

**18—VOLCANIC FEATURES**

| REF NO | DESCRIPTION  | SYMBOL | CARTOGRAPHIC SPECIFICATIONS* | NOTES ON USAGE*   |
|--------|--|--------|------------------------------|---|
| 18.1   | Rim of volcanic crater—Identity and existence certain, location accurate. Hachures point into crater           |        |                              | Use to show outline of topographic wall. Rim may not outline crater completely. May also be shown in red, magenta, or other colors. |
| 18.2   | Rim of volcanic crater—Identity or existence questionable, location accurate. Hachures point into crater       |        |                              |   |
| 18.3   | Rim of volcanic crater—Identity or existence certain, location approximate. Hachures point into crater         |        |                              |   |
| 18.4   | Rim of volcanic crater—Identity or existence questionable, location approximate. Hachures point into crater    |        |                              |   |
| 18.5   | Rim of volcanic crater—Identity and existence certain, location concealed. Hachures point into crater          |        |                              |   |
| 18.6   | Rim of volcanic crater—Identity or existence questionable, location concealed. Hachures point into crater      |        |                              |   |
| 18.7   | Rim of volcanic crater—Dot shows low point of crater   |        |                              |   |
| 18.8   | Caldera margin (1st option)—Identity and existence certain, location accurate. Ticks point into caldera        |        |                              | May also be shown in red, magenta, or other colors.   |
| 18.9   | Caldera margin (1st option)—Identity or existence questionable, location accurate. Ticks point into caldera    |        |                              |   |
| 18.10  | Caldera margin (1st option)—Identity and existence certain, location approximate. Ticks point into caldera     |        |                              |   |
| 18.11  | Caldera margin (1st option)—Identity or existence questionable, location approximate. Ticks point into caldera |        |                              |   |
| 18.12  | Caldera margin (1st option)—Identity and existence certain, location inferred. Ticks point into caldera        |        |                              |   |
| 18.13  | Caldera margin (1st option)—Identity or existence questionable, location inferred. Ticks point into caldera    |        |                              |   |
| 18.14  | Caldera margin (1st option)—Identity and existence certain, location concealed. Ticks point into caldera       |        |                              |   |
| 18.15  | Caldera margin (1st option)—Identity or existence questionable, location concealed. Ticks point into caldera   |        |                              |   |
| 18.16  | Caldera margin (2nd option)—Identity and existence certain, location accurate. Ticks point into caldera        |        |                              |   |
| 18.17  | Caldera margin (2nd option)—Identity or existence questionable, location accurate. Ticks point into caldera    |        |                              |   |
| 18.18  | Caldera margin (2nd option)—Identity and existence certain, location approximate. Ticks point into caldera     |        |                              |   |
| 18.19  | Caldera margin (2nd option)—Identity or existence questionable, location approximate. Ticks point into caldera |        |                              |   |
| 18.20  | Caldera margin (2nd option)—Identity and existence certain, location inferred. Ticks point into caldera        |        |                              |   |
| 18.21  | Caldera margin (2nd option)—Identity or existence questionable, location inferred. Ticks point into caldera    |        |                              |   |
| 18.22  | Caldera margin (2nd option)—Identity and existence certain, location concealed. Ticks point into caldera       |        |                              |   |
| 18.23  | Caldera margin (2nd option)—Identity or existence questionable, location concealed. Ticks point into caldera   |        |                              |   |

