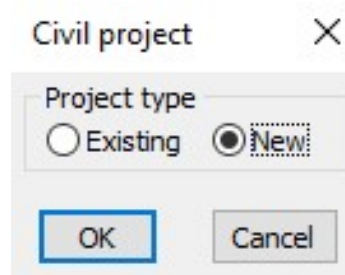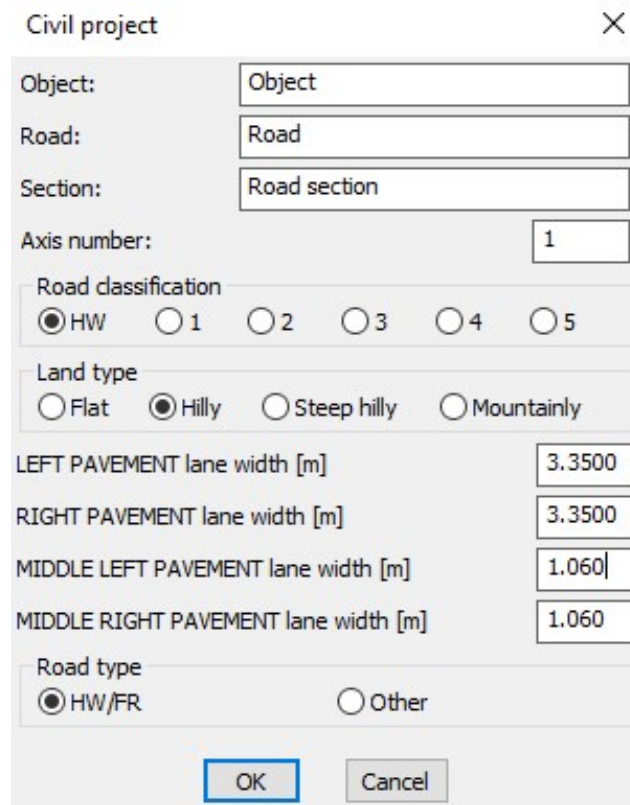# Module CIVIL

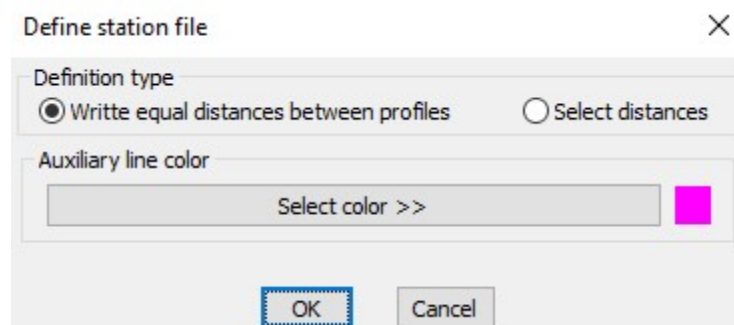1. Loading module – define civil project   creating file **Example2_3d.prc**

In new project we must first define insert dates.

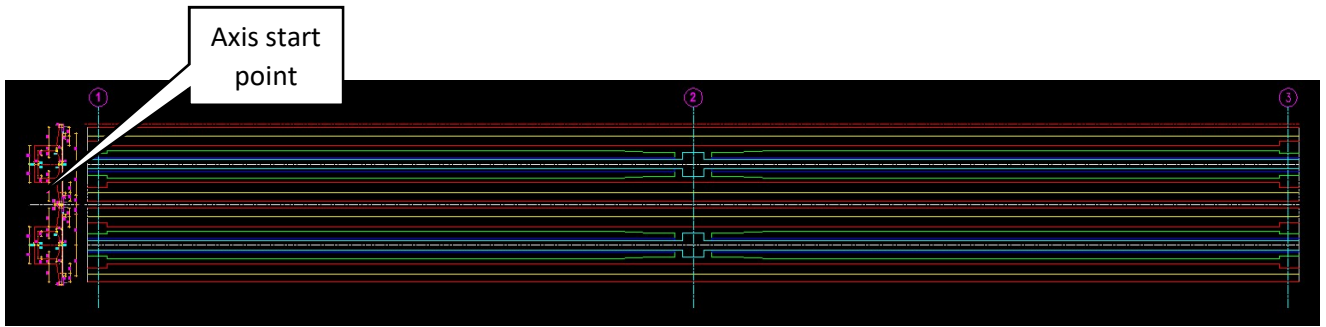2. Define station file   creating file **Example2_3d.raz**

Defining stations - distances, for cross axis and deck construction cross sections drawing

For drawing of 3d model, where in the equal profile (cross axis) apears two different sections, we must define equal stations!
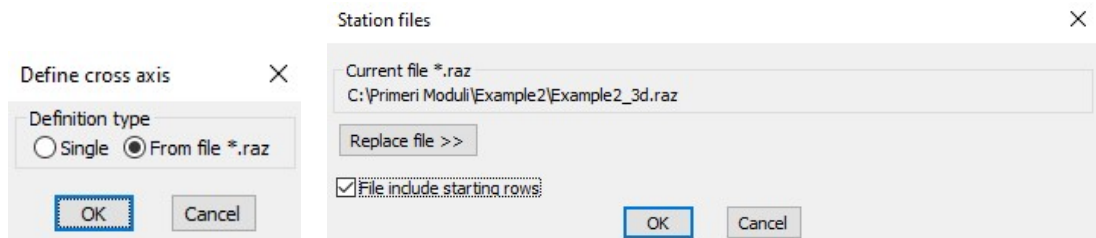
3. Checking axis start point.

