

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.
30.1.22	Index primary bathymetric contour—Approximate			Do not break contours for contour values.
30.1.23	Primary bathymetric contour		lineweight .175 mm 	Bathymetric contour values are always given in "below sea-level" units, so they are not preceded by a minus (-) sign.
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		lineweight .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		lineweight .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 lineweight .15 mm; length .5 mm; spacing 3.0 mm contour lineweight .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 lineweights .125 mm line color 100% cyan	

*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*
30.2—Drainage features				
30.2.1	Perennial river, stream, or creek (single-line drainage)			Letter size and spacing may be increased along longer features.
30.2.2	Intermittent river, stream, creek, or wash (single-line drainage)			
30.2.3	Perennial river, stream, or creek (double-line drainage)			Letter size and spacing may be increased along wider features.
30.2.4	River mileage marker			
30.2.5	Intermittent river, stream, creek, or wash (double-line drainage)			
30.2.6	Braided river, stream, or creek			
30.2.7	Canal or ditch (single-line drainage)			
30.2.8	Canal or ditch (double-line drainage)			
30.2.9	Canal lock (single-line drainage) (1st option)			
30.2.10	Canal lock (single-line drainage) (2nd option)			
30.2.11	Canal lock (double-line drainage)			
30.2.12	Floodgate			
30.2.13	Tidegate			
30.2.14	Sluice gate			
30.2.15	Fish ladder			
30.2.16	Aqueduct (single-line drainage)			
30.2.17	Aqueduct (double-line drainage)			
30.2.18	Underground or underwater aqueduct			
30.2.19	Aboveground water pipeline			
30.2.20	Underground or submerged water pipeline			
30.2.21	Elevated water pipeline			
30.2.22	Flume			
30.2.23	Siphon			
30.2.24	Penstock			

30—TOPOGRAPHIC AND HYDROGRAPHIC FEATURES (continued)

REF NO	DESCRIPTION	SYMBOL	CARTOGRAPHIC SPECIFICATIONS*	NOTES ON USAGE*
30.2—Drainage features (continued)				
30.2.25	Falls (single-line drainage)		TBI-7 (100% black) → line color 100% cyan	
30.2.26	Falls (double-line drainage)		 lineweights .125 mm	
30.2.27	Rapids (single-line drainage)		 6 mm line color 100% cyan	
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 line weight .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		 line weight .15 mm	
30.2.32	Perennial lake or pond—Showing name		TI-8 (100% black) → line color 100% cyan color fill 20% cyan line weight .2 mm	Letter size and spacing may be increased within larger features.
30.2.33	Intermittent lake or pond		 line weight .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 line weight .3 mm	
30.2.38	Area to be submerged behind dam		 pattern 132-C	
30.2.39	Reservoir (uncovered) with man-made shoreline		 line weight .15 mm color fill 20% cyan	
30.2.40	Covered water storage reservoir		 line weight .15 mm pattern 214-K (@45°) [pattern overprints 20% cyan color fill]	
30.2.41	Salt flat		H-7 → line color 100% cyan line weight .2 mm	
30.2.42	Carolina bay		 dash length 1.75 mm; spacing .5 mm line color 100% cyan line weight .2 mm	
30.2.43	Tailings pond		H-7 → line color 100% brown pattern 232-B dash length 1.75 mm; spacing .5 mm; line weight .2 mm	
30.2.44	Outline of glacier or permanent snowfield		 color 100% cyan line weight .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 line weight .15 mm circle diameter 1.0 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 color 100% cyan line weight .2 mm	
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	