Plateia
by **CGS Labs**

FILLETS
Tutorial

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L A B S

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Fillets

Title: **Fillets**

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1

Table of Contents

INTRODUCTION

The Fillet command group comprises three types of transition curves:

- _transition curve with one arc_: you need to enter only an arc radius.
- _transition curve with two arcs:_ using this type, you need to enter both radii and angle ratio between them.
- _transition curve with three arcs_: using this fillet type, enter the middle arc radius and a ratio between all three radii. Not to forget the angles: The R2 radius angle is 15.74 centesimal degrees and the one with the R3 radius is 20.25 centesimal degrees while the angle with the middle radius gets calculated according to the selected curve geometry.

Before you start drawing any of these three fillets, you must have two intersecting axes drawn in your drawing.

In this example, AXIS_01 is the major alignment and AXIS_02 is the minor alignment.
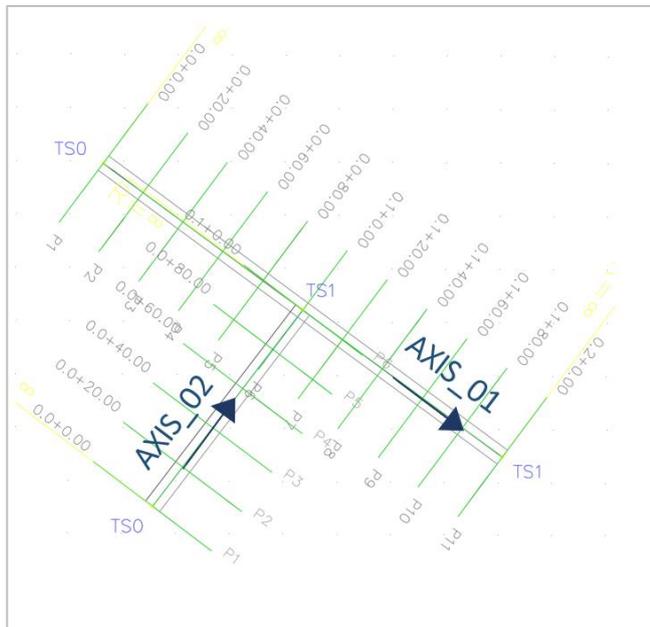
Draw a fillet

