

Plateia by CGS-labs

Design Additional Alignment

Tutorial/Workflow procedure





CGS Labs d.o.o.

Brnčičeva ulica 13

1000 Ljubljana

Design additional alignment Tutorial

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T: +386 1 235 06 00

E: info@cgs-labs.com

Internet: www.cgs-labs.com

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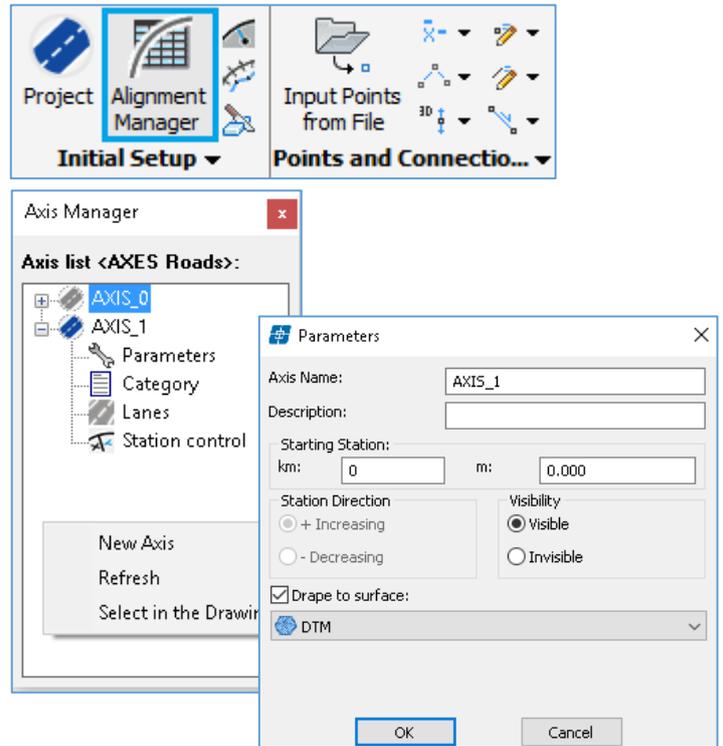
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INTRODUCTION

This tutorial will show you the procedure how to design an additional road alignment with Plateia software.

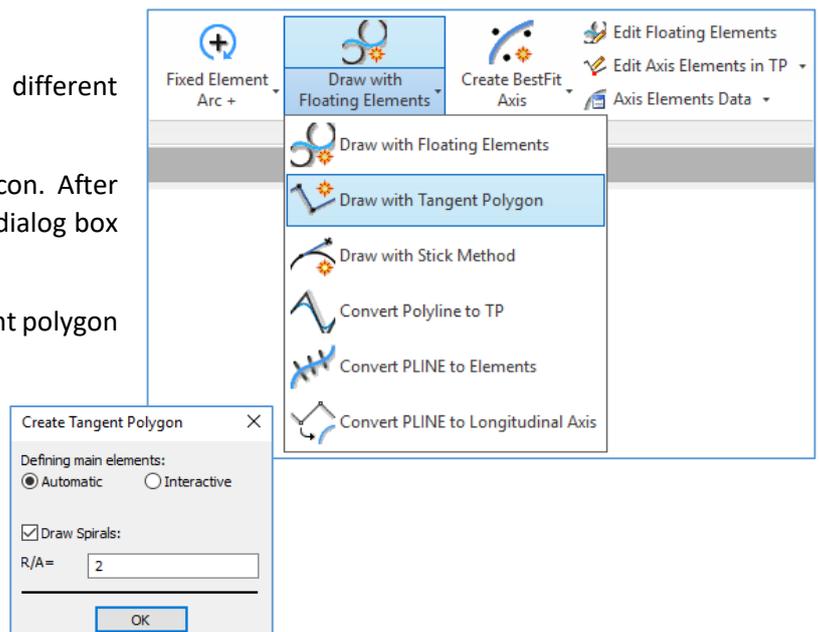
1. Alignment Manager

1. Start with **Layout** Ribbon Panel.
2. Click on **Alignment Manager** icon to define new alignment name.
3. A dialog box with a list of alignment and its parameters opens up. To create a new alignment, right click in Alignment manager dialog box and select **New Axis**.
4. Prior to designing a new axis, you need to define it, by stating the initial properties (description, station, direction ...) and define it as a current alignment. You can define the active axis in the status bar or by selecting it in the Alignment Manager.

