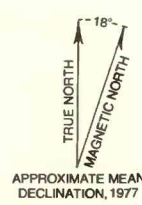
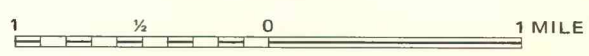




Base from the U.S. Geological Survey,
1:24,000, 1970



SCALE 1:48 000



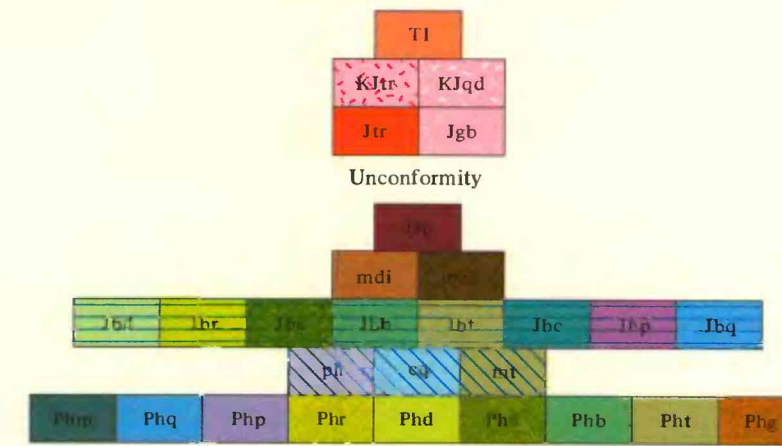
CONTOUR INTERVAL 40 FEET
DATUM IS MEAN SEA LEVEL

Geology by Anna Hietanen,
1973-75



QUADRANGLE LOCATION

CORRELATION OF MAP UNITS



Miocene
Lower Cretaceous and Upper Jurassic

TERTIARY
CRETACEOUS AND JURASSIC

JURASSIC(?)

JURASSIC(?) TO PERMIAN(?)

JURASSIC

PERMIAN(?)

DESCRIPTION OF MAP UNITS

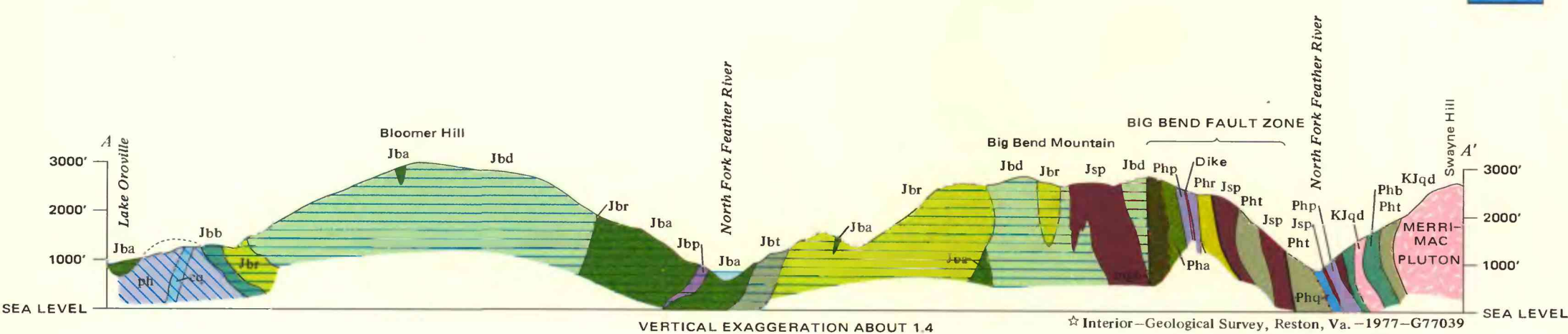
- EXTRUSIVE ROCKS**
- Tl** LOVEJOY BASALT (Miocene) - Fine-grained black rock with phenocrysts of plagioclase and augite. Groundmass consists of small laths of plagioclase, tiny grains of augite, euhedral grains of magnetite, and interstitial glass
- PLUTONIC ROCKS**
- KJtr** TRONDHEMITE - Coarse-grained very light gray plagioclase (An₁₅₋₂₅)-quartz-biotite rock with some hornblende, muscovite, and potassium feldspar. Grades with increasing amount of hornblende and decreasing amount of quartz and potassium feldspar to tonalite and quartz diorite toward the border of pluton
 - KJqd** QUARTZ DIORITE AND TONALITE, UNDIFFERENTIATED - Coarse-grained plagioclase-quartz-biotite-hornblende rock that grades from quartz diorite at the borders to tonalite toward the interior of pluton with decrease in hornblende and increase in quartz and potassium feldspar content
 - Jtr** ALTERED TRONDHEMITE - Coarse-grained light-bluish-gray equigranular massive to foliated albite-quartz-biotite-hornblende rock with some actinolite, epidote, muscovite, and chlorite
 - Jgb** ALTERED GABBRO - Coarse-grained hornblende-plagioclase rock
- METAMORPHOSED INTRUSIVE ROCKS**
- Jba** SERPENTINE AND TALC SCHIST - Serpentine is greenish-gray rock consisting of serpentine minerals, talc, and magnetite. Border zones and thin bodies consist of talc schist
 - mdi** METADIORITE - Medium-grained brownish-gray equigranular massive or slightly foliated rock consisting of hornblende, albite or oligoclase, epidote, and quartz
 - Jbb** METAGABBRO AND HORNBLENDITE - Coarse- to medium-grained dark-gray to black equigranular hornblende-plagioclase-epidote rock, in places foliated. Includes masses of coarse-grained hornblende rock
- METAMORPHIC ROCKS**
- BLOOMER HILL FORMATION (Jurassic) Includes:**
- Jbd** METADACITE - Fine-grained light-greenish-gray massive rocks with phenocrysts of albite and pyroclastic rocks with angular to round fragments of greenish-gray amygdaloidal and porphyritic rocks consisting of albite, quartz, epidote, amphiboles, chlorite, and some magnetite
 - Jbr** METASODARHYOLITE - Bluish-gray to light-gray fine-grained rocks with euhedral phenocrysts of quartz and albite. Groundmass is either granoblastic or trachytic and consists of quartz, albite, biotite, chlorite, muscovite, and epidote
 - Jba** META-ANDESITE - Greenish-gray massive or fragmentary rocks consisting of amphibole, chlorite, epidote, albite, leucocene, and magnetite. Phenocrysts of albite are few and small
 - Jbb** METABASALT - In the western part, greenish-gray augite basalt with phenocrysts of augite in a fine-grained felted groundmass consisting of tiny needles of actinolite, interstitial chlorite and albite, and grains of epidote. In the eastern part, dark-gray to black well-recrystallized hornblende-plagioclase rock with phenocrysts of plagioclase and amygdules of quartz and epidote
 - Jbt** METATUFF - Greenish-gray fine-grained well-foliated and layered rocks consisting of albite, quartz, epidote, chlorite, amphibole, calcite, and magnetite in varying proportions. Some layers in the western part have relict shards, lapilli, and amygdules of quartz, calcite, and chlorite. The occurrences near Bald Rock pluton have recrystallized to hornblende gneiss or amphibolite. Includes some layers of tuffaceous metasediment
- Jbs** CARBONATE ROCK - Medium-grained schistose rock consisting of calcite, amphibole, chlorite, and epidote
 - Jbp** PHYLLITE - Schistose muscovite-chlorite-quartz rock
 - Jbq** QUARTZITE - Light-gray medium-grained granular quartz-muscovite-biotite rock