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

**18—VOLCANIC FEATURES (continued)**

| REF NO | DESCRIPTION   | SYMBOL | CARTOGRAPHIC SPECIFICATIONS*   | NOTES ON USAGE*                                       |
|--------|---|--------|--|---|
| 18.24  | Contact separating individual lava flows within same map unit—Identity and existence certain, location accurate                   |        | lineweight .2 mm<br>color 100% red   | May also be shown in magenta, black, or other colors. |
| 18.25  | Contact separating individual lava flows within same map unit—Identity or existence questionable, location accurate               |        |  |   |
| 18.26  | Contact separating individual lava flows within same map unit—Identity and existence certain, location approximate                |        | 3.5 mm<br>   |   |
| 18.27  | Contact separating individual lava flows within same map unit—Identity or existence questionable, location approximate            |        |  |   |
| 18.28  | Contact separating individual lava flows within same map unit—Identity and existence certain, location inferred                   |        | 1.5 mm<br>   |   |
| 18.29  | Contact separating individual lava flows within same map unit—Identity or existence questionable, location inferred               |        |  |   |
| 18.30  | Contact separating individual lava flows within same map unit—Identity and existence certain, location concealed                  |        | .5 mm<br>  |   |
| 18.31  | Contact separating individual lava flows within same map unit—Identity or existence questionable, location concealed              |        |  |   |
| 18.32  | Flow lobe or lava-flow front—Identity and existence certain, location accurate. Hachures on side of overlying younger flow        |        | all lineweights .2 mm<br>color 100% red<br>  |   |
| 18.33  | Flow lobe or lava-flow front—Identity or existence questionable, location accurate. Hachures on side of overlying younger flow    |        |  |   |
| 18.34  | Flow lobe or lava-flow front—Identity and existence certain, location approximate. Hachures on side of overlying younger flow     |        | 3.5 mm<br>   |   |
| 18.35  | Flow lobe or lava-flow front—Identity or existence questionable, location approximate. Hachures on side of overlying younger flow |        |  |   |
| 18.36  | Flow lobe or lava-flow front—Identity and existence certain, location concealed. Hachures on side of overlying younger flow       |        | .5 mm<br>  |   |
| 18.37  | Flow lobe or lava-flow front—Identity or existence questionable, location concealed. Hachures on side of overlying younger flow   |        |  |   |
| 18.38  | Form line on lava flow  |        | lineweight .2 mm<br>color 100% red<br>length and spacing may vary                                |   |
| 18.39  | Flow lines on lava flow   |        | color 100% red<br>stem lineweight .175 mm<br>25°<br>2.0 mm<br>stem length and spacing may vary   |   |
| 18.40  | Cracks on surface of lava flow  |        | lineweight .25 mm<br>color 100% red<br>length and spacing may vary                               |   |
| 18.41  | Volcanic fissure  |        |  |   |
| 18.42  | Buried volcanic fissure   |        |  |   |
| 18.43  | Volcanic fissure where lava has been emitted  |        |  |   |
| 18.44  | Lava tube—Red circles indicate presence of skylights (not mapped to scale) along lava tube  |        | circle lineweight .2 mm; diameter .75 mm; color 100% red<br>lineweight .15 mm<br>1.375 mm<br>25° |   |
| 18.45  | Lava tube—Red circles outline collapses (mapped to scale) along lava tube   |        | lineweight .2 mm; color 100% red   |   |
| 18.46  | Crest line of pressure ridge or tumulus on lava flow  |        | lineweight .2 mm<br>color 100% red<br>60°<br>5.5 mm<br>1.0 mm                                    |   |
| 18.47  | Pressure ridge on lava flow   |        | lineweight .2 mm<br>color 100% red<br>60°<br>5.5 mm<br>1.0 mm                                    |   |

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**18—VOLCANIC FEATURES (continued)**

