GEOMAX

TUTORIAL
From GFD to Surfaces, Sections and Plot

From GFD to Surfaces, Sections & Plot

DESCRIPTION

- Use Survey data to create surfaces, sections and plot

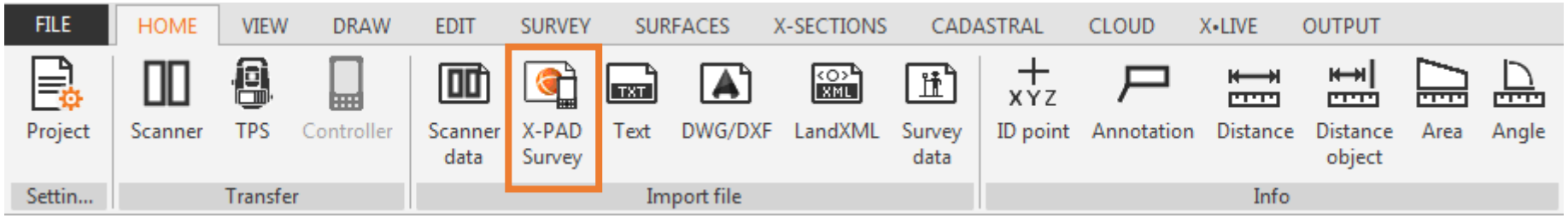
GOAL

- How to use survey data to create surfaces
- How to use survey data to create sections
- How to create plot

DATA

- Terracina.gfd

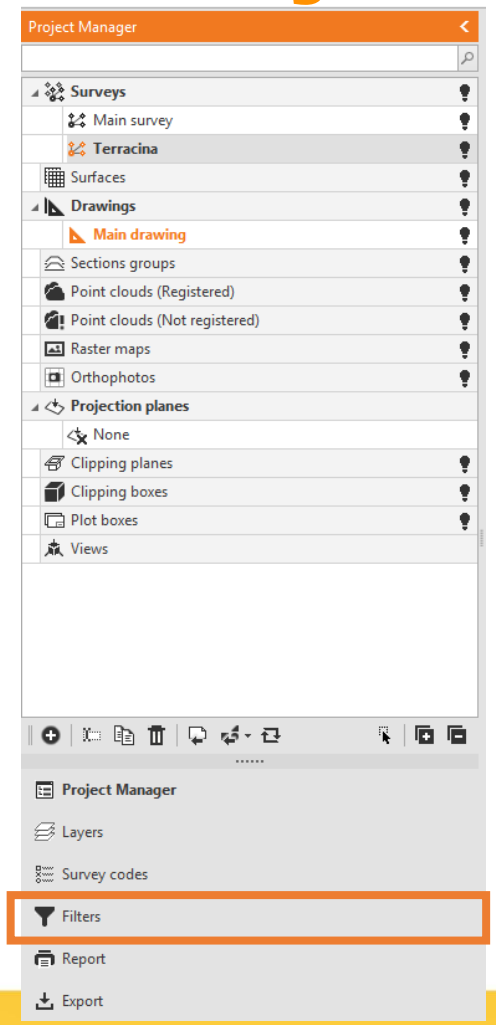
Import SURVEY data

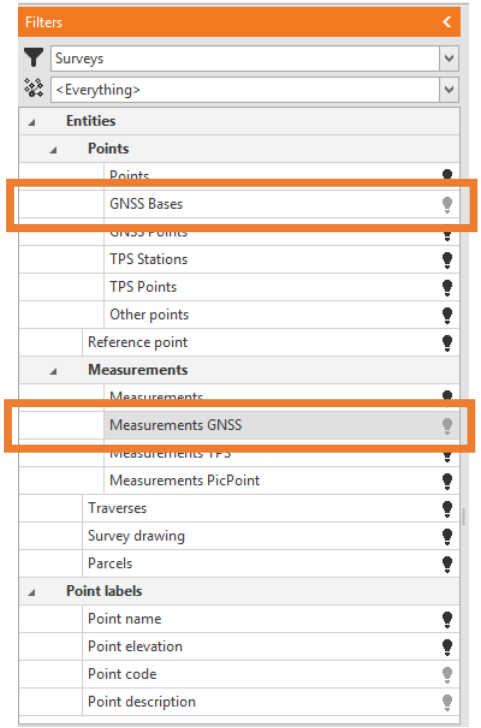


IMPORT FILE bar are the toolbar where find all the features related to data importation

Select **X-PAD Survey** to import survey file recorded in field with X-PAD Field software and select the job from the relative folder.

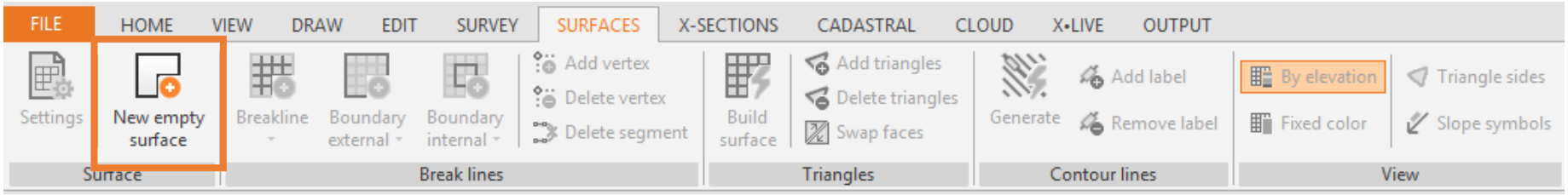
Survey data FILTERS



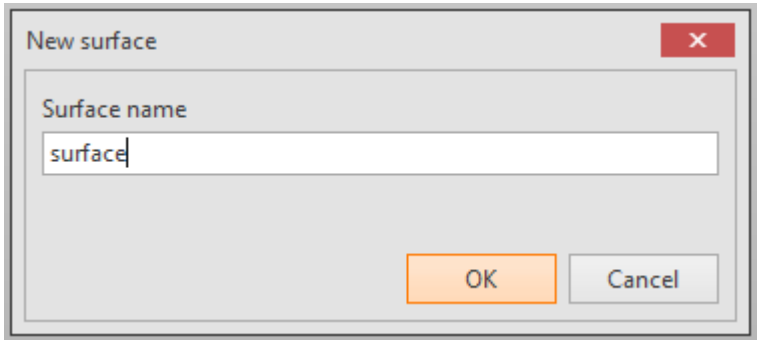


From the ***PROJECT MANAGER*** select ***FILTERS,*** from entities deselect GNSS Bases and Measurements GNSS to hide this entities

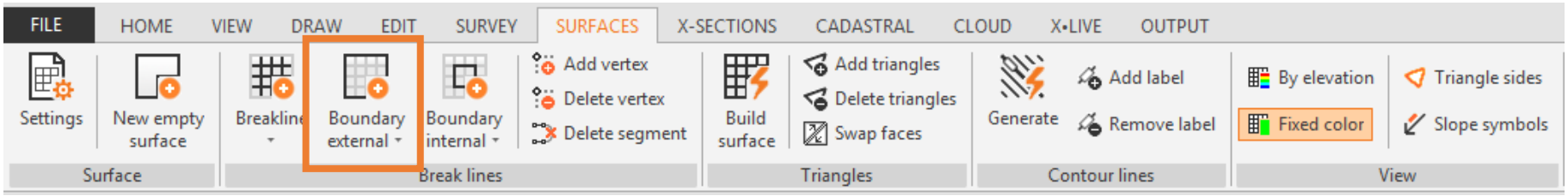
New Surface



From the ***SURFACES*** menu select New empty surface and insert the name of the new surface.



