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

Prepared in cooperation with the
National Park Service and Bureau of Land Management

Scientific Investigations Map 2900

Style Guide name: *MapStyleGuide_DMU_print_1sht_v1-1_01-15.pdf*

Note that this PDF file is an informational Style Guide only and does not contain any Paragraph or Character styles — to apply actual styles to a layout, please use the accompanying Illustrator Map Template file called *MapTemplate_DMU_print_1sht_v1-1_01-15.ai*

In the accompanying Map Template file, type specifications for each text element have been built as Paragraph Styles (for example, Map Series Headnote is specified as Univers 67 Bold Condensed, 14 pt, 17 pt leading). In addition, a few special type formats have been built as Character Styles (for example, map-unit names and ages in the DMU are specified as Times New Roman Bold, 10 pt, 12 pt leading). The styles are accessible from the Paragraph Styles and Character Styles palette windows.

Note that the template contains examples of only the most basic, fundamental elements that will appear on a typical map layout. Also, the small size of the map layout and of the map itself is for example purposes only — it is not intended to restrict the actual size of a map or map layout. In reality, many factors (for example, the size of the map, the number of map units and symbols, and the presence of cross sections, tables, or figures) will affect the actual size of a map layout and the final positioning of map elements.

Before finalizing layout, delete any style names, notes, arrows, or guides, as well as any outlines of text boxes, trim size, image areas, and map layout (artboard) area.

Fonts used in the accompanying Map Template file:
Univers 47 Condensed Light
Univers 47 Condensed Light Oblique
Univers 57 Condensed
Univers 57 Condensed Oblique
Univers 67 Condensed Bold
Univers 67 Condensed Bold Oblique
Times New Roman
Times New Roman Bold
Times New Roman Oblique
FGDCGeoAge
Arial (*in mean declination arrow, scale, and state location map*)
Arial Narrow (*dip values*)

Important note about applying type styles in the accompanying Map Template file:
Sometimes type that has been formatted using styles will either change to Myriad font or revert back to its "pre-Style" formatting after certain functions such as copying and pasting are performed. If a "+" appears after the style name in the Paragraph Styles palette when type in a text element is selected, then one of three things has likely happened: the style has not been fully applied to that type; the font has changed to Myriad; or the type has reverted to its "pre-Style" formatting. Clicking once more on the style name in the palette will apply the style completely and cause the "+" after the style name to disappear.

Please be advised that the contents of this Style Guide and the accompanying Map Template are for example purposes only and should not be used as guidelines for the representation of actual stratigraphic relations or other geologic situations.

CORRELATION OF MAP UNITS

[See Description of Map Units (in pamphlet) for precise unit ages]

UNCONSOLIDATED DEPOSITS

Holocene and Pleistocene — QUATERNARY

BEDROCK

NORTH SLOPE SUBTERRANE

KLIPPEN OF ENDICOTT MOUNTAINS AND DE LONG MOUNTAINS SUBTERRANES NEAR MOUNT ANNETTE

Endicott Mountains Subterrane

Lower Cretaceous — CRETACEOUS

Unconformity

Volcanic Rocks

TRIASSIC
PERMIAN
TRIASSIC

DESCRIPTION OF MAP UNITS

[Unit ages from Brabb and others (2000). Nearly all faults in northwest corner of map area are thrust faults, but level of detail precludes addition of sawteeth]

UNCONSOLIDATED DEPOSITS

Surficial deposits, undivided (Holocene and Pleistocene)—Alluvial gravel, sand, and silt; glacial outwash. Alluvial gravel, sand, and silt; glacial outwash. Alluvial gravel, sand, and silt; glacial outwash. In many places, effects of permafrost, including pingos and polygonal patterned ground, are severe, resulting in irregular surface. Numerous pingo scars are present

BEDROCK

NORTH SLOPE SUBTERRANE

Ipewik unit (Lower Cretaceous)—Black clay and silty shale

Pahrump Group (Lower Cretaceous)