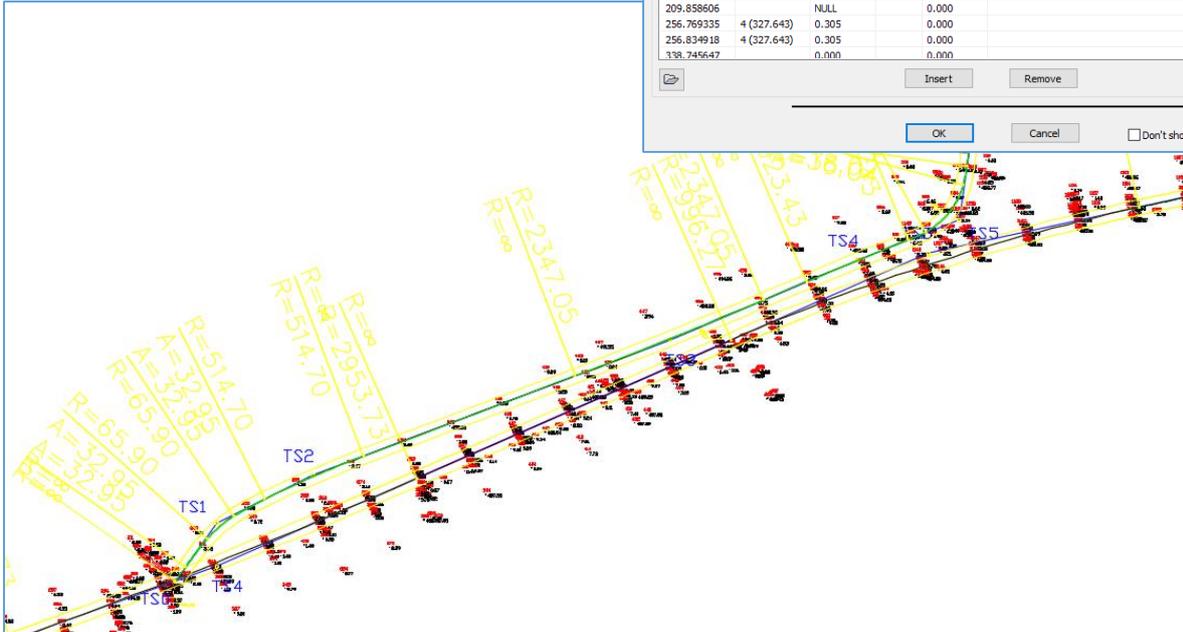
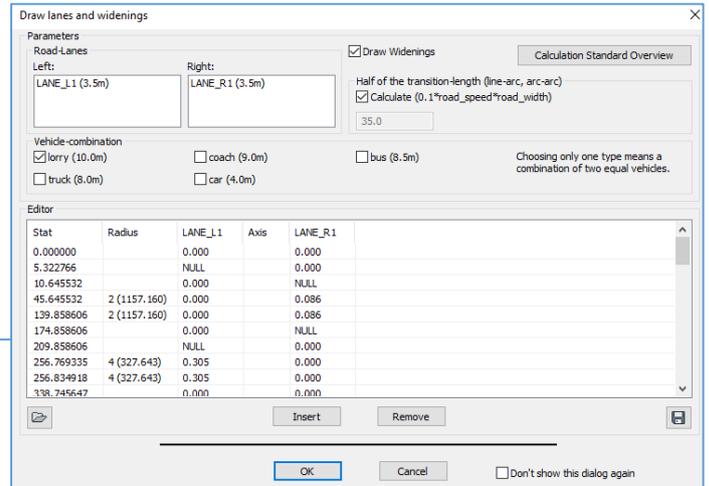


2. Create Alignment

1. Define active alignment.
2. Design an alignment with one of different methods.
3. Click on **Draw Tangent Polygon** icon. After invoking the command, the following dialog box appears.
4. Confirm with OK and define a tangent polygon with selecting points in the drawing.



