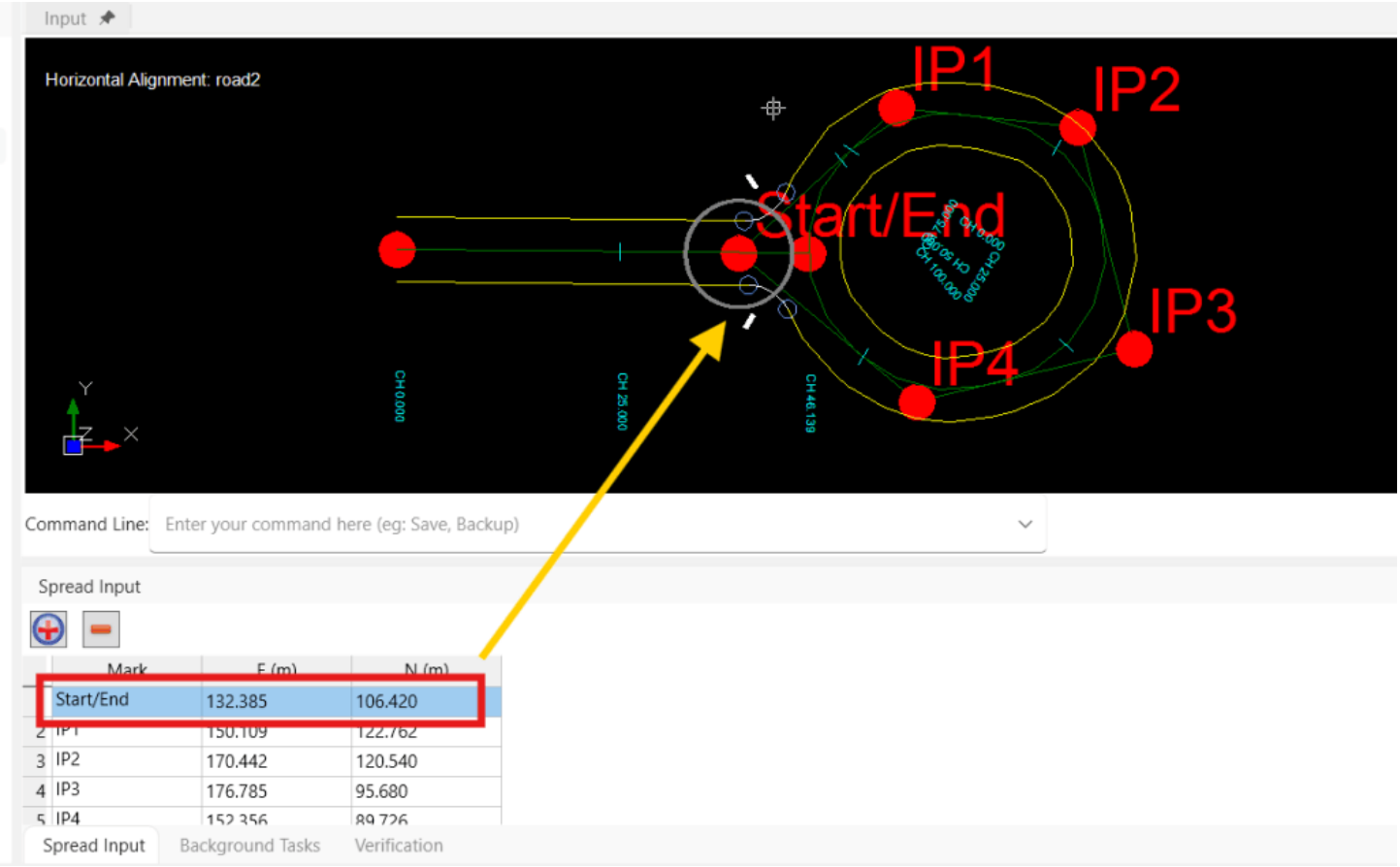
A roundabout is a type of loop road, which is also known as a ring road. Loop road is commonly required to control traffic flow and provide access to specific areas.

For a road to be considered in a loop, the **Start and End points should be at the same location**, forming a complete circle.

Steps on designing Roundabouts in Road module

Example of a roundabout project **here**.