- PHYLLITE UNIT SOUTH OF THE BIG BEND FAULT**
- ph** PHYLLITE - Brownish-gray fine-grained bedded and strongly foliated muscovite-chlorite-biotite rock with some interbedded lithic metagraywacke
 - cq** METACHERT AND QUARTZITE - Metachert is blue- to light-gray quartz rock with thin micaceous laminae. Quartzite is a gray granular thin-bedded quartz-muscovite rock with some chlorite
 - mt** METATUFF - Greenish-gray fine-grained foliated chlorite-amphibole-epidote-albite-quartz rock. Includes lenses of strongly deformed meta-andesite and metadacite in the southwest corner of quadrangle
- HORSESHOE BEND FORMATION (Permian?) Includes:**
- Mar** MARBLE - White to light-gray, partly micaceous calcium carbonate rock with distinct bedding
 - Phq** QUARTZITE AND METACHERT, UNDIFFERENTIATED - Quartzite is thin bedded and light bluish gray to white with some tremolite and mica. Metachert is thin bedded; white to gray pure quartzite layers are separated by thin micaceous layers. Grades to black phyllite
 - Php** PHYLLITE - Brownish-gray to black fine- to medium-grained foliated rock that consists of quartz, muscovite, biotite, and chlorite with or without epidote and calcite. Includes layers of lithic metagraywacke
 - Phr** METARHYOLITE - Light-gray massive to foliated quartz-albite-biotite-muscovite-epidote rock with some actinolite
 - Phd** METADACITE - Light-greenish-gray massive to foliated albite-quartz-actinolite-hornblende-epidote rock with or without chlorite
 - Pha** BASALTIC META-ANDESITE - Light-greenish-gray medium-grained massive to foliated albite-amphibole-chlorite-epidote rock with or without quartz
 - Phb** METABASALT - Dark-gray to black foliated hornblende-albite rock with some epidote and magnetite. Grades locally to greenish-gray medium-grained amphibole-epidote-albite-chlorite rock in the northwestern part
 - Pht** METATUFF - Light- to medium-gray well-foliated bedded rocks consisting of albite, quartz, epidote, amphibole, and chlorite with or without muscovite and biotite. Composition ranges from basaltic to rhyolitic
 - Phg** HORNBLLENDE GNEISS - Medium-gray foliated hornblende-plagioclase rock with some quartz, epidote, and biotite

- Contact - Approximately located; dotted where concealed
- - - Fault - Dashed where approximately located; dotted where concealed
- ↘ Minor fold axis, showing plunge
- ↘ Strike and dip of beds
- ↘ Inclined
- ↕ Vertical
- ↘ Strike and dip of foliation
- ↘ Inclined
- ↕ Vertical
- ↘ Bearing and plunge of lineation
- DIKE, undifferentiated
- 1753 • Sample locality - Locality number with M prefix is from Hietanen (1951)

Localities of specimens mentioned in the text

Loc. No.	Section	Township north	Range east	Loc. No.	Section	Township north	Range east
1613	27	22	5	1805	29	21	5
1720	4	21	5	1824	3	21	5
1722	5	21	5	1826	24	22	4
1726	12	21	4	1835	32	21	5
1729	31	22	5	1838	25	21	4
1749	29	21	5	1839	25	21	4
1751	29	21	5	1849	28	21	5
1753	30	21	5	1881	10	21	5
1755	30	21	5	M147	21	21	5
1758	24	21	4	M156	16	21	5
1787	30	21	5	M230	18	21	5
1792	33	21	5	M328	7	21	5
1797	10	21	5	M384	30	21	5
1800	26	21	4				



GEOLOGIC MAP OF THE BERRY CREEK QUADRANGLE, BUTTE COUNTY, CALIFORNIA