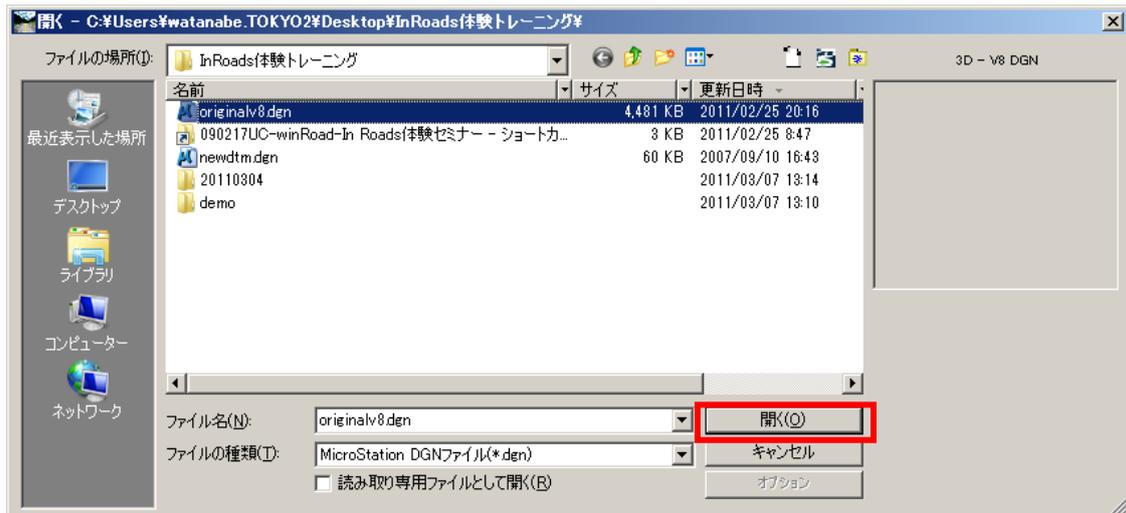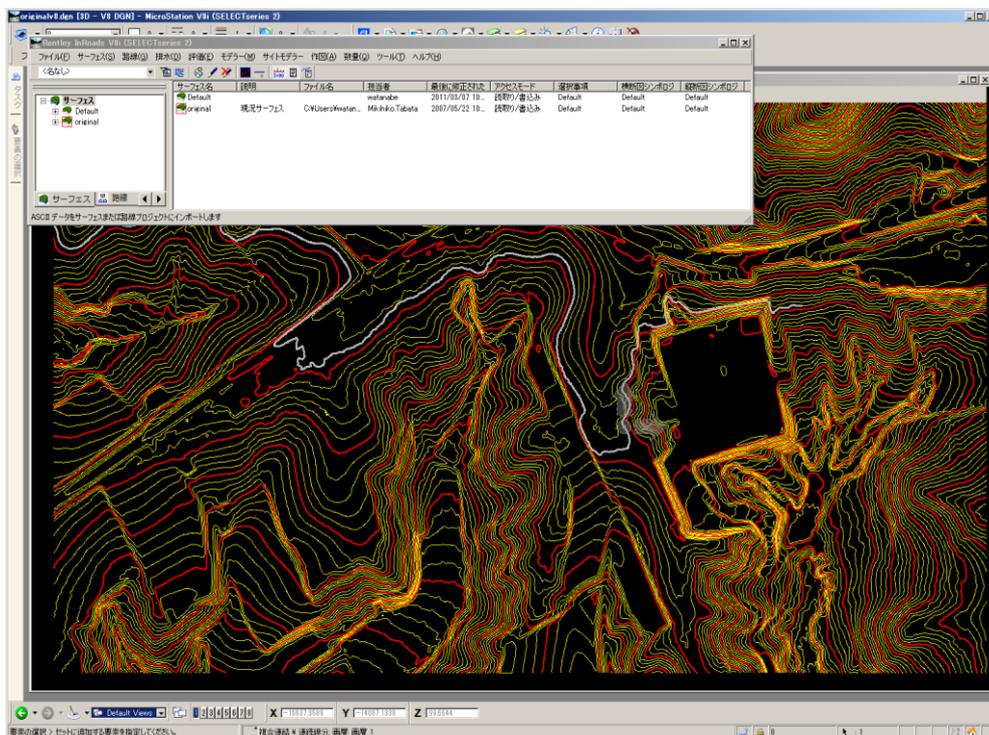## 1. Start InRoads

1-1. Start InRoads

1. Start InRoads from InRoads short cut icon on desktop, and select C:¥temp¥InRoads experience training ¥ originalv8.dgn from Micro Station manager.
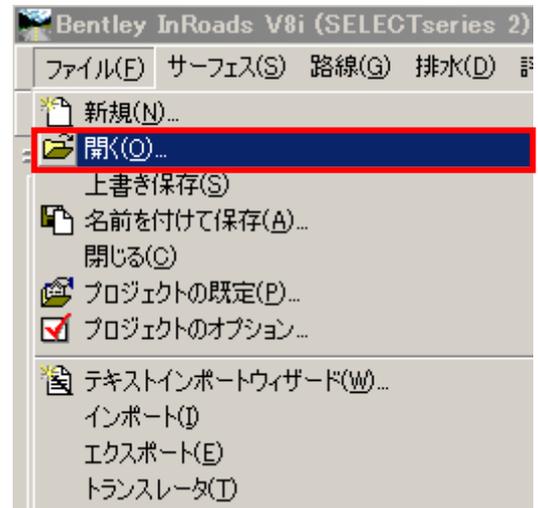

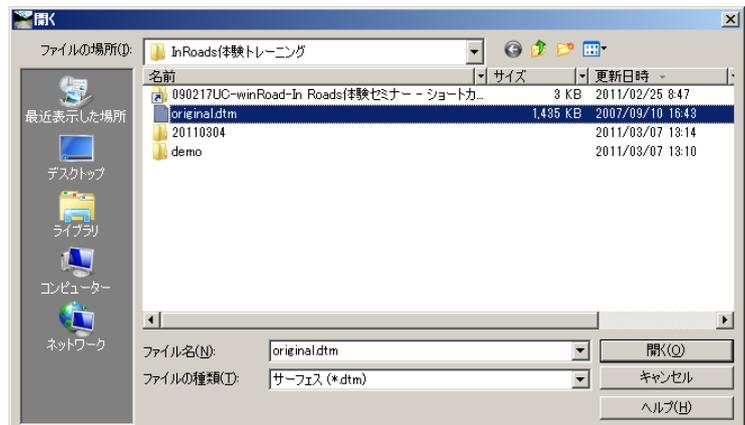2. Originalv8.dgn opens, and "Bentley InRoads V8i" dialog is displayed.

2. Import terrain surface for InRoads training

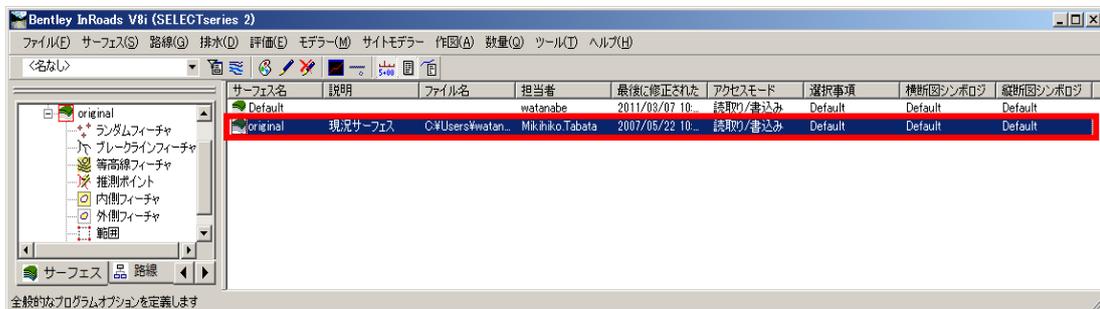### 2-1. Import terrain surface for InRoads training

