

Map Sections and Overview Map

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Map section is a tool to ease the pain from generating multiple sheets with the same contents but with different viewports/map sections. Up to now this should be done either by using 'save as' with a new viewport or by loading a template with the relevant contents followed by a processing of the viewport in Edit map mode. The tool 'Map section' works more flexible and efficient than that. Map section is a tool hosted by the Cartography module.

The viewports/map sections you want to present on paper can be created in the GeoDatabase or in Graphics. Typically the sections should be created in the GeoDatabase if you want to show 'close ups' of a corridor along a road or rail track (see Fig 1). In this case you generate the sections manually. If you on the other hand want to present the level inside an amorphous calculation area (see Fig 2), the map sections can be generated automatically in the Graphics.

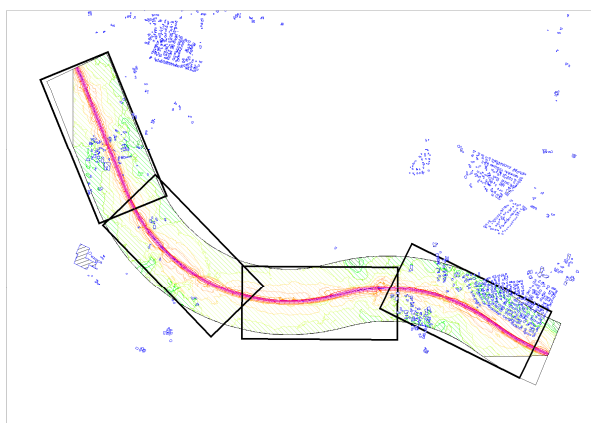


Fig 1 Map sections manually created in GeoDatabase

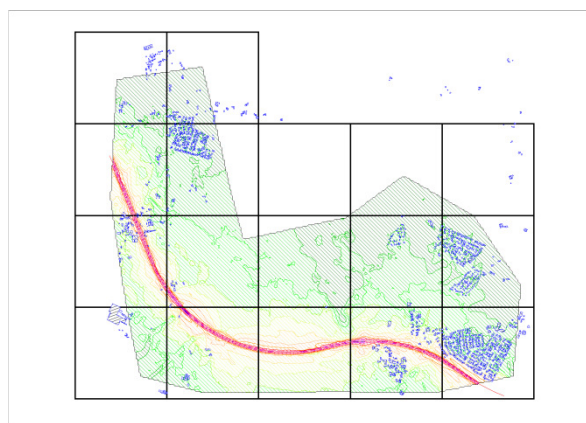
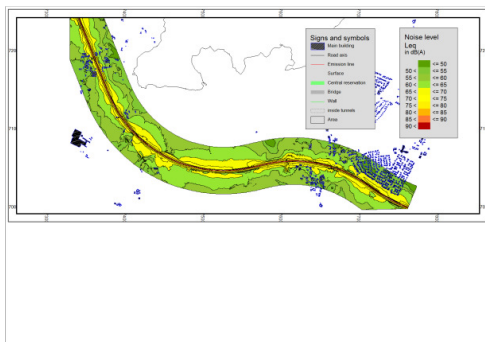


Fig 2 Map sections automatically generated in Graphics

Map sections in GeoDatabase

The map section is an area object type introduced first time with SoundPLAN Version 7.2.

All map sections in a group must not necessarily have the same dimension (width x height), but if you want the series of maps generated in Graphics to have the same scale, the size of the map sections must be identical. If you furthermore want the scale to hit a rounded figure, e. g. 1:5000, and the map section to fill out exactly the area inside the map frame, then it is a bit tricky to start the process by digitizing of the sections in GeoDatabase. It is much easier to do as follows:



Create a blank sheet in Graphics, portrait or landscape whatever fits your idea of the final sheet design. In the File selection manager load the files you intend to include in the final presentation. Adjust the size and position of the map on the sheet according to your ideas, see Fig 3. Please note the space left for text boxes, scale info, legend box etc.

Fig 3 Sheet with adjusted map size and position

In Edit map mode zoom to an area that more or less fit your ideas of a sensible section to show per final sheet. Call Geometry viewport > Geometry parameters and key in a rounded figure for the map scale and check the result. Fig 4.