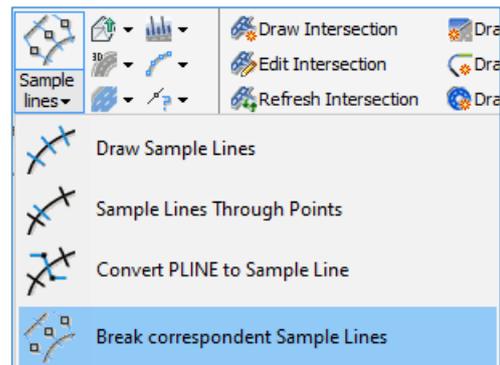
5. In the following dialog box select a vehicle combination to calculate widenings. Alignment parameters such as spiral lengths and radius values are calculated based on design speed defined in *Category definition*.



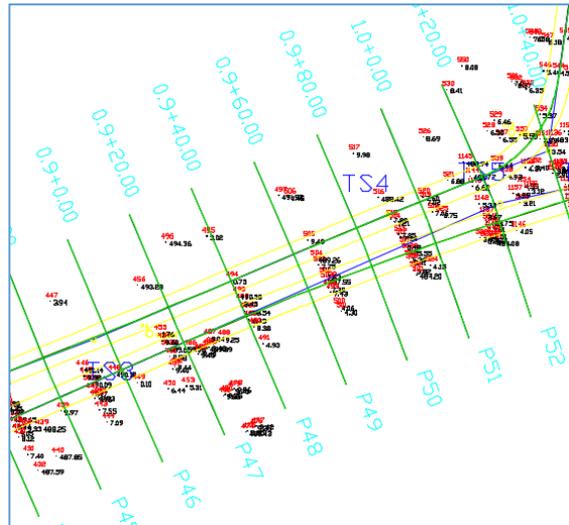
3. Create Correspondent Sample Lines

To get the relationship information between different alignments in the drawing, select the **Break Correspondent Sample Lines** command.

1. When creating correspondent section lines of the adjacent alignment, the main alignment needs to be set as **an active** alignment in *Alignment Manager*.
2. Click on **Break Correspondent Sample Lines** icon.
3. Select the longitudinal alignment of the second alignment. Press *Enter*.
4. Select Sample lines of the main alignment. Press *Enter*.
5. Define a break method. Three methods are available:

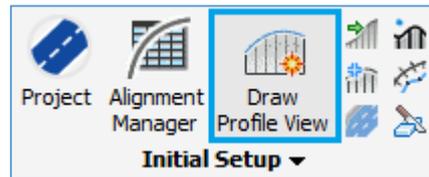


- Midpoint break (Bisection break point)
- Break over defined Polyline
- Break defined at the midpoint between alignments offset lines (representing roads offset value, road lanes outer edges etc. ...)



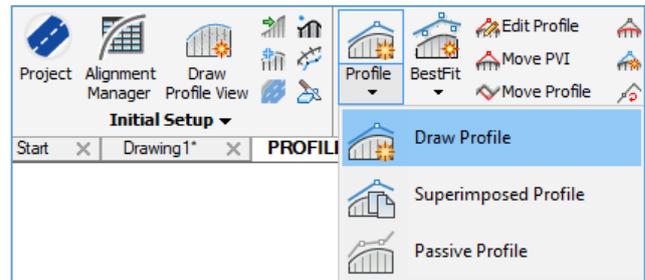
4. Draw Profile View

1. Continue with **Profile** Ribbon Panel.
2. Click on **Draw Profile View** icon.
3. Select Plateia table type, for source data use **Current drawing**, or select another drawing to which your alignment design was saved (in case you started to draw profile in a new drawing).
4. Press OK and define the location of profile view in the drawing.
5. Draw a profile view for both alignments in the drawing.