1. Select "File" > "Open "command
   from "Bentley InRoads V8i" dialog.
   "Open" dialog is displayed.

2. Select "Original.dtm" in "Open"
   dialog. The terrain data for training
   is loaded.

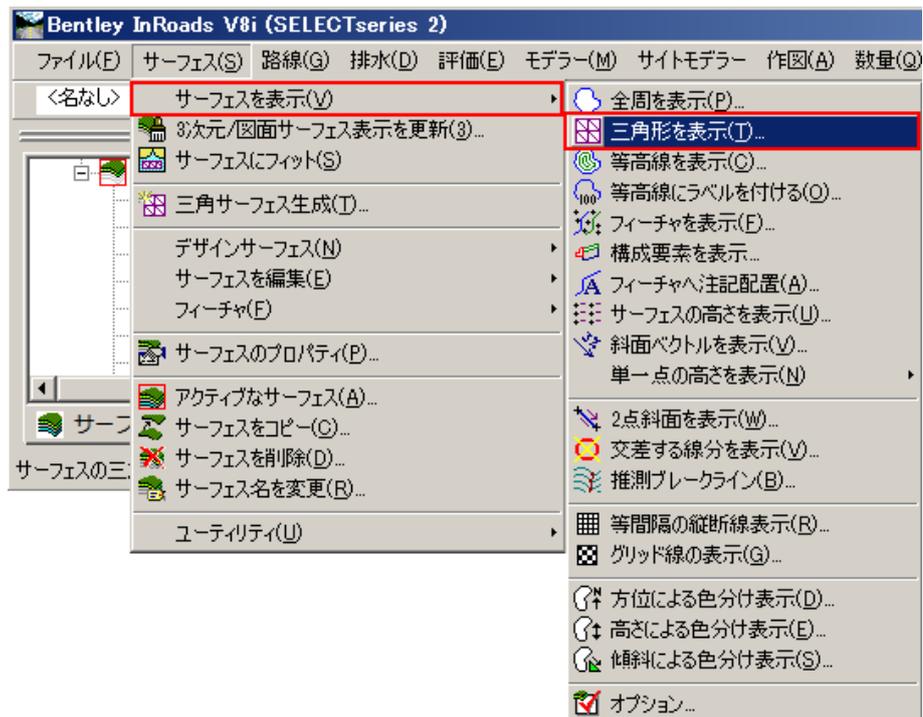3. Check if the "Original" surface is loaded correctly.

4. Click "Cancel" button to close "Open" dialog.

3. Display triangular surface
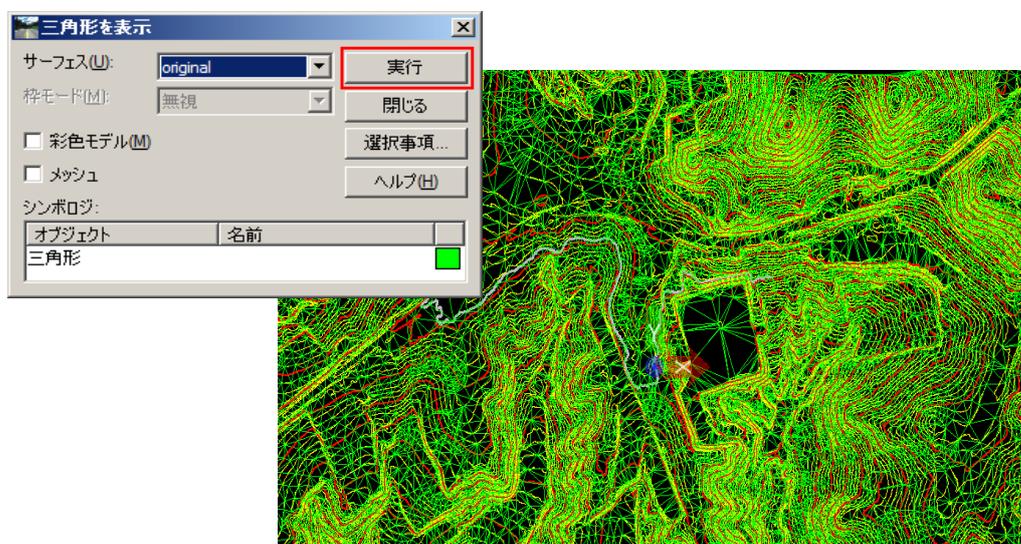
3-1.Display triangular surface

1. Select "Surface">"Display surface" >"Triangle" command.

    "Display triangle" dialog is displayed
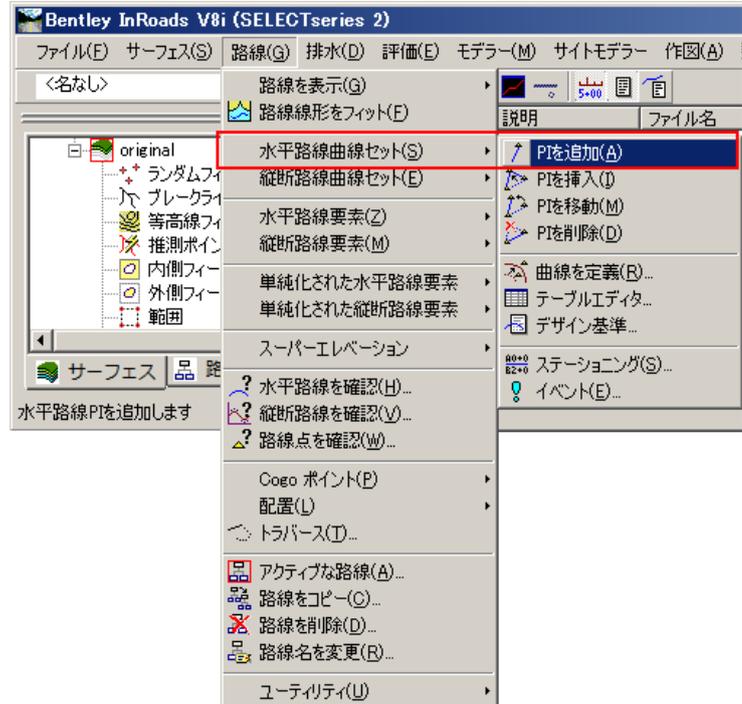

2. Click "Run" button from "Display triangle" dialog.

    A triangular surface is displayed. (Click "Esc" key to stop displaying.)
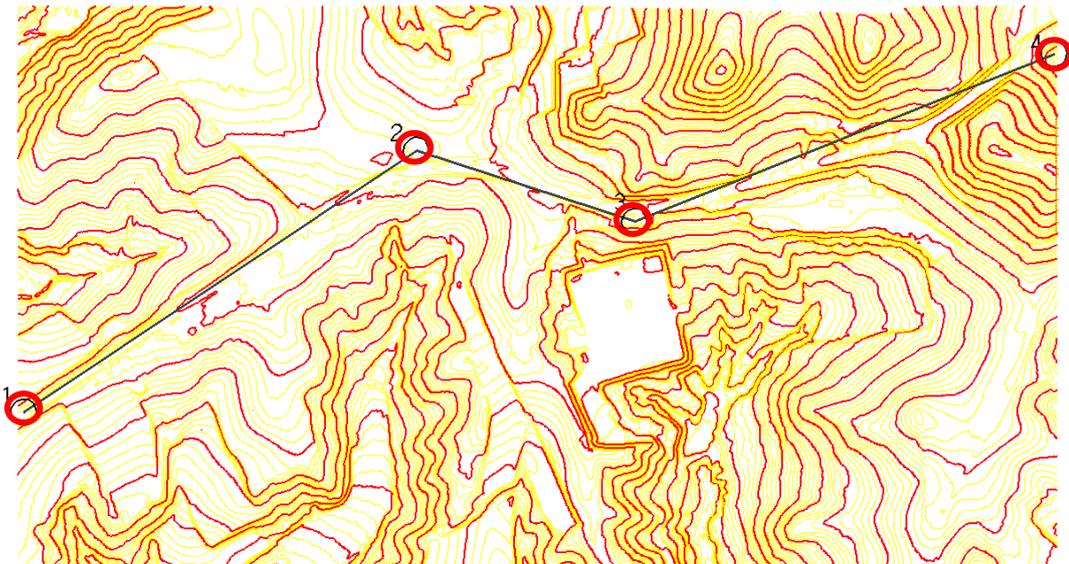
4. Design route on road

4-1. Define the horizontal route shape

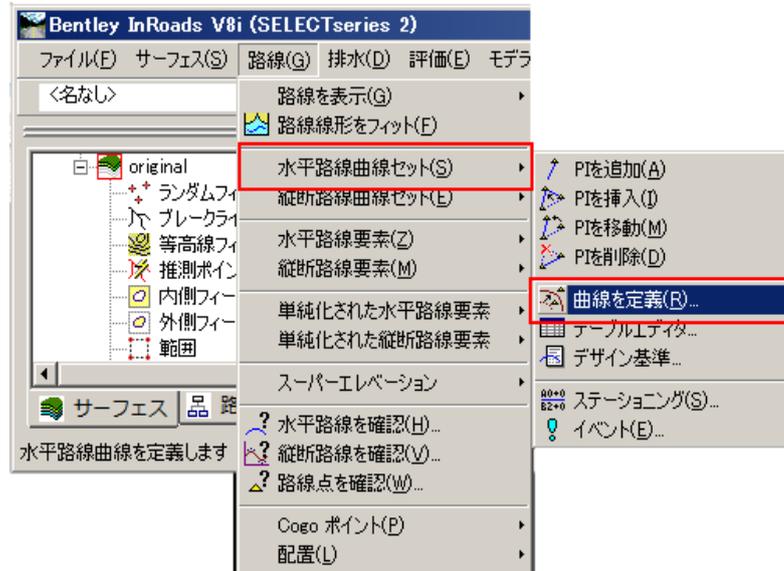1. Select "Route" > "Horizontal route curve set" > "Add PI" command.

