

Field Geology I Geologic Cross-section guidelines

- 1) Identify line of section of topographic map.
- 2) Produce topographic profile.
 - a. Use inch grid engineering paper so that the small squares (0.2") will be equal to 200' on the 1:12,000 cross-section.
 - b. Draw reference baseline on cross-section and choose elevation range appropriate to span minimum and maximum elevations along the profile.
 - c. Locate index contour crossings with line of section at appropriate position on profile using the dividers to double the distance.
 - d. Interpolate topographic profile through index contour points by accounting for topographic form as indicated by intervening contours on the map.
- 3) Locate contact and fault intersections with the line of section. Also locate nearby strike and dips projected along strike to the line of section. Make sure to plot them along the topographic profile.
- 4) Ink all elements of above drawing. Overlay with white paper and trace in ink. Use ruler for straight lines. Include:
 - a. Scale
 - b. A-A' or whatever letter end designators.
 - c. Cardinal directions of the ends of the profile.
 - d. Title
 - e. Elevation scale with labels.
- 5) Draw geologic section:
 - a. Account for apparent dip (look for nomogram chart in the back of Compton, or page 672 in Davis and Reynolds or use: $\tan \alpha = \tan \delta \sin \beta$ where α is apparent dip, δ is true dip, and β is horizontal angle between line of strike and line of section). But only do this if $\beta < 60^\circ$.
 - b. Maintain constant bedding thickness where appropriate
 - c. Use observed outcrop patterns, nearby strike and dips, map patterns, and geologic common sense to aid interpretation at depth.
 - d. Color and label units and structures.
 - e. Depth of subsurface interpretation is constrained by map information and may vary along the section.