   Extend polyline - axis for 0.25 m in opposite station direction. **Polyline must be drawn in station direction!**
   For polyline start point check use command in module BASICS -> Ratio -> Pedit -> Select polyline startpoint.

4. Define cross axis file   creating file **Example2_3d.pro**


```
Selected station file: C:\Primeri Moduli\Example2\Example2_3d.raz
Select starting side of site plan AXIS on 2D or 3D polyline:
Axis length = 132.650 m.
Station on start of EXTENDED AXIS in m < 0.000 >: -.25

Minimum distance to 1. axis must be > 0.10!
Distance to 1. cross axis <1.000>:.25
1.axis number < 1 >:

Data processing ... finished.
Define NEW file for CROSS SECTION AXIS.
Writting dates to file << C:\Primeri Moduli\Example2\Example2_3d.pro >>. finished
```

5. Draw cross axis
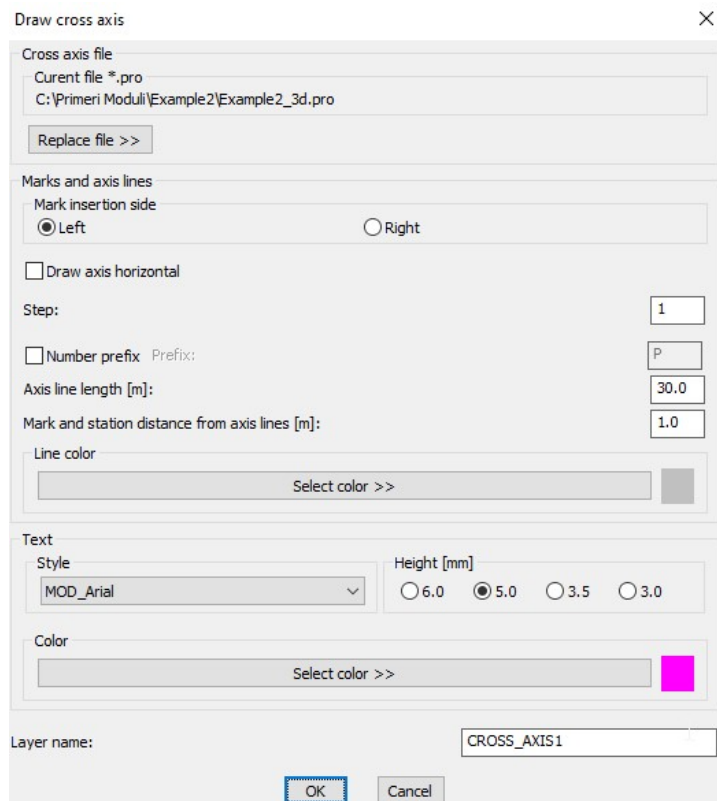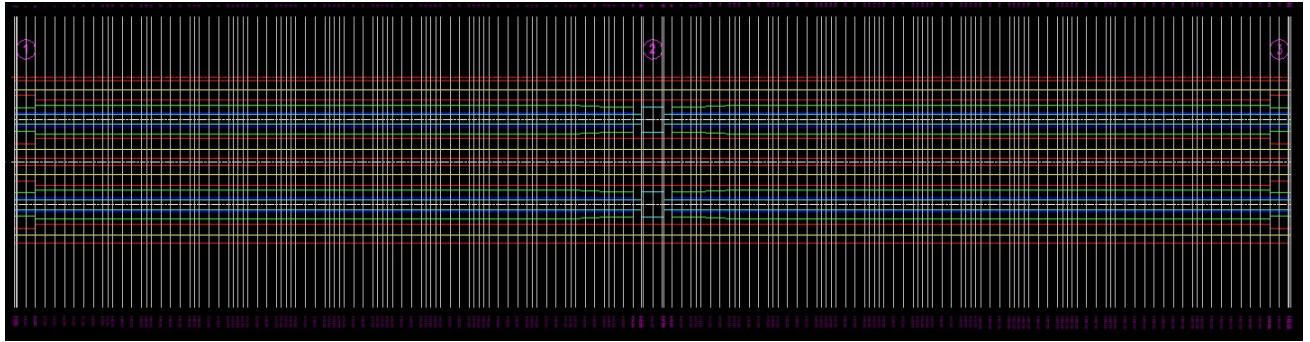
6. Define longitudinal profile vertical alignment file   creating file **Example2_3d.nvp**
