Extracting Information from Geologic Maps
Geology in the Field – EPSC 240
Nov 6 2019

Meet: In the lab

Bring: Ruler, protractor, calculator

Wear: Your choice

Instructions:
You are provided with three maps, each has different geology but the same topography.

1. MAP A
   (a) Where would a river run through this area? Mark its path with a blue line.
   (b) Where is the steepest area on the map? Could you hike up that?
   (c) What is the strike and dip of the contact between conglomerate and volcanic rock?
   (d) What is the true thickness of the siltstone?
2. MAP B
   (a) Is the shale tabular (e.g. does it have parallel edges?)
   (b) Which contact is its upper contact (e.g. original stratigraphic top of the shale bed)?
   (c) Which is the youngest rock on this map?
3. MAP C
   (a) What are the strike and dip of the units? Note: you will need to use a true 3-point problem for this.
   (b) A well is shown on the map. Assuming the well is perfectly vertical, at what depth will it reach fresh water stored in the diamictite?
4. Rank the units from oldest (1st) to youngest (7th).
5. Write a short story explaining the geologic history of the area, based on Map C. Include EVERYTHING you can think of that contributed to the current outcrop pattern and landforms.

Turn in:

1. Answers to all questions.
2. Any work sheets including work done on maps (SHOW ALL WORK).

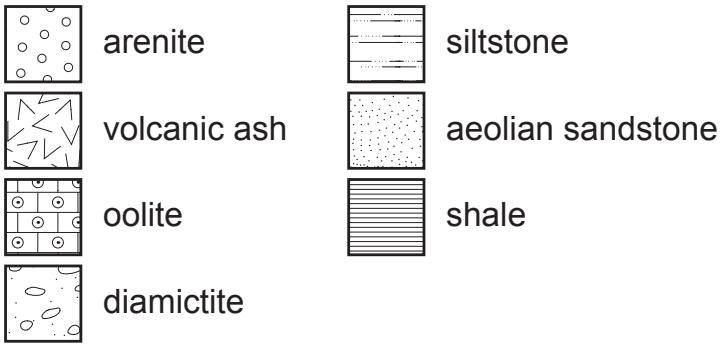
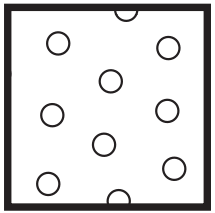
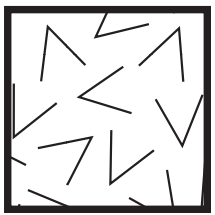


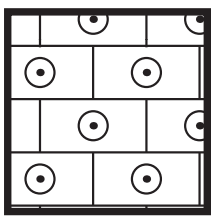
Figure 1: Key to rock type patterns for Maps A-C. Note: no stratigraphic order is implied in this legend.