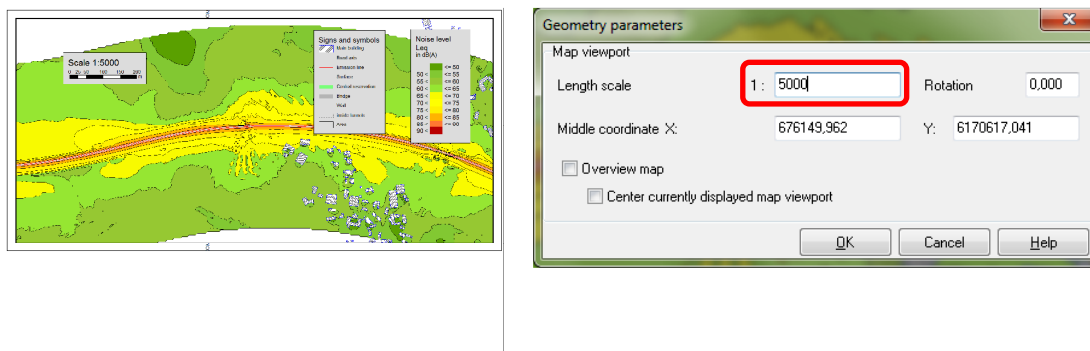


Fig 4 Final section

From now on don't change the viewport!

The inner edge line of this viewport/map section you can save as a geofile: Go to Edit map mode > Geometry viewport > Save current map section as geofile. Fig 5.

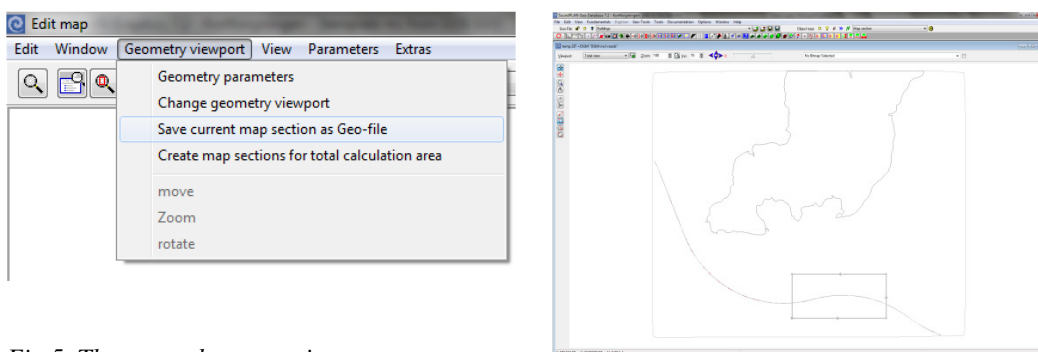


Fig 5 The created map section

Now you got a single map section in the GeoDatabase that will create a perfect viewport in the Graphics. This map section you can copy (Ctrl+C, Ctrl+V) in order to create more map sections with the same dimensions: grab the magenta coloured diamond with the left mouse key and move the copy; if necessary you can rotate the copy by holding down the Ctrl key + left mouse key.

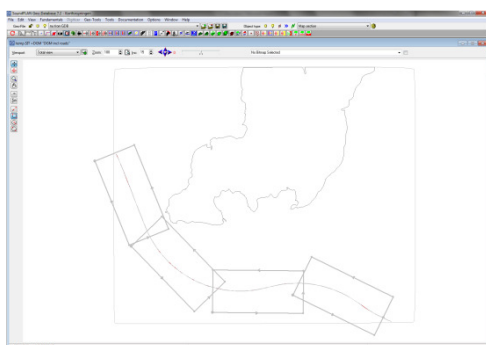


Fig 6 The entire line is covered with map section

(hint: hit Ctrl, then move your mouse to the diamond, click left mouse key and hold it down, then drag your mouse far away from the diamond before you start moving it in a circular way around the diamond, otherwise the map section rotates too hysterically).

Repeat this the needed number of times in order to cover the entire corridor, see Fig 6. Save all map sections in the same geofile. If you name the sections individually (left click on the start point of each map section), the name can be transferred to the final map in Graphics, see Fig 7 and later.

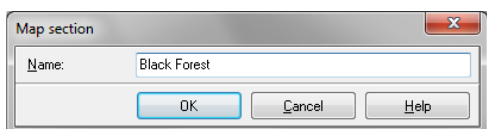
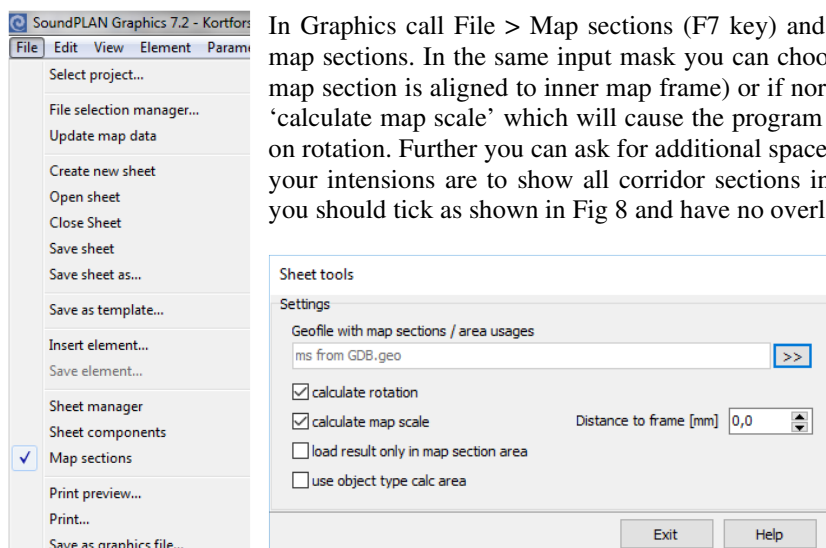


