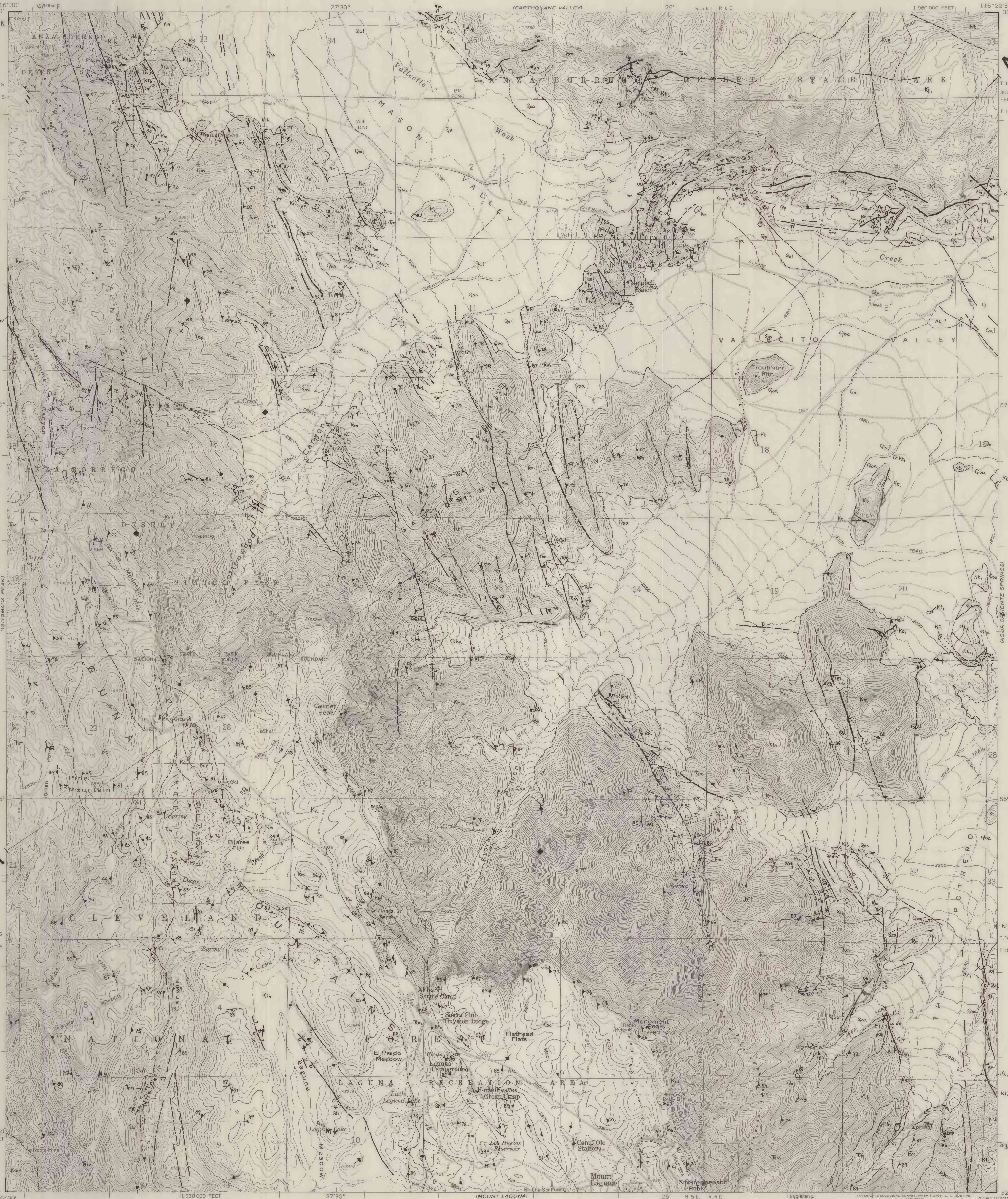
DEPARTMENT OF THE INTERIOR
UNITED STATES GEOLOGICAL SURVEY

OPEN-FILE REPORT 78-697



SCALE 1:24 000

1 ½ 0 1 MILE

1 .5 0 1 KILOMETER

CONTOUR INTERVAL 40 FEET
DOTTED LINES REPRESENT 20-FOOT CONTOURS
DATUM IS MEAN SEA LEVEL

TRUE NORTH MAGNETIC NORTH 14½°
APPROXIMATE MEAN DECLINATION, 1959

CALIF
QUADRANGLE LOCATION

EXPLANATION

Quaternary

Qal — Alluvium (sand and gravel)

Qoa — Older Alluvium (sand and gravel deposits dissected by modern washes; late Pleistocene to Recent(?))

