



Plateia

by **CGS Labs**



Conditional TCS element Tutorial





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Conditional TCS element

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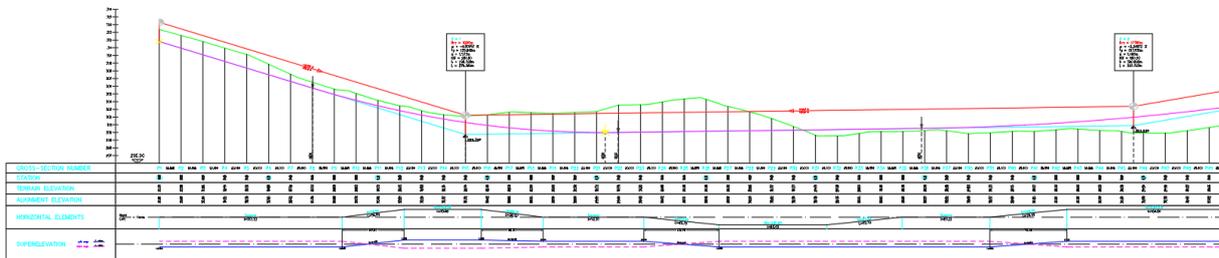
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INTRODUCTION

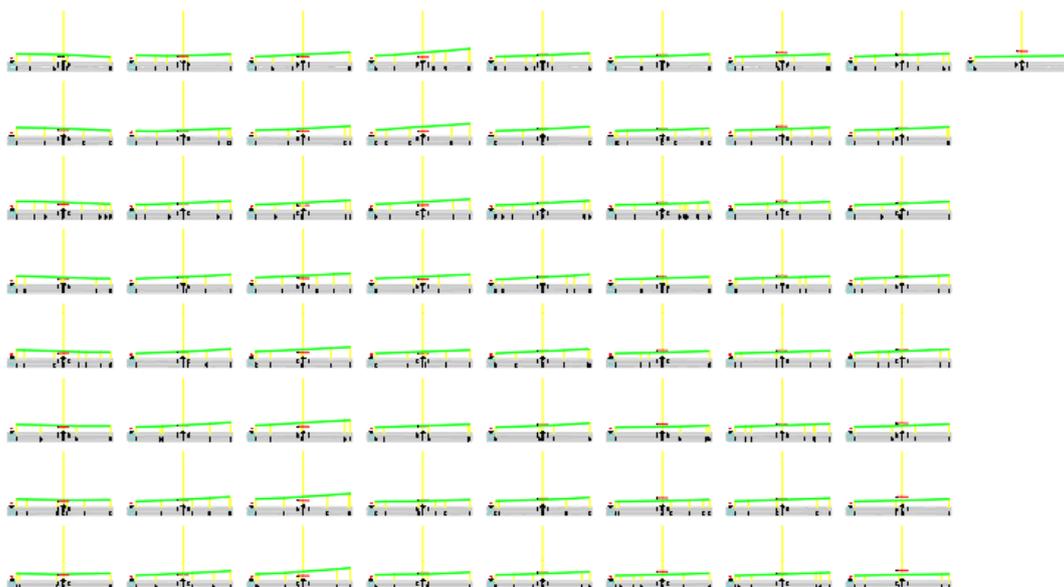
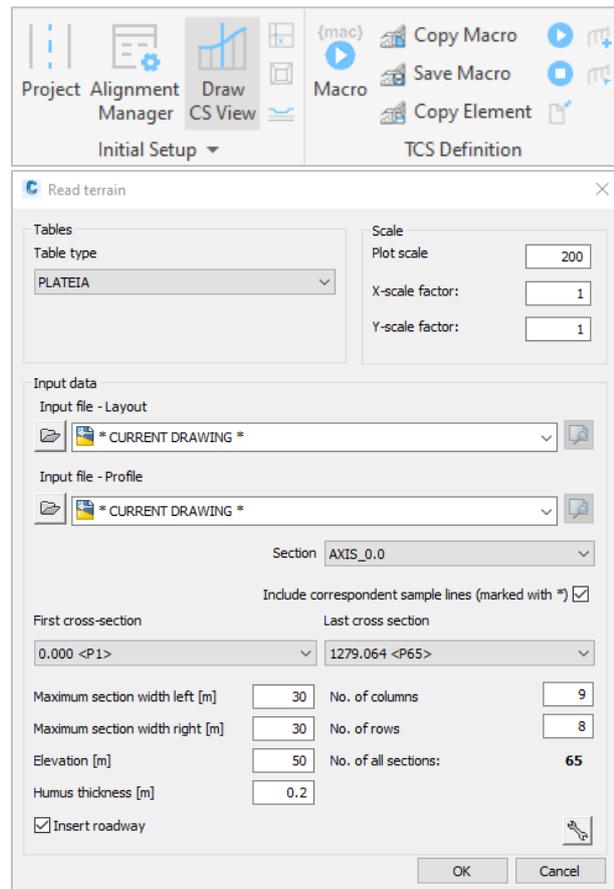
In this tutorial, you will learn how to use the Conditional element command. The conditional element is an element with special properties. It is only drawn if the selected condition is met. In this case, a checkmark is drawn. Otherwise, when the conditional element is not met, a cross is drawn. Conditional elements can also be nested. Nesting means that we place one if or else decision structure inside another one. Then we can also add a TCS element to these nested conditional elements.