Designing roundabouts in MiTS is quite similar to designing curvy roads. The key difference is that for roundabouts, users will create the Road CenterLine (Horizontal Line input) with the **Start and End points at the same coordinates** as illustrated in the image below.



S1: Setting up project file with original topography

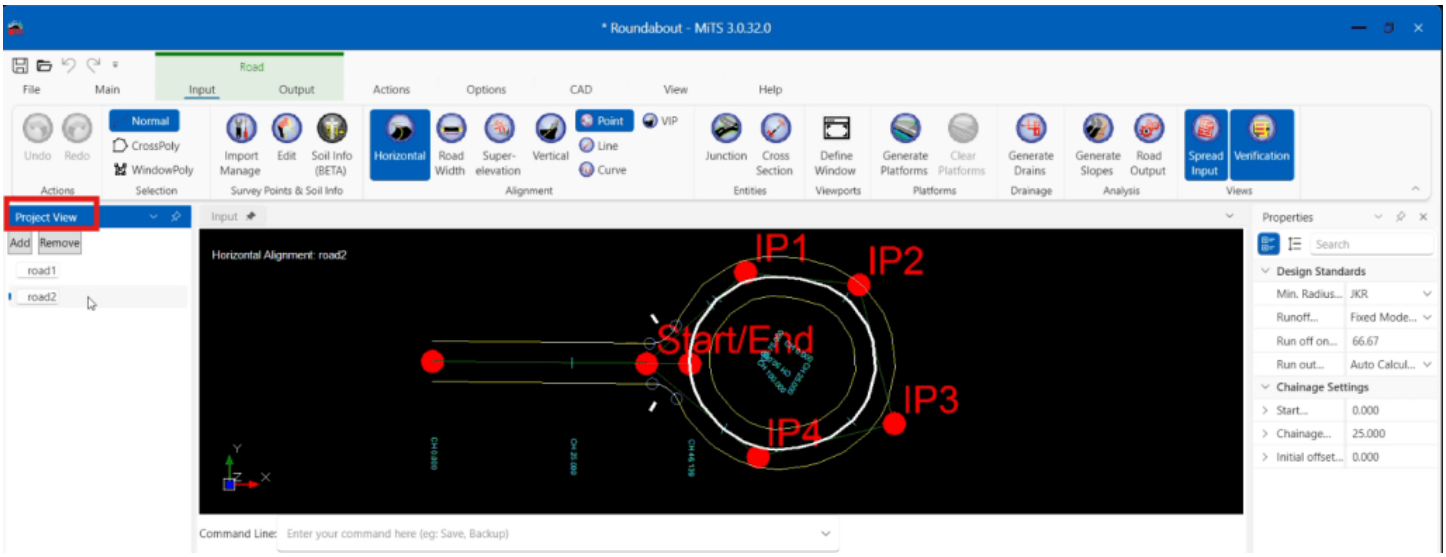
- Open the Road module
- Import the Survey Points to represent the original topography of your development area

