

30—TOPOGRAPHIC AND HYDROGRAPHIC FEATURES







| REF NO | DESCRIPTION | SYMBOL | CARTOGRAPHIC SPECIFICATIONS* | NOTES ON USAGE* |
|--|--|--------|---|---|
| 30.1—Topographic, bathymetric, and glacier contours | | | | |
| 30.1.1 | Index topographic contour (1st option) | | lineweight .25 mm line and text color 100% brown | On most maps, every fourth or fifth contour is an index contour. Usually only index and supplementary contours are labeled. Negative values must be preceded by a minus (-) sign. |
| 30.1.2 | Index topographic contour (1st option)—Approximate or indefinite | | 1.75 mm .5 mm HI-6 | |
| 30.1.3 | Intermediate topographic contour (1st option) | | lineweight .15 mm line color 100% brown | |
| 30.1.4 | Intermediate topographic contour (1st option)—Approximate or indefinite | | 1.75 mm .5 mm | |
| 30.1.5 | Supplementary topographic contour (1st option) | | lineweight .2 mm line and text color 100% brown | |
| 30.1.6 | Supplementary topographic contour (1st option)—Approximate or indefinite | | 1.75 mm .5 mm HI-6 | |
| 30.1.7 | Index topographic depression contour (1st option) | | tick lineweight .15 mm; length .5 mm; spacing 3.0 mm contour lineweight .25 mm line color 100% brown | Hachures are added to indicate closed areas of low values. |
| 30.1.8 | Intermediate topographic depression contour (1st option) | | tick length .5 mm; spacing 3.0 mm all lineweights .15 mm line color 100% brown | |
| 30.1.9 | Supplementary topographic depression contour (1st option) | | tick lineweight .15 mm; length .5 mm; spacing 3.0 mm contour lineweight .2 mm line color 100% brown | |
| 30.1.10 | Topographic depression contours (1st option)—Showing tick spacing of adjacent contours | | tick spacing 1.0 mm on lowest contour; on next contour, 2.0 mm; on all others, 3.0 mm (lineweights, etc., are given above) | |
| 30.1.11 | Index topographic contour (2nd option) | | lineweight .25 mm line and text color 50% black | |
| 30.1.12 | Index topographic contour (2nd option)—Approximate or indefinite | | 1.75 mm .5 mm HI-6 | |
| 30.1.13 | Intermediate topographic contour (2nd option) | | lineweight .15 mm line color 50% black | On most maps, every fourth or fifth contour is an index contour. Usually only index and supplementary contours are labeled. Negative values must be preceded by a minus (-) sign. |
| 30.1.14 | Intermediate topographic contour (2nd option)—Approximate or indefinite | | 1.75 mm .5 mm | |
| 30.1.15 | Supplementary topographic contour (2nd option) | | lineweight .2 mm line and text color 50% black | |
| 30.1.16 | Supplementary topographic contour (2nd option)—Approximate or indefinite | | 1.75 mm .5 mm HI-6 | |
| 30.1.17 | Index topographic depression contour (2nd option) | | tick lineweight .15 mm; length .5 mm; spacing 3.0 mm contour lineweight .25 mm line color 50% black | |
| 30.1.18 | Intermediate topographic depression contour (2nd option) | | tick length .5 mm; spacing 3.0 mm all lineweights .15 mm line color 50% black | |
| 30.1.19 | Supplementary topographic depression contour (2nd option) | | tick lineweight .15 mm; length .5 mm; spacing 3.0 mm contour lineweight .2 mm line color 50% black | |
| 30.1.20 | Topographic depression contours (2nd option)—Showing tick spacing of adjacent contours | | tick spacing 1.0 mm on lowest contour; on next contour, 2.0 mm; on all others, 3.0 mm (lineweights, etc., are given above) | |

*For more information, see general guidelines on pages A-i to A-v.

30—TOPOGRAPHIC AND HYDROGRAPHIC FEATURES (continued)