In the beginning, the user must draw the alignment with sample lines and profile. In this case, the profile is drawn in such a way that it runs somewhere above and below the terrain. Undivided planar is selected for superelevation type and center for the pivot method. Once, you have all this ready in your drawing, you can continue with these instructions.



1. Draw CS View

1. Run the Draw CS View command.
2. Select Plateia table type, for source data use *Current drawing*, or select another drawing to which your alignment design was saved (if you started to draw the profile in a new drawing).
3. Select all cross-sections and check the box at the Insert roadway.
4. Confirm by pressing the OK button and then select the insertion point for the upper-left corner.



2. Conditional elements

Depending on the slope of the road and the fact whether the left edge of the road is above or below the terrain, we will insert different drainage elements.

2.1 Slope

Firstly, we define the conditional element that returns value »TRUE« when the slope between the axis of the road and the left edge is smaller than 0 degrees and value »FALSE« when the slope is equal or larger than 0.

1. Run the Conditional TCS element command.

2. Select all cross-sections.

3. Specify the name of the conditional element (element label): slope.

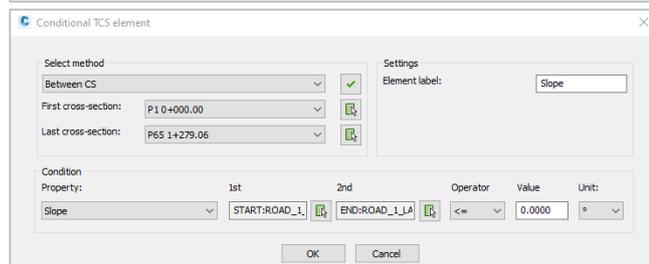
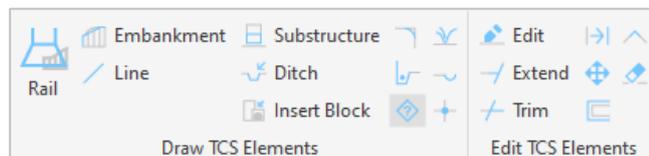
4. Select the Slope option from the drop-down menu.

5. Select the first and the second point between which the distance, slope or elevation will be measured. This distance, slope or elevation will be then compared to the inserted value. Usually, you can select endpoints of the elements.

If you select the starting point of the element (as shown in the figure on the right) the value in 1st will be »START:ROAD_1_LANE_R1:1« meanwhile if you select the ending point of the element this value will be »END:ROAD_1_LANE_R1:1«.

6. Insert the operator to compare the value to the measured distance, slope or elevation. You can also select the unit you want to use for this value.

7. Confirm by pressing OK and then select the element, where you want to place the conditional element. Select the second point in the drawing again.



The result:



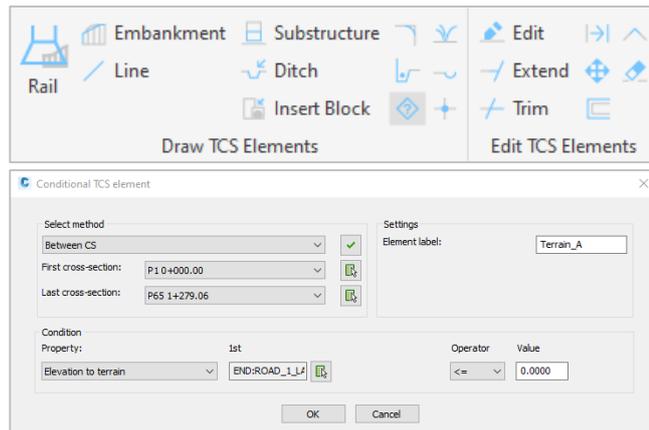
2.2 Terrain

Secondly, we will define two conditional elements that relate to the elevation to the terrain.

If the left lane is inclined from right to left, the conditional element Terrain_A is attached to it, which checks whether the leftmost point of the left lane is below or above the terrain.

If the left lane is not inclined from right to left, the conditional element Terrain_B shall be attached to it to check that the leftmost point of the lane is below or above the terrain.

