Introduction to Topographic Maps
Topographic Maps

Topographic maps are two dimensional models of the Earth’s, which is considered three dimensional.

Topographic maps are also known as contour maps.

Topographic maps illustrate elevation above sea level using contour lines.
Topographic Maps

Contour Line
A line on a map that connects points of equal elevation.

These lines not only show elevation but also show the shape of the land.
Topographic Maps

Contour Interval
This is the difference in elevation between each line. The spacing is always equal.

This contour interval is 20 feet.
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Index Contours
These help the map reader determine elevation. Every fifth line is darker and has an elevation printed on it.
Rules for Contours

1. Contour lines never cross each other.
Rules for Contours

2. Contours always form closed loops even if not shown on the map.

Figure 5-1: Isolated Hill
Rules for Contours

3. Contour lines bend upstream (uphill) when crossing a river.
4. The maximum possible elevation for a hill is one less than the value that would have designated the next contour line. In other words, the highest possible elevation of the hill is just below the value of the next contour line, even though that line is not shown.
Closely-Spaced Contours

On a steep slope, the contour lines are close together.
Widely-Spaced Contours

On a gradual slope, the contour lines are far apart.
Depressions

Contour lines that show a depression, crater, or sinkhole on a map are represented by dashed lines (hachure marks) on the inside of a contour line.

The elevation of the first depression contour is the same as the nearest regular contour line.
Rules for Contours

The lowest possible elevation for a depression is one more than what the next contour should be.

The lowest possible elevation of a depression is just above the value of the next line that is not shown.
Benchmarks

Benchmarks are locations whose exact elevation is known and is noted on a brass or aluminum plate.

Benchmarks are indicated on maps with an X followed by BM.
Map Scales

Map scales indicate the distance on the map compared to distance in the real world.

Graphical scales use a line divided into equal parts and marked in units of length.
Numerical scales display a ratio to represent the distances in the real world.

1:63,360

One inch on the map equals 63,360 inches in the real world because there are 63,360 inches in a mile.