1. Run the Fillet command.

2. Define the radius in meters.

3. Select entry and exit road edge. Click on the icon and select edges directly in the drawing.

4. From the drop-down menu, select the option to draw the fillet as a Plateia axis.

5. Define the alignment name.

Some options are hidden and only available if you select Civil's alignment from the drop-down menu.
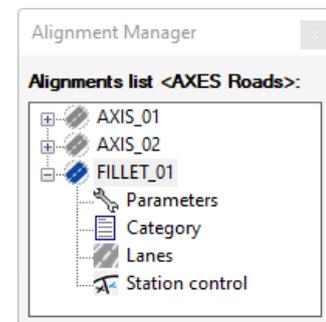
6. Confirm by clicking OK.
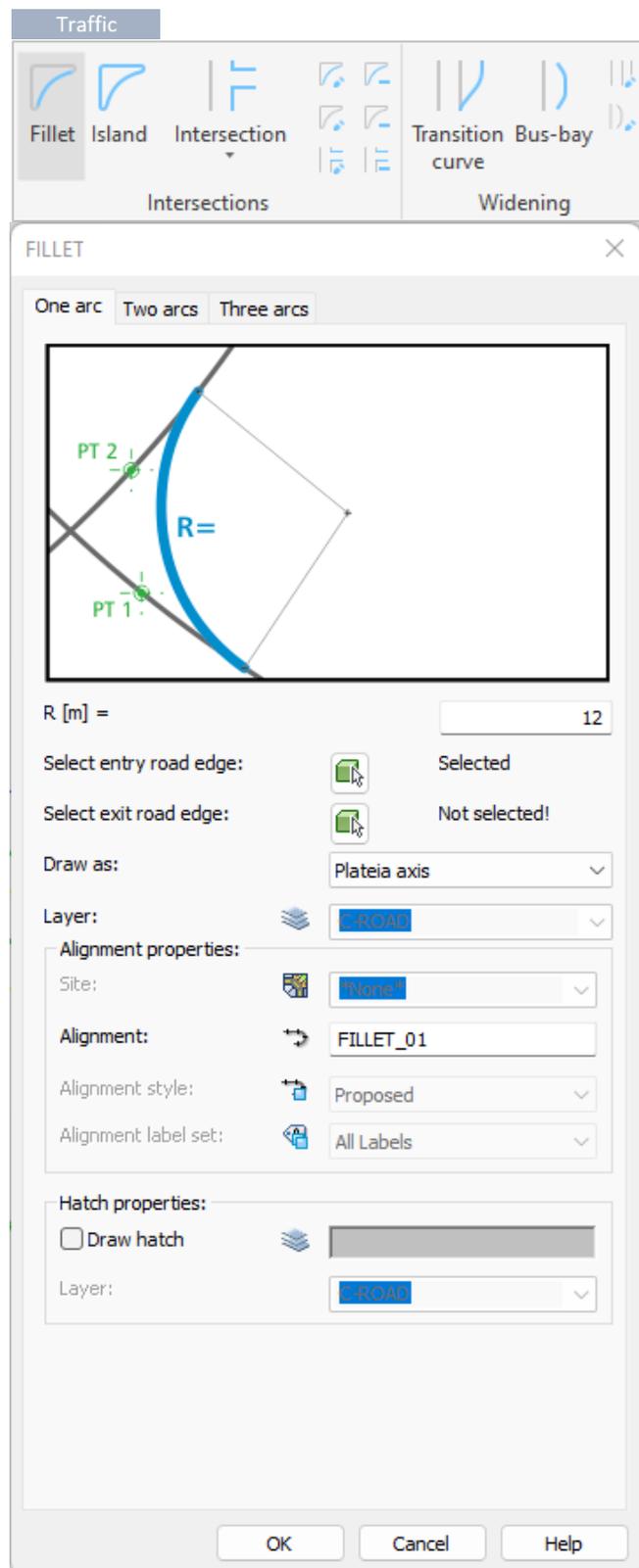
The following figures show the drawn fillet. In the 3D view, only the terrain line is drawn, since the fillet does not have yet a defined height position.
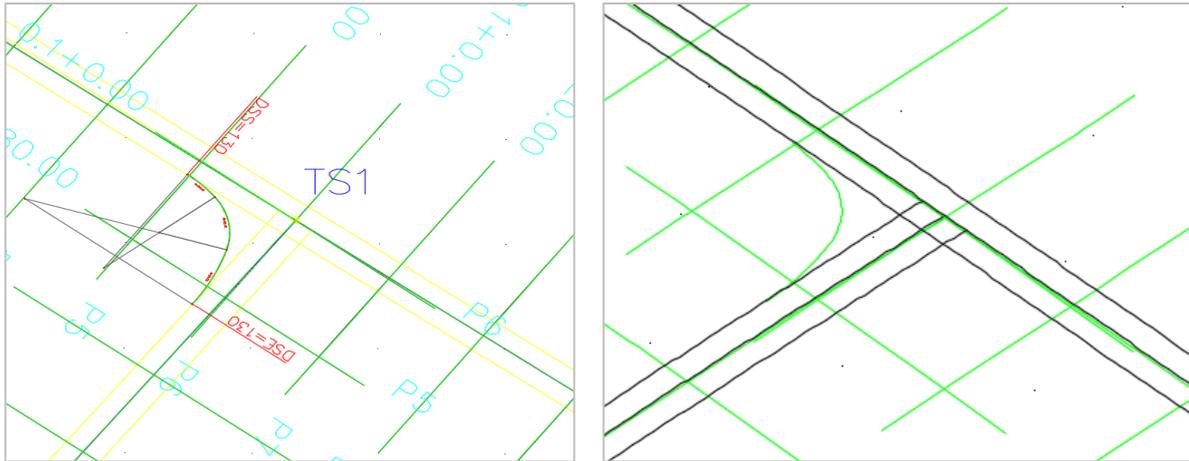
Insert a Profile View