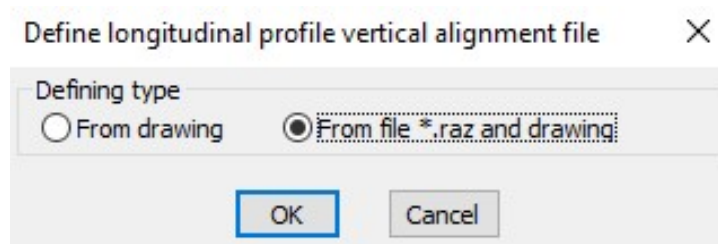
Select polyline – vertical alignment, laying in station area and defined in file Example2_3d.raz. Starting points of all selected polylines in longitudinal profile, must proceed from left to right! Poylines must be without arcs. First replace arcs in polylines in module BASICS with command Ratio -> Change arc/circle to polyline. Lengthen polyline for 1.00 m on ending side of polyline.
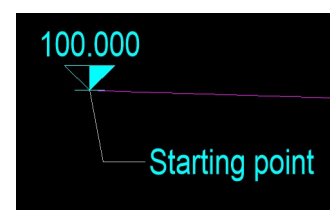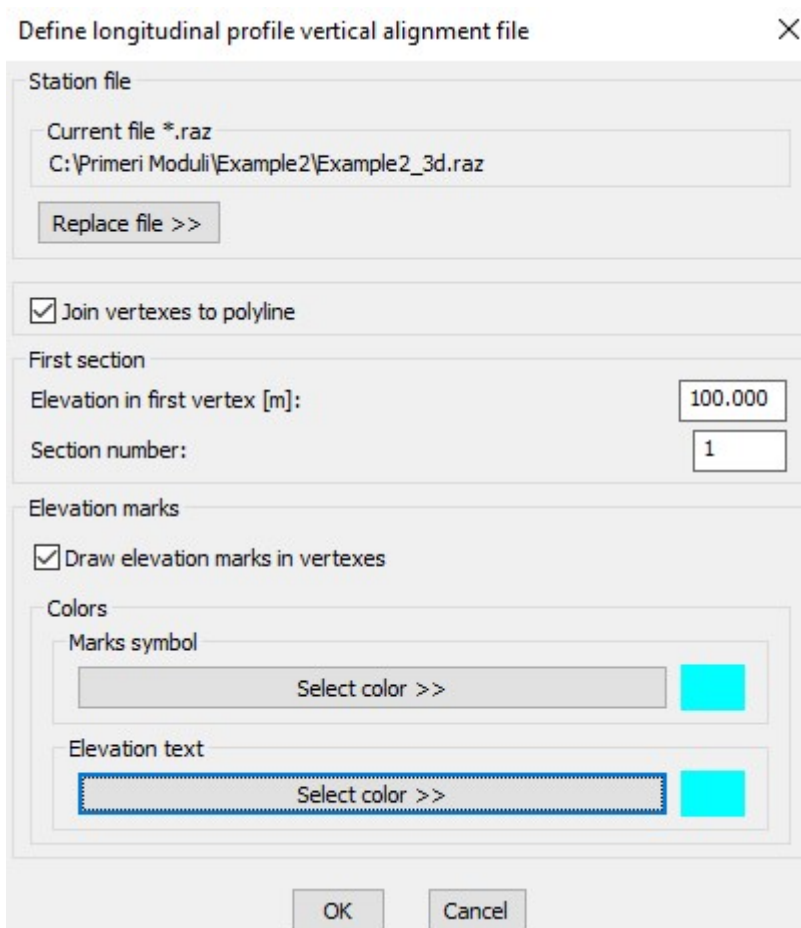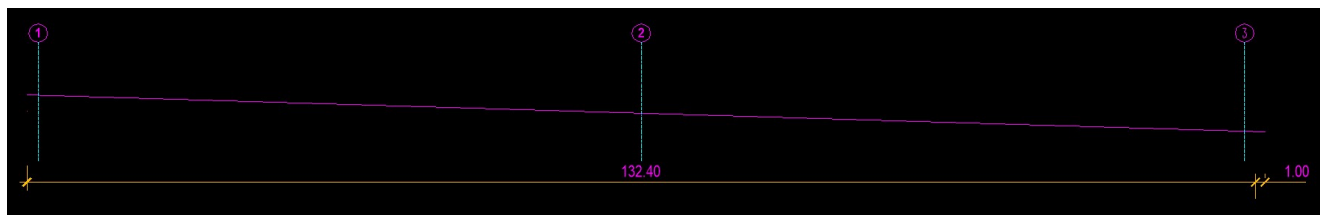
Selected station file: C:\Primeri Moduli\Example2\Example2_3d.raz
Select 2D or 3D longitudinal profile polyline:
Processing ...
Elevation symbol direction   Up/Down <U>:
 finished.
Define NEW longitudinal profile vertical alignment file.
Selected longitudinal profile vertical alignment file:C:\Primeri Moduli\Example2\Example2_3d.nvp
Writting dates to file << C:\Primeri Moduli\Example2\Example2_3d.nvp >> ... finished.