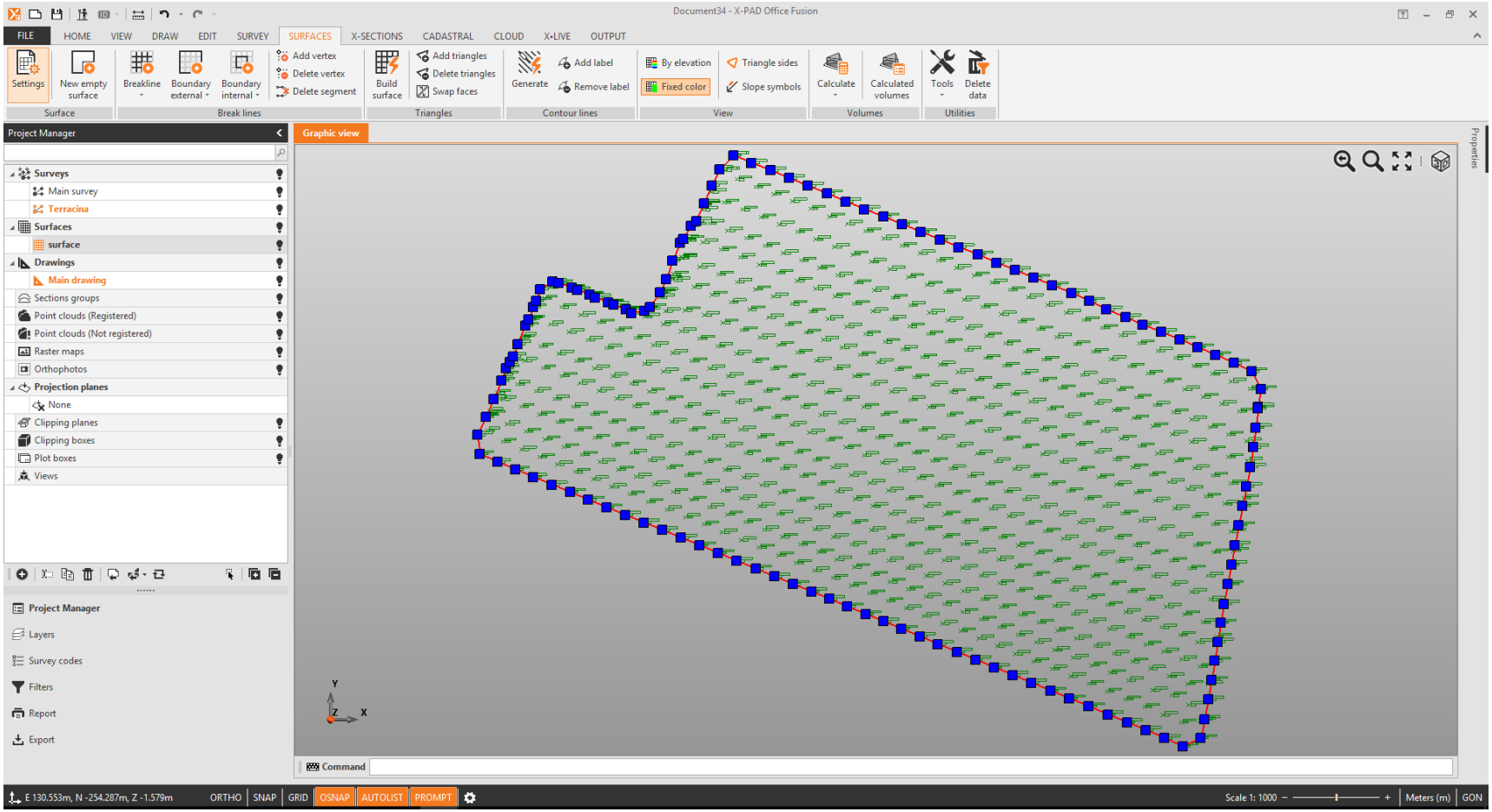
New Surface – BREAK LINES



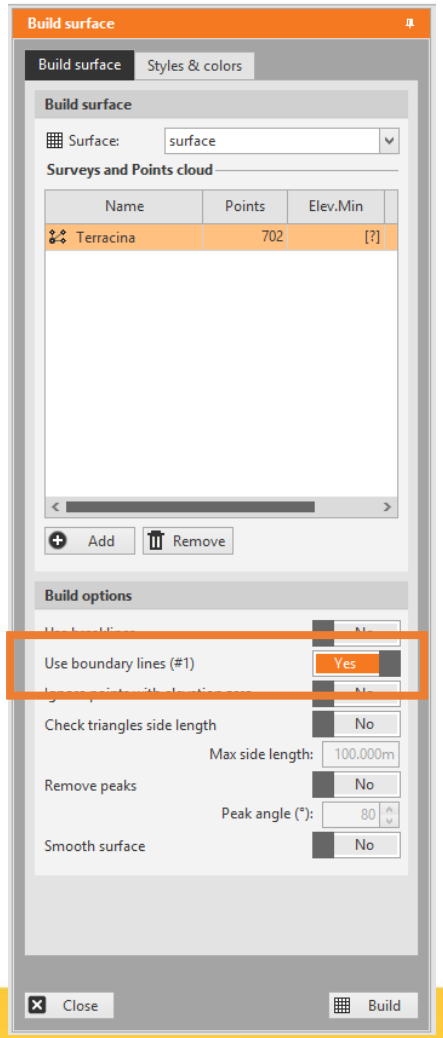
From ***SURFACES*** menu it is possibile to select Breakline or Boundary line to be used in creating a surface.
It is possible to use an existing polyline or create new elements directly on the points of the current survey.

Select ***Boundary external*** to draw a contour line directly on the points of the current survey.

New Surface – Break Line



Build a new SURFACE

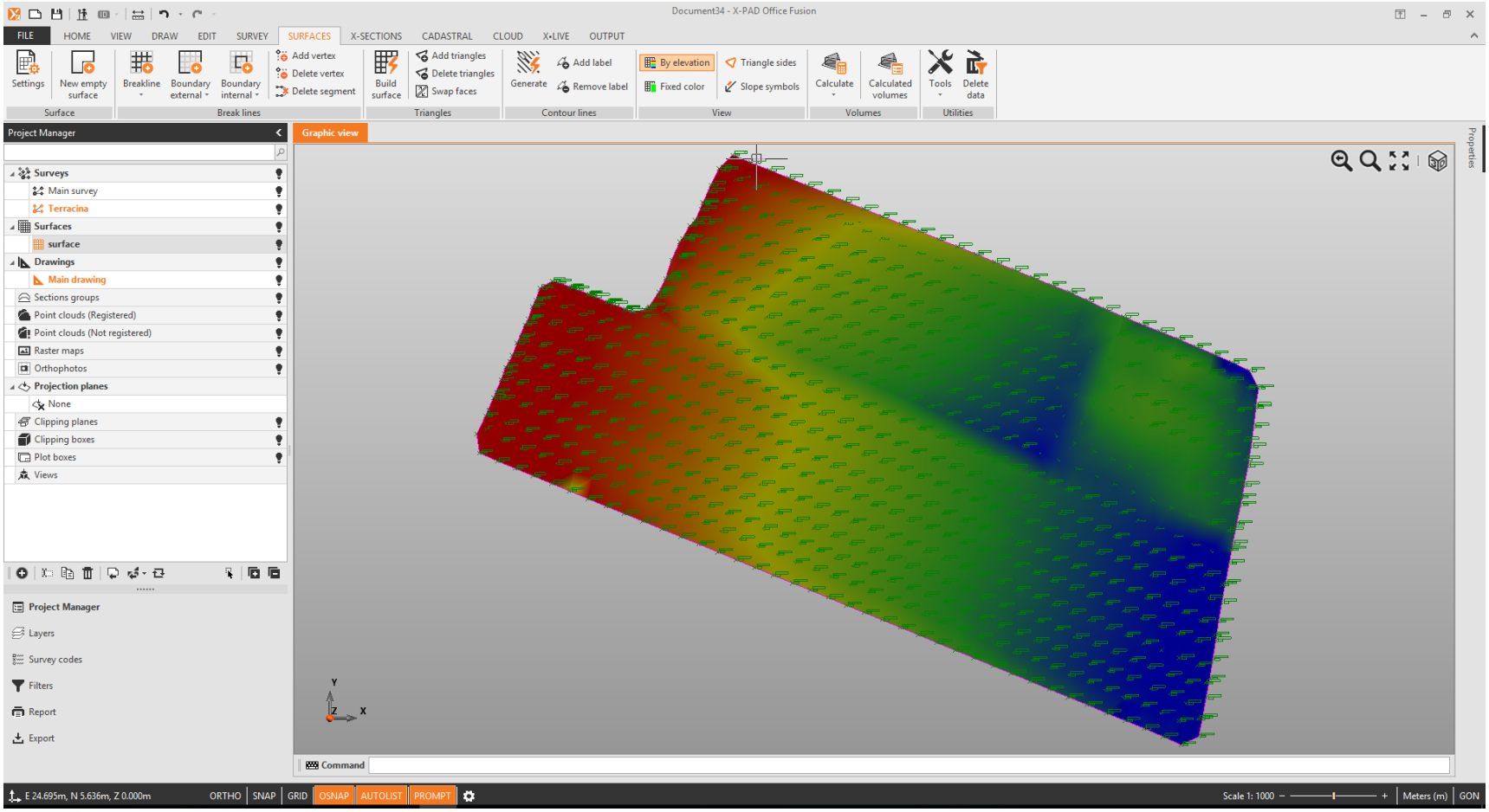


From ***BUILD SURFACE*** menu it is possible to select:

- Survey data to be used, in this case only the current survey ***Terracina*** will be visible.
- Breaklines or Boundary lines
- Check for the maximum triangles side lenght
- Remove peaks
- Smooth surface