Input > Survey Points & Soil Info > Import Manage

User may refer to User Guideline, ***Steps to Import Survey Data*

S2: Define the road and its CenterLine

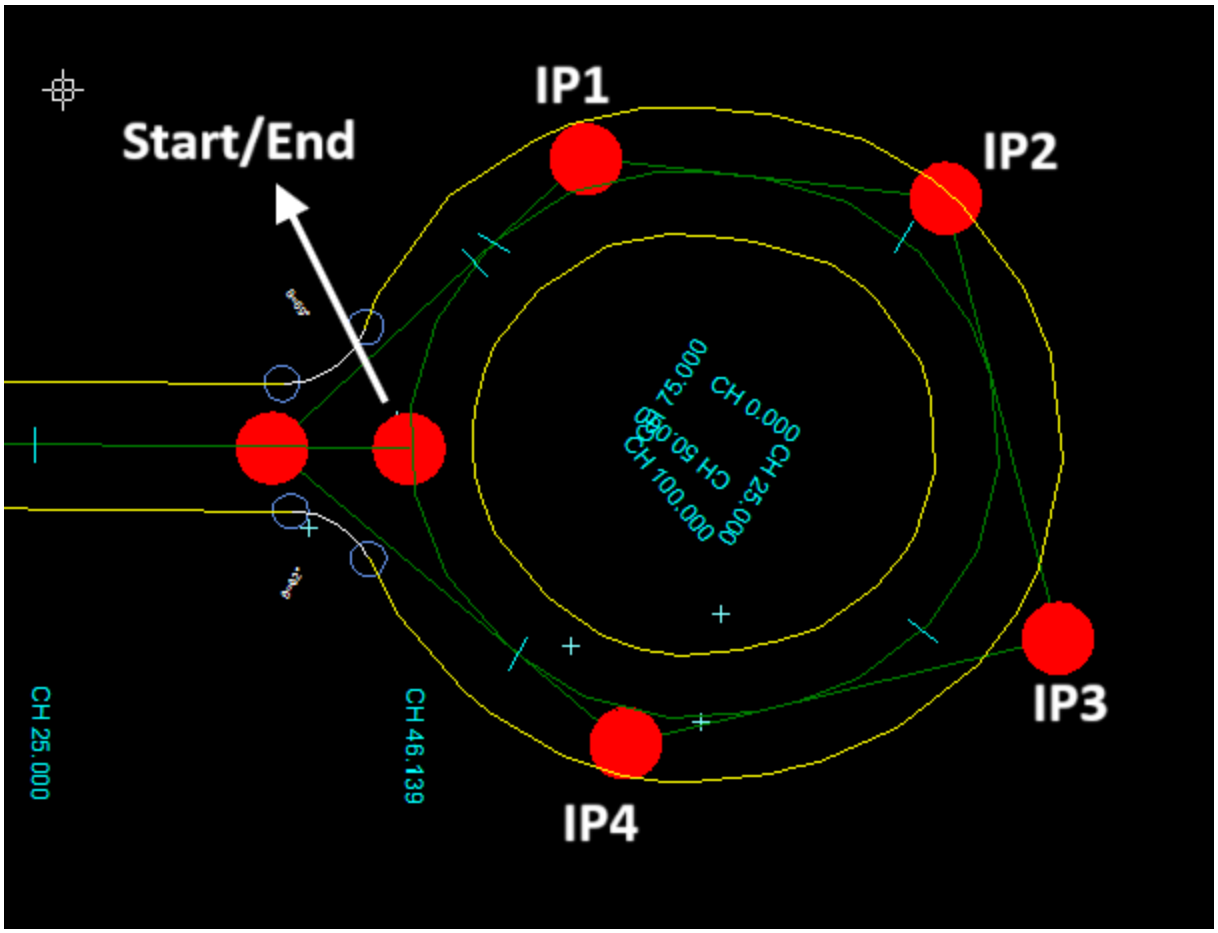
- At the Left Side Panel, define a road under the Project View. From the image below, we will be working on '**Road 2**'.



- Create the CenterLine by creating a few IP points circling the roundabout. (*Please refer below on how the IP points will be located*)