Kingston Peak Formation

Surprise Member

Siltstone

Coarse-grained subunit—Lens of pebble conglomerate

KLIPPEN OF ENDICOTT MOUNTAINS AND DE LONG MOUNTAINS SUBTERRANES NEAR MOUNT ANNETTE

Endicott Mountains Subterrane

Kongakut Formation (Lower Cretaceous)—Black shale

Otuk Formation (Lower Cretaceous)—Black shale and siltstone

Etivluk Group (Lower Cretaceous)—Shale and siltstone

Sedimentary rocks (Lower Cretaceous to Permian)—Sandstone and shale

Siltstone and shale (Triassic to Permian)—Sandy siltstone and shale

Fossiliferous shale (Triassic)—Black, fossiliferous shale

Volcanic Rocks

Volcanic rocks, undivided (Triassic)—Lava flows and lahar deposits that cover large areas of map

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EXPLANATION OF MAP SYMBOLS

Contact—Solid where location is accurate; dashed where location is approximate; dotted where location is concealed

Gradational contact

Faults—Solid where location is accurate; dashed where location is approximate; dotted where location is concealed

Thrust fault—Sawteeth on upper plate

Detachment faults

Detachment fault within metamorphic core complex block—Hachures on upper plate. Forms boundary beneath unit Tsss

Listric fault at head of detachment—Ticks on upper plate

Master detachment fault—Hachures on upper plate

PLANAR POINT FEATURES

[May be combined with other point features at point of observation]

Strike and dip of bedding

Inclined

Vertical

Pyroclastic deposits and rocks
Pyroclastic deposits and rocks—Basaltic and andesitic pyroclastic rocks and deposits, mostly poorly sorted and nonwelded

Coarse-grained ash-flow tuff—Well sorted, coarse-grained ash-flow tuff. Contains clasts as large as 3 mm

Fine-grained to massive ash-flow tuff—Moderately well sorted, coarse-grained ash-flow tuff. Thickness, 5 m

Welded silicic tuff unit—Welded silicic tuff made up of fine-grained silicic ash. Thickness, 0.5 m

Lithic-rich tuff layer—Angular lithic clasts. Interbedded with unit Tpft

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INTRODUCTION

The rocks and deposits in the map area represent a wide range of stratigraphic, structural, and tectonostratigraphic relations. Unit ages are from Brabb and others (2000).

STRATIGRAPHY

[Modified from Brabb and others (2000)]

UNCONSOLIDATED DEPOSITS

Surficial deposits in the map area consist of poorly sorted alluvial gravel and lithic sand and silt; also includes large areas of glacial outwash.

BEDROCK

A diverse set of volcanic and sedimentary rocks are present in the map area. These bedrock lithologies represent fragments of several tectonostratigraphic terranes.

KLIPPEN OF ENDICOTT MOUNTAINS AND DE LONG MOUNTAINS SUBTERRANES NEAR MOUNT ANNETTE

Rocks of the Endicott Mountains and DeLong Mountains subterranes are present in several scattered outcrops that are separated by faults.

Endicott Mountains Subterrane

Rocks of the Endicott Mountains subterrane consist of sedimentary and volcanic rocks.

Volcanic Rocks

Volcanic rocks of the Endicott Mountains subterrane are found in the eastern part of the map area.

Pyroclastic Rocks

Pyroclastic rocks of the Endicott Mountains subterrane consist of welded ash-flow tuffs.

Ash-flow Tuff

A conspicuous layer of laminated, lithic-rich ash-flow tuff is interbedded with unit Tpft.

REFERENCES CITED

Bailey, E.H., Irwin, W.P., and Jones, D.L., 1964, Franciscan and related rocks: California Geological Survey Bulletin 183, 177 p.

Brabb, E.E., Jones, D.L., and Graymer, R.W., 2000, Geologic map and map database of the Palo Alto 30'×60' quadrangle, California: U.S. Geological Survey Miscellaneous Field Studies Map 2332, available at http://pubs.usgs.gov/mf/2000/mf-2332/.

Base from U.S. Geological Survey, Palo Alto, 1997
Universal Transverse Mercator projection

SCALE 1:24 000

CONTOUR INTERVAL 40 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1929

APPROXIMATE MEAN DECLINATION, 2015

MAP LOCATION

Geology mapped by E.H. Pampeyan, E.E. Brabb, and G.J. Saucedo, 1992–1986; minor revisions, 1991–1992. Potassium-argon geochronology by L.B.G. Pickthorn from samples collected July 1985.
GIS database and digital cartography by Karen L. Wheeler
Edited by Jan L. Zigler; digital cartographic production by Kathryn Nimz
Manuscript approved for publication May 27, 2014

Geologic Map of the Palo Alto 7.5' Quadrangle, California

By

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2015

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