Cross Sections

Guide
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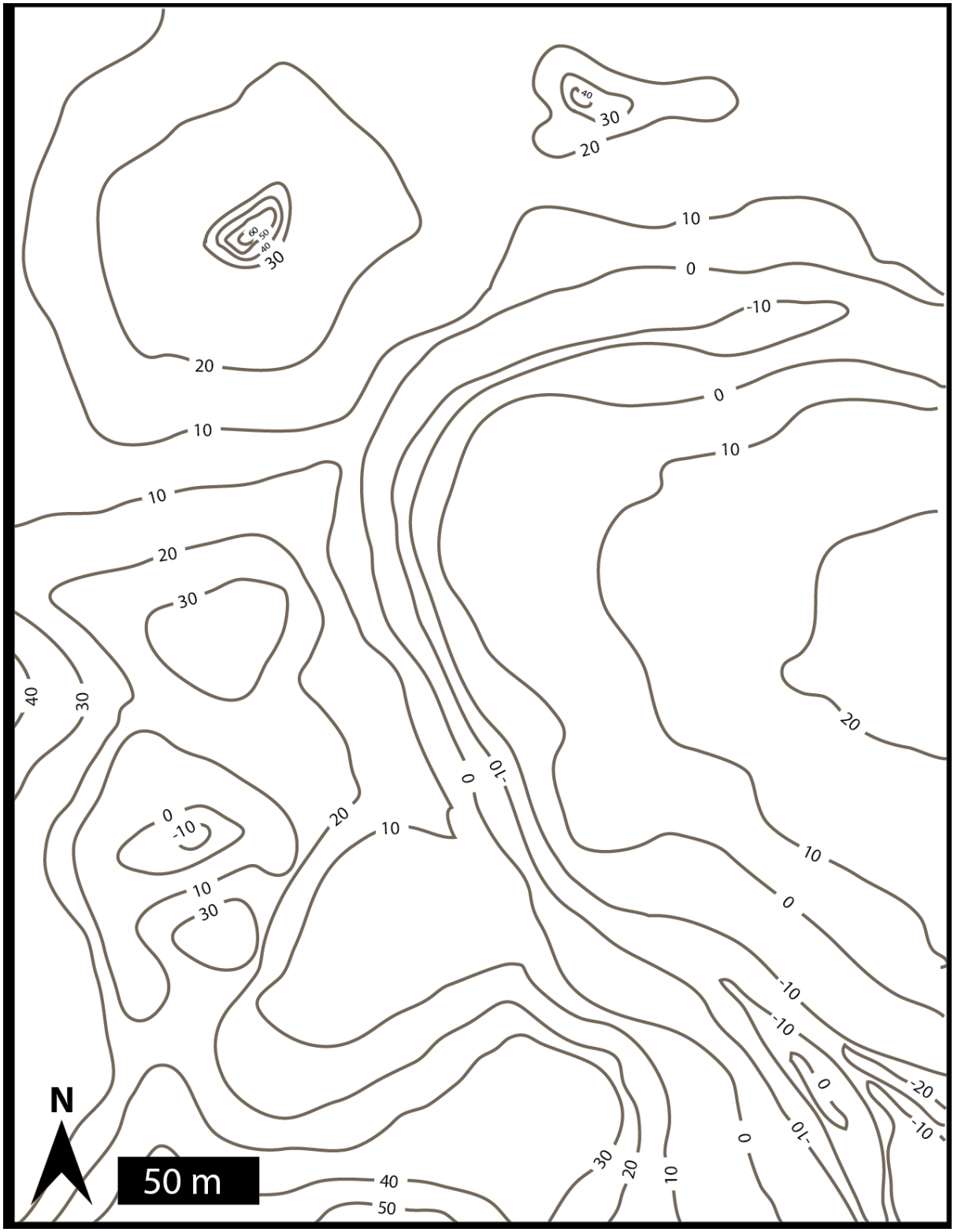
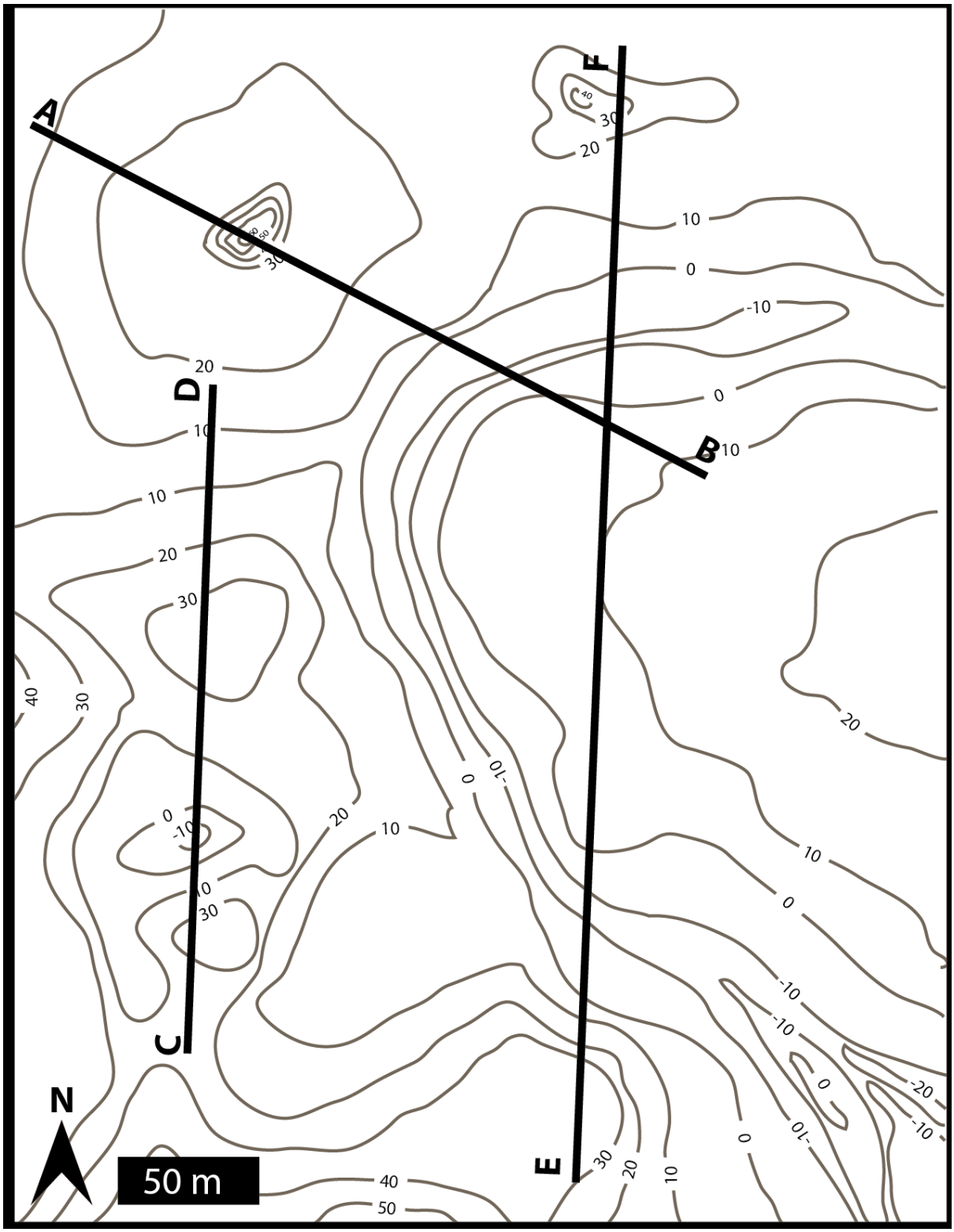
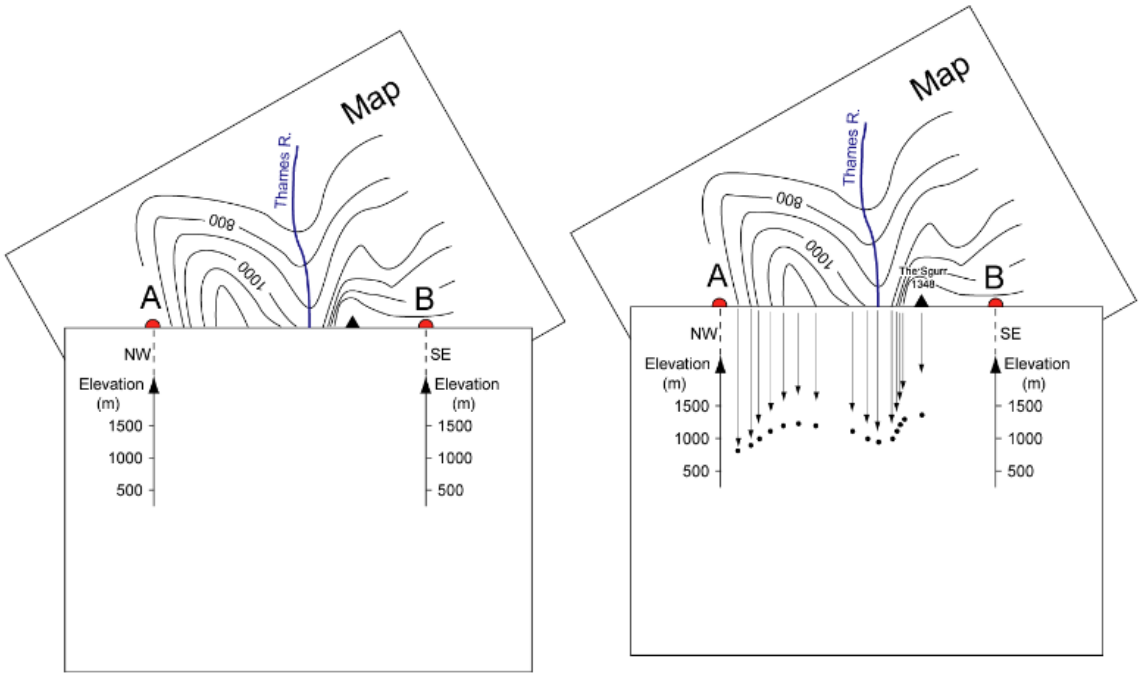
To understand geological profiles a general knowledge of terrain profiles is necessary.



This is a topographic map and it shows the elevation of the terrain in form of contour lines. Each of the lines represent a certain terrain elevation. Those maps do not contain any information about the geology but about the topography of the terrain and are therefore called topographic maps.



We want to obtain the profile for the section AB. We take the section length (km) as x aches and the elevation (m) as y aches. Mark the elevation of each contour line that is intersected by AB and we will get this result:



The next step is to connect the dots as realistic as possible (there are hardly any sharp edges in nature). The result is the elevation profile based on a topographic map.

Obtaining a geological cross section is a similar process. The boundaries of every geological unit are called contacts. Please note that usually the elevation profile and the geological cross section are shown in one diagram to get an idea about the units in the context of surface morphology. However, both profiles are independent from each other! The surface morphology can but does not have to influence the geological units and vice versa. Do not get confused with those two profiles. Draw the topography profile based on the contour lines first and then insert the contacts of the geological units.

Often the deposition situation in the subsurface is unknown, because only drillings and radar measurements provide information about that. However, we can often assume what the most likely shape of a unit in the subsurface is, based on the unit outlines on the surface. If you do not have proof for the shape in the subsurface used dashed or dotted lines to indicate that it is an assumed unit shape.