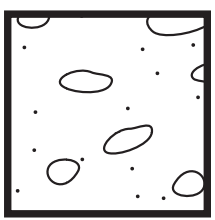
arenite



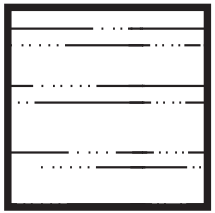
volcanic ash



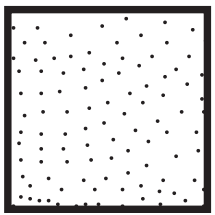
oolite



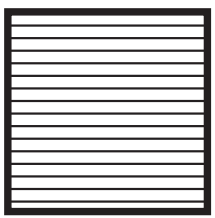
diamictite



siltstone

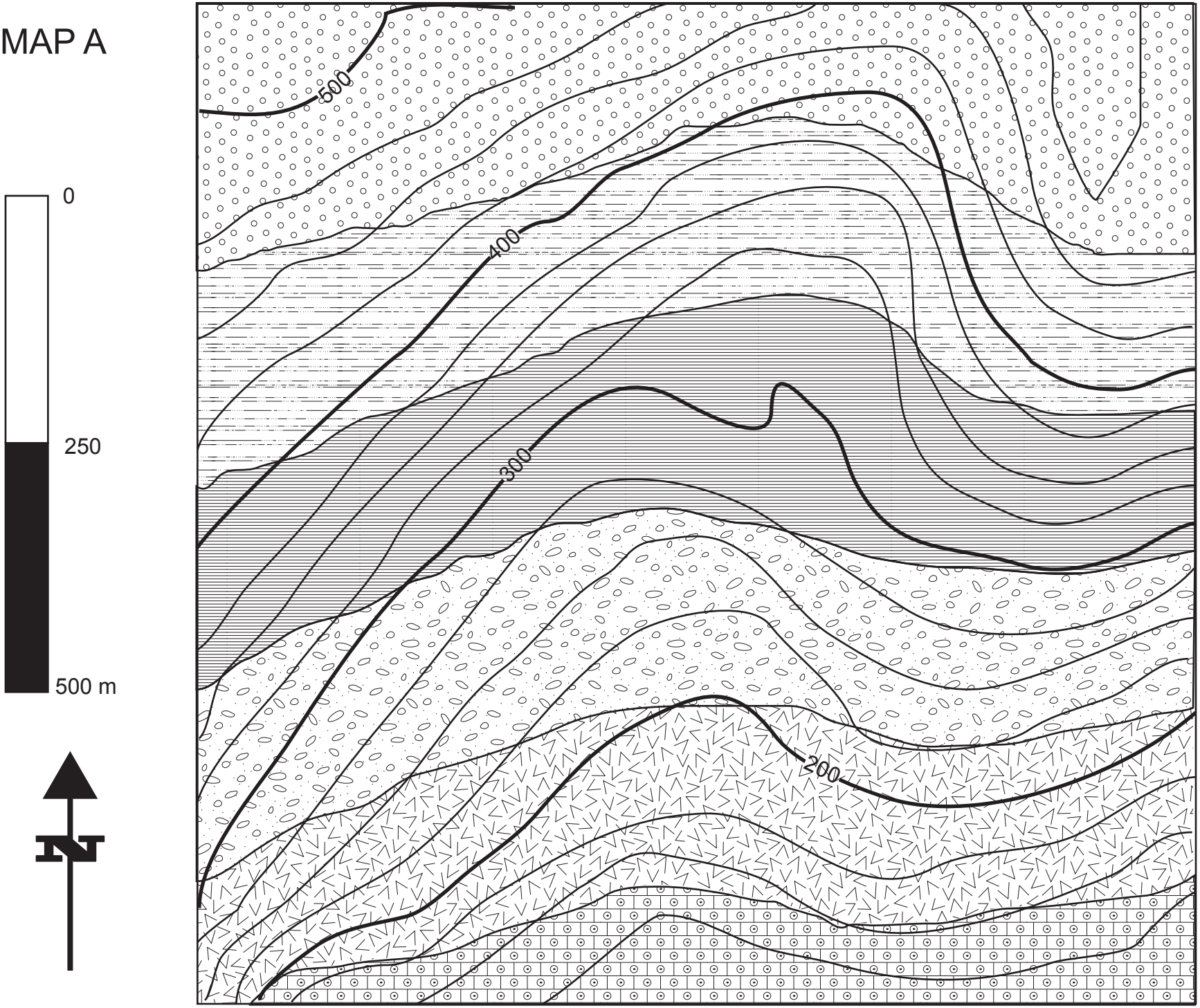