Arrange IP point, and create the following route shape.   *Right-click to finish drawing.

## 4-2.Define curve clothoid of the horizontal route shape

1. Select "Route" >"Horizontal route curve set" > "Define curve" command.

    "Define horizontal route curve set" dialog is displayed.

2. Input the following.

    Early transition: Clothoid curve "100.0"(m)

    Radius: "200.0" (m)

    Subsequent transition: Clothoid curve "100.0"(m)

    Click "Run" button to draw the curve and the clothoid curve.

3. Click "Next" button, and draw the curve and the clothoid curve on the second road corner.
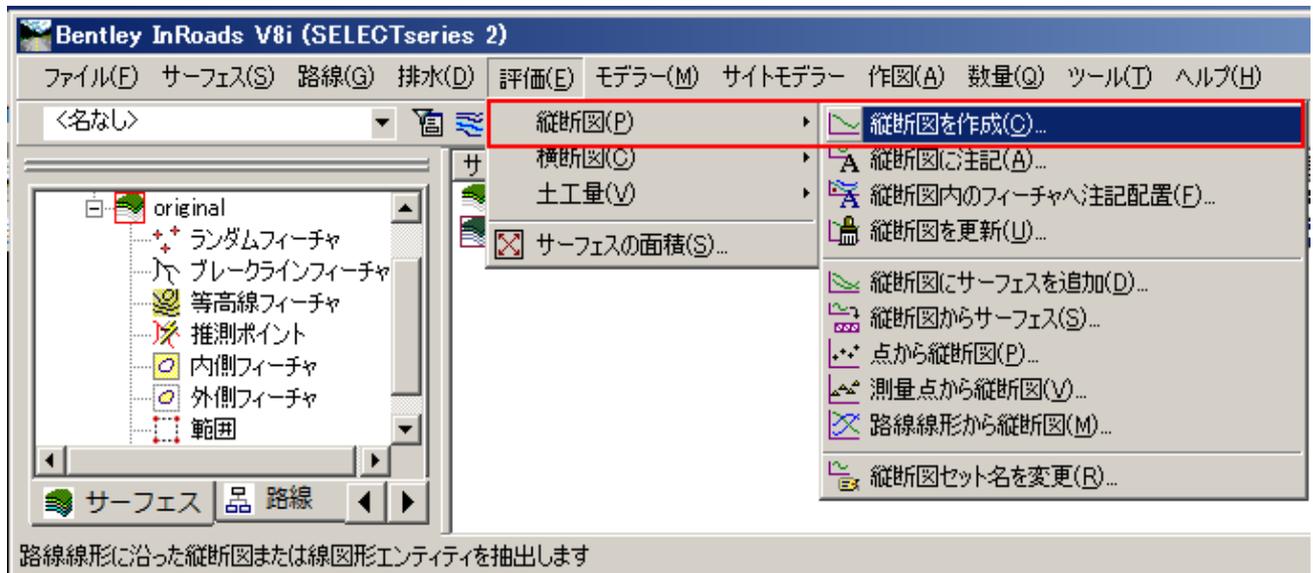
    Click "Close" in "Define horizontal route curve set" dialog to close the dialog.
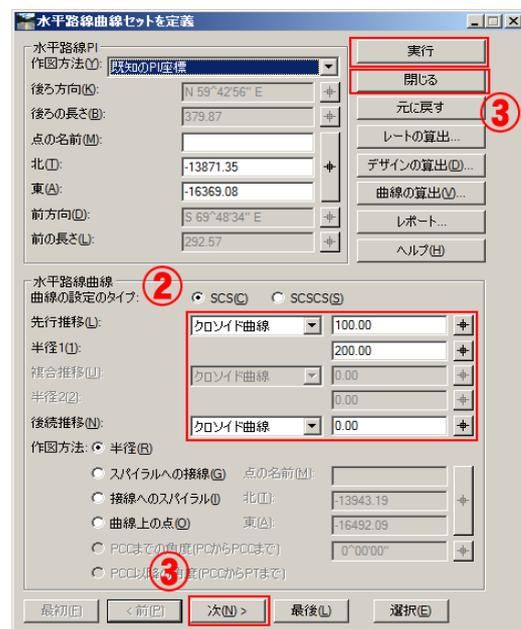
4-3. Create vertical section for vertical planning line

1. Select "Evaluation" > "Vertical section" > "Create vertical section" command.
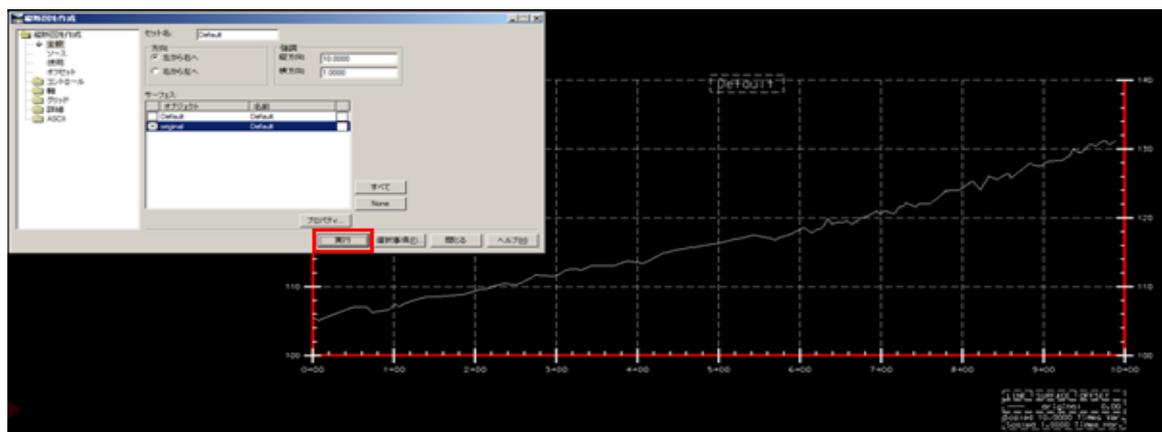
   "Create vertical section" dialog is displayed.

2. Select "original" from "Create vertical section" dialog as a surface. Set the emphasis direction as Vertical "10.0" and Longitudinal:"1.0" and "1.0". Vertical direction is ten times as longitudinal direction.

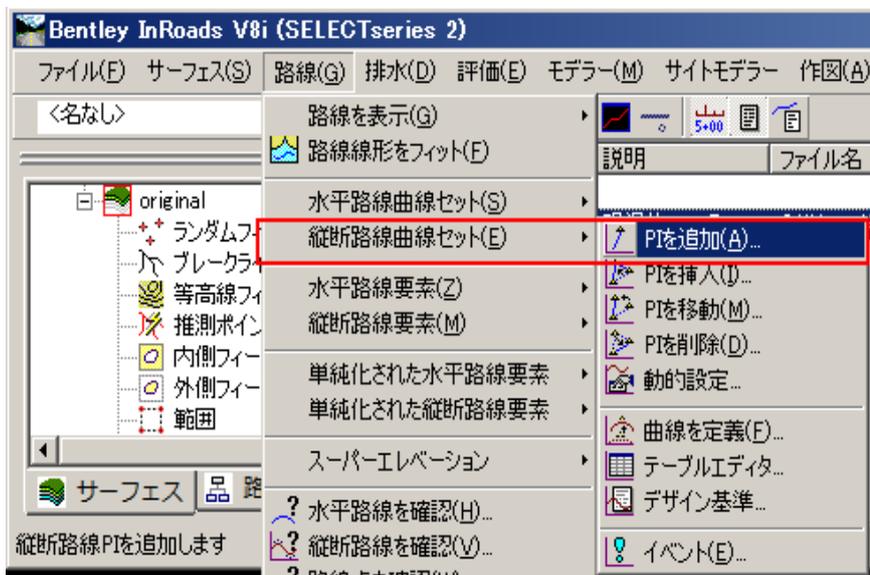3. Click "Run" button, and arrange it in free space on the view.

   It is arranged with their origin at the lower left corner in the graph.