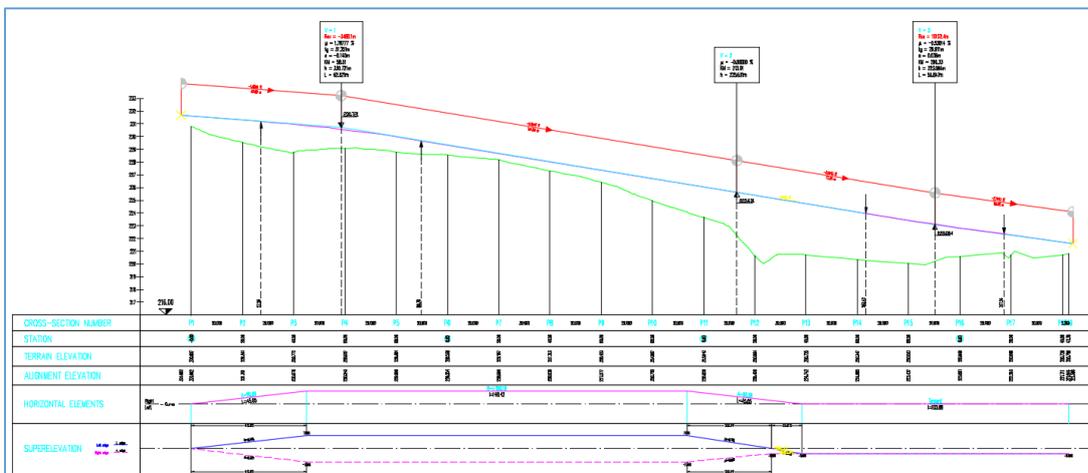
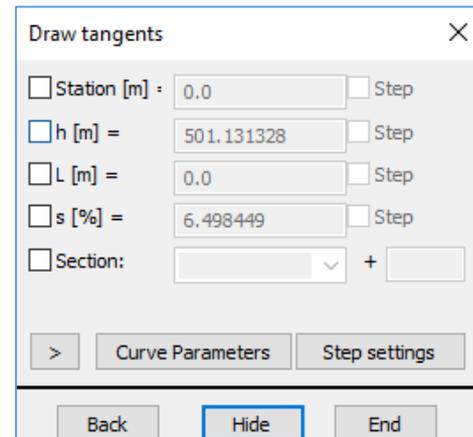
5. Draw Profile

1. Design the tangents in both profiles with **Draw Profile** command.



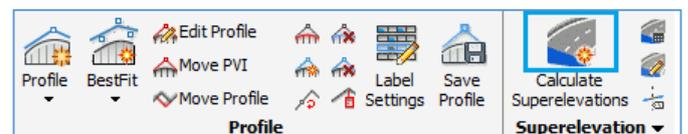
2. Tangents can be inserted to profile by selecting of vertex points with a mouse. Alternatively, they can be inserted by selecting parameters in a dialog box that appear after definition of the first tangent point in drawing.

In the first example, user can barely control their values, while in the second one they can precisely define station, elevation, distance, slope and section of the next vertex point.