Select boundary lies and ***BUILD***

New Surface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X-LIVE
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Settings
New empty surface
Breakline
Boundary external
Boundary internal
Add vertex
Delete vertex
Delete segment
Build surface
Add triangles
Delete triangles
Swap faces
Generate
Add label
Remove label
By elevation
Fixed color
Triangle sides
Slope symbols
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Calculated volumes
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Delete data
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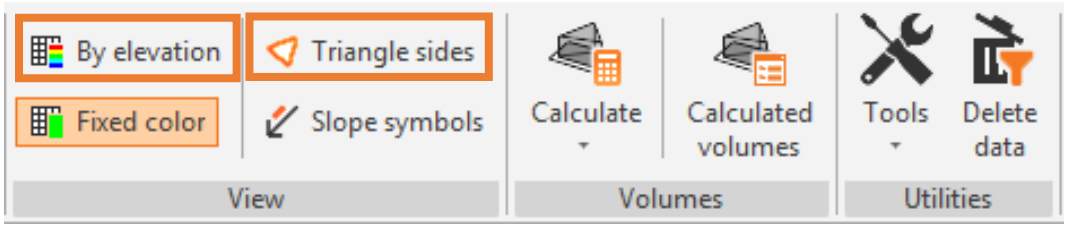
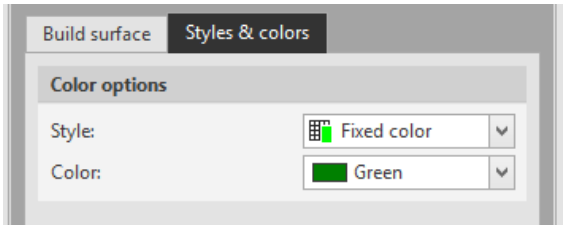
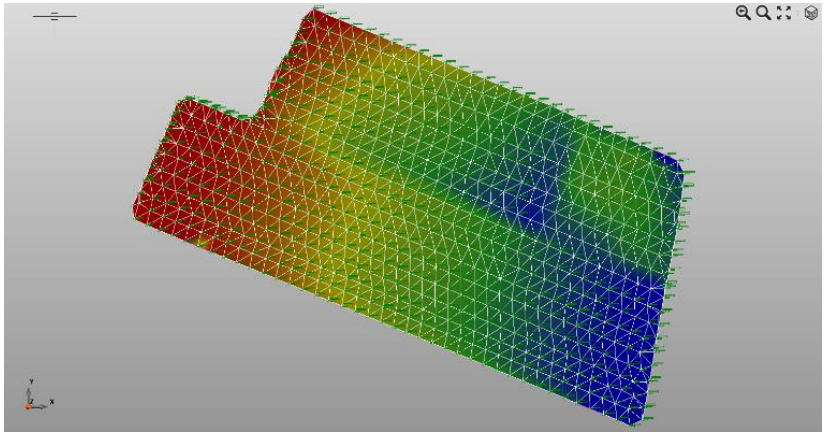
surface
Drawings
Main drawing
Sections groups
Point clouds (Registered)
Point clouds (Not registered)
Raster maps
Orthophotos
Projection planes
None
Clipping planes
Clipping boxes
Plot boxes
Views
Graphic view
Properties
Project Manager
Layers
Survey codes
Filters
Report
Export
Command
E 24.695m, N 5.636m, Z 0.000m
ORTHO
SNAP
GRID
OSNAP
AUTOLIST
PROMPT
Scale 1: 1000
Meters (m)
GON

New SURFACE - View



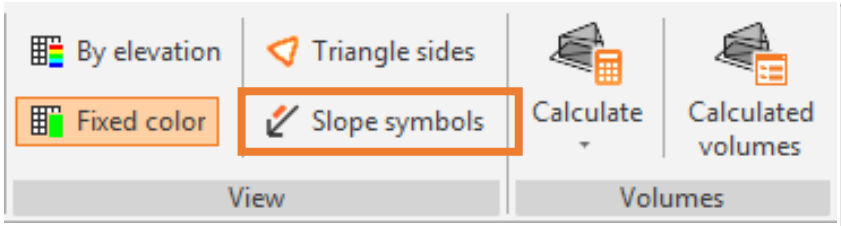


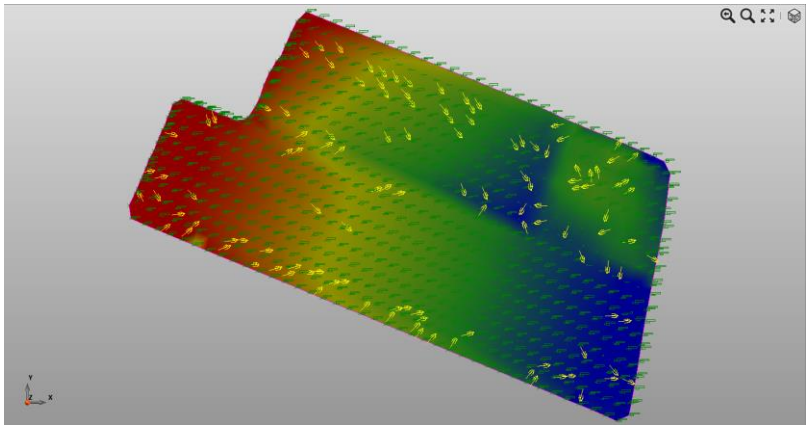


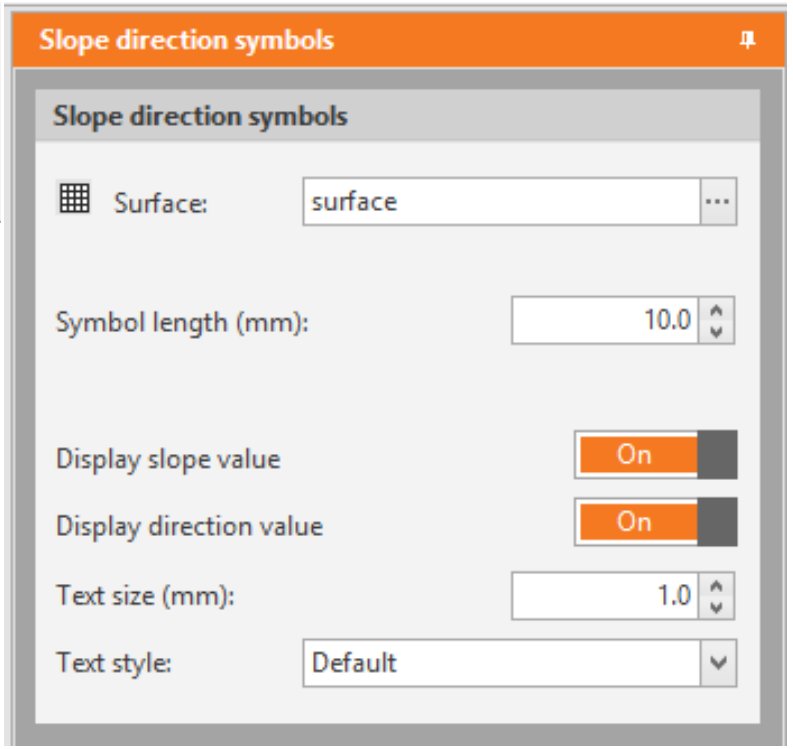
From the ***VIEW*** panel of the ***SURFACES*** menu it is possible to select:

- Color options of the surface, the option can also be selected during the built of the surface
- Triangle sides, to show the sides of the triangles of the surface
- Slop symbols

New SURFACE - View

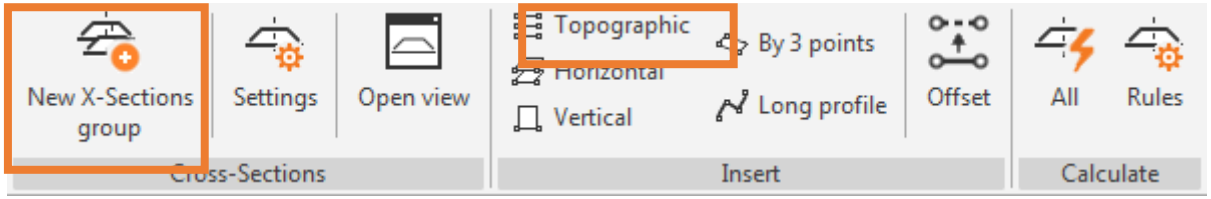






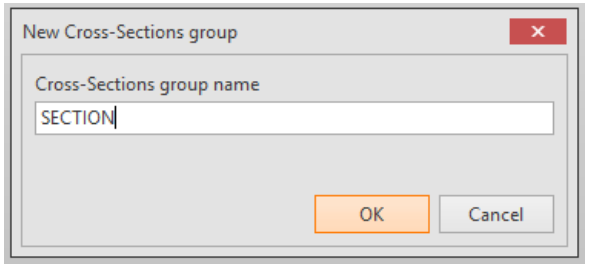
Selecting ***Slope symbols*** it is possible to show the value of the slopes of the surface with the relative slope direction

Cross section



- **New X-Sections group**: creates a new group of cross sections in the project manager

- **Insert**: Create the cross sections (topographic, horizontal, vertical, by 3 points or long profile)