4. Click "close" in "Create vertical section" dialog to close the dialog.

4-4. Make vertical planning line on vertical section

1. Select "Route" >"Vertical route curve set" > "Add PI" command. "Add vertical route PI" dialog is displayed.

2. Click "Run" button in "Add vertical route PI" dialog and create the vertical planning line as below.
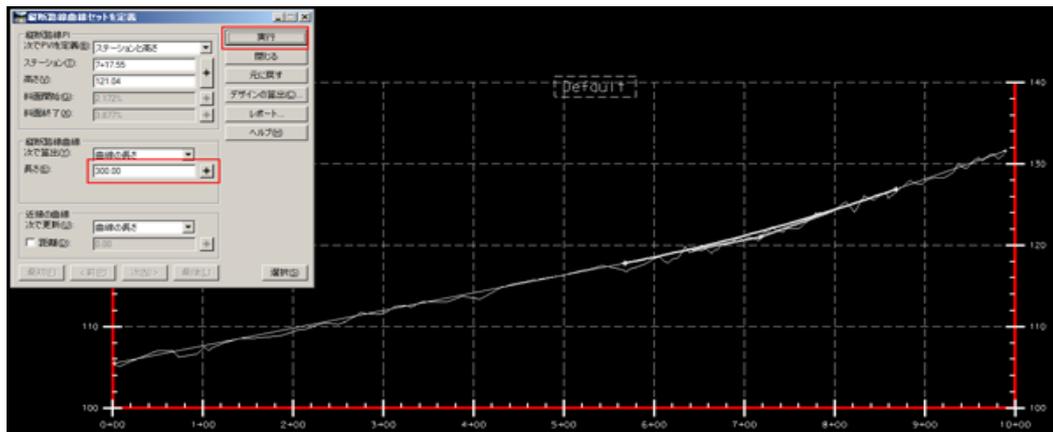
   *Right click to finish drawing.
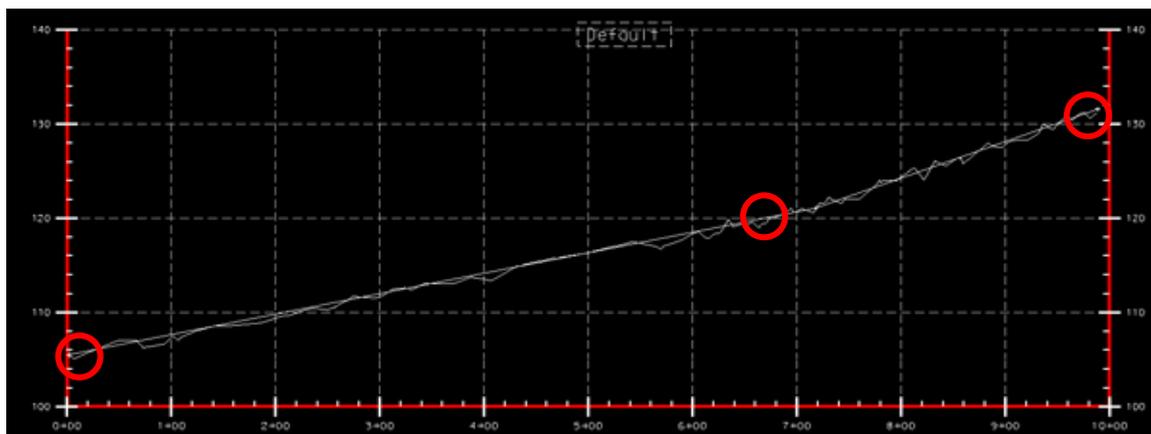
4-5.Create easement curve of vertical planning line

1.   Select "Route" >"Vertical route curve set" > "Define curve" command. "Define vertical route curve set" dialog is displayed.

2.   Input 300(m) below Calculation with "Curve length" in "Define vertical route curve set" dialog. Click "Run" button to draw the easement curve.
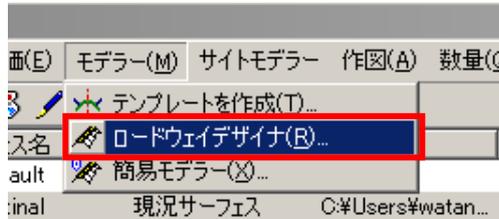

3.   Click "Close" of "Create vertical section" dialog to close the dialog.

5.Create road with roadway designer

5-1. Create road with roadway designer

1. Select "Modeler" > "Roadway designer" command. "Roadway designer" dialog is displayed.
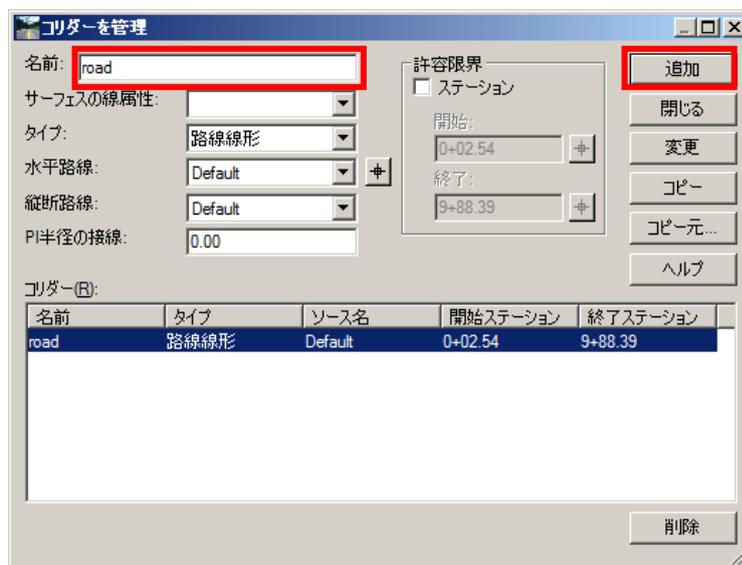

2. Click "Manage corridor" button ▥ in "Roadway designer" dialog. "Corridor" dialog appears.

    It serves as road surface name to be output. Click "Close" to finish the dialog.

3. Input "road" in the name column, and click "Add" button.

    It serves as a road surface name to be output. Click "Close" to close the dialog.

4. Click "Template position" button ▦."Template position" dialog appears.

5. Input 20 (m) in interval column. (The standard crossing section is arranged at 20m interval).

6. Select "temp00" from "Library Template" as the screen below and click "Add" button. The template name is added.

7. Check the template name was added, and click "Close" in "Release Template" dialog to close the dialog.
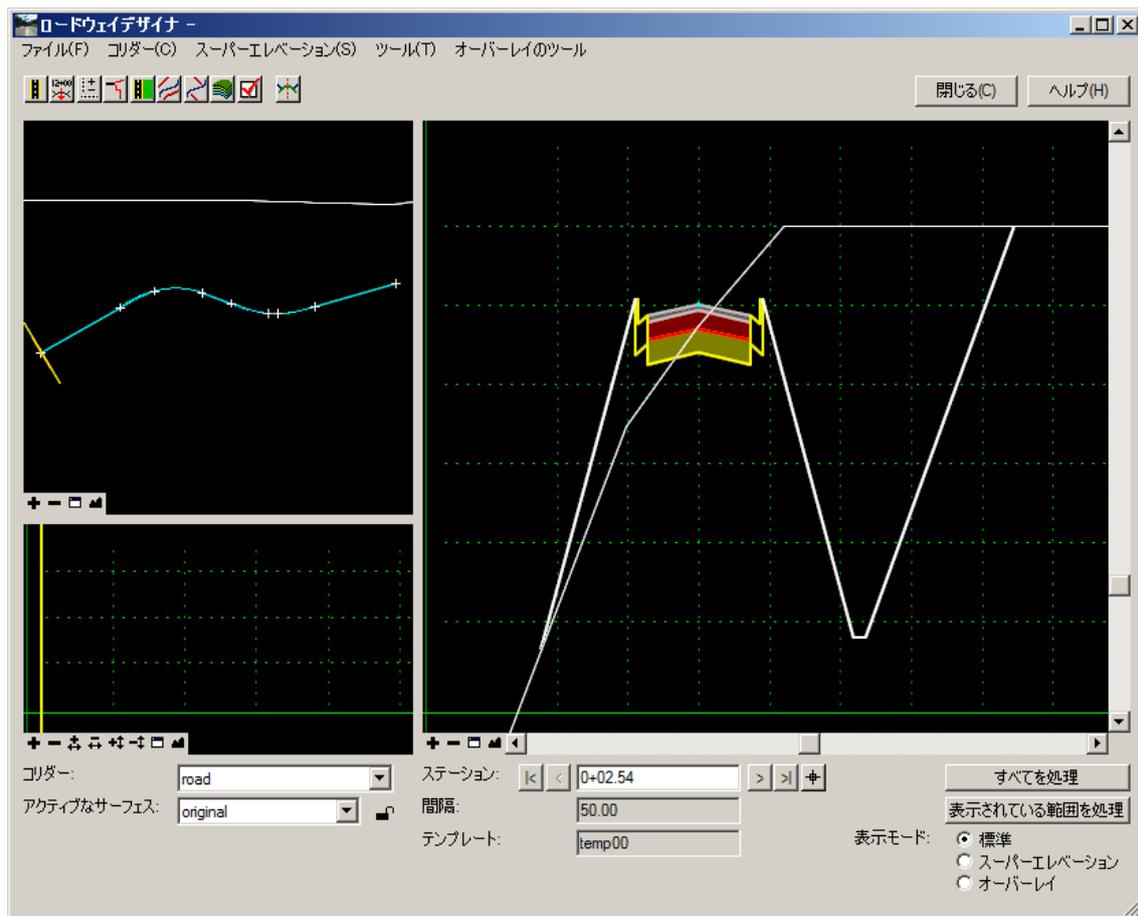
5-2.Create road surface with roadway designer