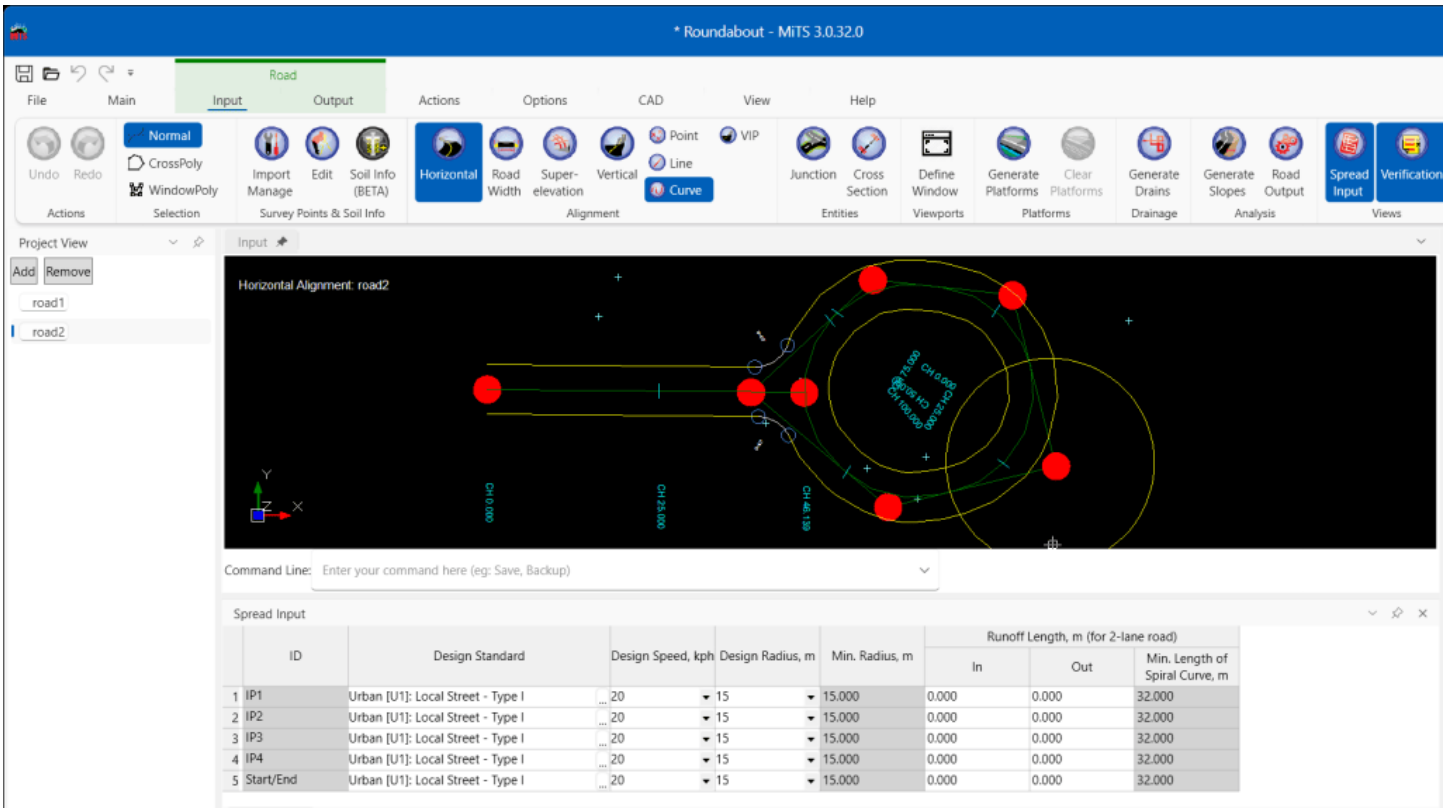
Road Input > Horizontal > Line

(*Please note that the Start and End are located at the same point*)