Fig 7 Map sections can be named individually



In Graphics call File > Map sections (F7 key) and you will be asked which geofile hosts the map sections. In the same input mask you can choose if the viewport should be rotated (so the map section is aligned to inner map frame) or if north should remain upwards. You can tick for 'calculate map scale' which will cause the program to adjust the scale for each print depending on rotation. Further you can ask for additional space to arrange an overlap between the prints. If your intentions are to show all corridor sections in the same scale like in the example above you should tick as shown in Fig 8 and have no overlap.

Fig 8 Map section settings

Once you have closed the Sheet tools window, File > Map sections (F7 key) will show all map name, the active map in red font. Sheet tools can be reopened with the gear wheel symbol. Fig 9. Now you can open the maps one by one by dragging them with your cursor to the display area.

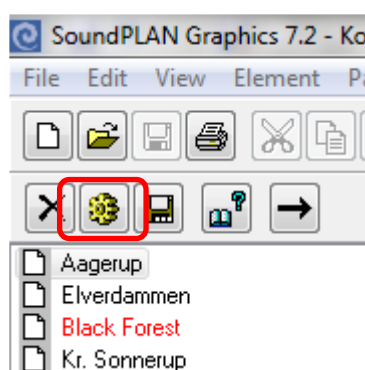


Fig 9 List with map names

Overview map

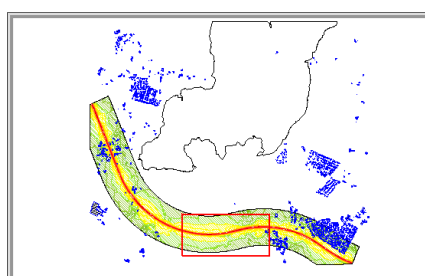


Fig 10 Overview map

In order to indicate which area each map shows you can insert an overview map like the one on Fig 10. Use the symbol



to insert a new map and load the files that it takes to make the user recognise the relevant district. Normally you only need a few landmarks like a lake, a highway, the coast line or the like for the overview map to fulfil its mission. And then of course a frame or square to indicate the mapped location.

The frame to indicate the mapped location can be generated automatically: Go to Edit map mode of the overview map, Geometry viewport > Geometry parameters and tick for Overview map, see Fig 11. If your preferred scale of the overview map prevents the map from displaying your entire project area you can tick for 'Center currently displayed map viewport' and the program will automatically move the view so the frame is in the middle. The design of the frame is defined in the map object types > Tools > Map section > Current map section in overviewmap, Fig 12.

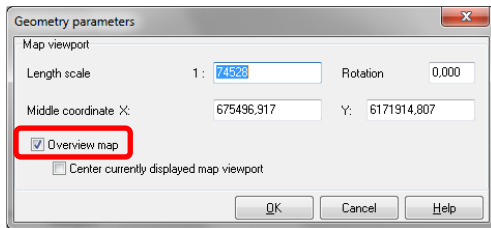


Fig 11 Make the overview map

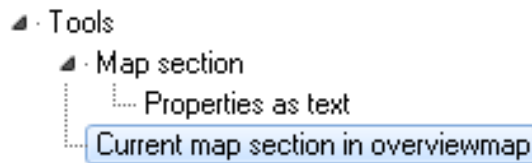


Fig 12 Highlight the location in Map object types

Hint: in the normal graphics mode you can right click on a map section in the overview map and choose Select map section from the menu popping up. This will make the program open the selected section in the display area.