1. Move the line segment which indicates the display position of yellow section on the horizontal route screen in "roadway designer" dialog. The section shape at the position is displayed.
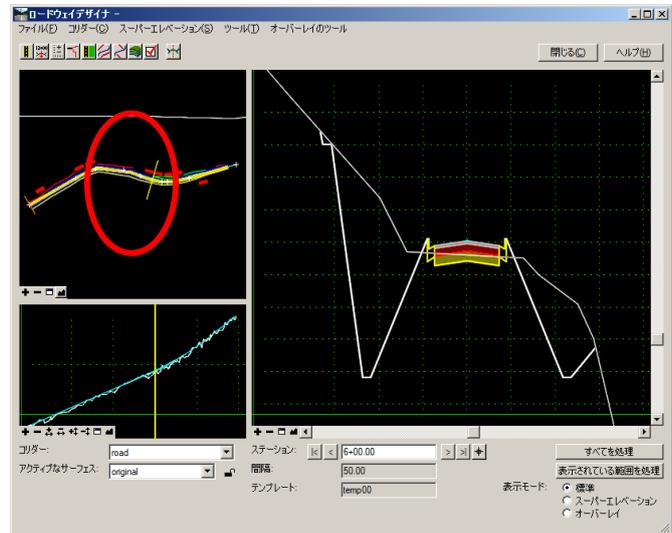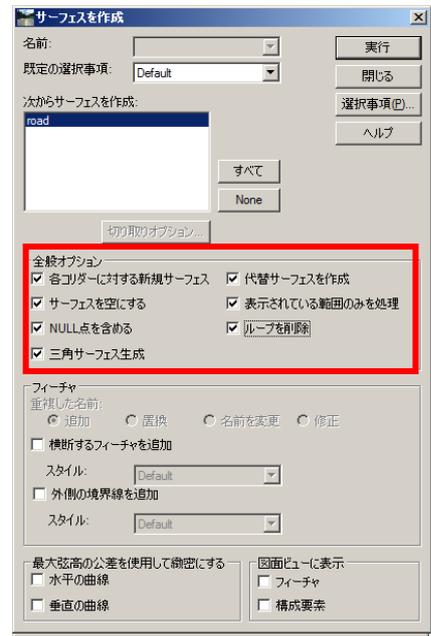
2. Click "Create surface" button in "Roadway designer".

   Select "Create surface" command. The "Create surface" dialog appears.

3. Check all the items in "General Options" in "Create surface" dialog.

   Click "Run" button and the message "Create surface" appears and then the road surface is created.

4. Select "File" >"Overwrite save" command from the menu bar of "Roadway Designer" dialog, and save in C:¥temp¥InRoads experience training ¥road.ird.

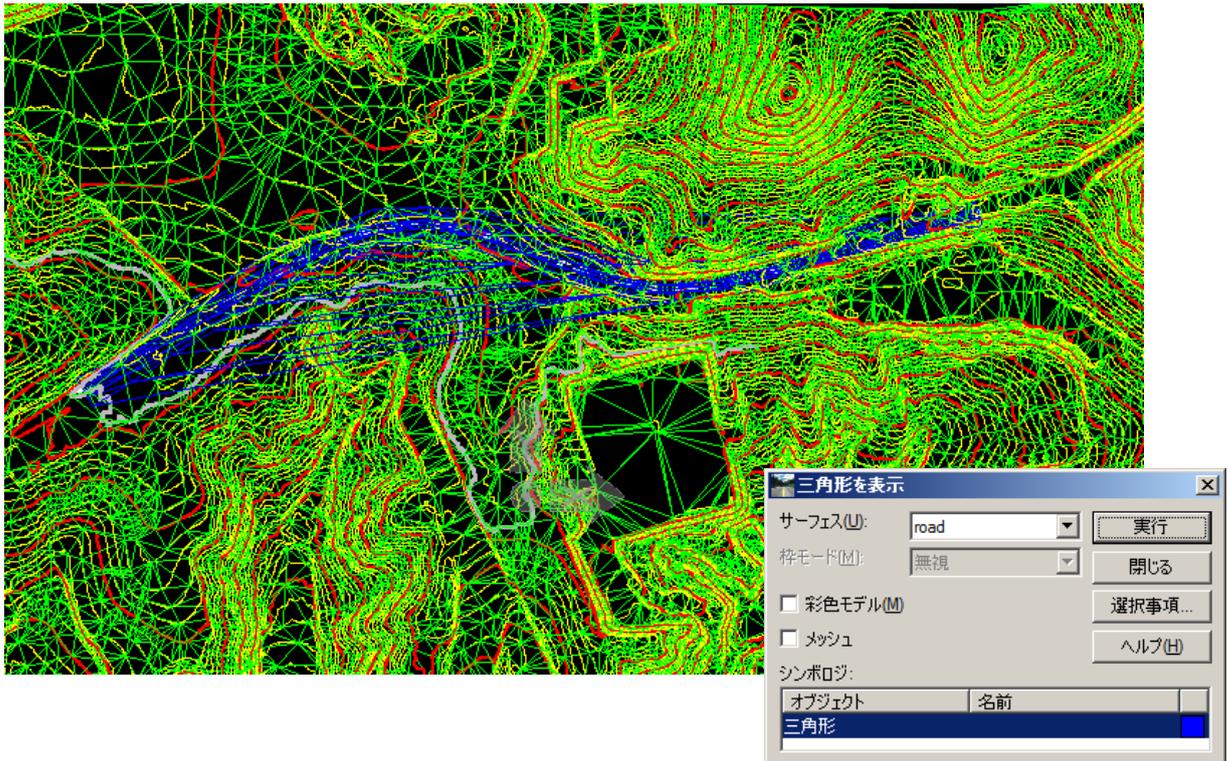5. Select "File"> "Close" command to close the dialog.
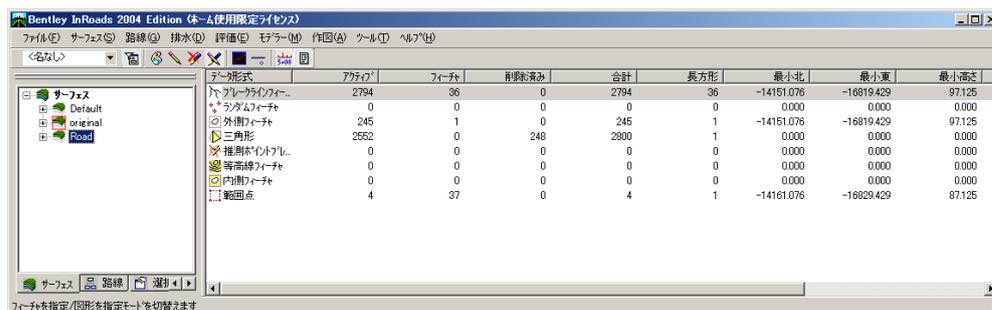
6. Select "Surface" >"Display surface" > "Triangle" command.

    "Display triangle" dialog is displayed.

7. Select "road" in surface column, and click "Run" button.

    The surface is displayed on the created road.

