

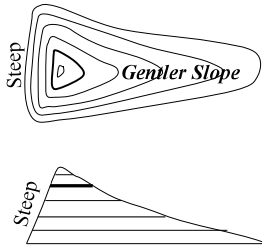
Basic Maps Review

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Topographical maps are a 2 dimensional representation of a 3 dimensional world. Each line on a map represents an elevation mark. On a **1:24000** scale map in our area, a contour line (**brown**) represents a gain or loss of **40' of elevation**. To make it even easier to count lines to determine elevation marks, there is another line called the Index line (**Bolder brown**) which appears every 5th contour line, therefore representing **200' in elevation loss or gain**. Other areas may have different elevations which will be indicated on the map

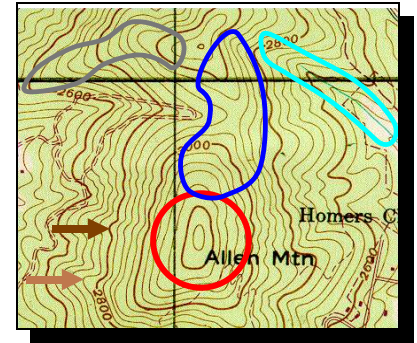
Things To Remember

Contour and Index lines that are **close - STEEP** ↗
 Contour and Index lines that are **far apart - GENTLE SLOPE** →



If you have trouble distinguishing between a ridge or a drainage, look for creeks further down in the "V" for a drainage **or** look for the pattern leading towards a saddle or landing for a ridge.

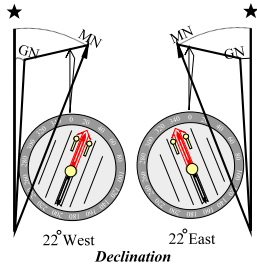
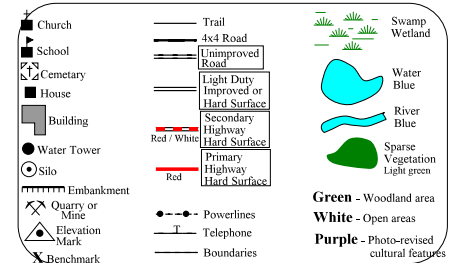
- Hill Top
- Saddle
- Ridge
- Drainage
- Index Line
- Contour Line



These are some of the most common items found on a map. Remember, your map may be quite old and several cultural or manmade **features may not have been in place when the map was made** or even photorevised. There also may be items that are displayed on the map that have been destroyed since map production.

Photorevised (purple) areas can include anything that was discovered in the new photograph, from new ponds, buildings, roads but the purple areas are never taken away from the map. Some maps of **other areas may have other symbols** that are needed for that area such as a pier or port on the coast or an airport but most symbols are obvious and are usually marked.

A **benchmark (X)** is location that is considered permanent and assists in solid reference points for knowing your exact altitude which can help check validity of altimeters and to set GPS units. The X will be accompanied by elevation number beside of it.



There are three types of North that apply to us.

True North - This is the actual North Pole or where all lines converge at the top of the Earth

Grid North - This represents the lines on a map for the Universal Transverse Mercator System. They provide reference lines for plotting position on a map. These lines are slightly curved, being their widest at the Equator and narrowest near the top and bottom of the Earth. They will be very close to the same as True North, usually not even varying less than a 1/2 degree.

Magnetic North - This is where your compass is attracted to. Your compass is **not** attracted to the North Pole. Magnetic North is South of the North Pole. *Refer to the figure to the right.*

Resectioning is sighting fixed objects, obtaining their bearing to the object and applying it to the topo map to find your location. You need at least two bearings but three is much better.

If you pick objects close together the compass bearing will be close to one another and not be of much value so try to find various objects all around you. You can use hilltops, road intersections, buildings, ponds, or towers. Make sure that the object is easily definable on the map. If you see an object and your compass bearing shows it to be 270° from your location then you are 90° from it's location. When you apply a reading to the map, go 90° from that object on the topo map and that will make 1 of the needed lines to resection your position. Most likely, all the lines will not intersect at the exact same point and may create a small triangle shape (if 3 points are used), use the center of the combination of lines to know your location. If your lines create a large triangle, recheck your bearings and plotting.

Basic Resectioning directions

1. Orient your map
2. Pick your first object (the building in the upper left for this case)
3. Get bearing on first object (Building is 314° from you which means you are 134° from the building)
4. Transfer the bearing to the map and draw a line
5. Get a bearing on the second object (hilltop to the right is 86° from you which mean you are 266° from the hilltop)
6. Transfer the bearing to the map and draw a line
7. Repeat steps for other objects
8. All lines drawn should come to a point. That is your position.

