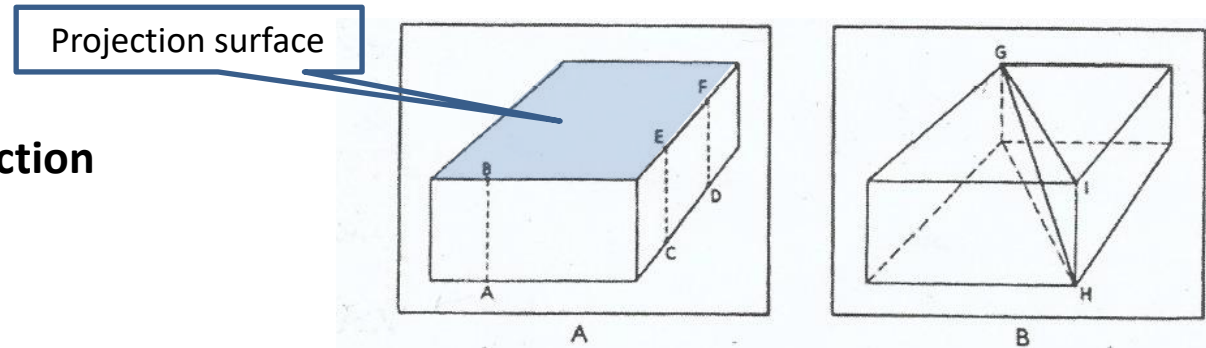


Lab 6

**Structural Geology
(2021-2022)**

**True and apparent dip calculations
(Orthographic Approach)**

Geometrical Projection

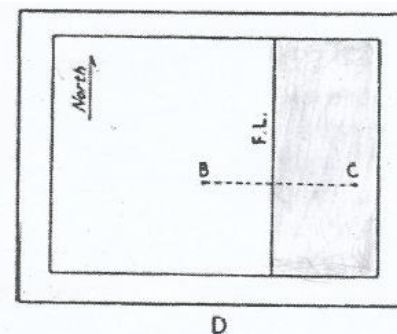
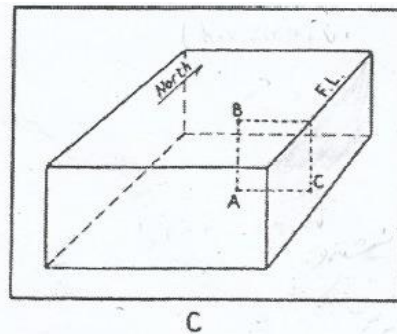


An object having three dimensions may be shown on a single plane by means of Projection. The projection of a point on a plane is a point. The project of a line on a plane is generally a line. The plane upon which points, or lines are projected is the plane of projection. The direction of projection is the direction in which a point is projected into the plane of projection. The direction of projection is perpendicular to the plane of projection in Normal projection.

Normal Projection is illustrated in the figure above. Points and lines have been projected into the horizontal plane represented by the upper surface of the blocks. In figure A, point B is the projection of point A; line EF is the projection of line CD. In figure B, line GI is the projection of the GH into this plane

The line of intersection of two planes is the trace of plane upon the other. The trace of one plane of projection upon a second plane is planes called a folding line. In normal projection the angle between two planes having a common folding line always 90° .

To represent a plane (map) and a section on one plane (paper), it is required to rotate the section into the plane of the map around the folding line as an axis. In the following problems it is best to consider the section as lying below the folding line; the section will then be rotated upward into the horizontal plane. In figure (C), point B is the projection of point A into horizontal plane; point C is the projection of point A into vertical plane represented by side of the block. Figure (D) shows the projection after the vertical plane has been rotated into the plane of the paper about the folding line (F.L) as an axis.



Procedure:

- 1. Draw the strike N45E.**
- 2. Then a perpendicular line of arbitrary length towards another strike line.**
- 3. Mark the far end 0 (origin).**
- 4. Draw the dip angle back toward the strike (35°).**
- 5. Measure the length, in a certain units, say centimeters.**
- 6. Draw the trend of the vertical wall N90W from point 0 till it hits the strike line.**
- 7. Drop a perpendicular with the same length in (5).**
- 8. Measure the apparent dip.**

**Problem 1: Given: A coal bed has a strike and dip of or N45E 35oNW.
Find: The apparent dip of the bed along a vertical section trending
N90W**



**Problem 2: A gold placer has a strike of E-W on a hilltop, and an apparent dip of 40° on the vertical hill side trending N 35° E.
Find true dip angle. (Homework out of 5)**