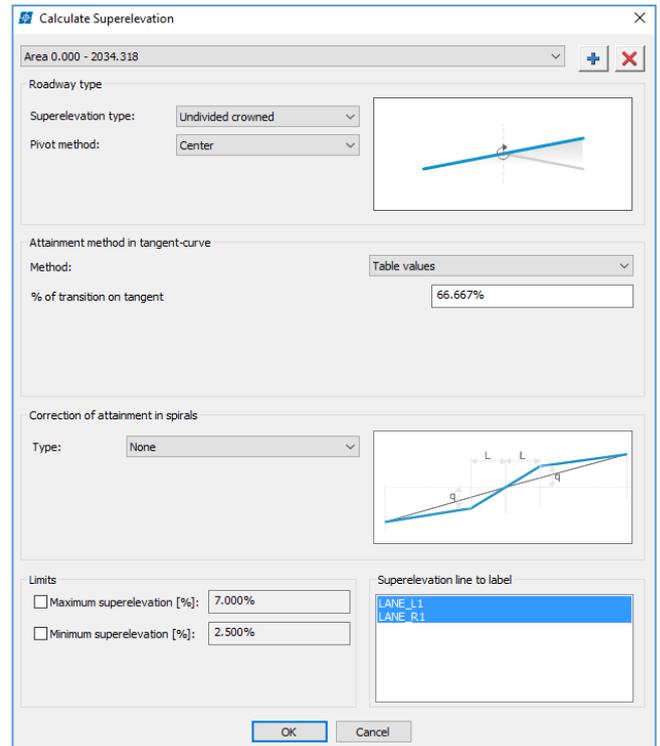


6. Calculate Superelevations

1. Define superelevations for both alignments with **Calculate Superelevations** command.

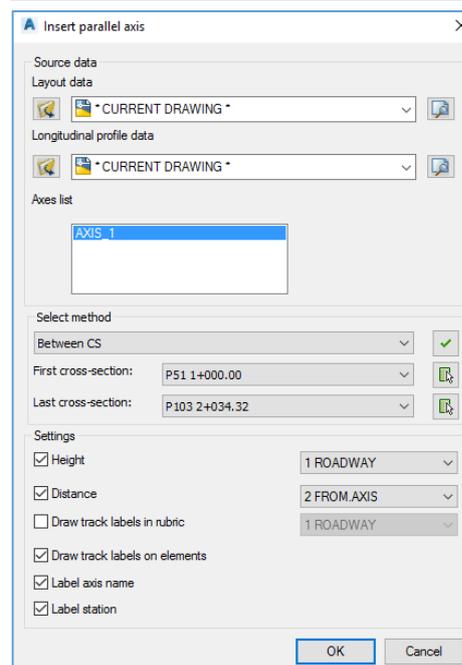
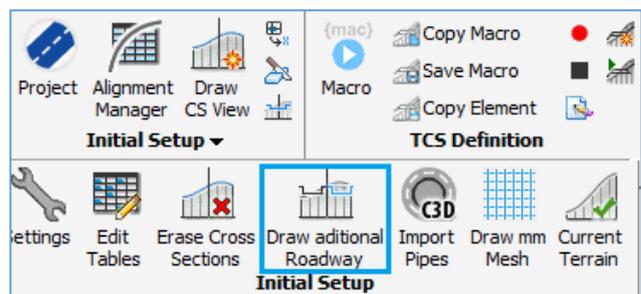