1. Click on the Conditional icon.
2. Select all cross-sections.
3. Type the element label: Terrain_A.
4. Select the Elevation to terrain from the drop-down menu.
5. Select the first point in the drawing. This point now represents the left bottom edge of the road.

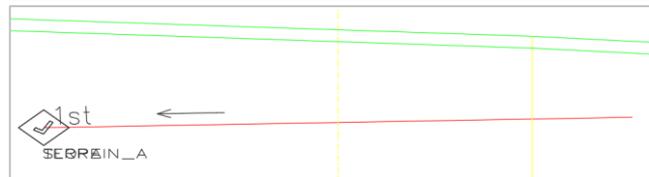


6. Select the operator and define the value.



7. Confirm by pressing the OK button.

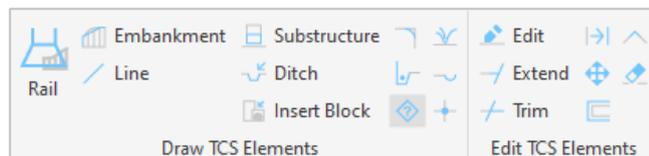
8. Click on the true slope conditional element in the drawing.



9. Click on the Conditional icon.

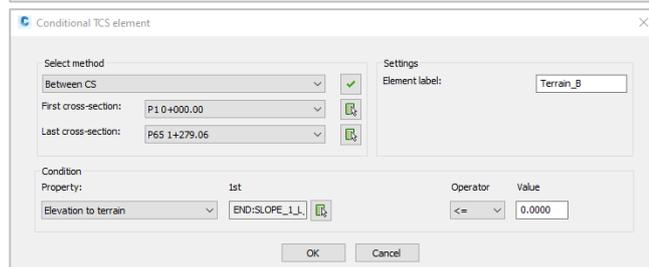
10. Select all cross-sections.

11. Type the element label: Terrain_B.



12. Select the Elevation to terrain from the drop-down menu.

13. Select the first point in the drawing. This point now represents the left bottom edge of the road.

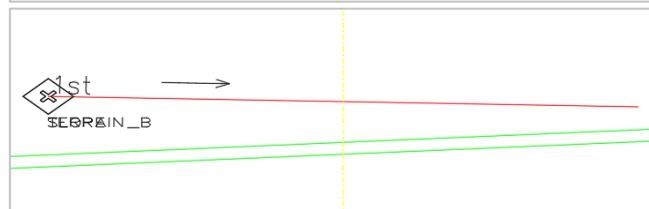


14. Select the operator and define the value.



15. Confirm by pressing the OK button.

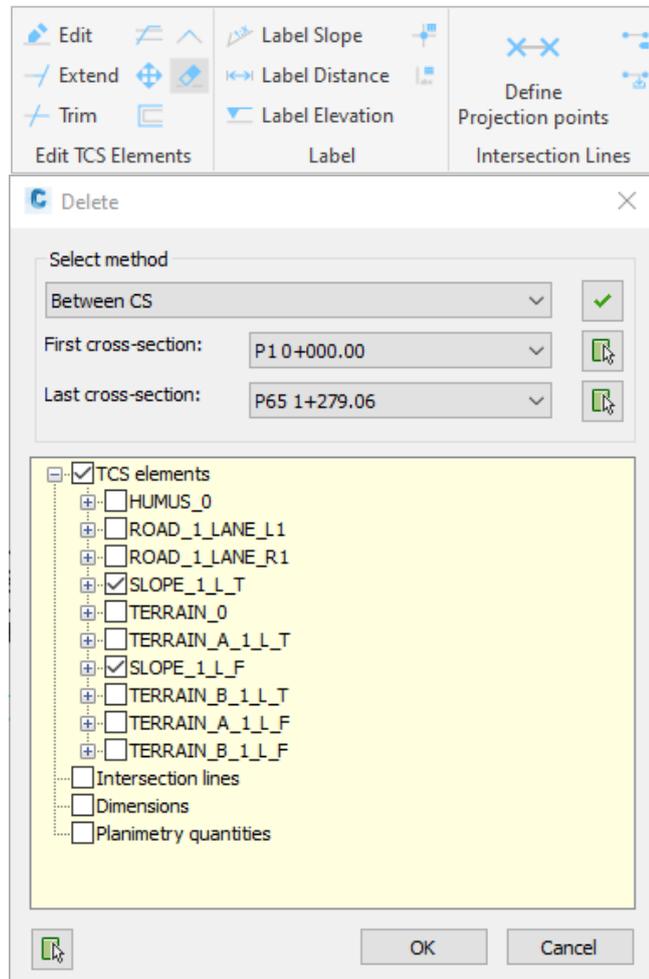
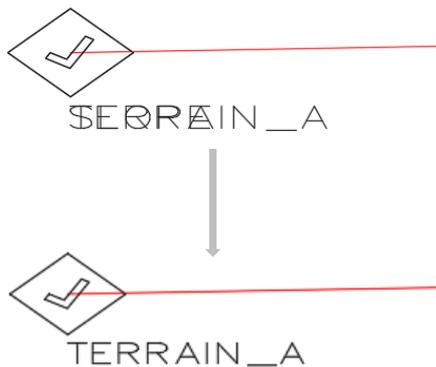
16. Click on the false slope conditional element in the drawing.