| REF NO | DESCRIPTION   | SYMBOL | CARTOGRAPHIC SPECIFICATIONS*   | NOTES ON USAGE*   |
|--------|---|--------|--|---|
| 18.48  | Ice-contact lava-flow margin—Identity and existence certain, location accurate. Rectangles on side of overlying younger flow        |        | lineweight .2 mm<br>color 100% red   | May also be shown in magenta, black, or other colors.                     |
| 18.49  | Ice-contact lava-flow margin—Identity or existence questionable, location accurate. Rectangles on side of overlying younger flow    |        | <i>H-8</i><br>tick spacing 2.0 mm (at base)<br>lineweight .2 mm<br>color 100% red                  |   |
| 18.50  | Ice-contact lava-flow margin—Identity and existence certain, location approximate. Rectangles on side of overlying younger flow     |        | 3.5 mm<br>lineweight .2 mm<br>color 100% red   |   |
| 18.51  | Ice-contact lava-flow margin—Identity or existence questionable, location approximate. Rectangles on side of overlying younger flow |        | .75 mm .75 mm<br>lineweight .2 mm<br>color 100% red  |   |
| 18.52  | Ice-contact lava-flow margin—Identity and existence certain, location concealed. Rectangles on side of overlying younger flow       |        | .5 mm 2.5 mm<br>lineweight .2 mm<br>color 100% red   |   |
| 18.53  | Ice-contact lava-flow margin—Identity or existence questionable, location concealed. Rectangles on side of overlying younger flow   |        | .75 mm .75 mm<br>lineweight .2 mm<br>color 100% red  |   |
| 18.54  | Outline of basalt-filled lava pond  |        | all lineweights .2 mm<br>tick spacing 2.0 mm (at base)<br>color 100% red                           | May also be shown in magenta, black, or other colors.                     |
| 18.55  | Small cone, vent, cinder cone, or spatter cone  |        | lineweight .2 mm<br>color 100% red   | May also be shown in magenta, black, or other colors.                     |
| 18.56  | Large cone, vent, cinder cone, or spatter cone  |        | 2.625 mm<br>60°<br>lineweight .2 mm<br>color 100% red  |   |
| 18.57  | Small hornito   |        | 2.0 mm<br>45°<br>lineweight .2 mm<br>color 100% red  |   |
| 18.58  | Large hornito   |        | 2.625 mm<br>45°<br>lineweight .2 mm<br>color 100% red  |   |
| 18.59  | Spatter rampart   |        | 5 mm<br>1.5 mm<br>90°<br>lineweight .2 mm<br>color 100% red  |   |
| 18.60  | Rootless vent area on lava flow   |        | lineweight .2 mm<br>line color 100% red<br>pattern 327-R   |   |
| 18.61  | Thermal area  |        | lineweight .2 mm<br>line color 100% red<br>pattern 121-R in 50% red                                |   |
| 18.62  | Thermal spring  |        | color 100% red<br>dot diameter 1.5 mm<br>radius .5 mm<br>lineweight .15 mm                         | Rotate tail to downhill.<br>May also be shown in magenta or other colors. |
| 18.63  | Geyser  |        | radius .5 mm<br>2.75 mm<br>lineweight .2 mm<br>lineweight .375 mm<br>color 100% red                | May also be shown in magenta, black, or other colors.                     |
| 18.64  | Fumarole or steam vent  |        | draft as shown<br>2.5 mm<br>all lineweights .2 mm<br>color 100% red                                |   |
| 18.65  | Recent volcano on small-scale maps  |        | outer diameter 3.0 mm; inner diameter 1.375 mm<br>22.5°<br>all lineweights .2 mm<br>color 100% red |   |
| 18.66  | Active volcano on small-scale maps  |        | lineweight .3 mm<br>2.625 mm<br>60°<br>color 100% red  | Usually reserved for maps at scales of 1:250,000 or smaller.              |
| 18.67  | Inactive volcano on small-scale maps  |        | 90°<br>2.5 mm<br>color 100% red<br>lineweight .3 mm  | May also be shown in magenta, black, or other colors.                     |
| 18.68  | Cinder cone on small-scale maps   |        | circle diameter 1.375 mm<br>lineweight .2 mm<br>color 100% red                                     |   |
| 18.69  | Diatreme  |        | dot diameter 1.375 mm<br>color 100% red  |   |
| 18.70  | Breccia pipe  |        | dot diameter 1.375 mm<br>color 100% red  |   |
| 18.71  | Collapse structure—Indicating breccia pipe at depth   |        | lineweight .2 mm<br>circle diameter 1.375 mm<br>color 100% red                                     |   |

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