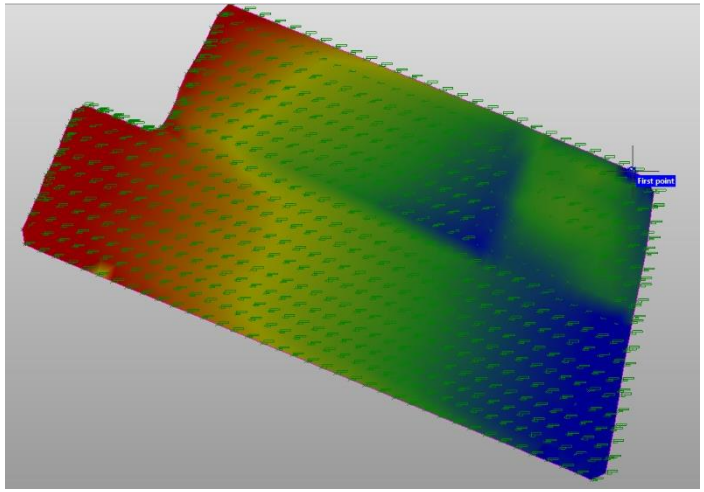


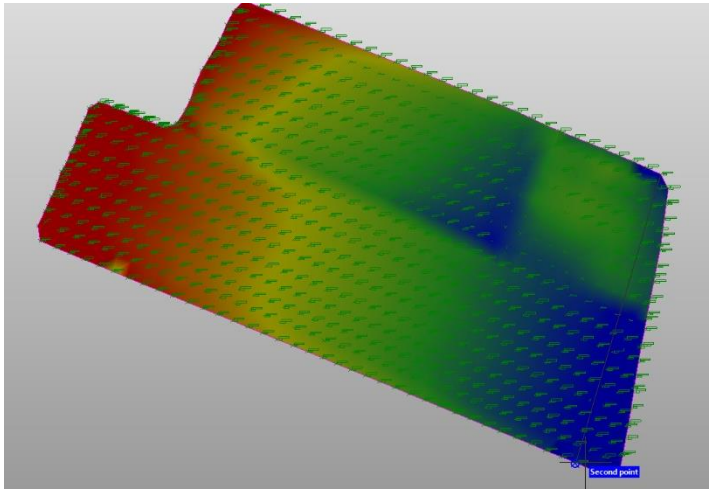
Select ***TOPOGRAPHIC*** sections

Section

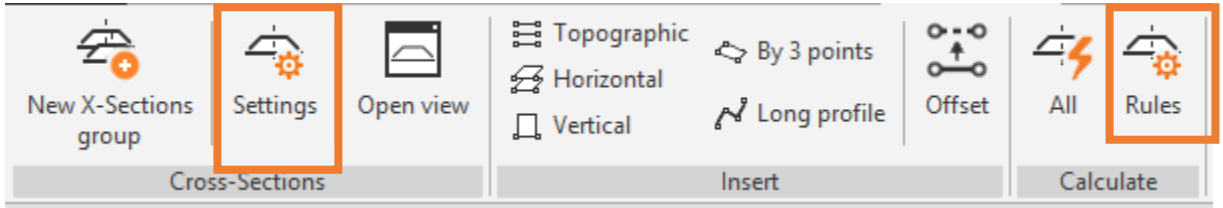
Once the section has been selected, it is necessary to insert the name of the single section and to graphically define the two initial and final points.

The points do not necessarily belong to the survey, but you can also set two graphically external points



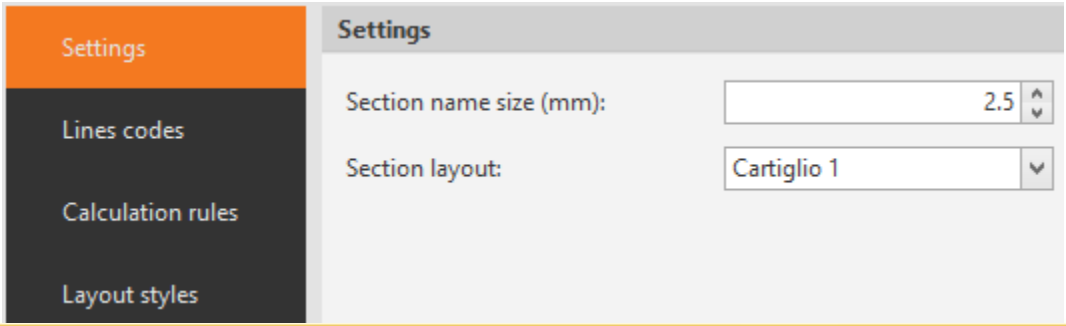


Sections Settings - Settings

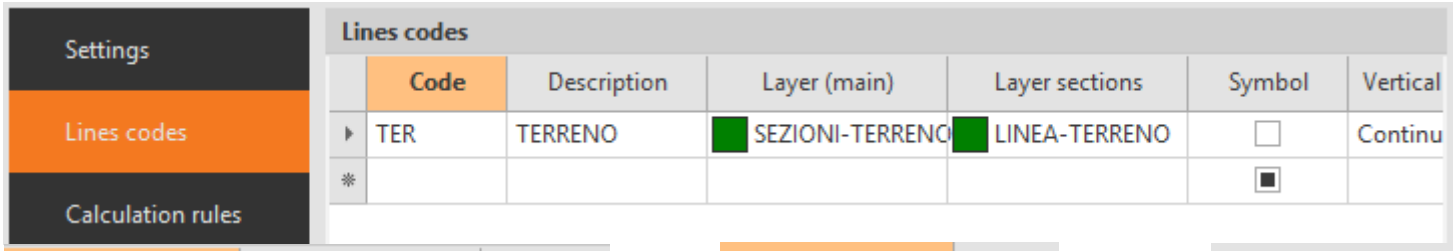


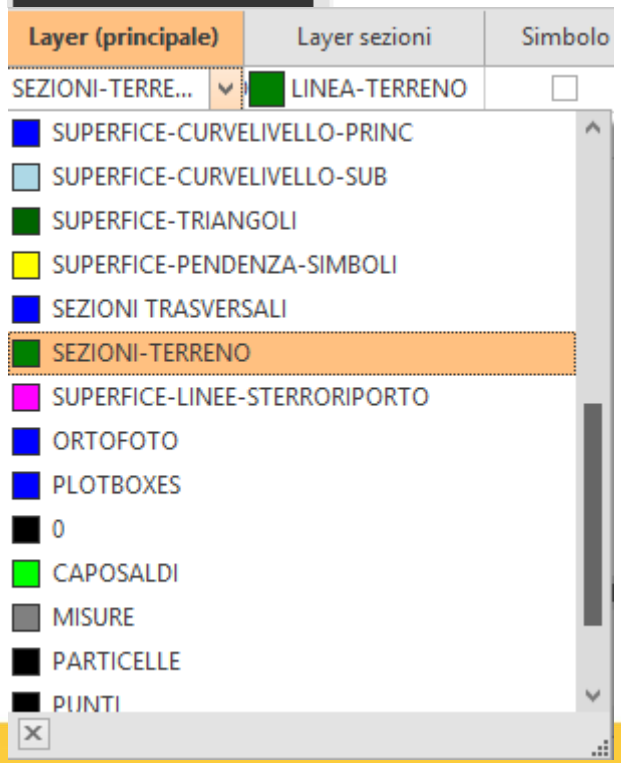
SETTINGS: Define the parameters for the group of sections (Settings, Lines codes, Calculation rules, and Layout style)

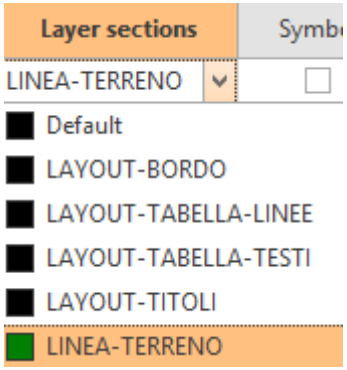
It is possible to select ***SETTINGS*** and ***RULES*** both before and after the graphically selection of the section

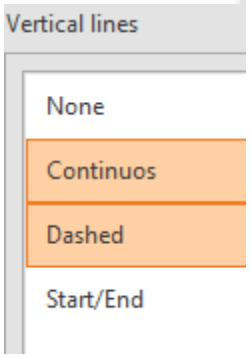


Sections Settings – Lines code









Lines codes: used to define:

- Code
- Description
- Layer (main)
- Layer sections
- Vertical lines

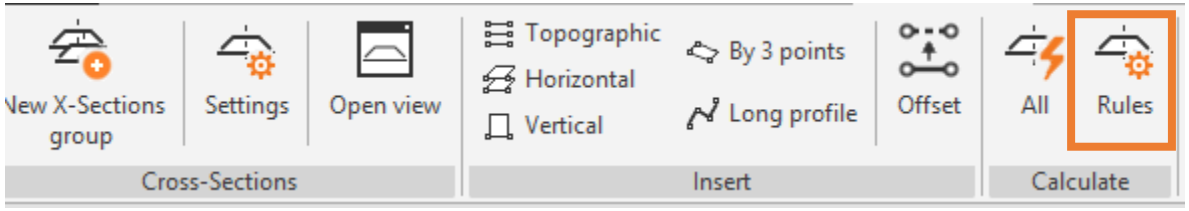
Sections Settings – Calculation rules

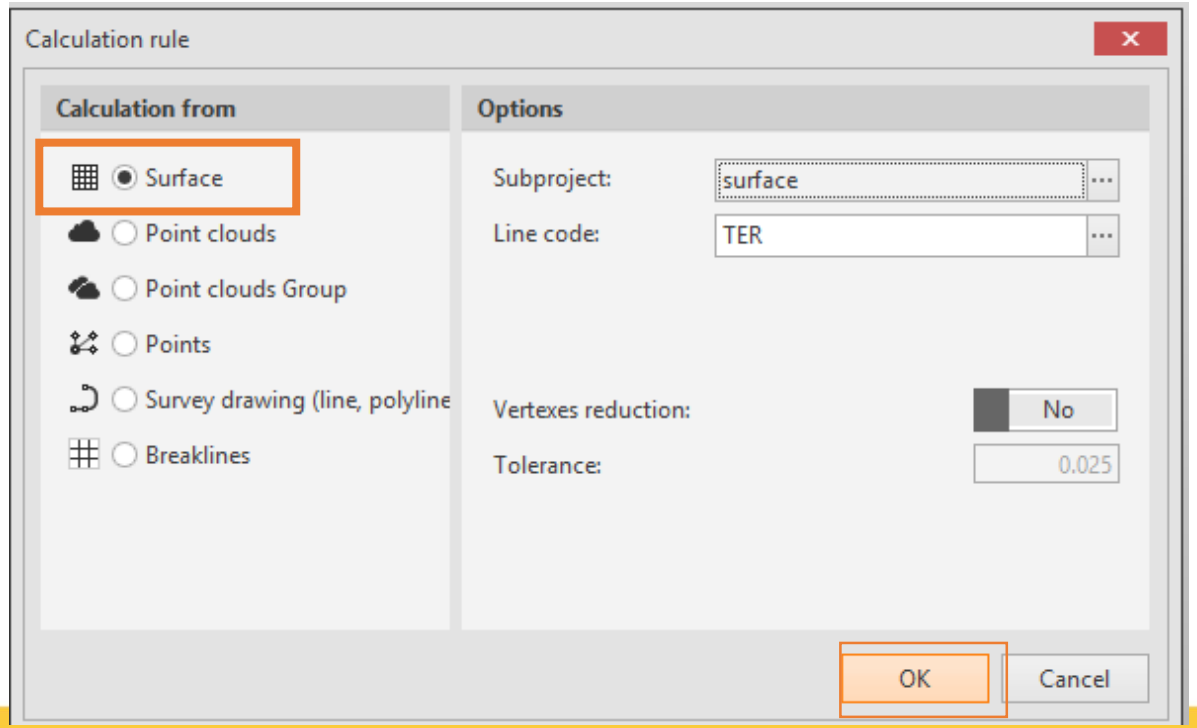
Rules: used to define the sections rules. It is possible to create sections from:

- Surface
- Point cloud
- Punts
- Survey Drawing

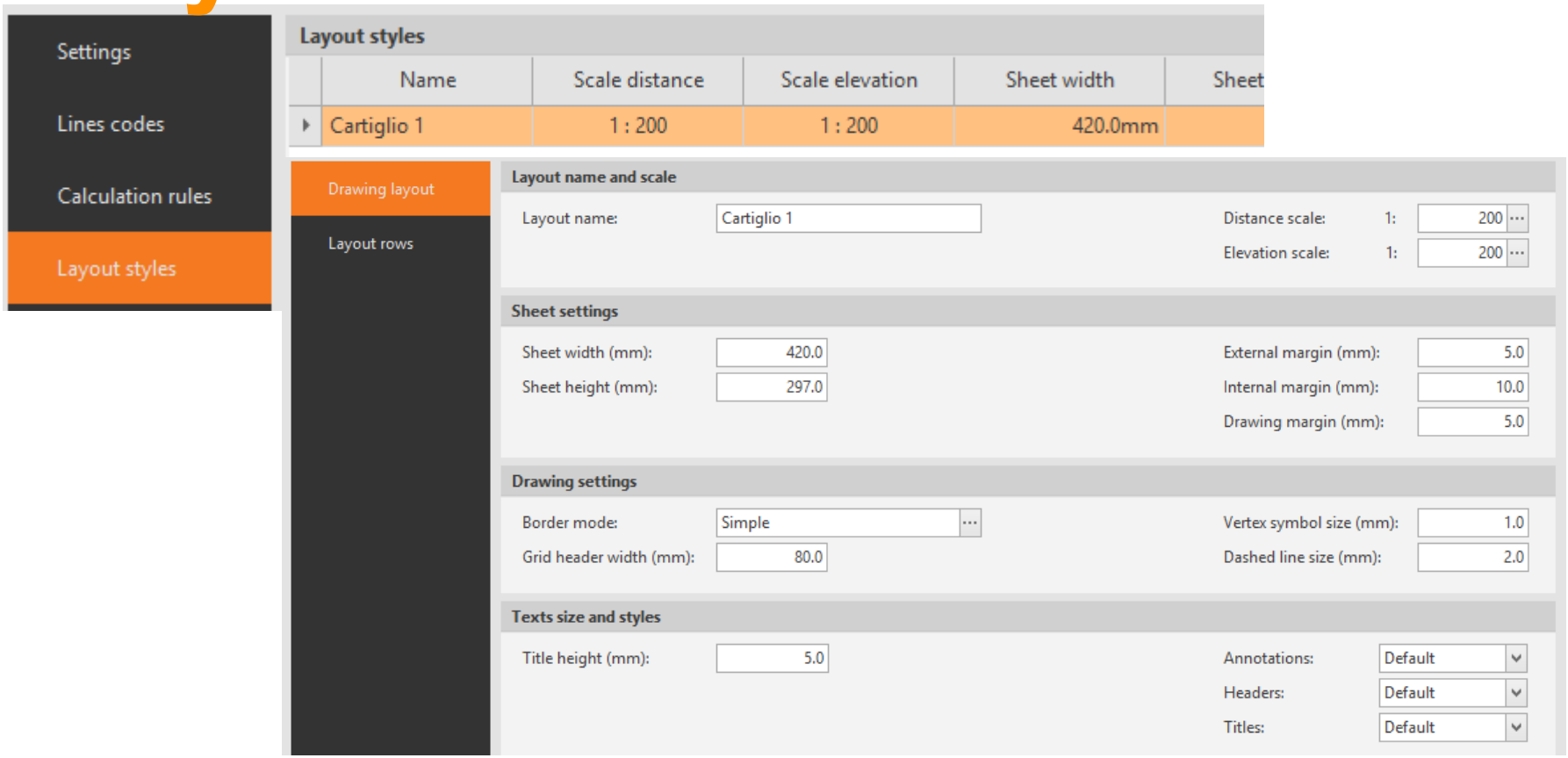
Select:

- Subproject
- Line code
- Vertexes reduction
- Tolerance



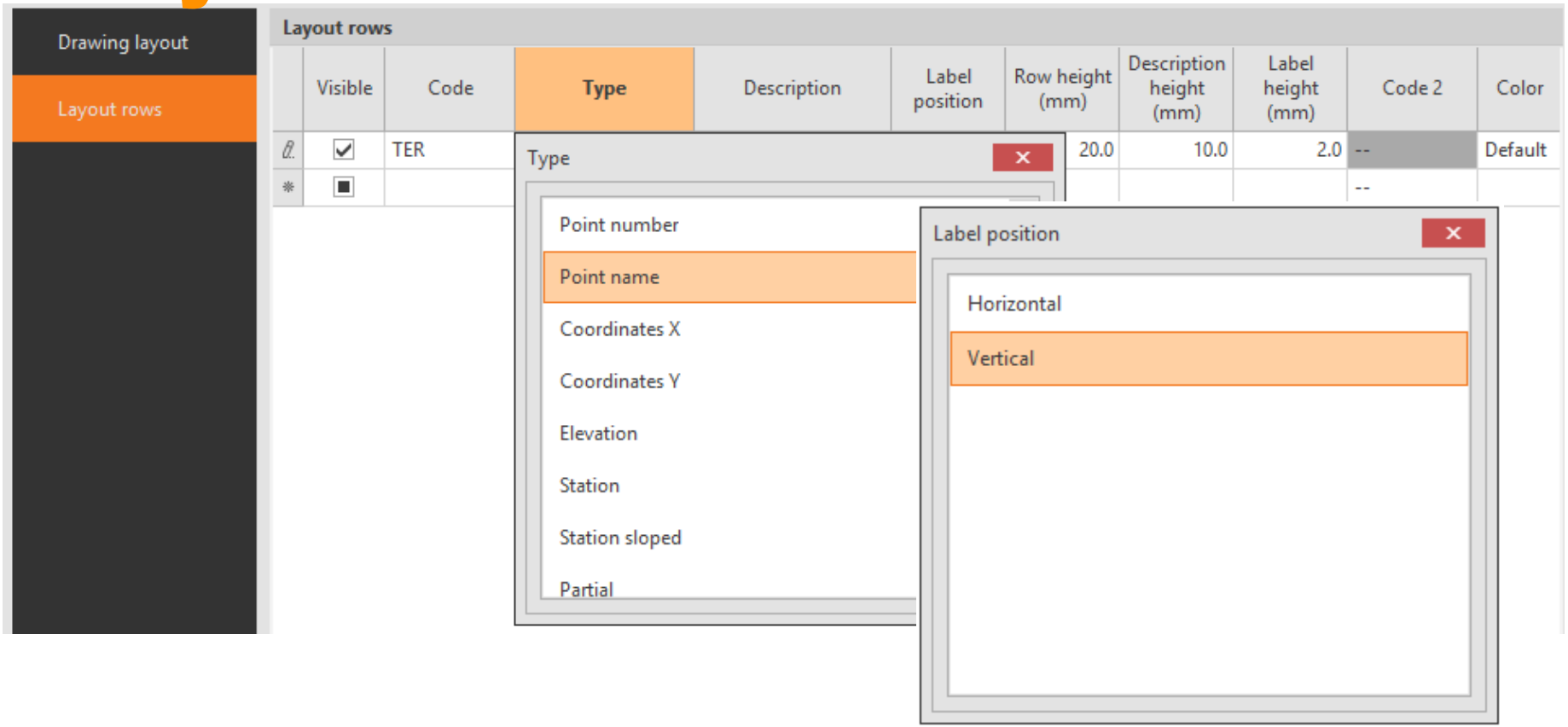


Sections Settings– Layout styles



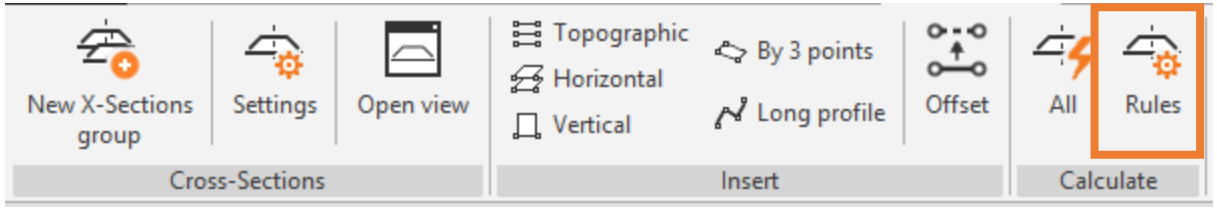
Layout styles: used to define the drawing layout settings and the layout rows

Sections Settings– Layout styles

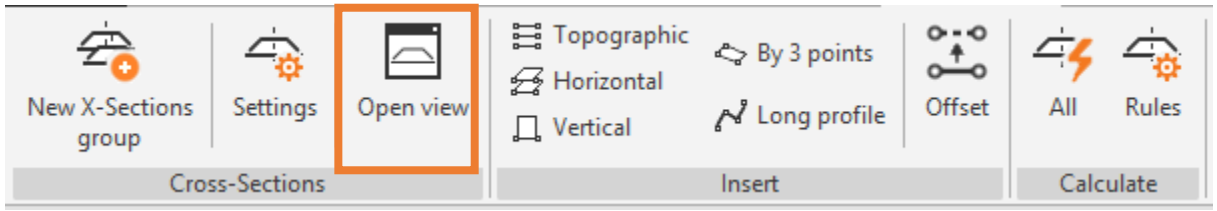


Layout rows: used to define the information for the sections calculation, each line corresponds to an information

Sections

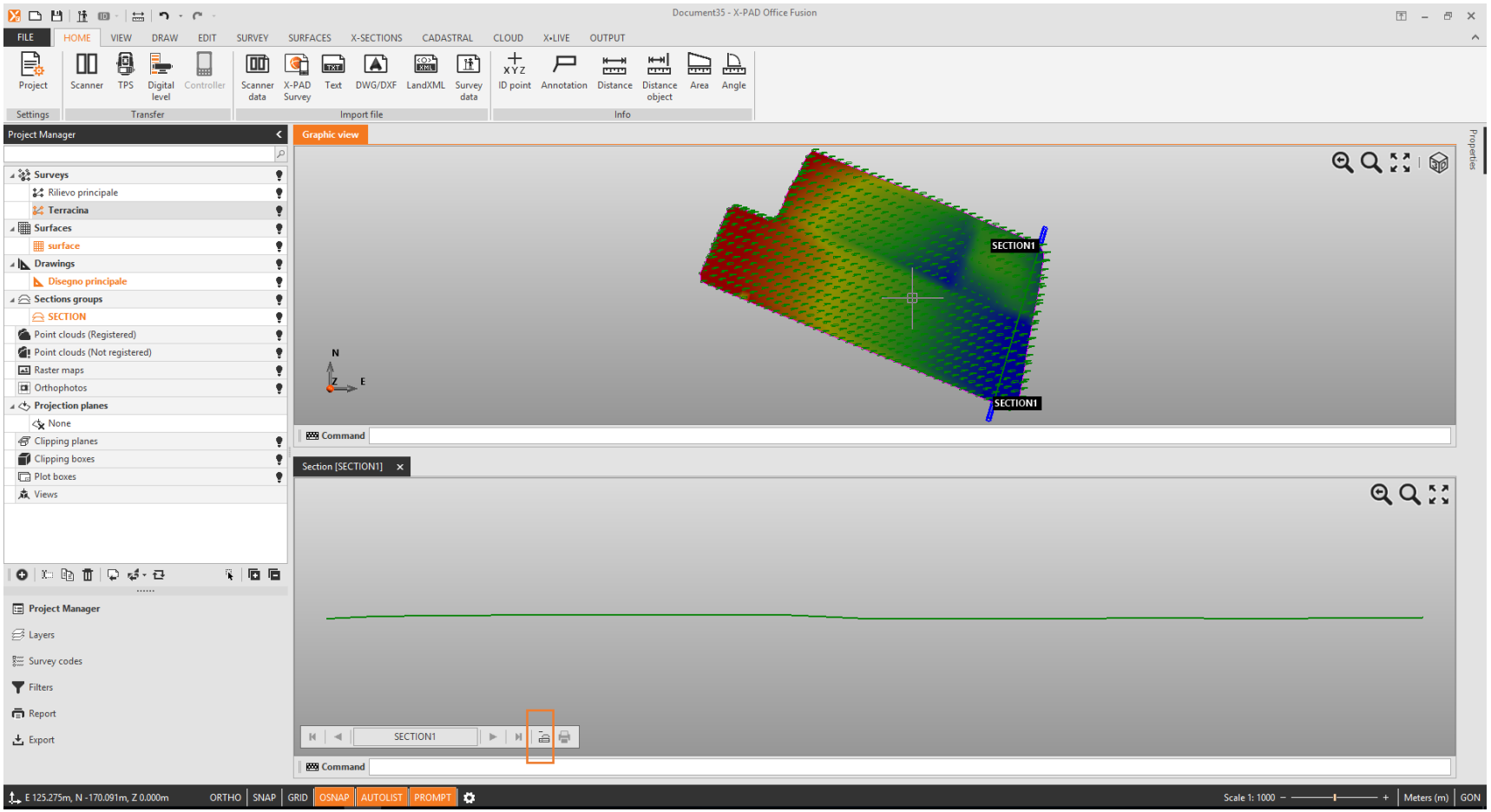


Calculate: Once the settings and the calculation rules have been established, click on ***ALL*** pto generate the sections