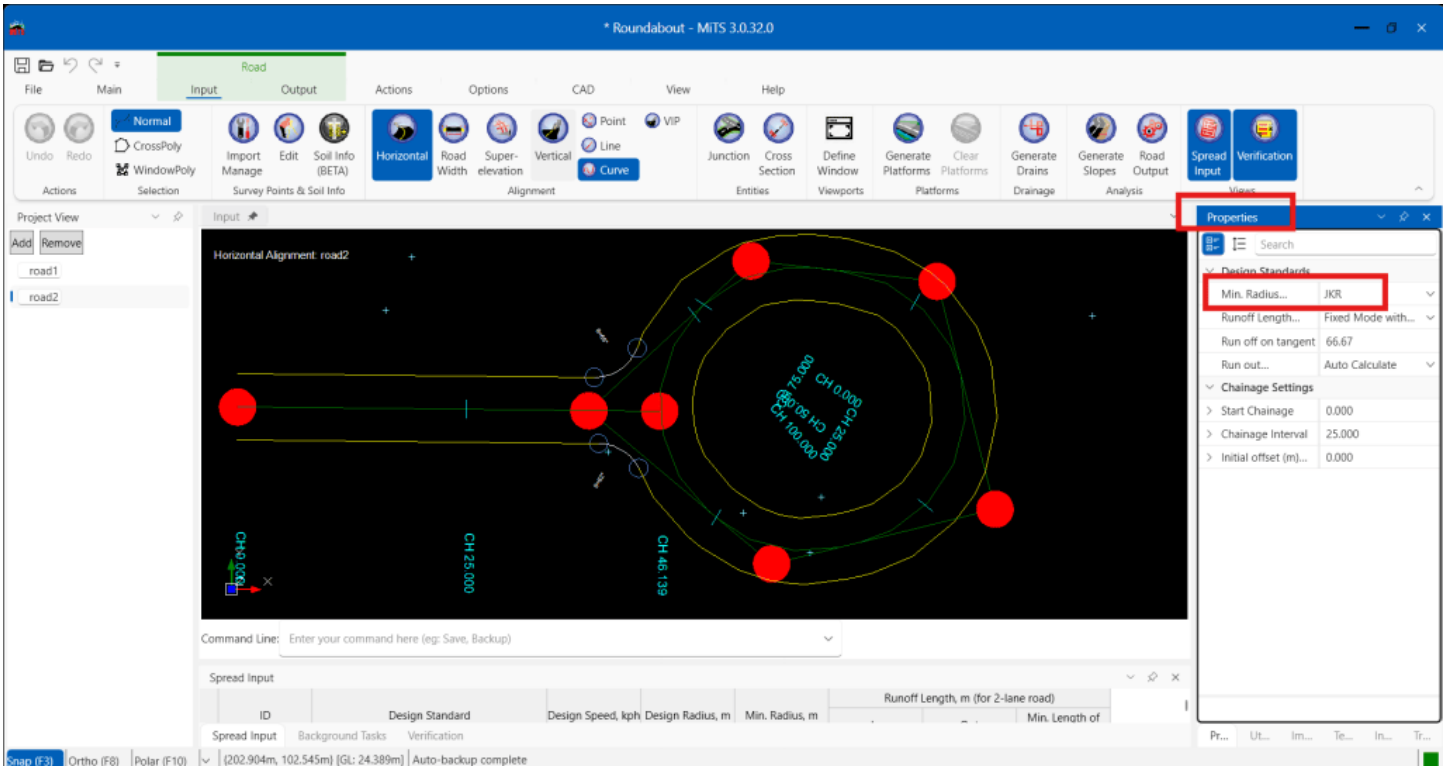


S3: Define a suitable Design Radius and Transition Length

- Once all the IPs have been input, please go to *Horizontal Alignment > Curve > Spread Input*