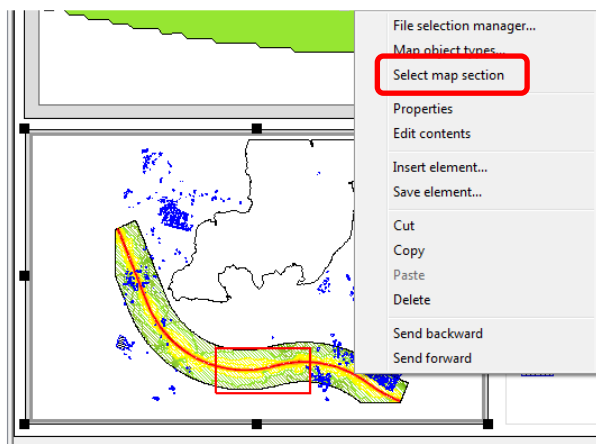


Fig 13 Pick any map section to open with a right click

Now we are pretty close to the final result. Maybe the last thing you should do is to make the map name appear automatically in a text box (together with other info about the displayed map). That can be done with the Text variables, see Fig 14

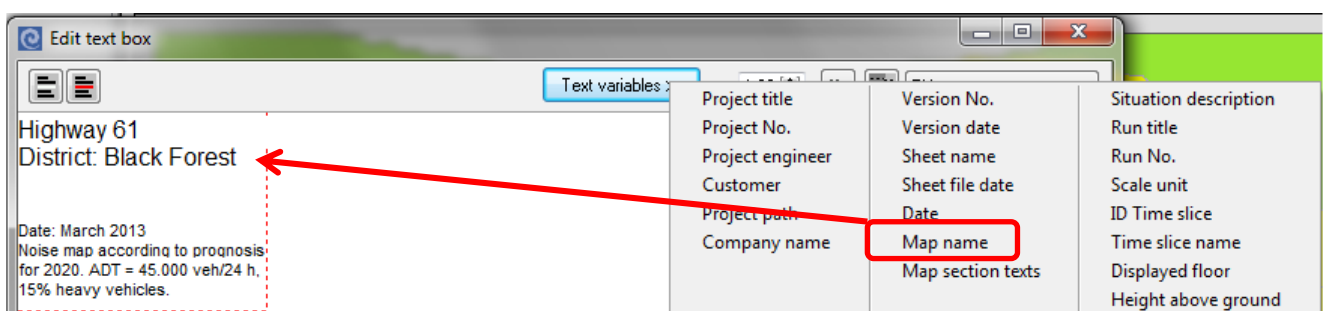


Fig 14 Insert the map name automatically

One of the 4 final maps in this example is shown in Fig 15. The actual printing of the maps is described on page 8.

