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Topographic Map Symbols

What is a Topographic Map?

A map is a representation of the Earth, or part of it. The distinctive characteristic of a topographic map is that the shape of the Earth's surface is shown by contour lines. Contours are imaginary lines that join points of equal elevation on the surface of the land above or below a reference surface, such as mean sea level. Contours make it possible to measure the height of mountains, depths of the ocean bottom, and steepness of slopes.

A topographic map shows more than contours. The map includes symbols that represent such features as streets, buildings, streams, and vegetation. These symbols are constantly refined to better relate to the features they represent, improve the appearance or readability of the map, or reduce production cost.

Consequently, within the same series, maps may have slightly different symbols for the same feature. Examples of symbols that have changed include built-up areas, roads, intermittent drainage, and some lettering styles. On one type of large-scale topographic map, called provisional, some symbols and lettering are hand-drawn.

U.S. Department of the Interior
U.S. Geological Survey

Reading Topographic Maps

Interpreting the colored lines, areas, and other symbols is the first step in using topographic maps. Features are shown as points, lines, or areas, depending on their size and extent. For example, individual houses may be shown as small black squares. For larger buildings, the actual shapes are mapped. In densely built-up areas, most individual buildings are omitted and an area tint is shown. On some maps, post offices, churches, city halls, and other landmark buildings are shown within the tinted area.

The first features usually noticed on a topographic map are the area features, such as vegetation (green), water (blue), and densely built-up areas (gray or red).

Many features are shown by lines that may be straight, curved, solid, dashed, dotted, or in any combination. The colors of the lines usually indicate similar classes of information: topographic contours (brown); lakes, streams, irrigation ditches, and other hydrographic features (blue); land grids and important roads (red); and other roads and trails, railroads, boundaries, and other cultural features (black). At one time, purple was used as a revision color to show all feature changes. Currently, purple is not used in our revision program, but purple features are still present on many existing maps.

Various point symbols are used to depict features such as buildings, campgrounds, springs, water tanks, mines, survey control points, and wells. Names of places and features are shown in a color corresponding to the type of feature. Many features are identified by labels, such as "Substation" or "Golf Course."

Topographic contours are shown in brown by lines of different widths. Each contour is a line of equal elevation; therefore, contours never cross. They show the general shape of the terrain. To help the user determine elevations, index contours are wider. Elevation values are printed in several places along these lines. The narrower intermediate and supplementary contours found between the index contours help to show more details of the land surface shape. Contours that are very close together represent steep slopes. Widely spaced contours or an absence of contours means that the ground slope is relatively level. The elevation difference between adjacent contour lines, called the contour interval, is selected to best show the general shape of the terrain. A map of a relatively flat area may have a contour interval of 10 feet or less. Maps in mountainous areas may have contour intervals of 100 feet or more. The contour interval is printed in the margin of each U.S. Geological Survey (USGS) map.

Bathymetric contours are shown in blue or black, depending on their location. They show the shape and slope of the ocean bottom surface. The bathymetric contour interval may vary on each map and is explained in the map margin.

BATHYMETRIC FEATURES

- Area exposed at mean low tide; sounding datum line***
- Channel***
- Sunken rock***

BOUNDARIES

- National
- State or territorial
- County or equivalent
- Civil township or equivalent
- Incorporated city or equivalent
- Federally administered park, reservation, or monument (external)
- Federally administered park, reservation, or monument (internal)
- State forest, park, reservation, or monument and large county park
- Forest Service administrative area*
- Forest Service ranger district*
- National Forest System land status, Forest Service lands*
- National Forest System land status, non-Forest Service lands*
- Small park (county or city)

BUILDINGS AND RELATED FEATURES

- Building
- School; house of worship
- Athletic field
- Built-up area
- Forest headquarters*
- Ranger district office*
- Guard station or work center*
- Racetrack or raceway
- Airport, paved landing strip, runway, taxiway, or apron
- Unpaved landing strip
- Well (other than water), windmill or wind generator
- Tanks
- Covered reservoir
- Gaging station
- Located or landmark object (feature as labeled)
- Boat ramp or boat access*
- Roadside park or rest area
- Picnic area
- Campground
- Winter recreation area*
- Cemetery

COASTAL FEATURES

- Foreshore flat
- Coral or rock reef
- Rock, bare or awash; dangerous to navigation
- Group of rocks, bare or awash
- Exposed wreck
- Depth curve; sounding
- Breakwater, pier, jetty, or wharf
- Seawall
- Oil or gas well; platform

CONTOURS

Topographic

- Index
- Approximate or indefinite
- Intermediate
- Approximate or indefinite
- Supplementary
- Depression
- Cut
- Fill
- Continental divide

Bathymetric

- Index***
- Intermediate***
- Index primary***
- Primary***
- Supplementary***

CONTROL DATA AND MONUMENTS

- Principal point**
- U.S. mineral or location monument
- River mileage marker

Boundary monument

- Third-order or better elevation, with tablet
- Third-order or better elevation, recoverable mark, no tablet
- With number and elevation

Horizontal control

- Third-order or better, permanent mark
- With third-order or better elevation
- With checked spot elevation
- Coincident with found section corner
- Unmonumented**

CONTROL DATA AND MONUMENTS – *continued*

Vertical control

- Third-order or better elevation, with tablet — BM 5280
- Third-order or better elevation, recoverable mark, no tablet — 528
- Bench mark coincident with found section corner — BM 5280
- Spot elevation — 7523