| REF NO | DESCRIPTION | SYMBOL | CARTOGRAPHIC SPECIFICATIONS* | NOTES ON USAGE* |
|--|--|--------|--|--|
| 30.1—Topographic, bathymetric, and glacier contours (continued) | | | | |
| 30.1.21 | Index primary bathymetric contour | | lineweight .275 mm | On most maps, every fourth or fifth contour is an index contour. Do not break contours for contour values. Bathymetric contour values are always given in "below sea-level" units, so they are not preceded by a minus (-) sign. |
| 30.1.22 | Index primary bathymetric contour—Approximate | | | |
| 30.1.23 | Primary bathymetric contour | | lineweight .175 mm | |
| 30.1.24 | Primary bathymetric contour—Approximate | | | |
| 30.1.25 | Supplementary bathymetric contour | | lineweight .2 mm | |
| 30.1.26 | Supplementary bathymetric contour—Approximate | | | |
| 30.1.27 | Index bathymetric contour | | lineweight .25 mm | |
| 30.1.28 | Index bathymetric contour—Approximate | | | |
| 30.1.29 | Intermediate bathymetric contour | | lineweight .15 mm | |
| 30.1.30 | Intermediate bathymetric contour—Approximate | | | |
| 30.1.31 | Index primary bathymetric depression contour | | tick lineweight .175 mm; length .375 mm (spacing varies) | Hachures are added to the lowest contour(s) to indicate a closed area of low values (depression) and also an area of higher value (rise) inside a depression. |
| 30.1.32 | Index primary bathymetric rise contour (inside depression) | | | |
| 30.1.33 | Primary bathymetric depression contour | | tick length .375 mm (spacing varies) | |
| 30.1.34 | Primary bathymetric rise contour (inside depression) | | | |
| 30.1.35 | Supplementary bathymetric depression contour | | tick lineweight .175 mm; length .375 mm (spacing varies) | |
| 30.1.36 | Supplementary bathymetric rise contour (inside depression) | | | |
| 30.1.37 | Index bathymetric depression contour | | tick lineweight .175 mm; length .375 mm (spacing varies) | |
| 30.1.38 | Index bathymetric rise contour (inside depression) | | | |
| 30.1.39 | Intermediate bathymetric depression contour | | tick length .375 mm (spacing varies) | |
| 30.1.40 | Intermediate bathymetric rise contour (inside depression) | | | |
| 30.1.41 | Bathymetric rise contour (inside depression)—Showing hachure spacing for closed contours less than 12.7 mm in circumference | | tick spacing 1.0 mm | |
| 30.1.42 | Bathymetric depression contours—Showing hachure spacing for closed contours less than 12.7 mm in circumference | | tick spacing 1.0 mm | |
| 30.1.43 | Bathymetric depression or rise contours—Showing hachure spacing for closed contours between 12.7 mm and 76.2 mm in circumference | | tick spacing 2.0 mm | |
| 30.1.44 | Bathymetric depression or rise contours—Showing hachure spacing for closed contours more than 76.2 mm in circumference | | tick spacing 2.5 mm | |

30—TOPOGRAPHIC AND HYDROGRAPHIC FEATURES (continued)

| REF NO | DESCRIPTION | SYMBOL | CARTOGRAPHIC SPECIFICATIONS* | NOTES ON USAGE |
|--|---|---|--|--|
| 30.1—Topographic, bathymetric, and glacier contours (continued) | | | | |
| 30.1.45 | Index contour on glacier or permanent snowfield |  | line weight .225 mm line color 100% cyan | On most maps, every fourth or fifth contour is an index contour. |
| 30.1.46 | Index contour on glacier or permanent snowfield—Approximate or indefinite |  | 2.5 mm tick length .5 mm | |
| 30.1.47 | Intermediate contour on glacier or permanent snowfield |  | line weight .125 mm line color 100% cyan | |
| 30.1.48 | Intermediate contour on glacier or permanent snowfield—Approximate or indefinite |  | 2.5 mm tick length .5 mm | |
| 30.1.49 | Index depression contour on glacier or permanent snowfield |  | tick line weight .15 mm; length .5 mm; spacing 3.0 mm contour line weight .225 mm line color 100% cyan | Hachures are added to indicate closed areas of low values. |
| 30.1.50 | Intermediate depression contour on glacier or permanent snowfield—Approximate or indefinite |  | tick length .5 mm; spacing 3.0 mm all line weights .125 mm line color 100% cyan | |

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30—TOPOGRAPHIC AND HYDROGRAPHIC FEATURES (continued)