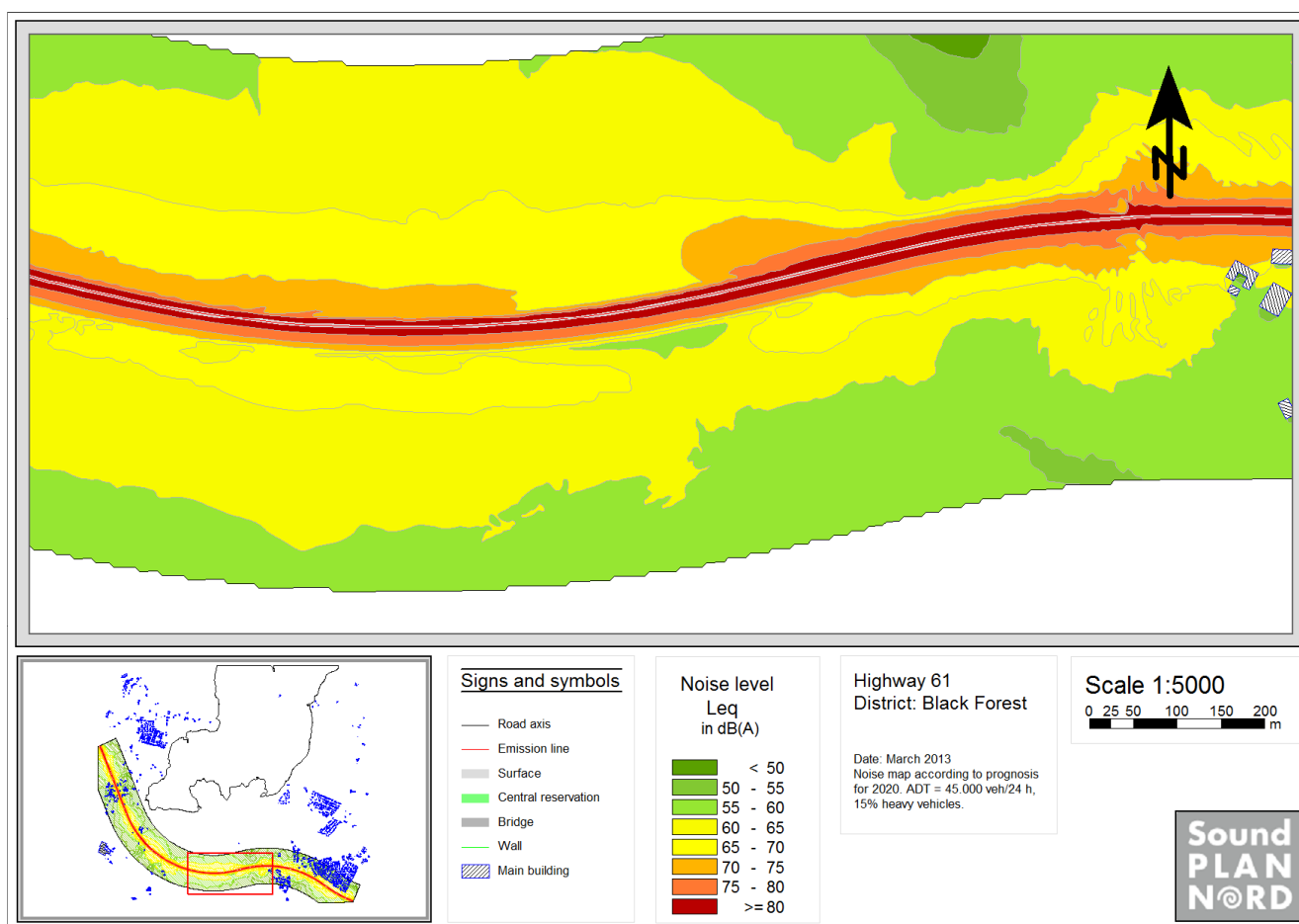


Fig 15 Example of final map

Map sections in Graphics

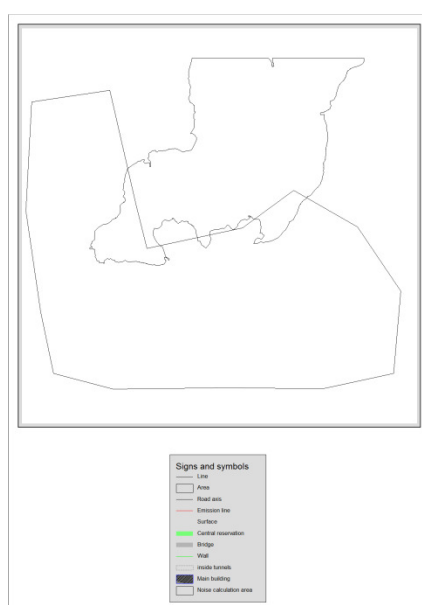
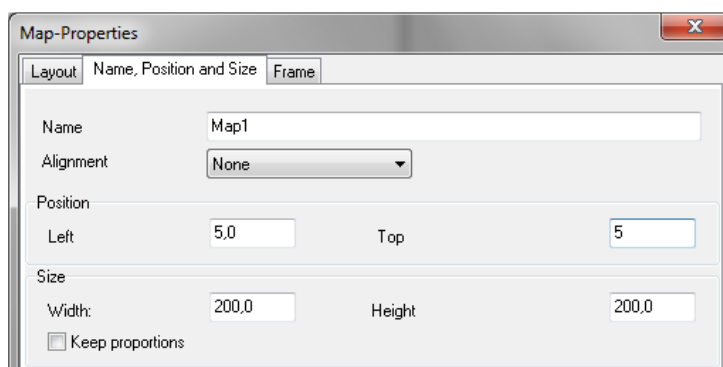


Fig 16 Preparing for sections

The map sections ('tiles') shown in Fig 2 were generated automatically. It can be done in Graphics: Load at least the calculation area you want to be covered by map sections plus eventually some other 'landmarks'. Adjust position and size of the map so you end up with a map design you like. In the following example an A4 portrait sheet was selected and the map was adjusted to a size of 200 x 200 mm, leaving a suitable area for overview map, legend box, colour scale etc. Fig 16.



The tile size is controlled by the current map dimensions; therefore you should now go to Edit map mode > Geometry viewport > Geometry parameters and adjust the viewport to show an area you want each final print to cover. In this example we want each map to cover 1000 x 1000 m and since we have 200 x 200 mm available we can select the scale 1:5000.

Now you are ready to create the tiles: Launch Edit map mode > Geometry viewport > Create map sections for total calculation area. You will be asked if the tiles need to fill out a big rectangle encircling the calculation area or if tiles completely outside the calculation area can be left out, see Fig 17. Normally tiles with no calculation result are useless and if so you should not tick for 'create map sections for complete rectangle.....' since we intend to print the maps automatically and then you risk printing empty sheets.