    Select "Close" command to close the dialog when the display is completed.
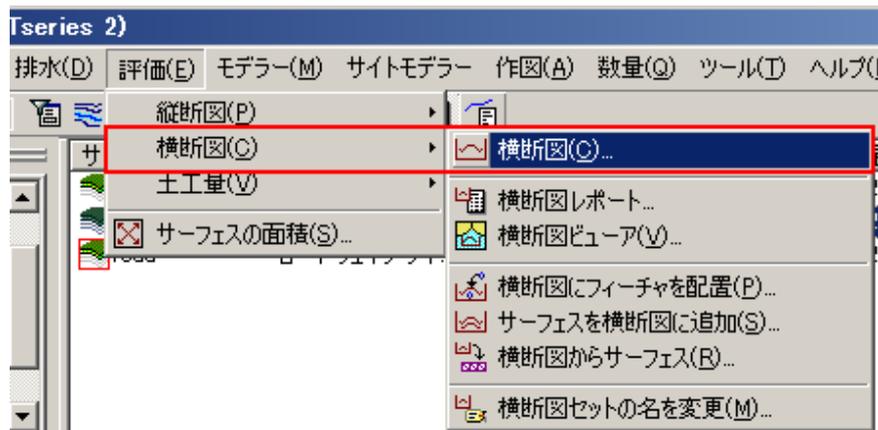
6. Automatic generation of road lateral profile

6-1. Automatic generation of road lateral profile
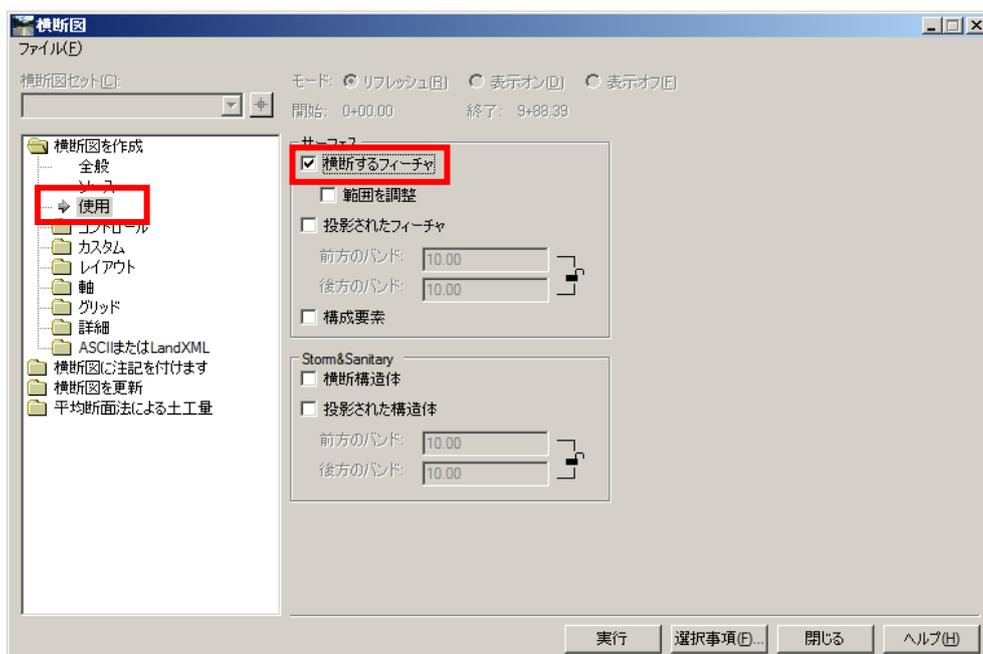
1.   Select "Evaluation" >"Lateral profile" > "Create lateral profile" command.

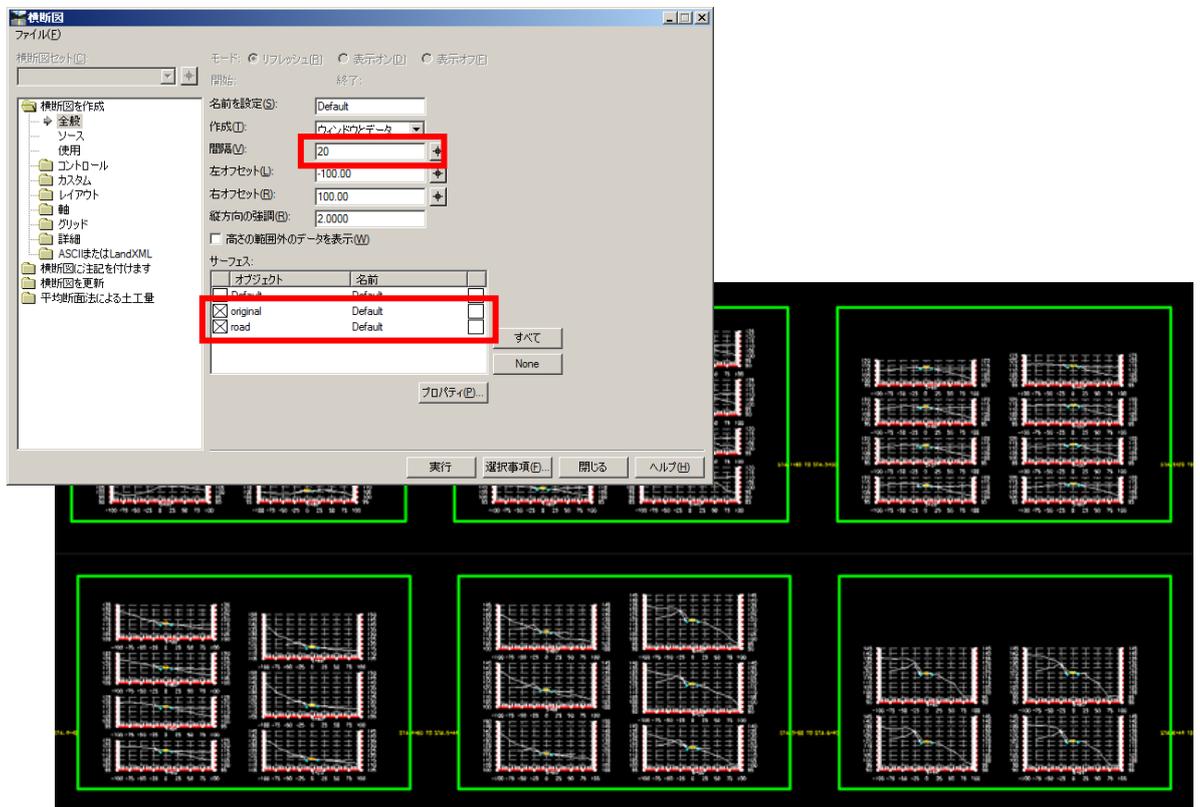   "Create lateral profile" dialog is displayed.

2.   Set the interval at "20.0" (m) in "Create lateral profile" dialog.

3.   Select the current "original" and "road" in "Surface" column.

4.   Click "Use" in "Create cross section" tree, "Cross section" dialog.

   Check on "crossing feature" in "Surface".

5.   Click "Run" button to arrange in free space.

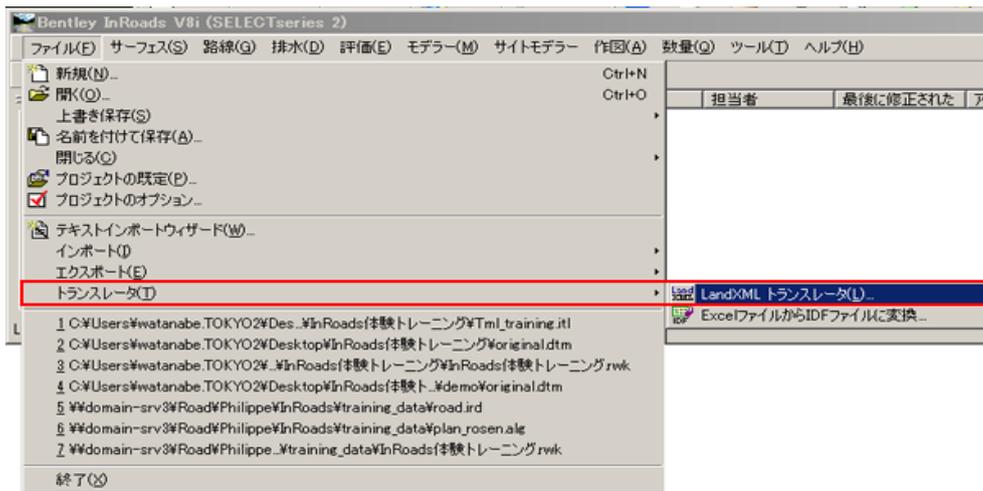Click "Close" button when the lateral profile is created.
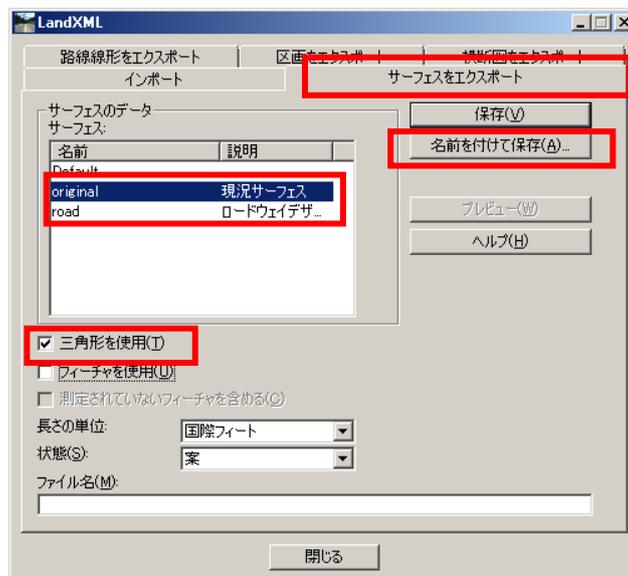
7. Export to LandXML

7-1. Export surface (terrain) and route data

1. Select "File" >"Translator" > "LandXML translator" command.

    LandXML dialog is displayed.