| REF NO | DESCRIPTION | SYMBOL | CARTOGRAPHIC SPECIFICATIONS* | NOTES ON USAGE* |
|-------------------------------|---|--------|---|---|
| 30.2—Drainage features | | | | |
| 30.2.1 | Perennial river, stream, or creek (single-line drainage) | | line weight .2 mm line color 100% cyan | Letter size and spacing may be increased along longer features. |
| 30.2.2 | Intermittent river, stream, creek, or wash (single-line drainage) | | long dash length 4.3 mm; very short dash, .2 mm; spacing .6 mm color 100% cyan | |
| 30.2.3 | Perennial river, stream, or creek (double-line drainage) | | TI-8 (100% black) color fill 20% cyan all line weights .2 mm spacing may vary | Letter size and spacing may be increased along wider features. |
| 30.2.4 | River mileage marker | | line weight .2 mm | |
| 30.2.5 | Intermittent river, stream, creek, or wash (double-line drainage) | | pattern 132-C | |
| 30.2.6 | Braided river, stream, or creek | | all line weights .2 mm color 100% cyan | |
| 30.2.7 | Canal or ditch (single-line drainage) | | HI-6 (100% cyan) line weight .2 mm | |
| 30.2.8 | Canal or ditch (double-line drainage) | | color fill 20% cyan spacing may vary all line weights .2 mm | |
| 30.2.9 | Canal lock (single-line drainage) (1st option) | | H-6 (100% black) line weight .35 mm 1.25 mm | |
| 30.2.10 | Canal lock (single-line drainage) (2nd option) | | H-6 (100% black) line weight .35 mm | |
| 30.2.11 | Canal lock (double-line drainage) | | line weight .35 mm width may vary | |
| 30.2.12 | Floodgate | | H-6 (100% black) line weight .35 mm | |
| 30.2.13 | Tidegate | | H-6 (100% black) line weight .35 mm | |
| 30.2.14 | Sluice gate | | H-6 (100% black) line weight .35 mm | |
| 30.2.15 | Fish ladder | | H-6 (100% black) line weight .5 mm length may vary | |
| 30.2.16 | Aqueduct (single-line drainage) | | HI-6 (100% cyan) line weight .2 mm | |
| 30.2.17 | Aqueduct (double-line drainage) | | color fill 20% cyan spacing may vary all line weights .2 mm | |
| 30.2.18 | Underground or underwater aqueduct | | dash length 1.25 mm; spacing .5 mm | |
| 30.2.19 | Aboveground water pipeline | | HI-6 (100% cyan) line weight .2 mm | |
| 30.2.20 | Underground or submerged water pipeline | | HI-6 (100% cyan) dash length 1.25 mm; spacing .5 mm | |
| 30.2.21 | Elevated water pipeline | | HI-6 (100% cyan) wing length .575 mm; angle 45° all line weights .2 mm | |
| 30.2.22 | Flume | | HI-6 (100% cyan) line weight .2 mm | |
| 30.2.23 | Siphon | | HI-6 (100% cyan) dash length 1.25 mm; spacing .5 mm | |
| 30.2.24 | Penstock | | HI-6 (100% cyan) line weight .2 mm | |

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|---|---|--------|---|--|
| 30.2—Drainage features (continued) | | | | |
| 30.2.25 | Falls (single-line drainage) | | TBI-7 (100% black) line color 100% cyan all lineweights .2 mm 1.25 mm | |
| 30.2.26 | Falls (double-line drainage) | | lineweights .125 mm | |
| 30.2.27 | Rapids (single-line drainage) | | 6 mm 1.25 mm | |
| 30.2.28 | Rapids (double-line drainage) | | lineweights .125 mm | |
| 30.2.29 | Shoreline—Showing open water | | line color 100% cyan color fill 20% cyan lineweight .2 mm | |
| 30.2.30 | Indefinite or unsurveyed shoreline | | dash length 1.75 mm; spacing .5 mm | |
| 30.2.31 | Approximate mean low water line | | lineweight .15 mm | |
| 30.2.32 | Perennial lake or pond—Showing name | | TI-8 (100% black) line color 100% cyan color fill 20% cyan lineweight .2 mm | Letter size and spacing may be increased within larger features. |
| 30.2.33 | Intermittent lake or pond | | lineweight .2 mm; dash length 1.75 mm; spacing .5 mm pattern 132-C line color 100% cyan | |
| 30.2.34 | Dry lake or pond | | pattern 132-B | |
| 30.2.35 | Land subject to inundation | | pattern 231-C (@90%) | |
| 30.2.36 | Reservoir with natural shoreline | | line color 100% cyan color fill 20% cyan | |
| 30.2.37 | Dammed reservoir | | color fill 20% cyan lineweight .3 mm | |
| 30.2.38 | Area to be submerged behind dam | | pattern 132-C | |
| 30.2.39 | Reservoir (uncovered) with man-made shoreline | | lineweight .15 mm color fill 20% cyan | |
| 30.2.40 | Covered water storage reservoir | | lineweight .15 mm pattern 214-K (@45°) [pattern overprints 20% cyan color fill] | |
| 30.2.41 | Salt flat | | H-7 line color 100% cyan lineweight .2 mm | |
| 30.2.42 | Carolina bay | | dash length 1.75 mm; spacing .5 mm line color 100% cyan lineweight .2 mm | |
| 30.2.43 | Tailings pond | | H-7 line color 100% brown pattern 232-B dash length 1.75 mm; spacing .5 mm; lineweight .2 mm | |
| 30.2.44 | Outline of glacier or permanent snowfield | | color 100% cyan lineweight .2 mm dash length 1.75 mm; spacing .5 mm | |
| 30.2.45 | Outline of glacier or permanent snowfield—Form lines show glacial trend | | pattern 522-C (rotated perpendicular to glacial trend) | |
| 30.2.46 | Marsh, wetland, swamp, or bog | | pattern 420-C | |
| 30.2.47 | Mangrove area | | pattern 424-C | |
| 30.2.48 | Rice field | | pattern 423-C | |