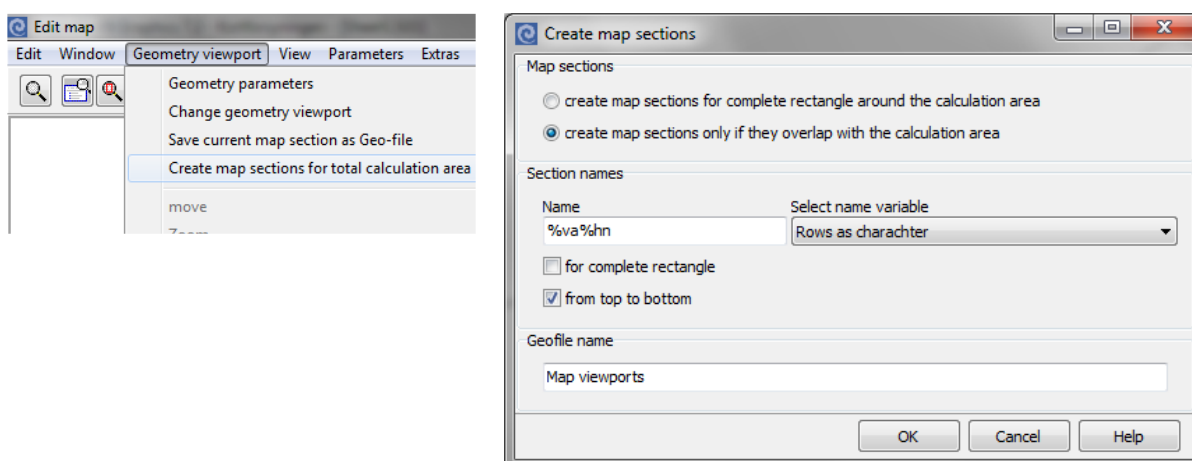


Fig 17 Create map sections

The maps can be named automatically. You have several options, see Fig 18. If you go for consecutive numbering and at the same time have chosen to generate only those tiles overlapping the calculation area, you can further put a tick mark for 'for complete rectangle'; in that case there will be numbers missing corresponding to the missing tiles, Fig 19.

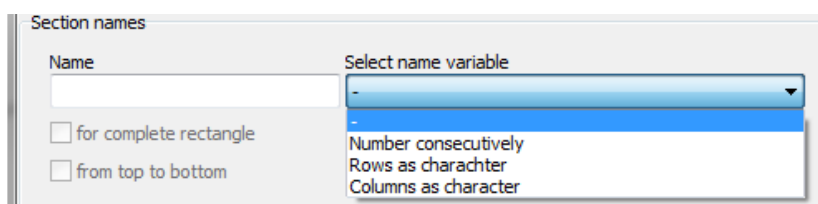


Fig 18 Automatic naming of map sections

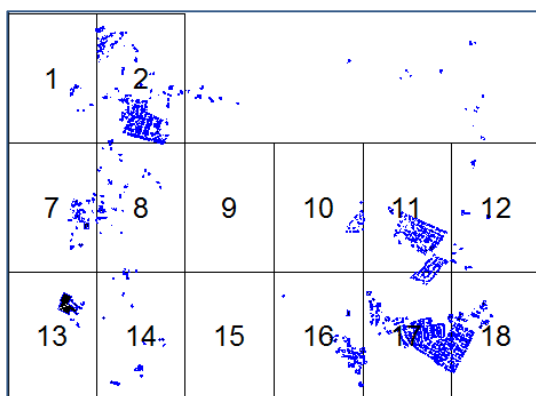


Fig 19 Missing numbers

In projects where each tile covers multiple kilometres there is additionally a possibility to identify each section by the coordinates in km.

Fig 20 shows an example of Rows as characters.

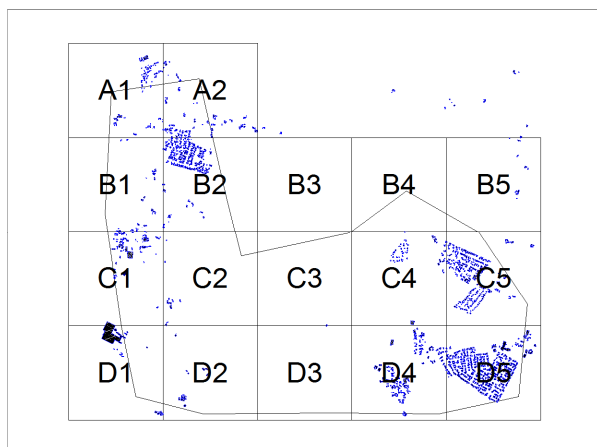


Fig 20 Map sections named 'Rows as characters'

To show these map names on the map you must use the function Show attributes as text in the file selection manager, see Fig 21. (hint: Most likely you must adjust the font size in order to see the text).