Open View: Allow to have a trasversal view of the calculated cross-sections

Sections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SECTION
Point clouds (Registered)
Point clouds (Not registered)
Raster maps
Orthophotos
Projection planes
None
Clipping planes
Clipping boxes
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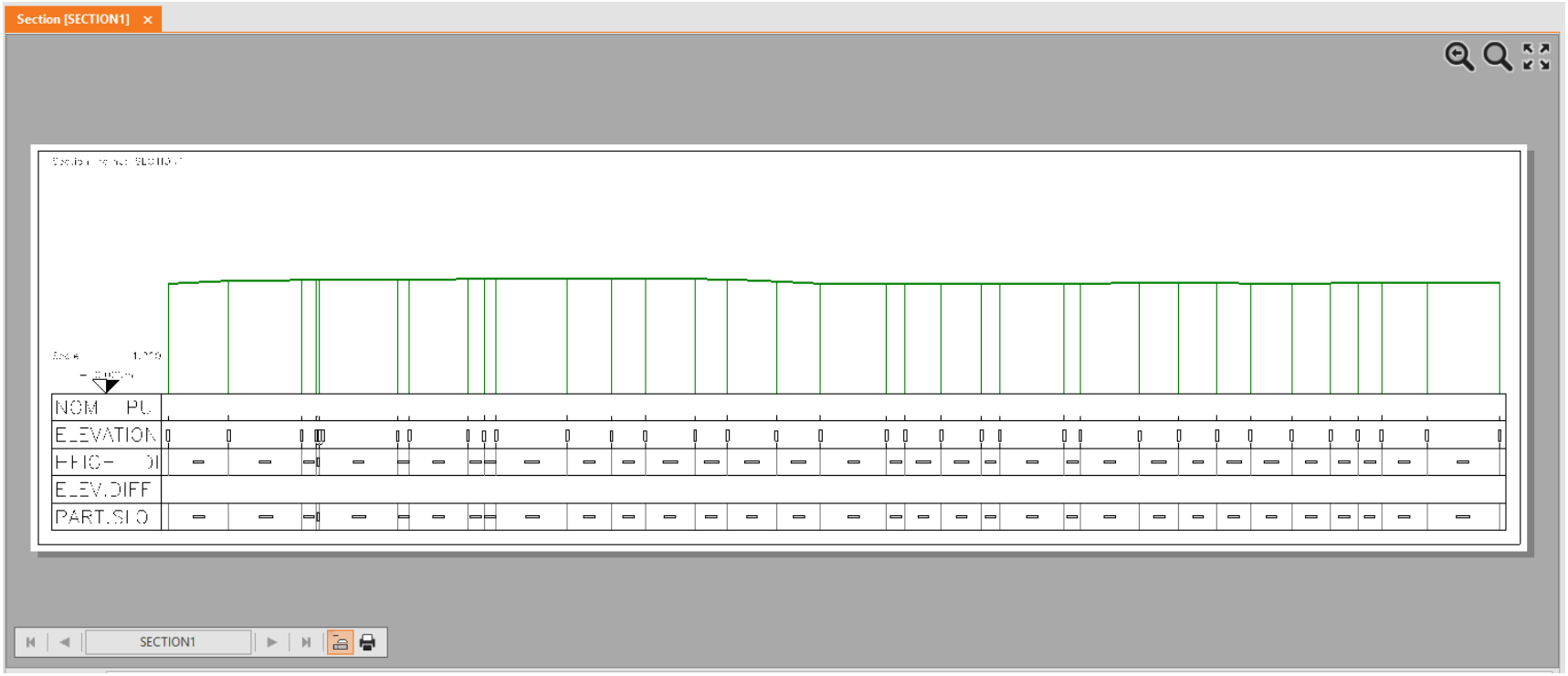
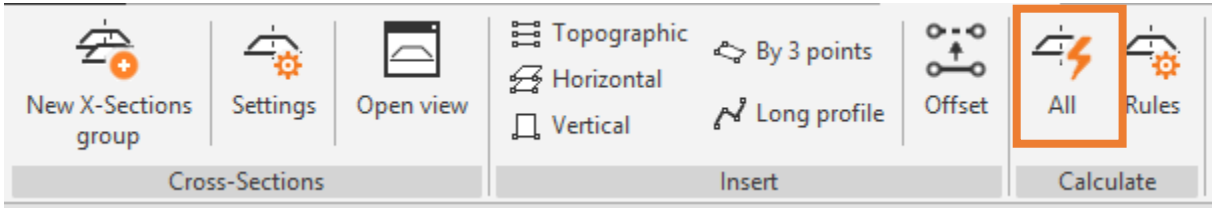
SECTION1
SECTION1
N
Z
E
Command
Section [SECTION1]
SECTION1
Command
Properties
E 125.275m, N -170.091m, Z 0.000m
ORTHO
SNAP
GRID
OSNAP
AUTOLIST
PROMPT
Scale 1: 1000
Meters (m)
GON

Sections



Sections Offset

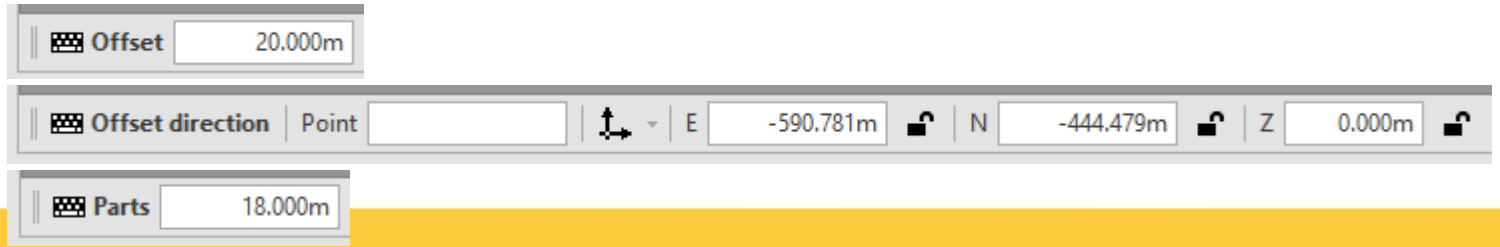


Offset: it is the function used to generate sections offset related to a reference section.

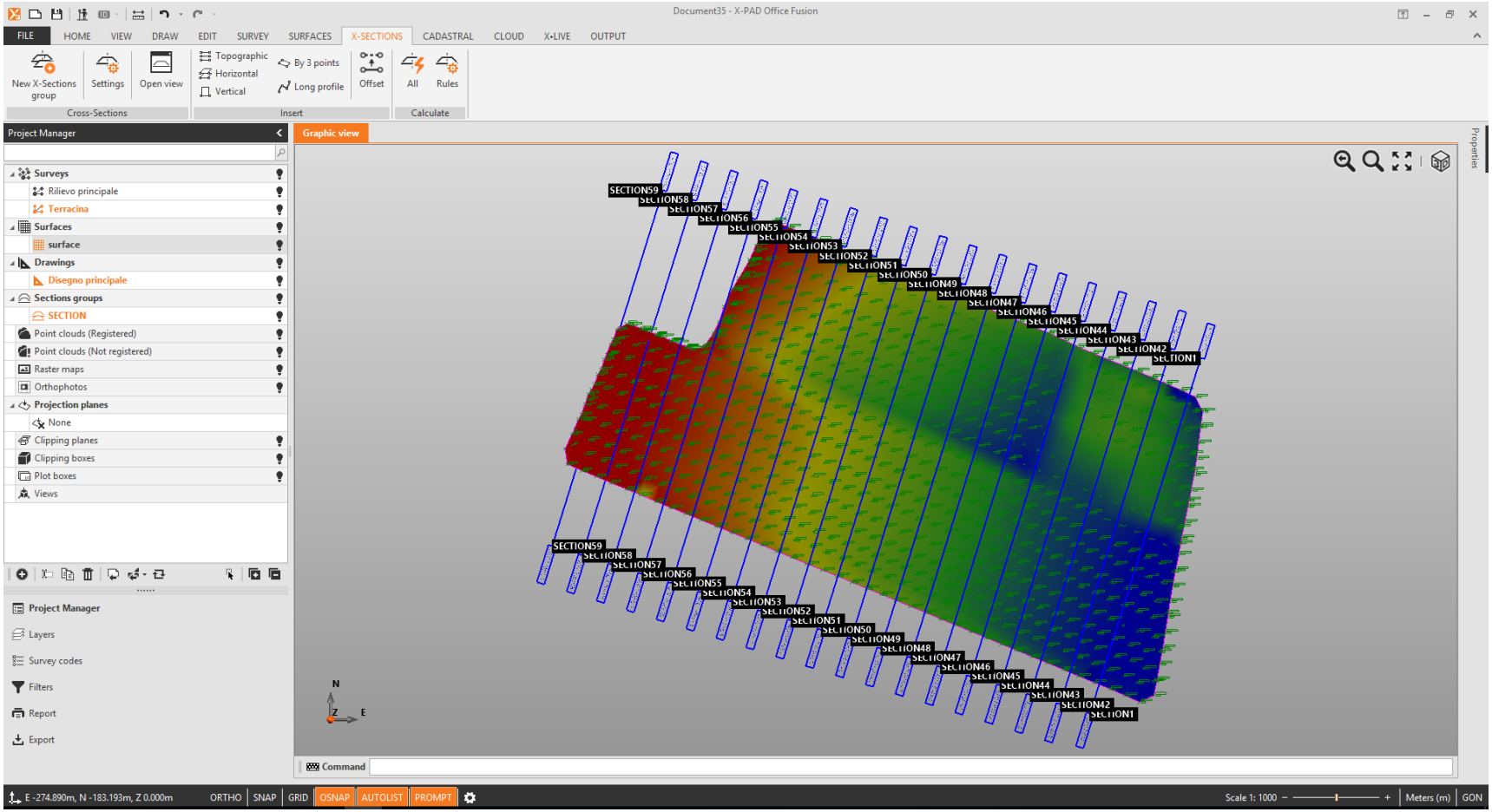
Once the reference section has been selected, it is necessary to insert:

- Offset distance
- Direction
- Parts

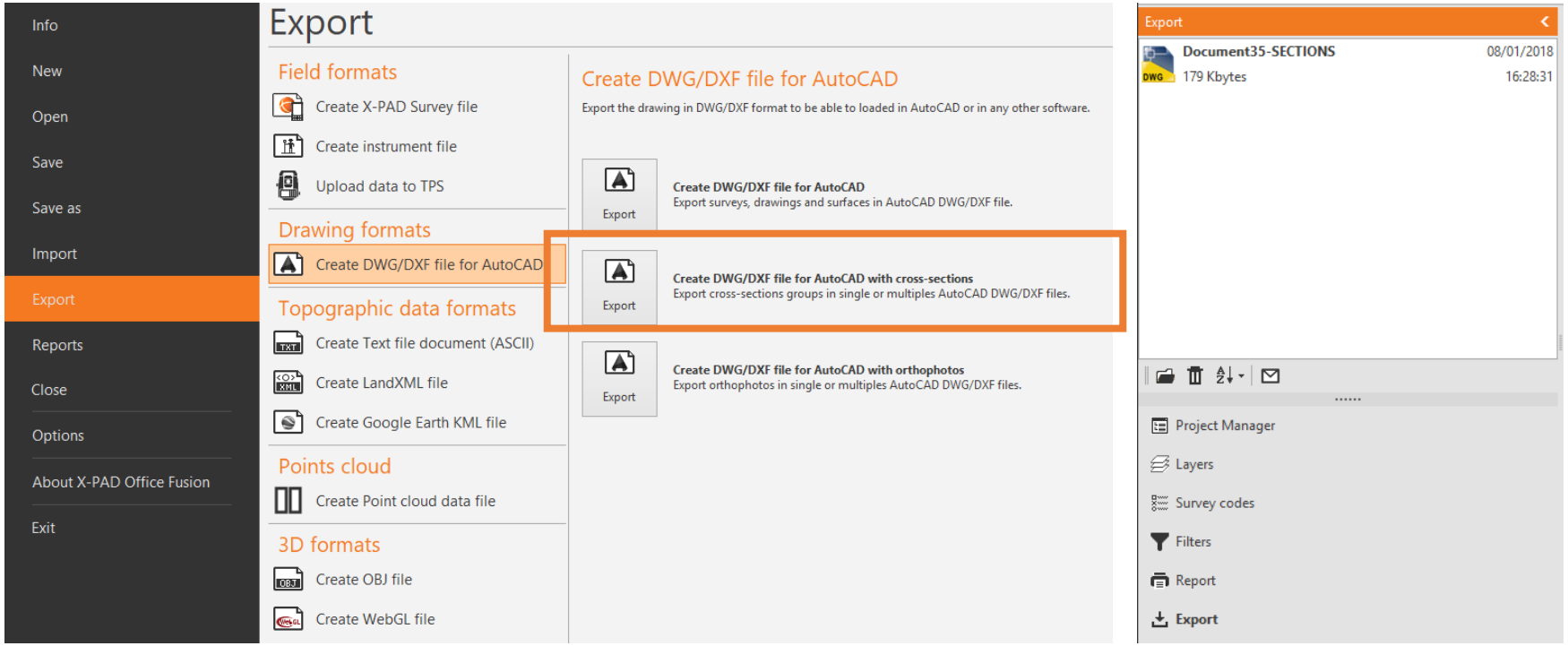
Click on ***ALL*** to generate the sections with the same calculation rules



Sections Offset

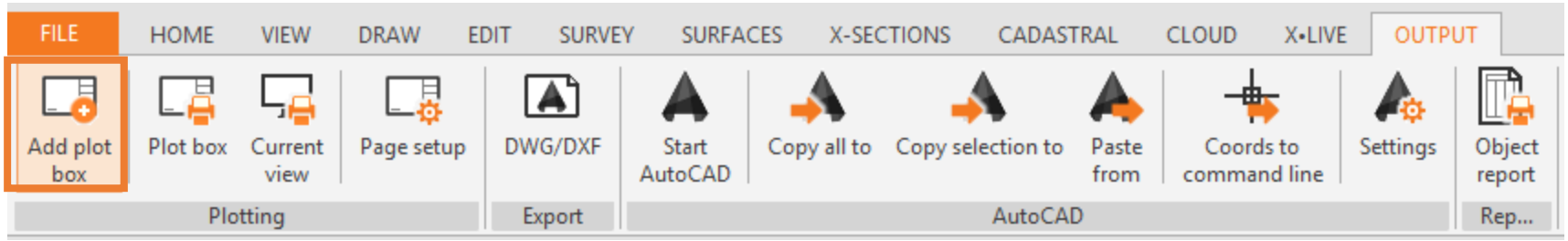


Export



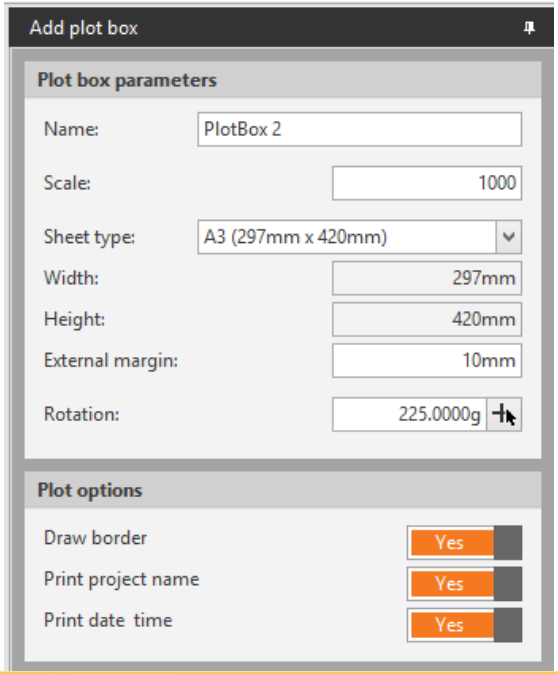
From ***FILE*** menu it is possible to select ***EXPORT*** to create a ***DWG/DXF*** file with the calculated sections.
The export data are always visible from ***EXPORT*** in the Project Manager.

Plot

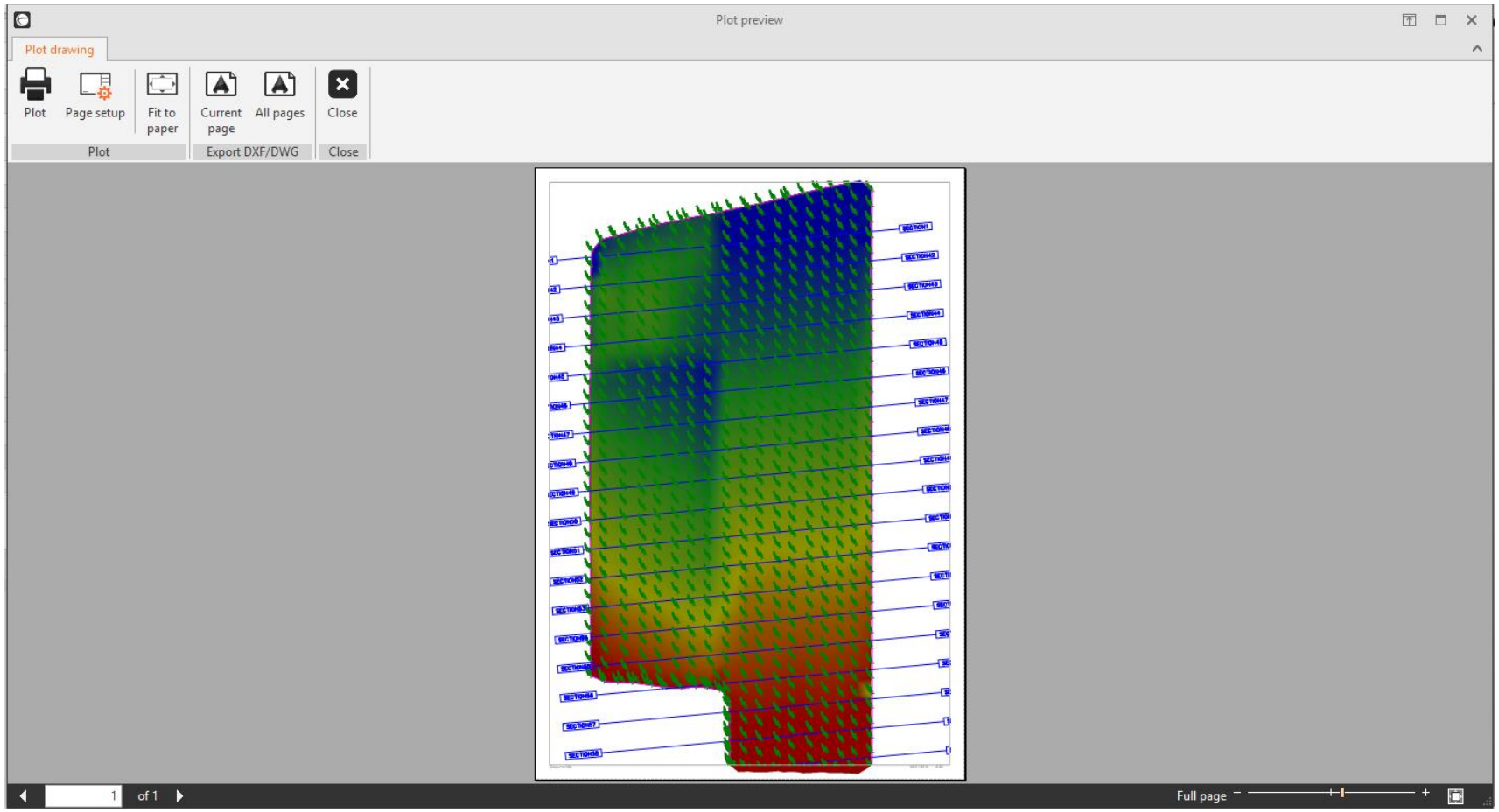


From the ***OUTPUT*** menu it is possible to select ***ADD PLOT BOX*** to create print area selecting:

- Name
- Scale
- Sheet type
- External margin
- Rotation
- Project informations



Plot


Plot preview
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