2. Select "Export surface" tab.   Select "Original" in surface column.Check "Use triangle".

    Click "Save as" button, and name it originarl_surf.xml.
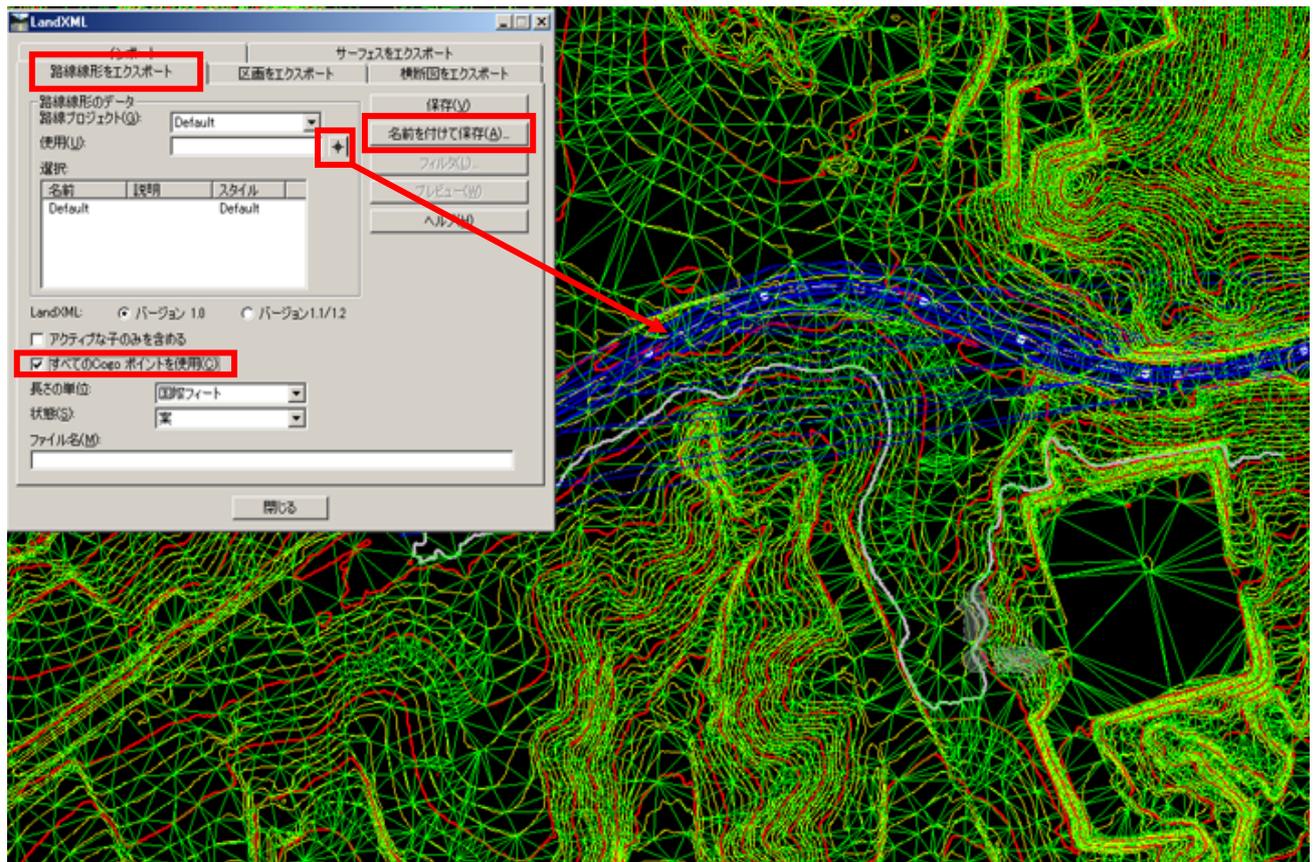
7-2. Export route type data

1. Select "Export route type" tab.

   Click ⊕ beside of Use:. Click horizontal route (horizontal alignment) from view.

   The name of the horizontal route is displayed in the selection item.

   Check "Use all Cogo point".

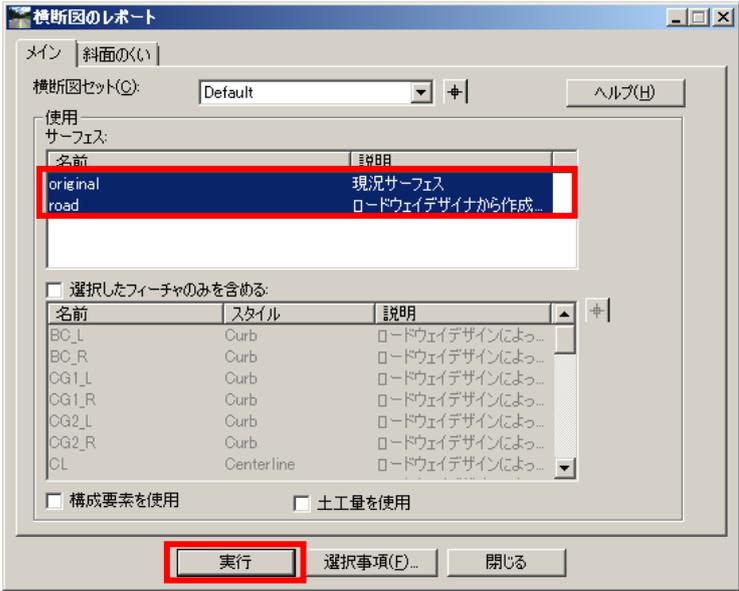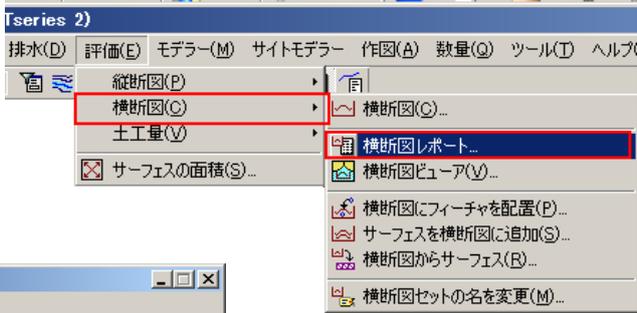   Click "Save as" button, and name plan_land.xml.

   Close "LandXML" dialog.

7-2. Export road section (lateral profile)

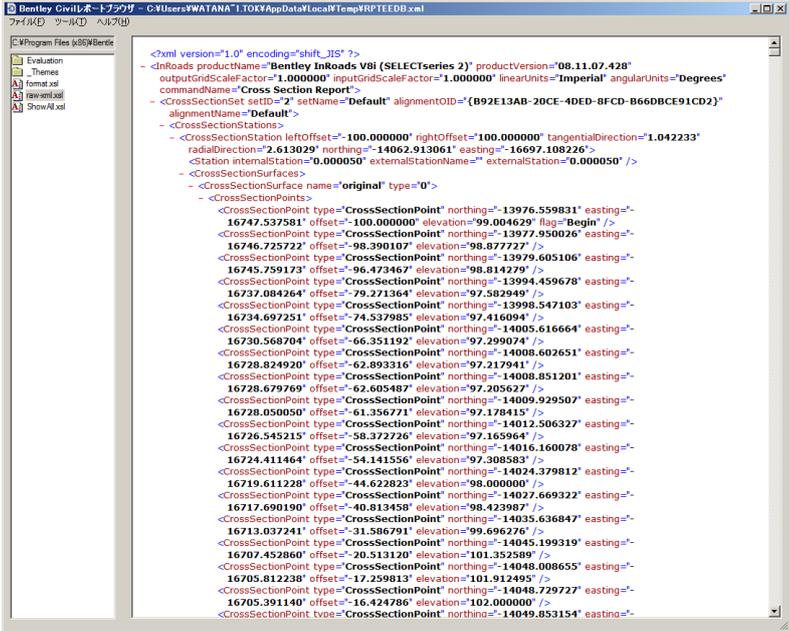1. Select "Evaluation" > "Lateral profile" > "Lateral profile report".

    The lateral profile report dialog is displayed.

2. Select "original" and "Road" for surface, and click "All"

3. "Bentley Civil Report Browser" starts.

    Click "raw-xml.xls" in the tree on left side. Save as "cutfill_in.xml" from "File" > "Save as".

4. Click "Close" in the cross section report dialog.

8. Import from LandXML

8-1. Open new file

1. Open "newdtm.dgn" from "File" >"Open" command in Micro Station.

8-2. Import LandXML file

1. Select "File" >"Translator" > "LandXML translator" command.

2. Select "Import" tab.

    Click "Reference" button, and select seminar.xml.

    Check "Use triangle point".

    Click "Run" button.