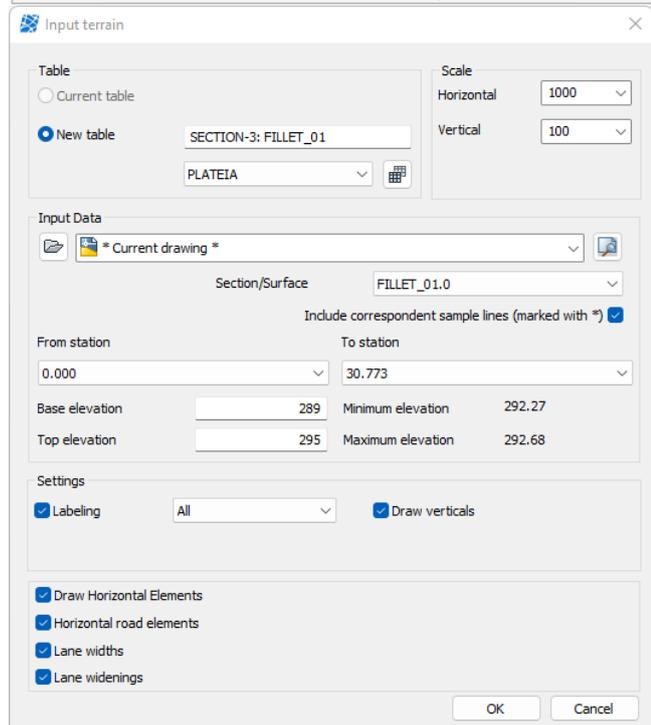1. In the Alignment manager double-click on the FILLET_01 axis to set it as an active alignment.

2. Run the Draw Profile View command.

3. In the Input terrain dialogue box specify:
 - Scale: 1000:100
 - Input Data: *current drawing*
 - From station: select the first sample line
 - To station: select the last sample line
 - Check: Labeling
        Draw verticals
        Draw horizontal elements
   Horizontal road elements
        Lane widths
   Lane widenings

4. Confirm by pressing OK.

5. Define the insertion point in the drawing.

The figure on the right shows the drawn profile view.

Draw a profile

1. Run the Draw Profile command.

2. Select the first tangent point in the drawing. Draw tangents dialogue box opens.

You can define vertex points interactively in the drawing, or you can specify tangent parameters in the dialogue box.

3. When finished, press Enter. Vertical alignment and tangents are drawn and labelled in the drawing.

Show intersection

In the Profile tab, there is an Intersection command, which is used for the input of intersections with the existent infrastructure (roads, railroads, streams).

In the selected longitudinal profile, the command will show all the existent and already defined roads, railroads or the stream gradient. The command can be helpful when planning intersections or when levelling fillets in the intersections.