7. Define screwing file   creating file **Example2_3d.vij**
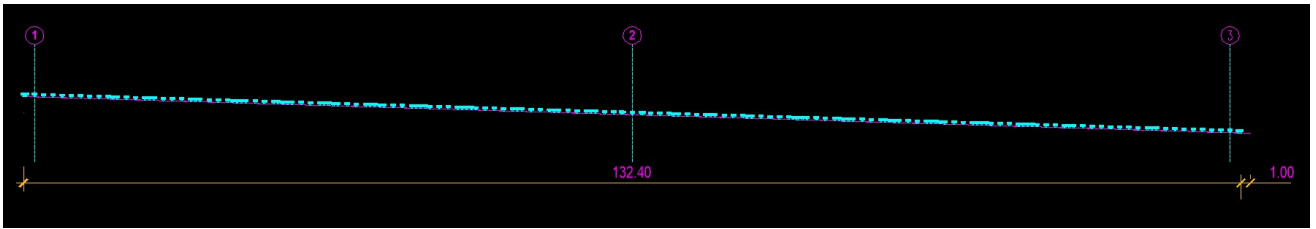
Define screwing file - first section

Axis number: 1

Stations

Station on section start [m]   0.000

Station on section end [m]   140.000

Slopes

On section start

Slope - left roadway side [%]   2.5

Slope - right roadway side [%]   -2.5

On section end

Slope - left roadway side [%]   2.5

Slope - right roadway side [%]   -2.5

OK   Cancel

Define screwing file on sections

Station on section end [m]   140.000

Slopes on section end

Slope - left roadway side [%]   2.5

Slope - right roadway side [%]   -2.5

OK   Cancel   End

8. Define roadway slope file in cross sections   creating file **Example2_3d.psk**

Define roadway slope file

Cross axis file

Current file *.pro

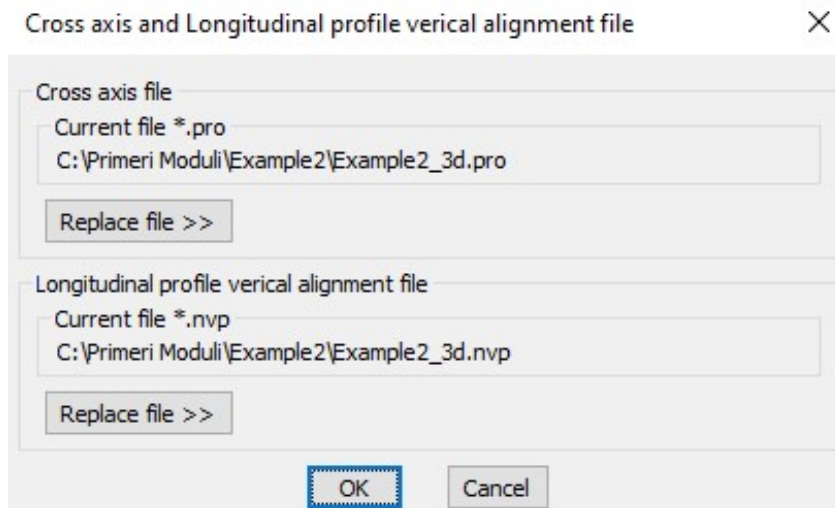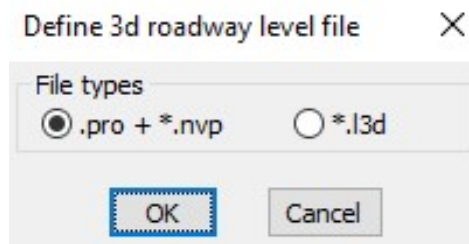C:\Primeri Moduli\Example2\Example2_3d.pro

Replace file >>

Cross sections screwimg file

Current file *.vij

C:\Primeri Moduli\Example2\Example2_3d.vij

Replace file >>

OK   Cancel

9. Define 3d roadway level file   creating file **Example2_3d.o3d**

Define 3d roadway level file   ✕

File types
⦿ .pro + *.nvp   ○ *.l3d

OK   Cancel

Cross axis and Longitudinal profile verical alignment file   ✕

Cross axis file
Current file *.pro
C:\Primeri Moduli\Example2\Example2_3d.pro

Replace file >>

Longitudinal profile verical alignment file
Current file *.nvp
C:\Primeri Moduli\Example2\Example2_3d.nvp

Replace file >>

OK   Cancel

```
Selected cross axis file: C:\Primeri Moduli\Example2\Example2_3d.pro
Selected longitudinal profile verical alignment file:C:\Primeri Moduli\Example2\Example2_3d.nvp
Define NEW 3d roadway level file.
3d roadway level file: C:\Primeri Moduli\Example2\Example2_3d.o3d
Writting dates to file << C:\Primeri Moduli\Example2\Example2_3d.o3d >> ...  finished.
```

10. Define 3d separate roadway levels file   creating file **Example2_3d.l3d**

Define 3d separate roadways levels file ✕

Files

3d roadway level file

Current file *.o3d
C:\Primeri Moduli\Example2\Example2_3d.o3d

[Replace file >>]
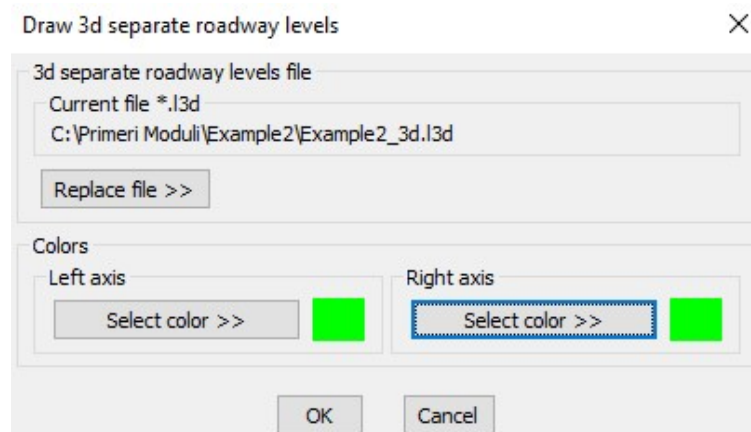
Roadway slope file

Current file *.psk
C:\Primeri Moduli\Example2\Example2_3d.psk

[Replace file >>]

Section area

◉ All   ○ From-to   ○ Single

Left object

Distance to object axis - L [m]	3.35

Middle lane

Middle lane distance LEFT - VL [m]	1.06
Middle lane distance RIGHT - VD [m]	1.06

Right object

Distance to object axis - D [m]	3.35

[OK]   [Cancel]