    Click "Close" button
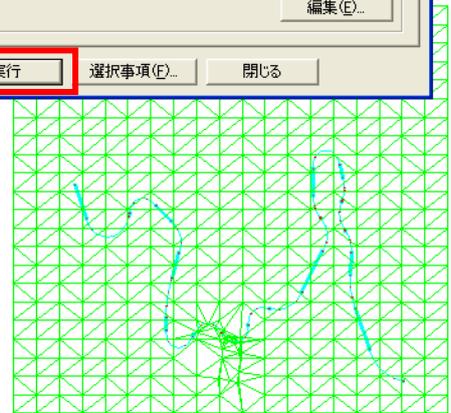
    to close the dialog.

8-3. Create the road using the imported data

1. Select "Surface" >"Display surface" > "Triangle" command, and click "Run" button to display the imported terrain surface.
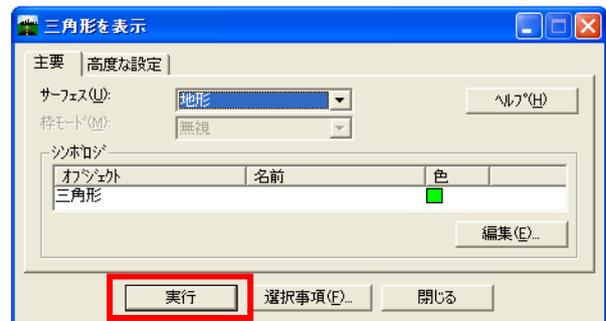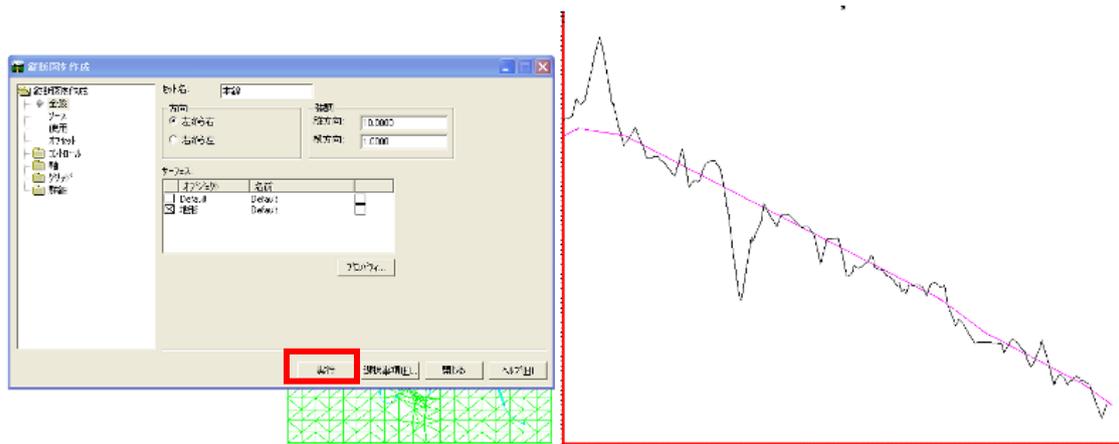
2. Select "Route" >"Display route">
   "Active horizontal route" command.
   The horizontal route is displayed.

3. Select "Evaluation" >"Vertical Profile" > "Create ∨
   Click "Run" button to draw the vertical profile.

4. Select "Route" >"Display route" > "Active vertical route" command.

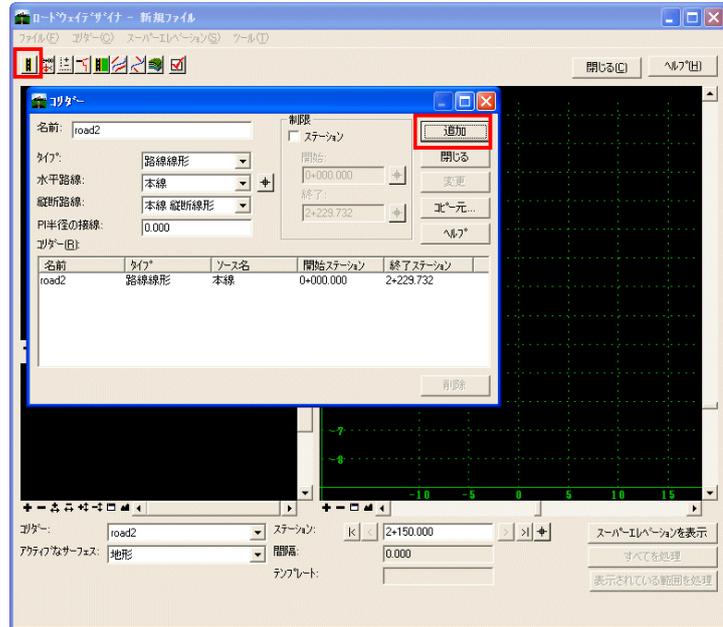5.   Select "Modeler" > "Roadway designer" command.

Select "Corridor" >

"Manager" command.

Input "road2" in name column.
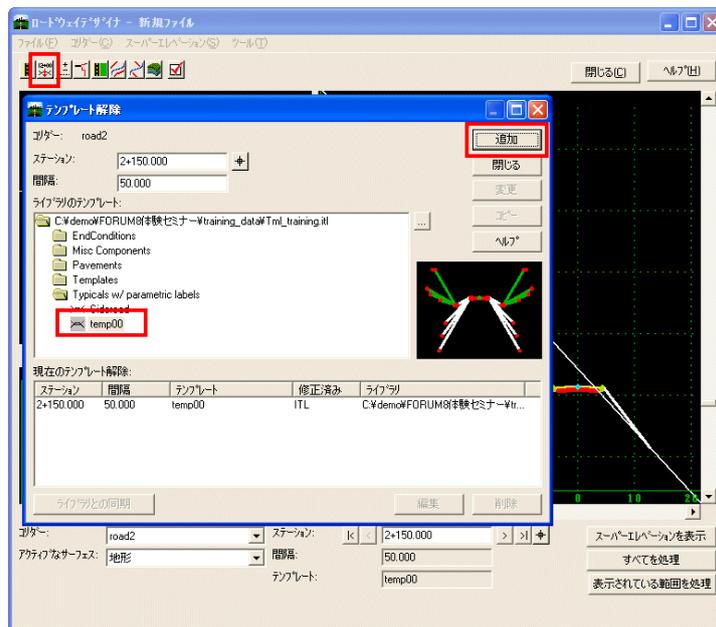
Click "Add" command.

Click "Close" button to

close dialog.

6.   Select "Corridor" > "Release template" command.
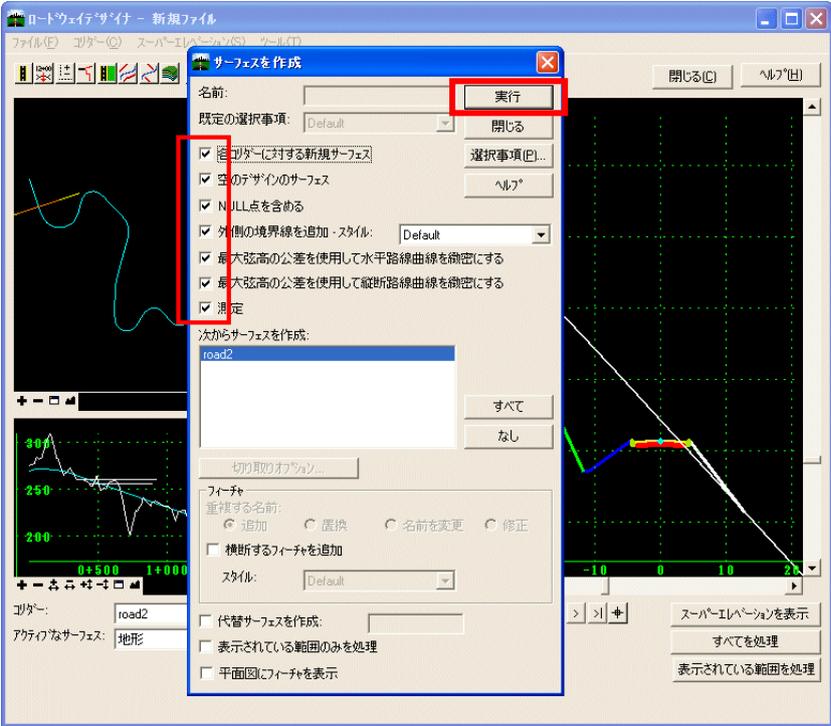
Select "Temp00"from template.

Click "Add" buttonto add.

7.   Select "Corridor" > "Create surface" command.

Check the required item, and click "Run" button.

Click "Close" button

to close the dialog.

8.   Check the created road surface.

Select "Surface" > "Display surface" > "Triangle" command.

Select "road2" from the surface.

Click "Run" button to display the imported terrain surface.