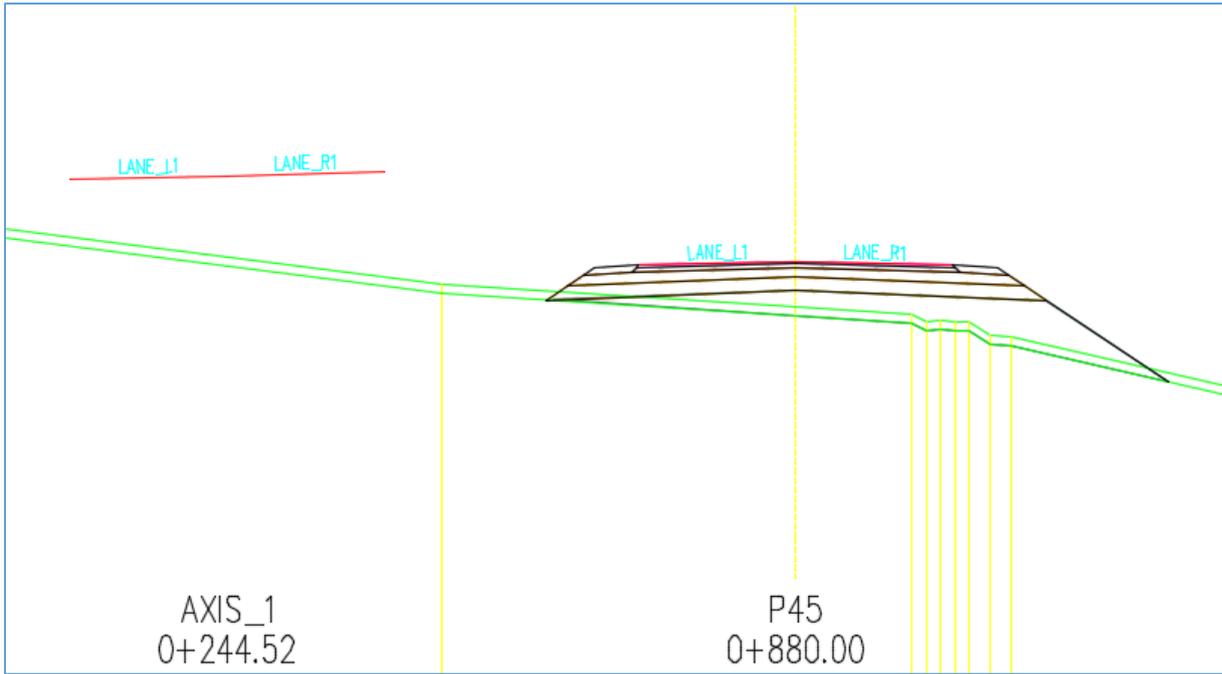
2. With the button  in the dialog box define the area on the alignments where you assign the roadway type. Then select the superelevation type and pivot method.



7. Draw Parallel Roadway

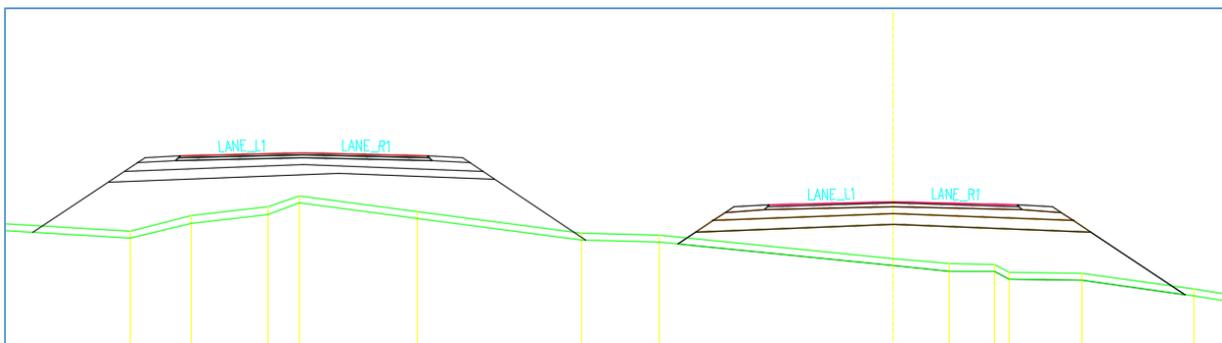
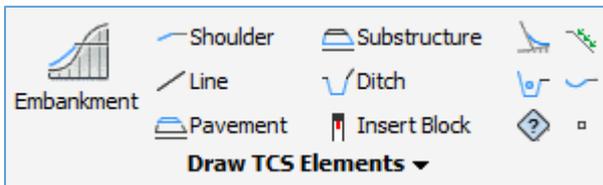
1. Continue with **Cross Sections** Ribbon panel.
2. Click on **Draw Parallel Roadway** icon.
3. The main alignment must be set as an active alignment.
4. In *Insert parallel alignment* dialog box define source data: layout data and longitudinal profile data.
5. In *Axes list* select the second (additional) alignment.
6. If the boxes *Heights* and *Distance* are checked, the elevation text and the text that describes the distance between the roadway edge and the alignment will be inserted in the selected rubric.
7. If you want to label lanes names in the table, select the *Draw lane-labels* option.