30—TOPOGRAPHIC AND HYDROGRAPHIC FEATURES (continued)

| REF NO | DESCRIPTION | SYMBOL | CARTOGRAPHIC SPECIFICATIONS* | NOTES ON USAGE* |
|---|--|----------------------|--|---|
| 30.3—Miscellaneous topographic and hydrographic features | | | | |
| 30.3.1 | Open pit mine or quarry, as shown on topographic maps or on general-purpose or smaller scale maps | Quarry | H-7 → Quarry draft as shown | |
| 30.3.2 | Gravel, sand, clay, or borrow pit, as shown on topographic maps or on general-purpose or smaller scale maps | Gravel Pit | H-7 → Gravel Pit 2.235 mm .75 mm line weight .15 mm | |
| 30.3.3 | Adit or mine tunnel entrance, as shown on topographic maps or on general-purpose or smaller scale maps | Mine | H-7 → Mine 2.225 mm 1.175 mm 1.75 mm 55° all line weights .15 mm | Rotate symbol so that long line points in direction of cave or mine entrance. |
| 30.3.4 | Cave entrance, as shown on topographic maps or on general-purpose or smaller scale maps | Cave | H-7 → Cave | |
| 30.3.5 | Prospect, as shown on topographic maps or on general-purpose or smaller scale maps | Prospect | H-7 → Prospect line weight .15 mm 1.75 mm 45° | |
| 30.3.6 | Mine shaft, as shown on topographic maps or on general-purpose or smaller scale maps—Showing name | Garnet Mine | line weight .15 mm 1.0 mm Garnet Mine ← H-7 | |
| 30.3.7 | Landmark object, as shown on topographic maps or on general-purpose or smaller scale maps | Lookout | H-7 → Lookout dot diameter .225 mm circle diameter 1.0 mm line weight .15 mm | Add label for type of object (as is shown for example of "lookout"). |
| 30.3.8 | Windmill, as shown on topographic maps or on general-purpose or smaller scale maps | Windmill | H-7 → Windmill 1.125 mm 1.25 mm windmill arm angles 110°, 70° .675 mm line weight .15 mm | |
| 30.3.9 | Oil or gas well, as shown on topographic maps or on general-purpose or smaller scale maps | Well | H-7 → Well circle diameter 1.0 mm line weight .15 mm | |
| 30.3.10 | Water well, as shown on topographic maps or on general-purpose or smaller scale maps | Well | H-7 → Well circle diameter 1.0 mm line weight .2 mm line color 100% cyan | |
| 30.3.11 | Geothermal well, as shown on topographic maps or on general-purpose or smaller scale maps | Geothermal | H-7 → Geothermal circle diameter 1.0 mm line weight .2 mm line color 100% cyan | |
| 30.3.12 | Spring, as shown on topographic maps or on general-purpose or smaller scale maps | Spring | H-7 → Spring circle diameter 1.0 mm draft "tail" as shown line color 100% cyan line weight .2 mm | |
| 30.3.13 | Geyser, fumarole, mud pot, or thermal spring, as shown on topographic maps or on general-purpose or smaller scale maps | Geyser | H-7 → Geyser circle diameter 1.0 mm line weight .2 mm line color 100% cyan | |
| 30.3.14 | Gaging station, as shown on topographic maps or on general-purpose or smaller scale maps | Gaging Station | H-7 → Gaging Station circle diameter 1.25 mm line weight .15 mm | |
| 30.3.15 | Pumping station, as shown on topographic maps or on general-purpose or smaller scale maps | Pumping Station | H-7 → Pumping Station .875 mm | |
| 30.3.16 | Rock | Rock | H-7 → Rock 60° line weight .2 mm 1.25 mm | |
| 30.3.17 | Exposed wreck | | line weight .15 mm draft as shown | |
| 30.3.18 | Coral reef | Coral | H-7 → Coral line weight .15 mm | |
| 30.3.19 | Shoal | Shoal | dash length .2 mm; spacing .425 mm Shoal ← H-7 line weight .2 mm | |
| 30.3.20 | Ruins | Ruins | dash length 1.0 mm; spacing .5 mm Ruins ← H-7 line weight .15 mm | |
| 30.3.21 | Power transmission line | | line weight .125 mm dot diameter .425 mm .825 mm | |
| 30.3.22 | Telephone line | TELEPHONE | line weight .125 mm TELEPHONE ← HI-5 dash length 2.5 mm; space .5 mm | |
| 30.3.23 | Underground gas or oil pipeline | PIPELINE | PIPELINE ← HI-5 line weight .125 mm | |
| 30.3.24 | Aboveground gas or oil pipeline | ABOVEGROUND PIPELINE | ABOVEGROUND PIPELINE ← HI-5 line weight .125 mm | |