11. Draw 3d separate roadway levels

Draw 3d separate roadway levels ✕

3d separate roadway levels file

Current file *.l3d
C:\Primeri Moduli\Example2\Example2_3d.l3d

[Replace file >>]

Colors

Left axis

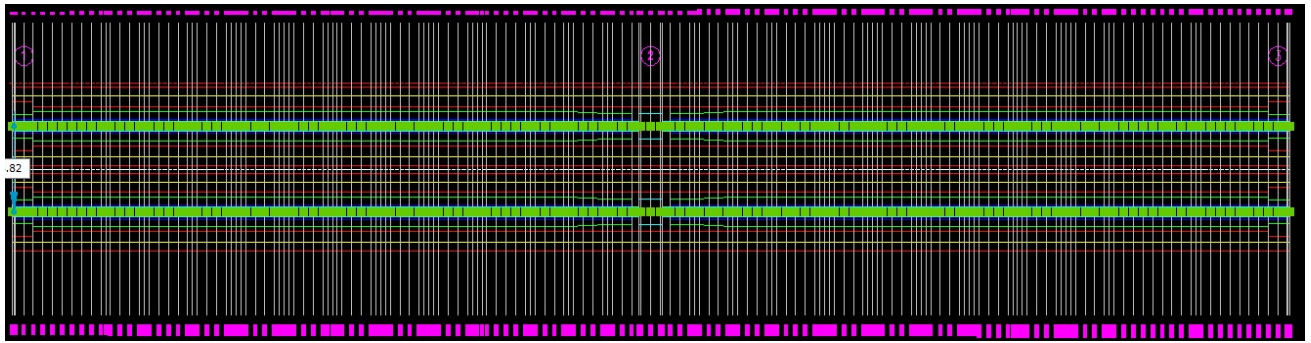[Select color >>] ▮ (green)

Right axis

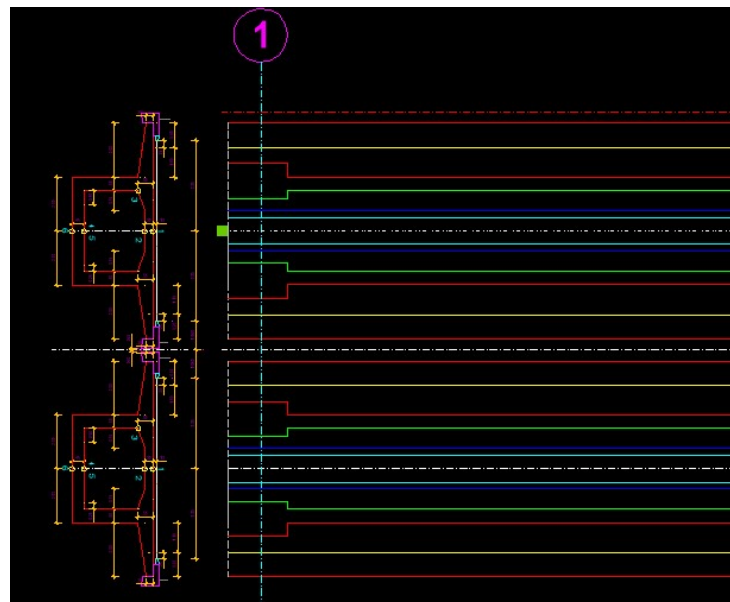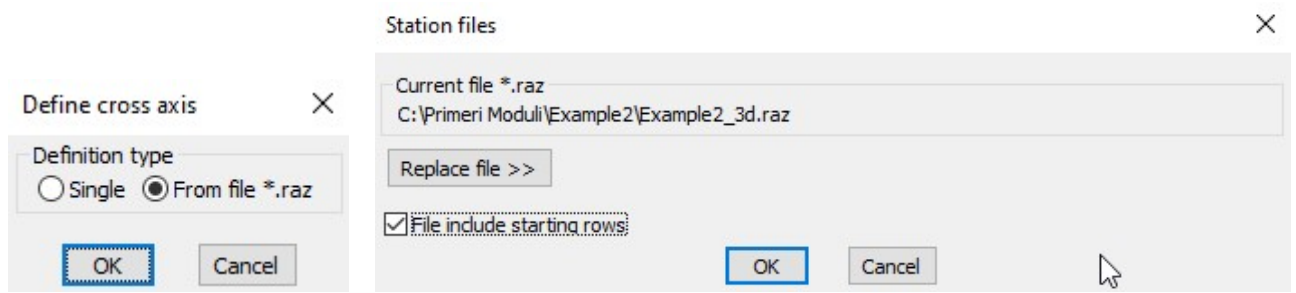[Select color >>] ▮ (green)

[OK]   [Cancel]

```
Sections checking... Section checking finished.
Drawing 3d axis LEFT ... finished.
Drawing 3d axis RIGHT ... finished.
```


12. Define cross axis for left object   creating file **Example2_3dL.pro**

First extend polyline - axis for 0.25 m in opposite station direction.


```
Selected station file: C:\Primeri Moduli\Example2\Example2_3d.raz
Select starting side of site plan AXIS on 2D or 3D polyline:
Axis length = 132.650 m.
Station on start of EXTENDED AXIS in m < 0.000 >: -.25

Minimum distance to 1. axis must be > 0.10!
Distance to 1. cross axis <1.000>:.25
1.axis number < 1 >:

Data processing ... finished.
Define NEW file for CROSS SECTION AXIS.
Writting dates to file << C:\Primeri Moduli\Example2\Example2_3dL.pro >>. finished
```