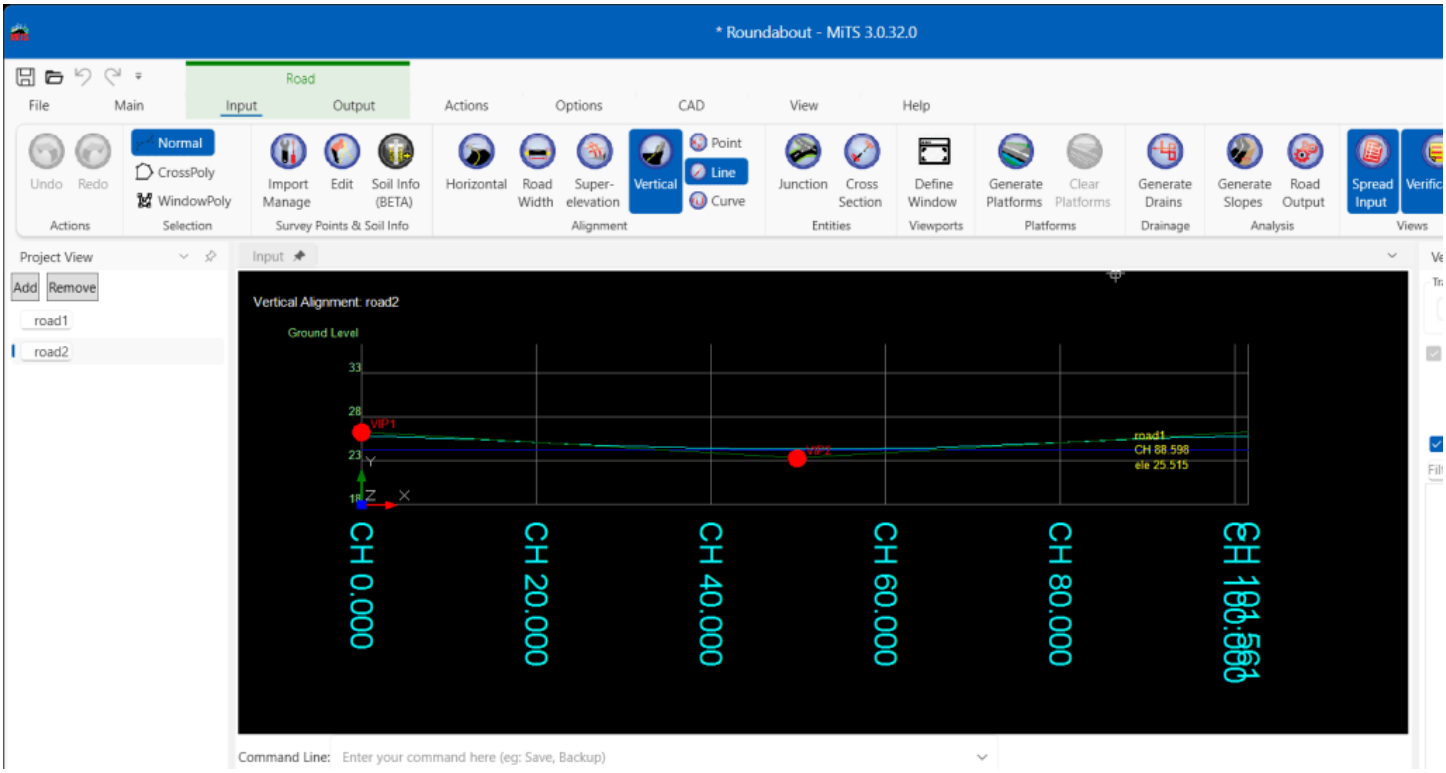


- Do note that you will need to change the design standard, design speed, design radius, and spiral length to suit the roundabout condition.
    - If the roundabout requires a design radius *smaller* than the Min. Radius stated under the Spread Input, go to *Properties tab at the RHS Panel > Change the Min. Radius Standards from JKR to None*



