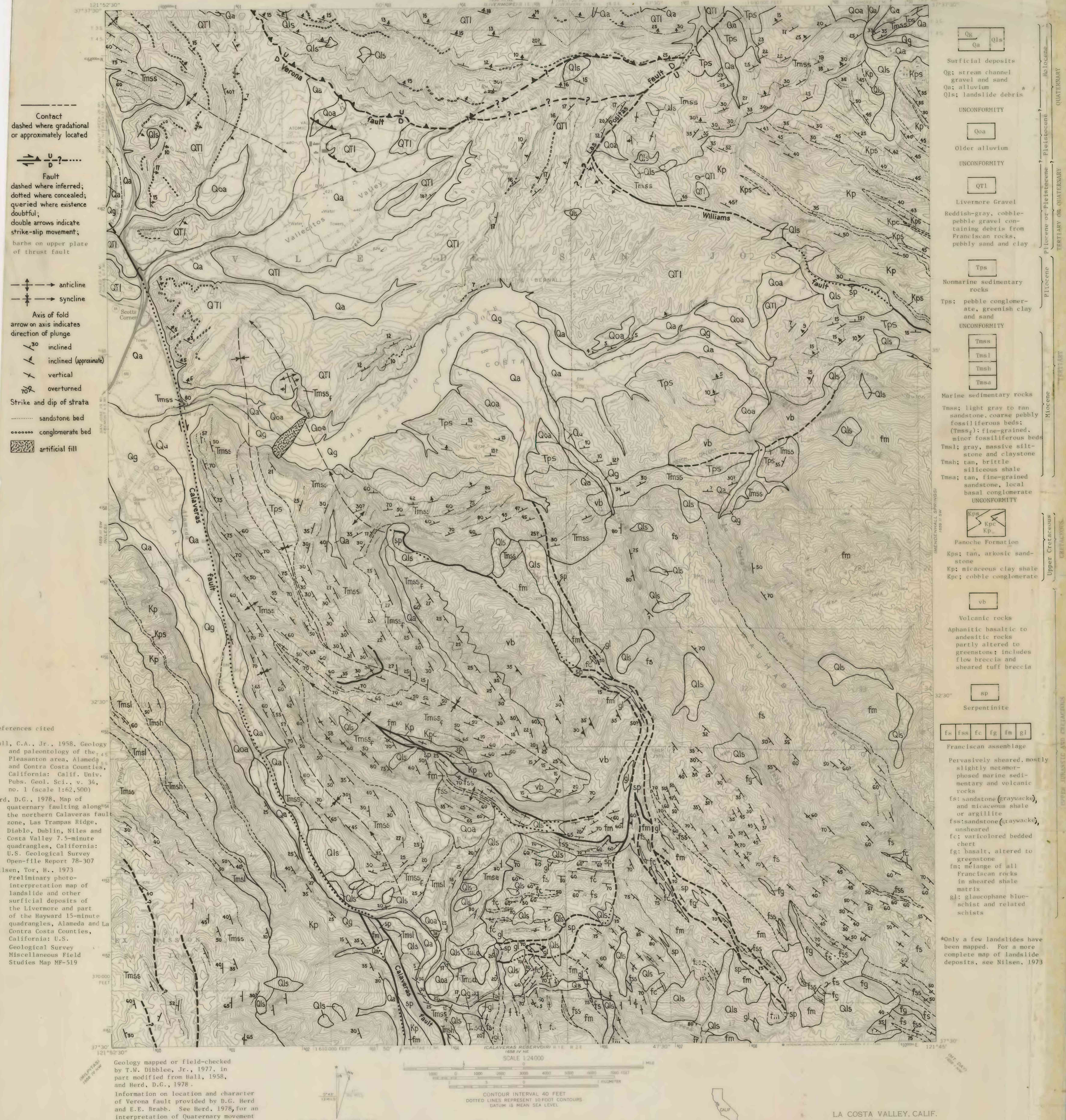


LA COSTA VALLEY QUADRANGLE
CALIFORNIA-ALAMEDA CO
7.5 MINUTE SERIES (TOPOGRAPHIC)