13. Draw cross axis for left object

Draw cross axis   ×

Cross axis file
  Curent file *.pro
  C:\Primeri Moduli\Example2\Example2_3dL.pro

  Replace file >>

Marks and axis lines
  Mark insertion side
  ● Left   ○ Right

  ☐ Draw axis horizontal

  Step: 1

  ☐ Number prefix   Prefix: P
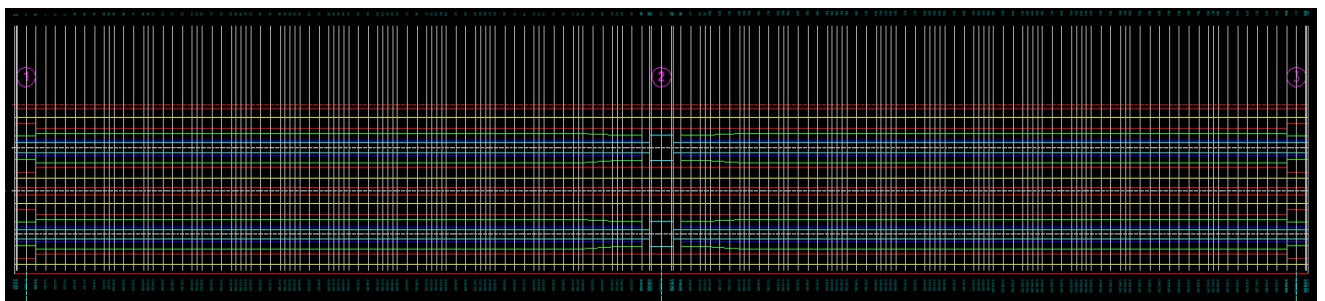 Axis line length [m]:   25.0
  Mark and station distance from axis lines [m]:   1.0
  Line color
    Select color >>