2.3 Delete conditional element for slope

We should delete existing conditional elements for the slope that we have a clearer drawing.

1. Run the Erase Elements command.
2. Select all cross-sections.
3. Select the conditional element Slope.
4. Confirm by clicking the OK button.

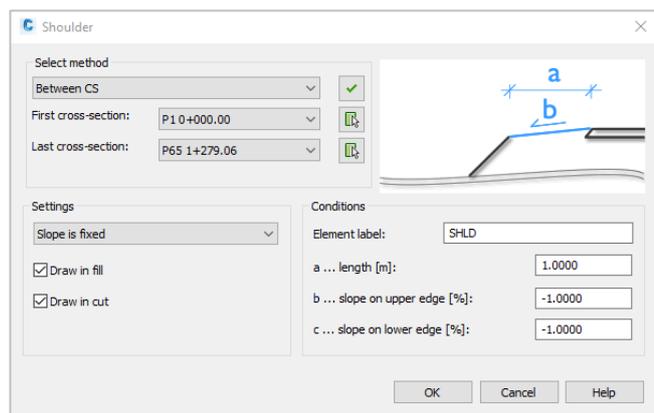
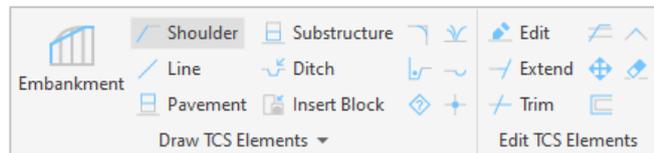
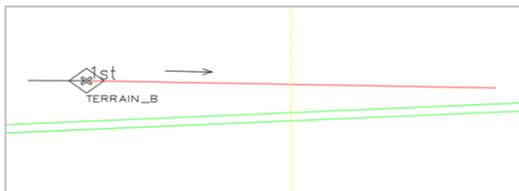


2.4 Drainage elements

We will now insert different drainage elements for different cases.

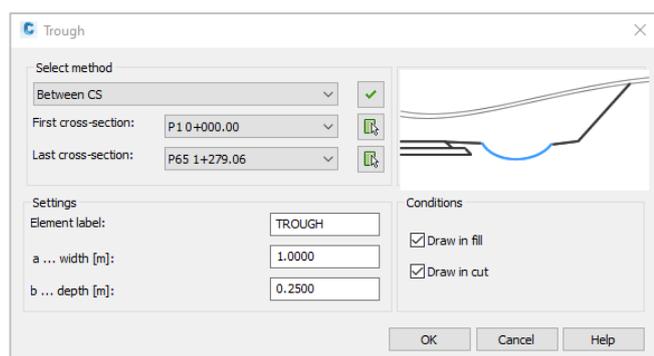
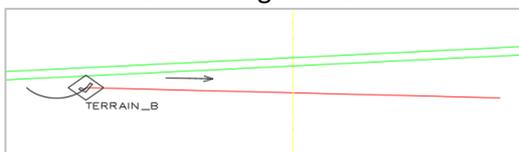
If the left lane is not inclined from right to left and the leftmost point of the left lane is over the terrain, the shoulder is attached to the conditional element.

1. Run the Shoulder command.
2. Select all the cross-sections and check the parameters.
3. Confirm by pressing the OK button.
4. Click on the conditional element, in which the leftmost point of the left lane is located above the terrain and the left lane is not inclined from right to left.



If the left lane is not inclined from right to left and the leftmost point of the left lane is under the terrain, the trough is attached to the conditional element.

1. Run the Trough command.
2. Select all the cross-sections and check the parameters.
3. Confirm by pressing the OK button.
4. Click on the conditional element, in which the leftmost point of the left lane is located under the terrain and the left lane is not inclined from right to left.



If the left lane is inclined from right to left and the leftmost point of the left lane is under the terrain, the ditch is attached to the conditional element.

1. Run the Ditch command.
2. Select all the cross-sections and check the parameters.
3. Confirm by pressing the OK button.
4. Click on the conditional element, in which the leftmost point of the left lane is located under the terrain and the left lane is inclined from right to left.