Contact
dashed where gradational
or approximately located

Fault
dashed where inferred;
dotted where concealed;
questioned where existence
doubtful;
double arrows indicate
strike-slip movement;
barbs on upper plate of
thrust fault

Axis of fold
arrow on axis indicates
direction of plunge

Strike and dip of strata

..... sandstone bed
..... conglomerate bed
[stippled] artificial fill

..... anticline
..... syncline

30° inclined
/ inclined (approximate)
⊥ vertical
70° overturned

Qg, Qa, Qls
Surficial deposits
Qg: stream channel
gravel and sand
Qa: alluvium
Qls: landslide debris

UNCONFORMITY

Qoa
Older alluvium

UNCONFORMITY

QTI
Livermore Gravel
Reddish-gray, cobble-
pebble gravel contain-
ing debris from
Franciscan rocks,
pebbly sand and clay

Tps
Nonmarine sedimentary
rocks

Tps: pebble conglomerate,
greenish clay and sand

UNCONFORMITY

Tmss, Tmsl, Tmsh, Tmsa
Marine sedimentary rocks

Tmss: light gray to tan
sandstone, coarse pebbly
fossiliferous beds;
(Tmss₁): fine-grained,
minor fossiliferous beds
Tmsl: gray, massive silt-
stone and claystone
Tmsh: tan, brittle
siliceous shale
Tmsa: tan, fine-grained
sandstone, local
basal conglomerate

UNCONFORMITY

Kps, Kpc, Kp
Panoche Formation

Kps: tan, arkosic sand-
stone
Kp: micaceous clay shale
Kpc: cobble conglomerate

vb
Volcanic rocks

Aphanitic basaltic to
andesitic rocks
partly altered to
greenstone; includes
flow breccia and
sheared tuff breccia

sp
Serpentine

fs, fss, fc, fg, fm, gl
Franciscan assemblage

Pervasively sheared, mostly
slightly metamor-
phosed marine sedi-
mentary and volcanic
rocks

fs: sandstone (graywacke),
and micaceous shale
or argillite
fss: sandstone (graywacke),
unshaded
fc: varicolored bedded
chert
fg: basalt, altered to
greenstone
fm: mélange of all
Franciscan rocks
in sheared shale
matrix
gl: glaucophane blue-
schist and related
schists

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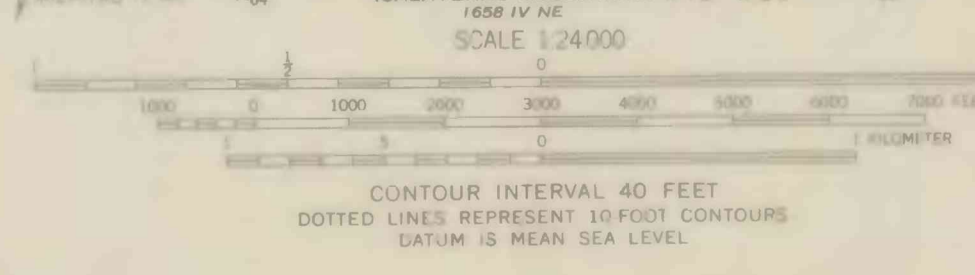
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Geology mapped or field-checked by T.W. Dibblee, Jr., 1977, in part modified from Hall, 1958, and Herd, D.G., 1978.

Information on location and character of Verona fault provided by D.G. Herd and E.E. Brabb. See Herd, 1978, for an interpretation of Quaternary movement along the Calaveras fault



PRELIMINARY GEOLOGIC MAP OF THE LA COSTA VALLEY QUADRANGLE, ALAMEDA COUNTY, CALIFORNIA

by
Thomas W. Dibblee, Jr.
1980

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

LA COSTA VALLEY, CALIF.
SE 4 LIVERMORE 15 QUADRANGLE
N3730-W12145-7.5