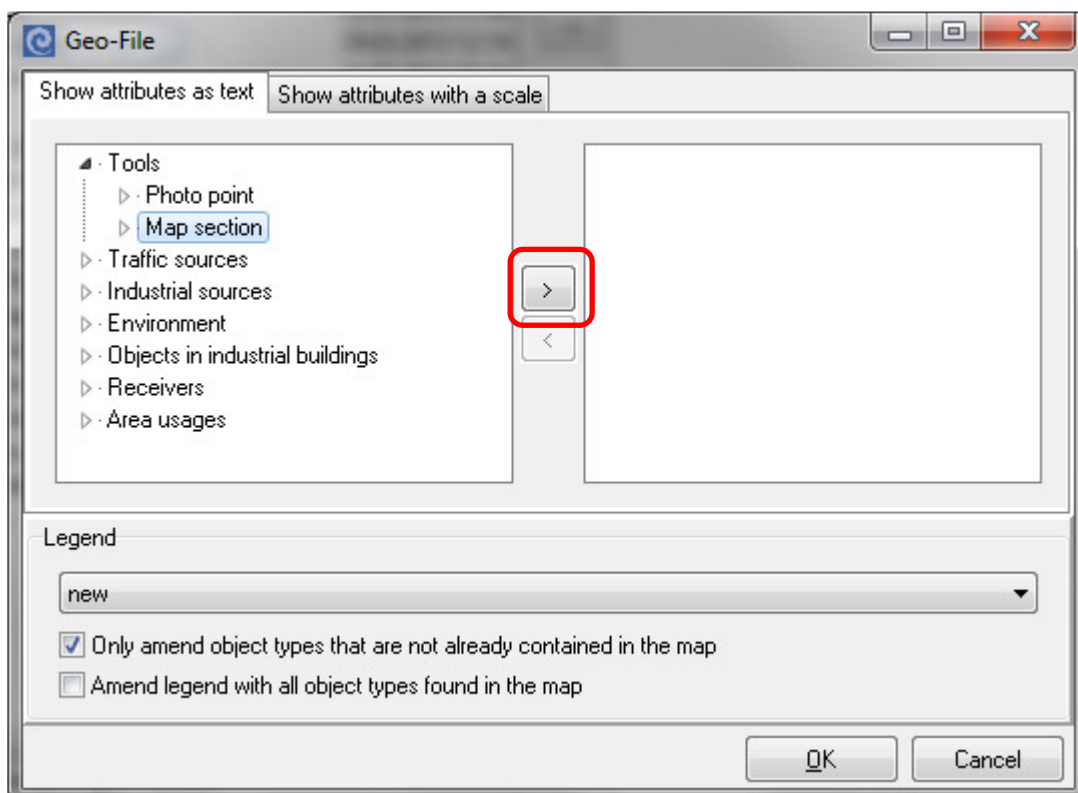


Fig 21 Load the map section properties as text

Finally we are ready to produce our 'template' with the objects that you normally include in a map, introducing the overview map as described above, and after fine tuning the map might end up with something like shown in Fig 22.