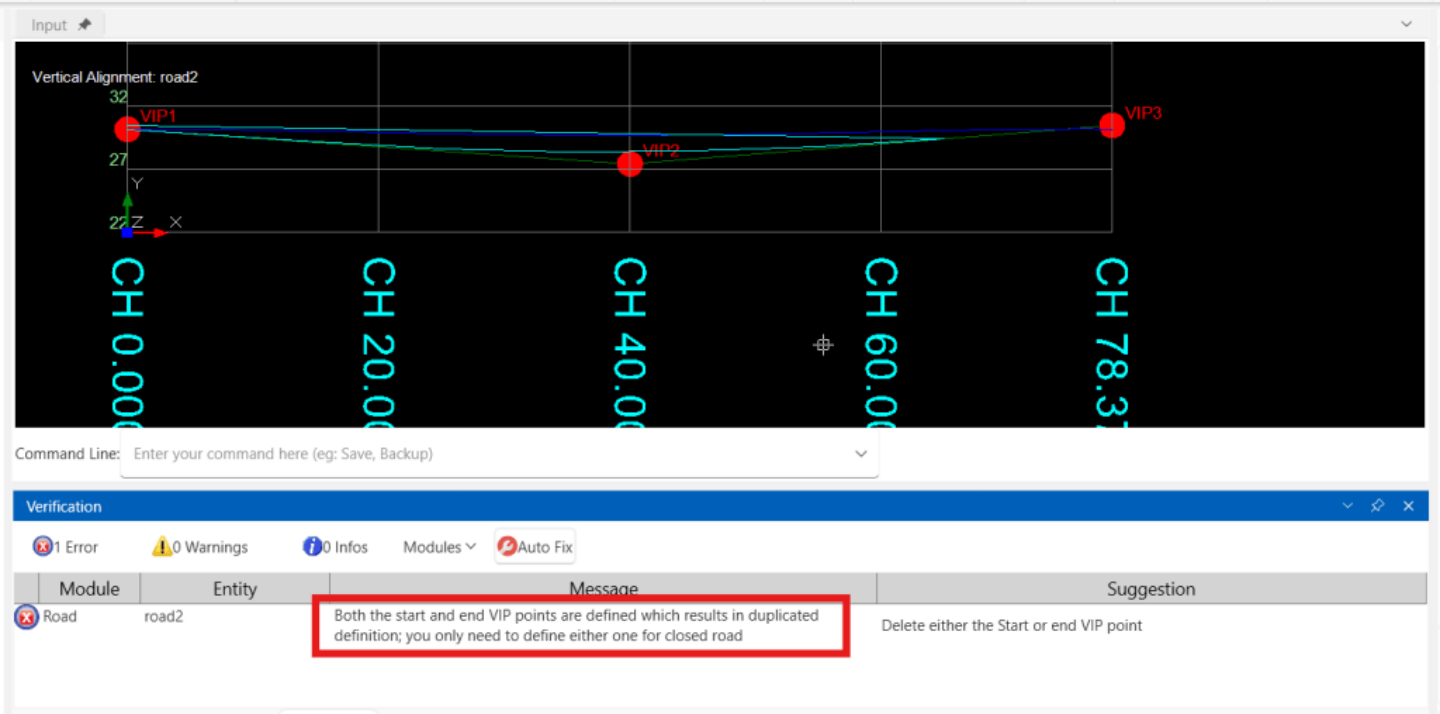
S4: Design the Vertical Alignment

- Then, you may start to design your vertical alignment as in the image below.



Possible Verification Error for Vertical Alignment

Shown below, is the Verification Error that you may receive when designing the Vertical Alignment for a loop road.

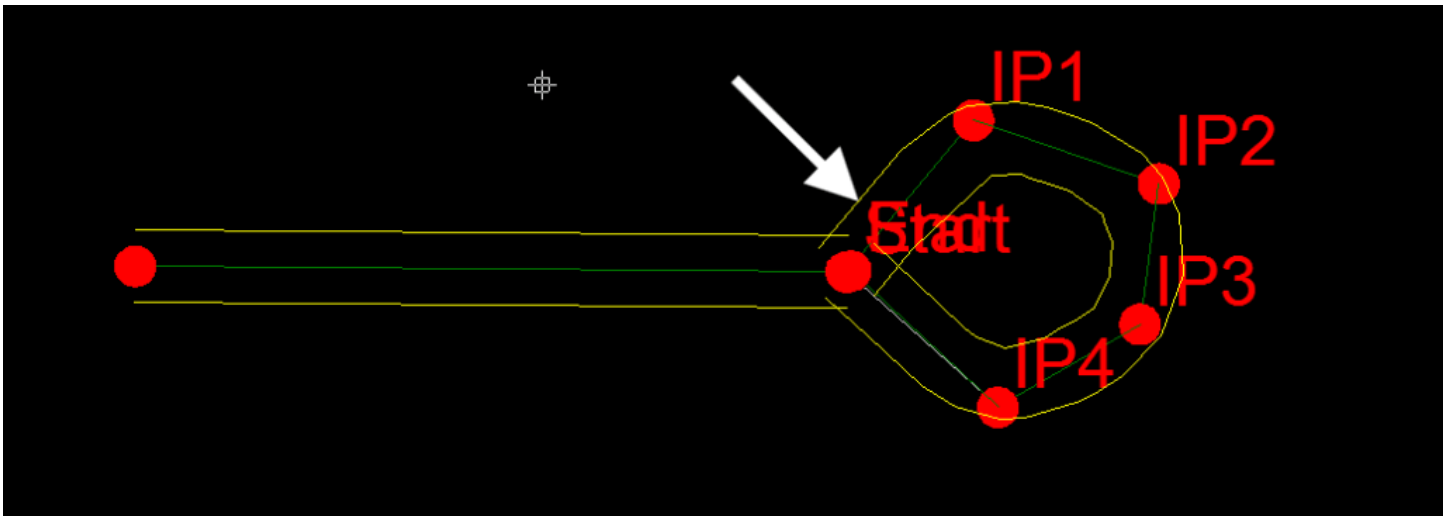


Please note that **both Start and End VIP for loop roads are the same**, so you only need to define either ONE for closed roads.