1. Run the Intersection command.

2. Select layout DWG from the drop-down menu.

3. Select longitudinal profile DWG from the drop-down menu.

4. Mark AXIS_01 [PLATEIA] and AXIS_02 [PLATEIA].

5. Confirm by pressing the OK button.
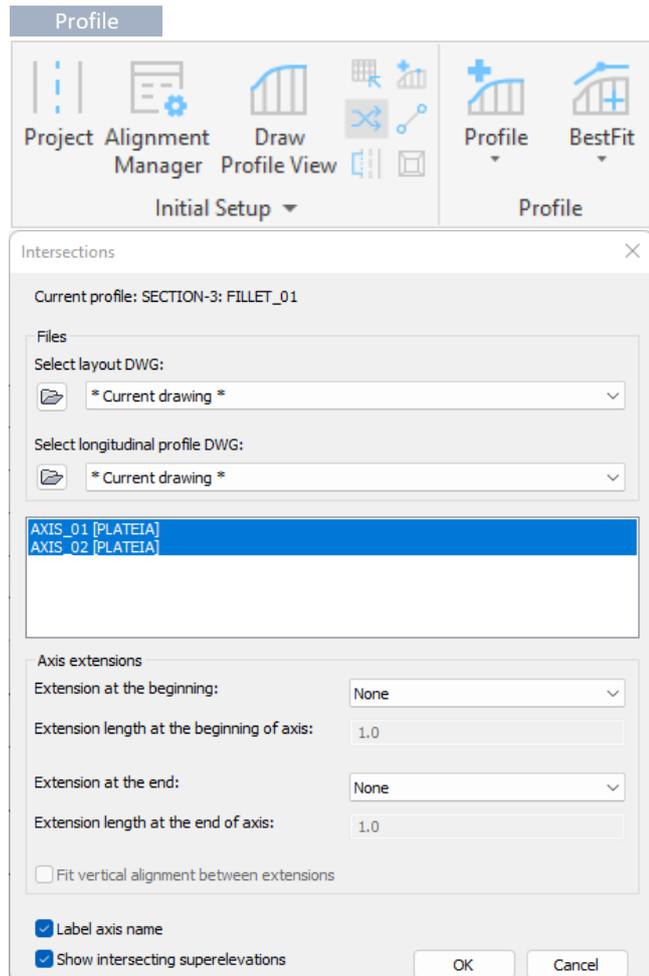
The height of the axis AXIS_01 and AXIS_02 are now drawn in the profile FILLET_01 as shown in the figure on the right. They are coloured blue for easier presentation.
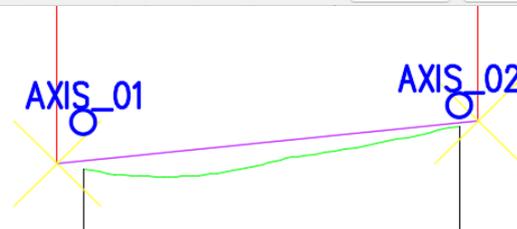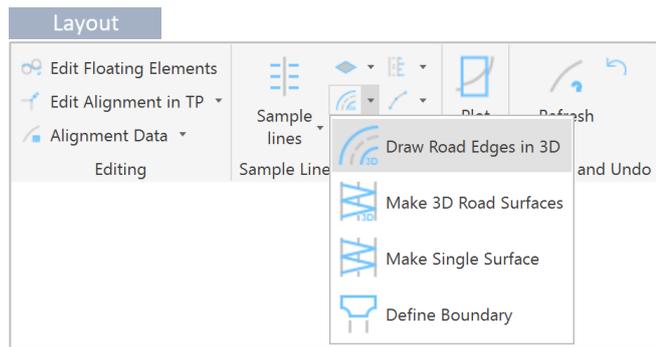

Edit the profile of the fillet

Now it is necessary to adjust the profile of the FILLET_01 according to AXIS_01 and AXIS_02 profiles. To edit the profile, use the tools from the Editing profile tab.

1. Run the Move PVI command.

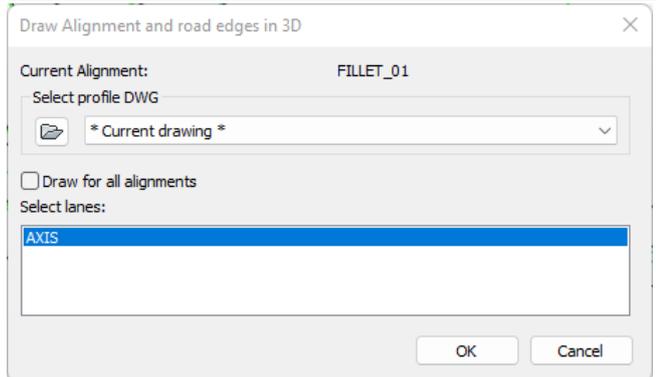2. Change the position of the profile to fit the axes AXIS_01 and AXIS_02.
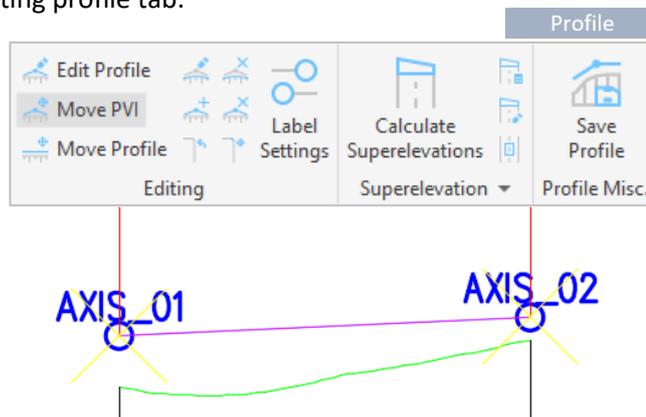
Draw 3D road edges

1. Run the <u>Draw Road Edges in 3D</u> command.

2. Select lanes in the dialogue box by clicking on them.

3. Confirm by clicking OK.

The fillet is now drawn in 3D.