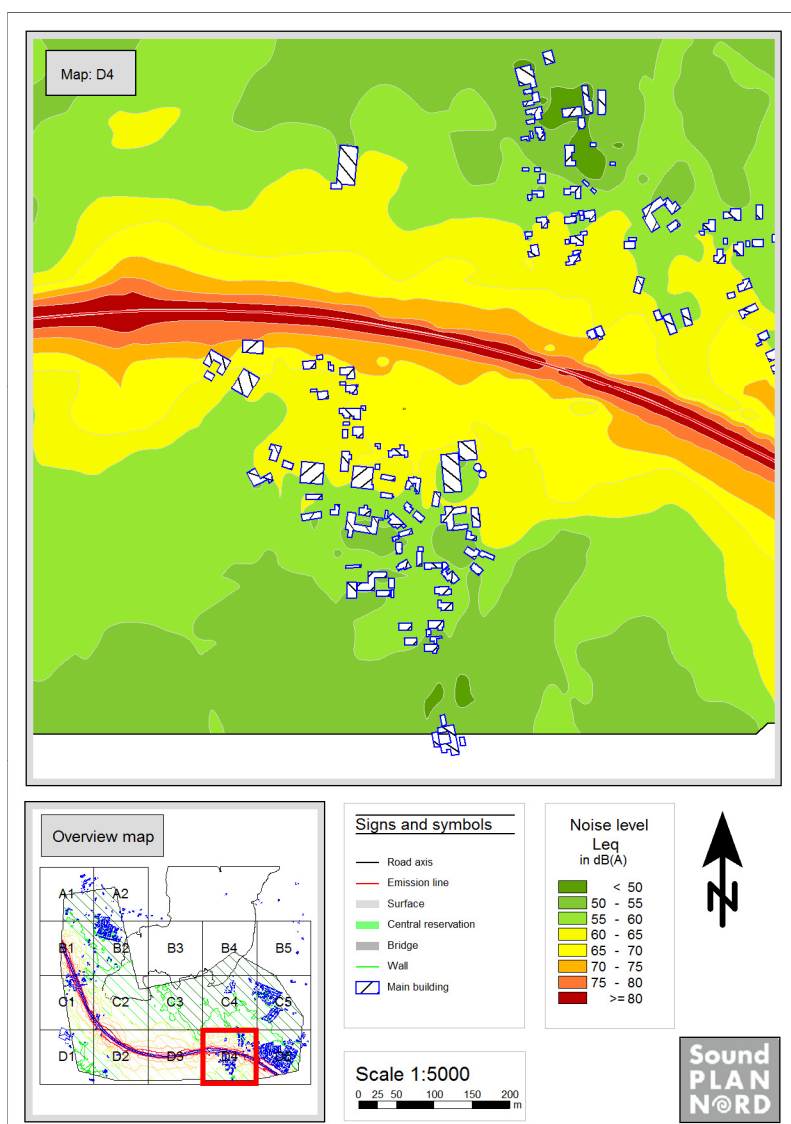


Fig22 Example of final map

Automatic Printing

In the map section view of Graphics (F7 key) you must select the maps you want to print and next click the Save under symbol, see Fig 23.

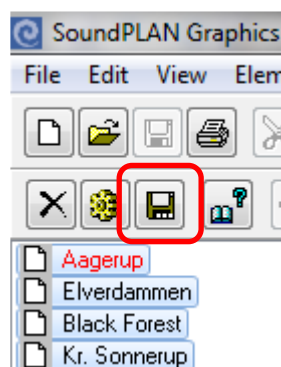


Fig 23 Select the maps you want to print and click Save under

This will open the Sheet tools, see Fig 24.

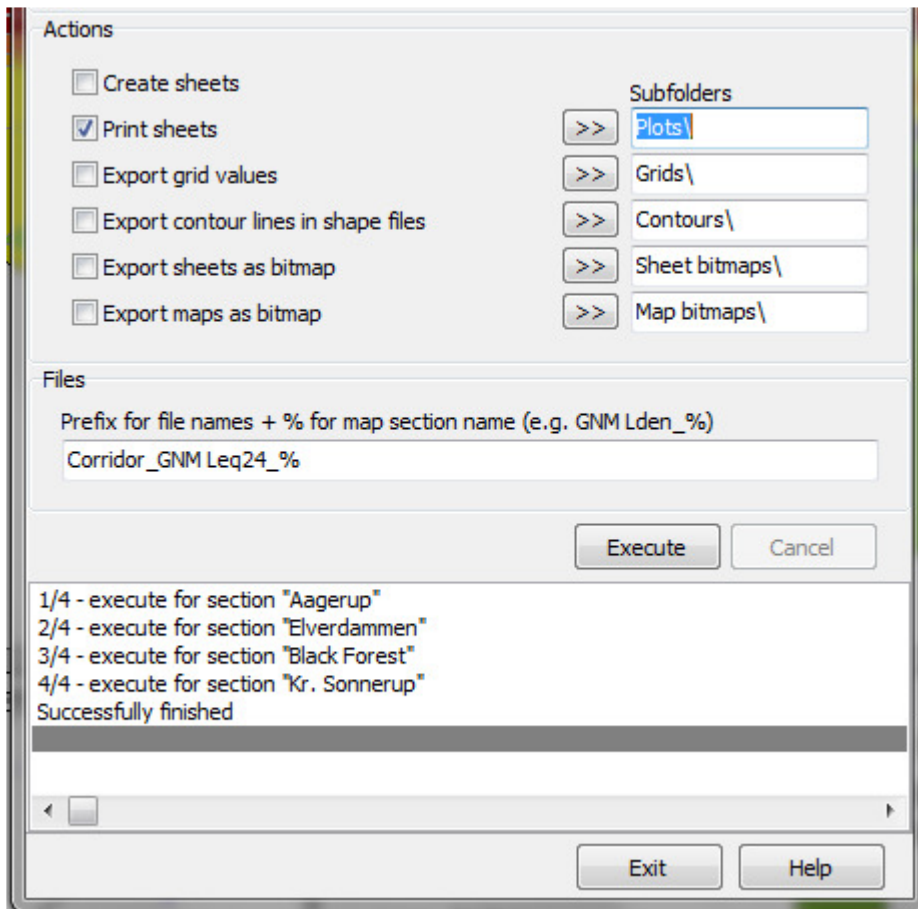


Fig 24 Sheet tools

‘Create sheets’ will create a .sgs file of each map so you afterwards can open each sheet and if needed adjust the design individually, meaning without changing the other maps in the ‘family’.

The difference between Export sheet and Export map is that Export sheet exports the entire sheet including overview map, legend box and what else you have outside the map, whereas Export map only exports the map with the calculation result.

In the file name you must key in a prefix to further identify what the map shows since the placeholder (%) will only add the map name automatically.