Qp — Palm Spring Formation (sandstone, silty sandstone and silty claystone; conglomeratic sandstone; early-middle Pleistocene)

Cretaceous

Kmd — Fine-grained and porphyritic mafic dikes (quartz diorite, diorite and gabbro forming dikes in all units; too small to be shown at map scale; dike swarms indicated by letter x)

Kt_1 — Tonalite (biotite tonalite with color index of 8-14 percent "La Posta tonalite"; pegmatite and alaskite)

Kem — Tonalite, quartz diorite and gabbro of East Mesa (biotite hornblende tonalite, quartz diorite and minor gabbro)

Kpv — Granite and granodiorite of Pine Valley (hornblende-biotite quartz monzonite and lesser granodiorite)

Kl — Pegmatite, alaskite and aplite (leucocratic dikes related to Kpv shown individually by ∮ or in swarms by ◆)

Khc — Hybrid gneiss of Harper Creek (cordierite and sillimanite-bearing, quartz-biotite-plagioclase-potassium feldspar/muscovite gneiss; micaceous granitic dikes related to Khc are shown by ◇ symbol on map)

Km — Migmatitic schist and gneiss (hybrid gneiss and migmatitic ℞m, in both interlayered and gradational relation)

Kcr — Granodiorite and tonalite of Cuyamaca Reservoir (biotite granodiorite; hornblende-biotite granodiorite and tonalite)

Kt_2 — Mafic tonalite (hornblende-biotite gneissic tonalite with color index of 25 percent and abundant mafic inclusions; pegmatite; consists of both Klb and Kcr)

Klb — Tonalite of Las Bancas (pyroxene-biotite tonalite and hornblende-biotite tonalite; stipple pattern is leucocratic tonalite and granodiorite)

Kc — Cuyamaca Gabbro (peridotite, olivine gabbro, hornblende gabbro; solid lenses indicate abundant gabbro inclusions too small to be shown at map scale present in other units)

Triassic(?)

℞m — Metasedimentary rocks (quartzo-feldspathic, micaceous semi-schistose rock and schist; micaceous, feldspathic quartzite; black amphibolite; tremolite-epidote schist)

Contact, long-dashed where approximately located, queried where indefinite, dotted where concealed, open circles indicate gradational contact.

High-angle fault, long-dashed where approximately located, short-dashed where inferred, queried where probable, dotted where concealed; U, upthrown side; D, downthrown side; heavier line weight indicates major fault; J, minor fault probably developed along joint; arrow shows direction of dip of fault plane, and amount of dip when it can be measured; diamond symbol shows direction and plunge of linear features on fault planes

Fault or lineament from aerial photographs, not checked or identified on ground

Low-angle fault, long-dashed where approximately located; teeth on upper plate

Zone of cataclasite and gouge in crystalline rocks

Zone of highly fractured, bleached rock surrounding faults

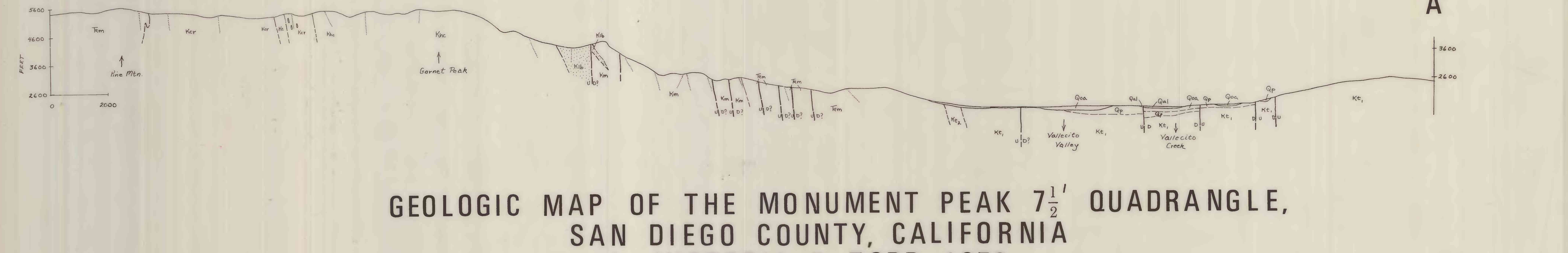
Strike and dip of inclined bedding in sedimentary rocks

Horizontal bedding in sedimentary rocks

Strike and dip of inclined foliation in crystalline rocks

Where vertical

Where two foliations are present at single locality



GEOLOGIC MAP OF THE MONUMENT PEAK $7\frac{1}{2}'$ QUADRANGLE, SAN DIEGO COUNTY, CALIFORNIA

by VICTORIA R TODD 1978

U. S. Geological Survey
OPEN FILE REPORT
This report is preliminary and has not been edited or reviewed for conformity with Geological Survey standards and nomenclature.