Text
  Style   Height [mm]
  MOD_Arial   ⌄   ○ 6.0   ● 5.0   ○ 3.5   ○ 3.0

  Color
    Select color >>

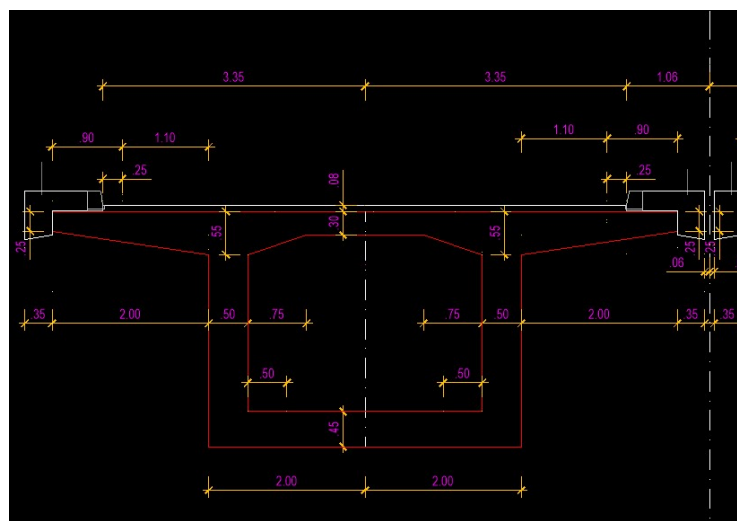Layer name: CROSS_AXIS_LEFT

              OK   Cancel
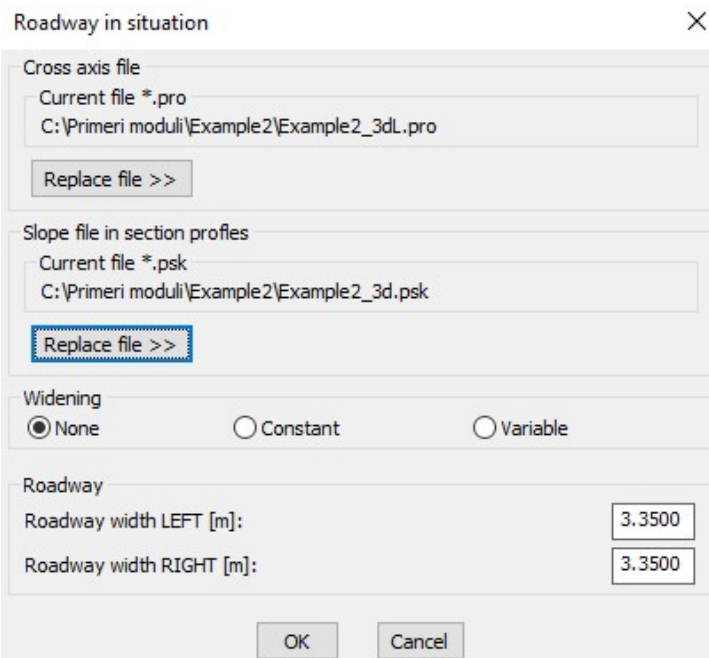

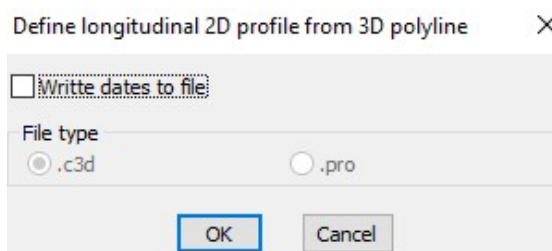14. Define roadway and widening file in cross sections for left object   creating file **Example2_3dL.voz**
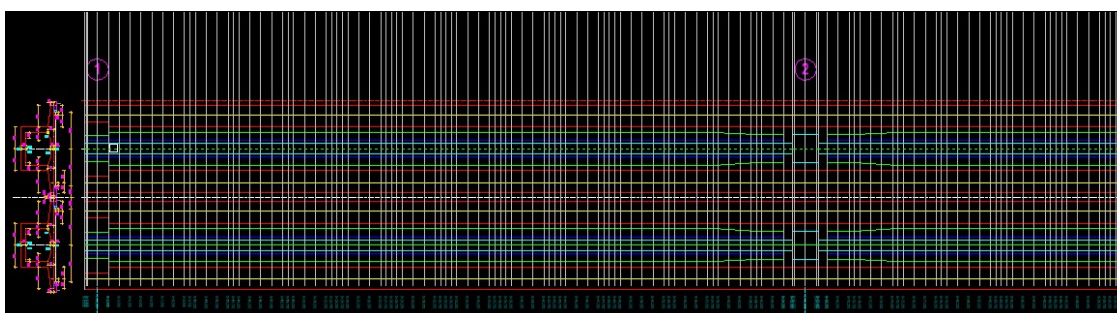
If the roadway has widening, select in column Widening Variable and after them we select in situation or sketch left and right roadway border.
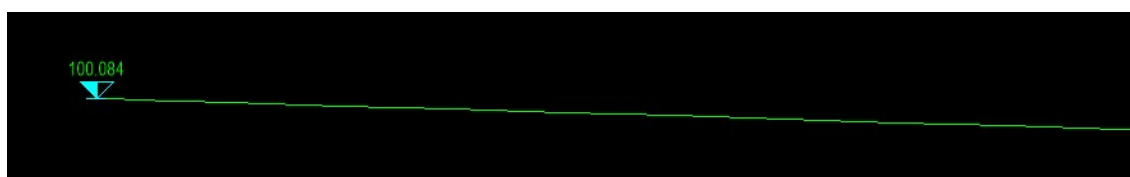
15. Define longitudinal 2D profile from 3D polyline for left object
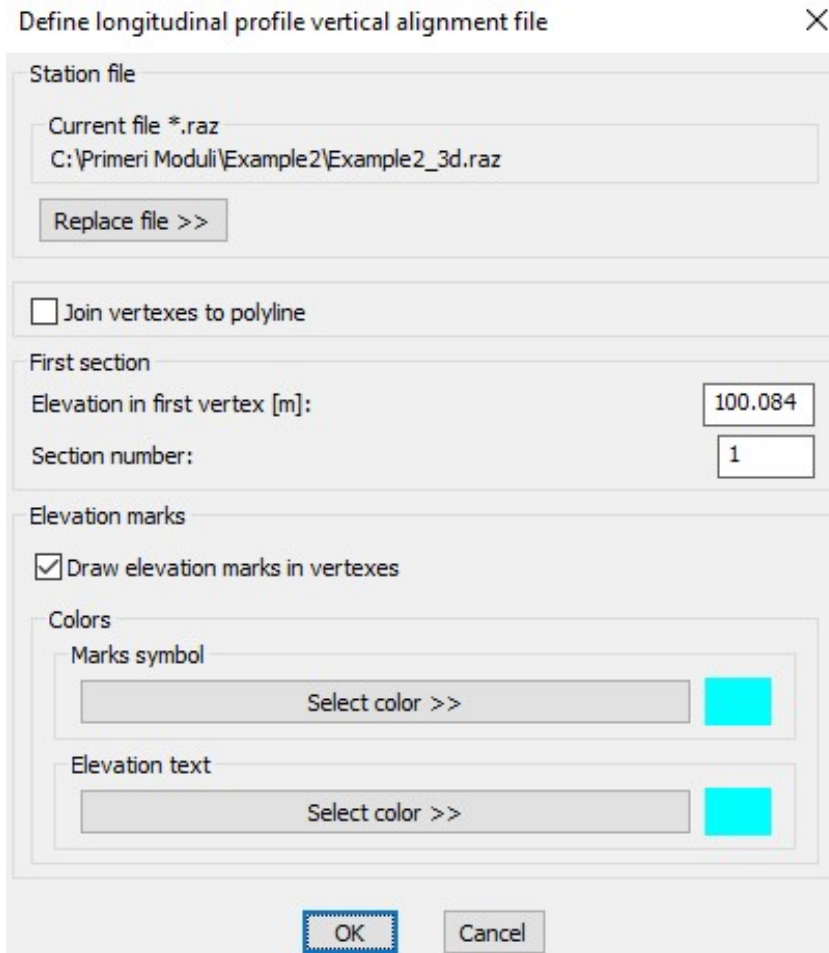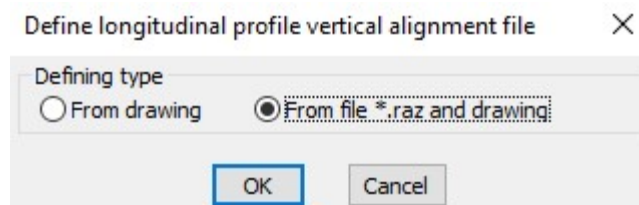