aeolian sandstone



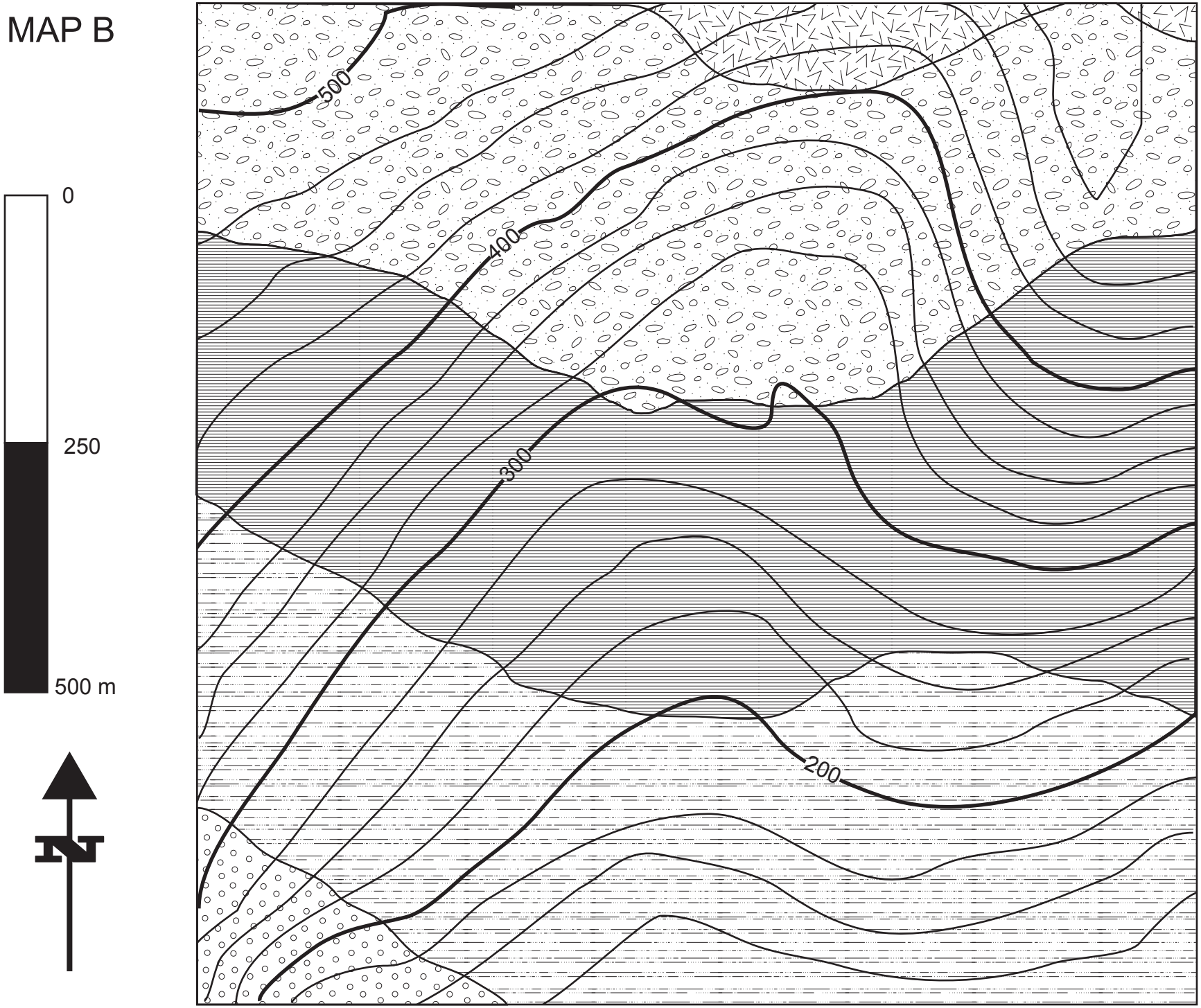
shale

MAP A

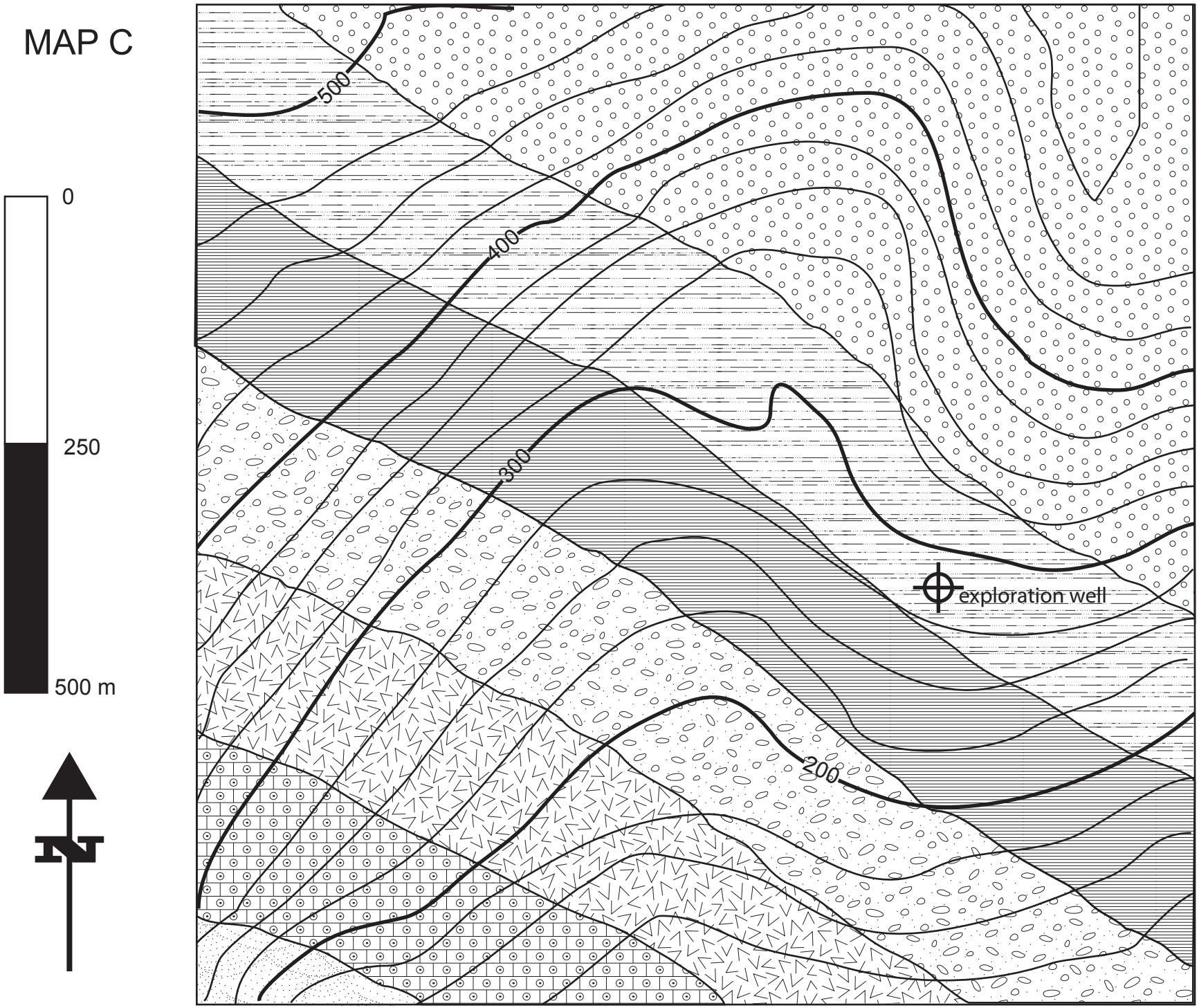


contour interval: 25 m

MAP B



contour interval: 25 m


MAP C
0
250
500 m
N
500
400
300
200
exploration well
contour interval: 25 m