8. Draw TCS Elements

Construct roadway section geometry with [Draw TCS Elements](#) commands.



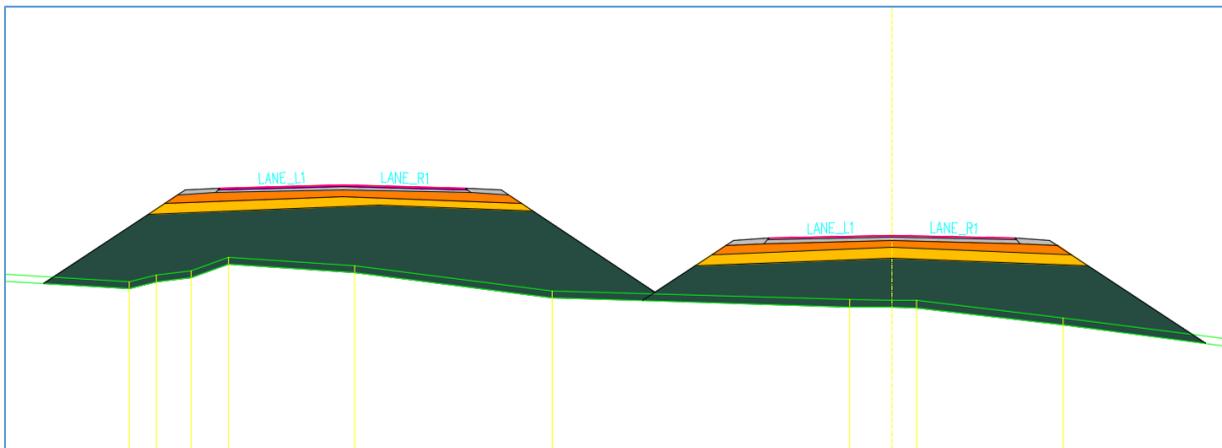
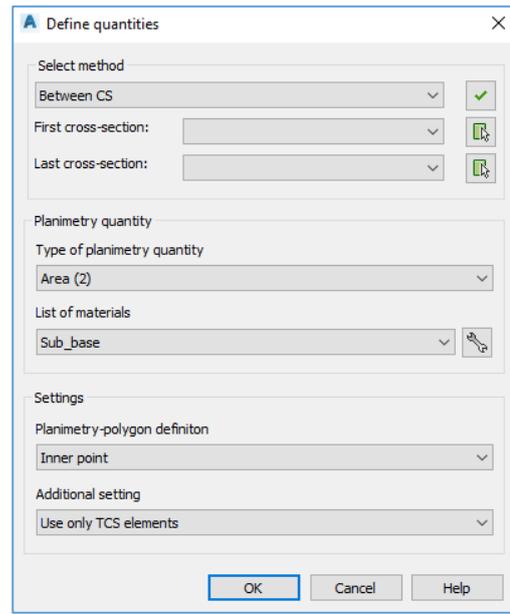
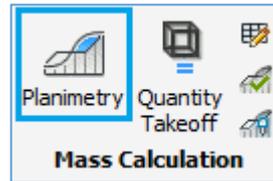
9. Planimetry

1. Define material area with **Planimetry** command.
2. *Define quantities* dialog box opens. Select the planimetry method. Define the first and last section line, between which you want to define quantities.
3. Select type of planimetry quantities. Automatic planimetry is generally divided into two types:
 - surface and
 - length planimetry.

Choose the material and a planimetry polygon.

4. Confirm with *OK*.

Command draws completed polygons and hatches their inner part.



WORKFLOW SUMMARY

Below is a brief workflow summary of how to create an additional alignment using Plateia road design software.

Layout

- 1. Alignment Manager
- 2. Create Alignment
- 3. Create Correspondent Sample Lines

Profile

- 4. Draw Profile View
- 5. Draw Profile
- 7. Calculate Superellevations

Cross sections

- 8. Draw Parallel Roadway
- 9. Draw TCS Elements
- 10. Planimetry