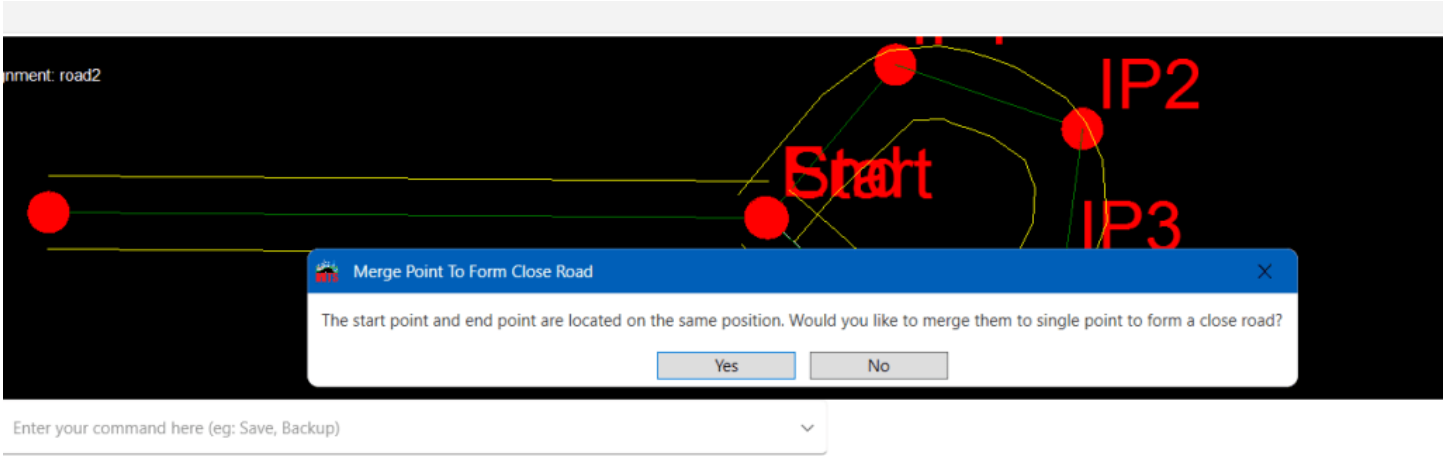
What if the Start and End points of the Horizontal Line are not the same?

A *not properly closed* loop road may be one of the possible modeling errors that users face when designing for a loop road.

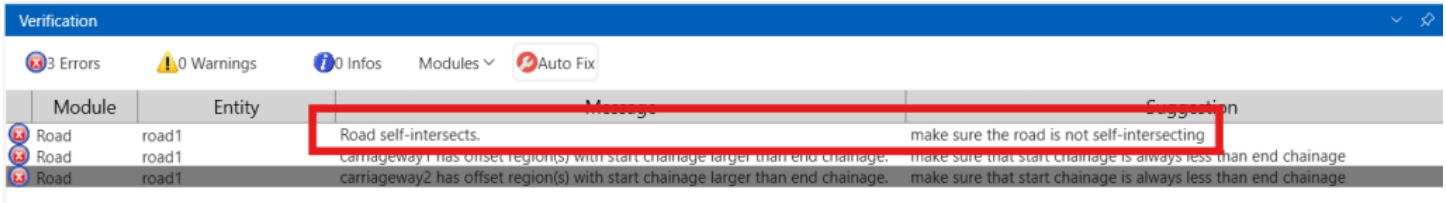
In this situation, despite having the same X and Y coordinates for the Start and End points, they will be considered as two different entities.



To ease users in simulating a loop road in our **latest MiTS 3**, the software has been improved with auto-detection for a close road. Once the software detects the Start and End points of a road to be closely placed, a *message will be prompted* asking users if the points need to be merged as in the image below.



Furthermore, an *AutoFix* feature has also been implemented to resolve self-intersects road verification error (The Start and End points are overlapping but not merged) as in the image below.



Tutorial Video for reference

User may also refer to the video below;

Embedded media:

https://www.youtube.com/embed/Z8JrSHcn7Hg?version=3&rel=1&showsearch=0&showinfo=1&iv_load_policy=1&fs=1&hl=en-US&autohide=2&wmode=transparent&enablejsapi=1

Related topics

- **Open Loop in Road**

Related



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I’m the Benevolent Dictator for Life for MiTS Software cum Editor of this website. Read more here.

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