GLACIERS AND PERMANENT SNOWFIELDS

- Contours and limits
- Formlines
- Glacial advance
- Glacial retreat

LAND SURVEYS

Public land survey system

- Range or Township line
  - Location approximate
  - Location doubtful
  - Protracted
  - Protracted (AK 1:63,360-scale)
  - Range or Township labels — R1E T2N R3W T4S
- Section line
  - Location approximate
  - Location doubtful
  - Protracted
  - Protracted (AK 1:63,360-scale)
  - Section numbers — 1 - 36 1 - 36
- Found section corner
- Found closing corner
- Witness corner — WC
- Meander corner — MC
- Weak corner*

Other land surveys

- Range or Township line
- Section line
- Land grant, mining claim, donation land claim, or tract
- Land grant, homestead, mineral, or other special survey monument
- Fence or field lines

MARINE SHORELINES

- Shoreline
- Apparent (edge of vegetation)***
- Indefinite or unsurveyed

MINES AND CAVES

- Quarry or open pit mine
- Gravel, sand, clay, or borrow pit
- Mine tunnel or cave entrance
- Mine shaft
- Prospect — X
- Tailings — Tailings
- Mine dump
- Former disposal site or mine

PROJECTION AND GRIDS

- Neatline — 39°15′ 90°37′30″
- Graticule tick — 55′
- Graticule intersection
- Datum shift tick

State plane coordinate systems

- Primary zone tick — 640 000 FEET
- Secondary zone tick — 247 500 METERS
- Tertiary zone tick — 260 000 FEET
- Quaternary zone tick — 98 500 METERS
- Quintary zone tick — 320 000 FEET

Universal transverse metcator grid

- UTM grid (full grid) — 273
- UTM grid ticks* — 269

RAILROADS AND RELATED FEATURES

- Standard guage railroad, single track
- Standard guage railroad, multiple track
- Narrow guage railroad, single track
- Narrow guage railroad, multiple track
- Railroad siding
- Railroad in highway
  Railroad in road
  Railroad in light duty road*
- Railroad underpass; overpass
- Railroad bridge; drawbridge
- Railroad tunnel
- Railroad yard
- Railroad turntable; roundhouse

RIVERS, LAKES, AND CANALS

- Perennial stream
- Perennial river
- Intermittent stream
- Intermittent river
- Disappearing stream
- Falls, small
- Falls, large
- Rapids, small
- Rapids, large
- Masonry dam
- Dam with lock
- Dam carrying road

RIVERS, LAKES, AND CANALS – *continued*

- Perennial lake/pond
- Intermittent lake/pond
- Dry lake/pond
- Narrow wash
- Wide wash
- Canal, flume, or aqueduct with lock
- Elevated aqueduct, flume, or conduit
- Aqueduct tunnel
- Water well, geyser, fumarole, or mud pot
- Spring or seep

ROADS AND RELATED FEATURES

Please note: Roads on Provisional-edition maps are not classified as primary, secondary, or light duty. These roads are all classified as improved roads and are symbolized the same as light duty roads.

- Primary highway
- Secondary highway
- Light duty road
- Light duty road, paved*
- Light duty road, gravel*
- Light duty road, dirt*
- Light duty road, unspecified*
- Unimproved road
- Unimproved road*
- 4WD road
- 4WD road*
- Trail
- Highway or road with median strip
- Highway or road under construction
- Highway or road underpass; overpass
- Highway or road bridge; drawbridge
- Highway or road tunnel
- Road block, berm, or barrier*
- Gate on road*
- Trailhead*

SUBMERGED AREAS AND BOGS

- Marsh or swamp
- Submerged marsh or swamp
- Wooded marsh or swamp
- Submerged wooded marsh or swamp
- Land subject to inundation

SURFACE FEATURES

- Levee
- Sand or mud
- Disturbed surface
- Gravel beach or glacial moraine
- Tailings pond

TRANSMISSION LINES AND PIPELINES

- Power transmission line; pole; tower
- Telephone line
- Aboveground pipeline
- Underground pipeline

VEGETATION

- Woodland
- Shrubland
- Orchard
- Vineyard
- Mangrove

* USGS-USDA Forest Service Single-Edition Quadrangle maps only.

In August 1993, the U.S. Geological Survey and the U.S. Department of Agriculture's Forest Service signed an Interagency Agreement to begin a single-edition joint mapping program. This agreement established the coordination for producing and maintaining single-edition primary series topographic maps for quadrangles containing National Forest System lands. The joint mapping program eliminates duplication of effort by the agencies and results in a more frequent revision cycle for quadrangles containing National Forests. Maps are revised on the basis of jointly developed standards and contain normal features mapped by the USGS, as well as additional features required for efficient management of National Forest System lands. Single-edition maps look slightly different but meet the content, accuracy, and quality criteria of other USGS products.

** Provisional-Edition maps only.

Provisional-edition maps were established to expedite completion of the remaining large-scale topographic quadrangles of the conterminous United States. They contain essentially the same level of information as the standard series maps. This series can be easily recognized by the title "Provisional Edition" in the lower right-hand corner.

*** Topographic Bathymetric maps only.

Topographic Map Information

For more information about topographic maps produced by the USGS, please call: 1-888-ASK-USGS or visit us at http://ask.usgs.gov/

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