Select starting side of left 3d axis

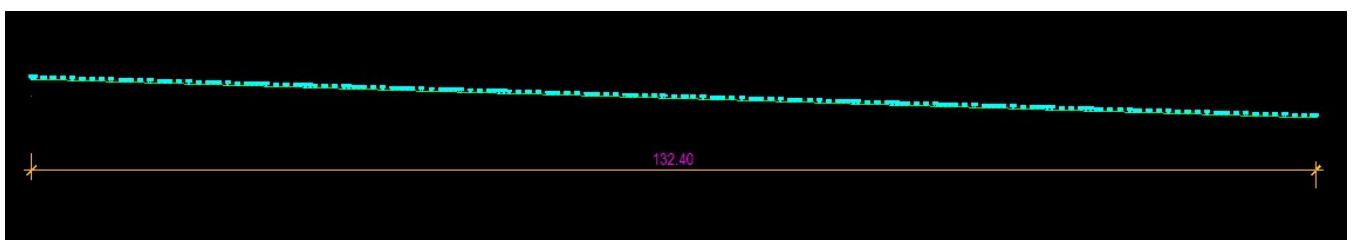And start point of 2d longitudinal profile from 3d polyline; 2d profile will be created.

100.084

16. Define longitudinal profile vertical alignment file for left object   creating file **Example2_3dL.nvp**

Define longitudinal profile vertical alignment file   ×

Defining type
○ From drawing   ⦿ From file *.raz and drawing

OK   Cancel

Define longitudinal profile vertical alignment file   ×

Station file

Current file *.raz
C:\Primeri Moduli\Example2\Example2_3d.raz

Replace file >>

☐ Join vertexes to polyline

First section

Elevation in first vertex [m]:   100.084

Section number: 1

Elevation marks

☑ Draw elevation marks in vertexes

Colors

Marks symbol

Select color >>   ▮

Elevation text

Select color >>   ▮

OK   Cancel

```
Selected station file: C:\Primeri Moduli\Example2\Example2_3d.raz
Select 2D or 3D longitudinal profile polyline:
Processing ...
Elevation symbol direction    Up/Down <U>:
 finished.
Define NEW longitudinal profile vertical alignment file.
Selected longitudinal profile vertical alignment file:C:\Primeri Moduli\Example2\Example2_3dL.nvp
Writting dates to file << C:\Primeri Moduli\Example2\Example2_3dL.nvp >> ...  finished.
```

132.40

Dolocitev datoteke 3D osi   ✕

Vrste datotek za dolocitev

○ *.pro + *.tan   ◉ .pro + *.nvp   ○ *.l3d

OK   Cancel

Cross axis and Longitudinal profile verical alignment file   ✕

Cross axis file
Current file *.pro
C:\Primeri Moduli\Example2\Example2_3dL.pro

Replace file >>

Longitudinal profile verical alignment file
Current file *.nvp
C:\Primeri Moduli\Example2\Example2_3dL.nvp

Replace file >>

OK   Cancel
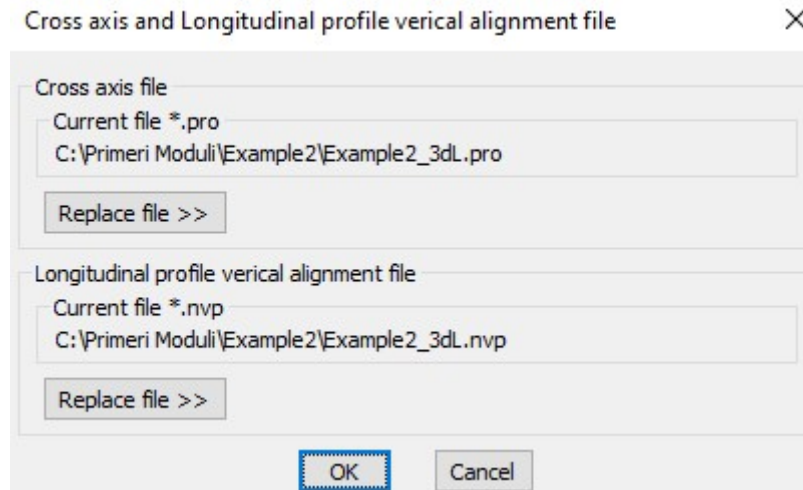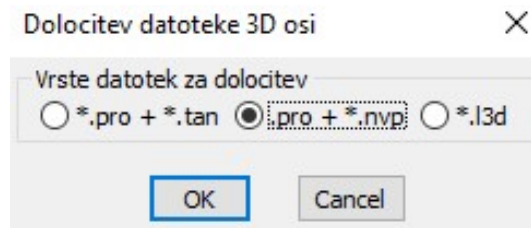
```
Selected cross axis file: C:\Primeri Moduli\Example2\Example2_3dL.pro
Selected longitudinal profile verical alignment file:C:\Primeri Moduli\Example2\Example2_3dL.nvp
Define NEW 3d roadway level file.
3d roadway level file: C:\Primeri Moduli\Example2\Example2_3dL.o3d
Writting dates to file << C:\Primeri Moduli\Example2\Example2_3dL.o3d >> ...  finished.
```