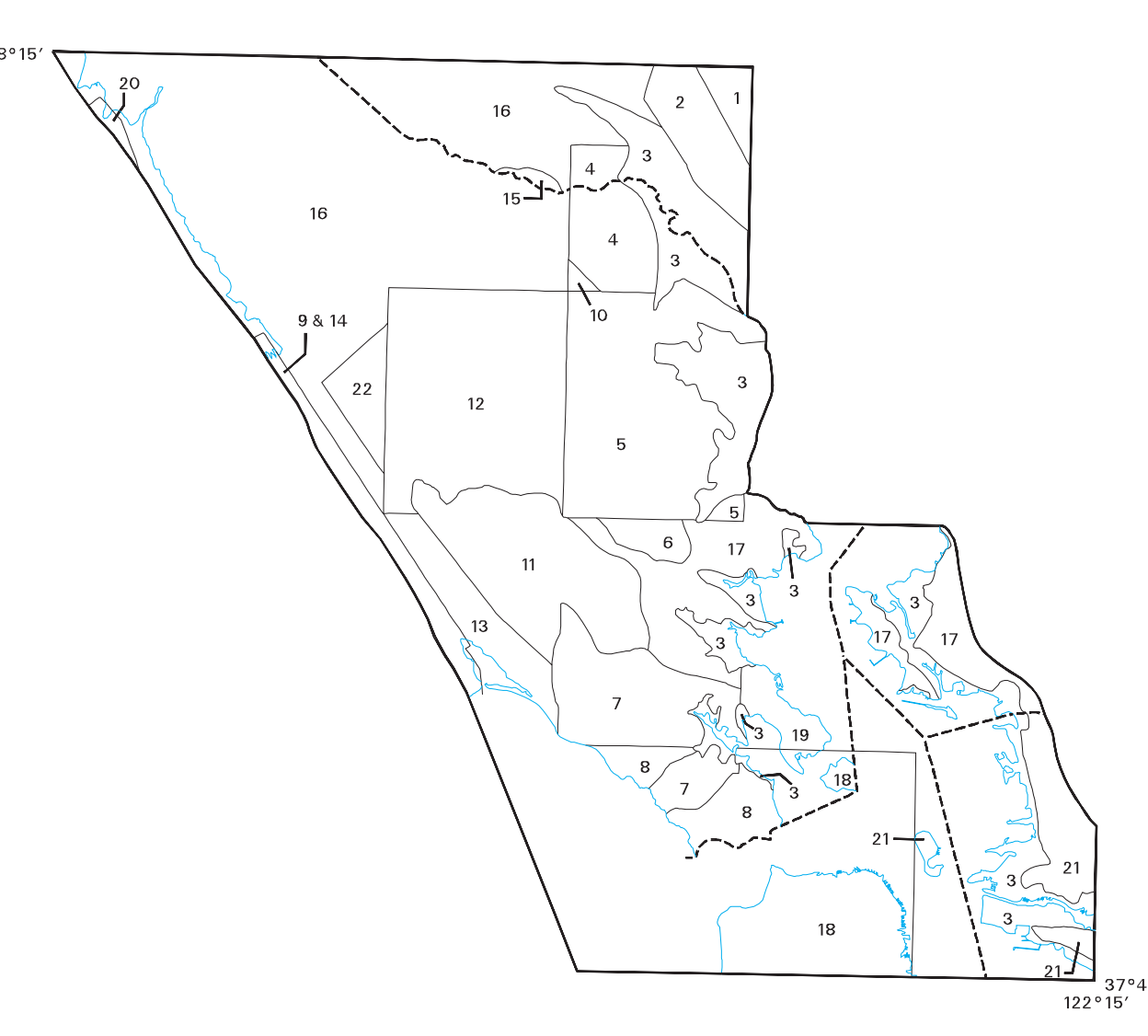
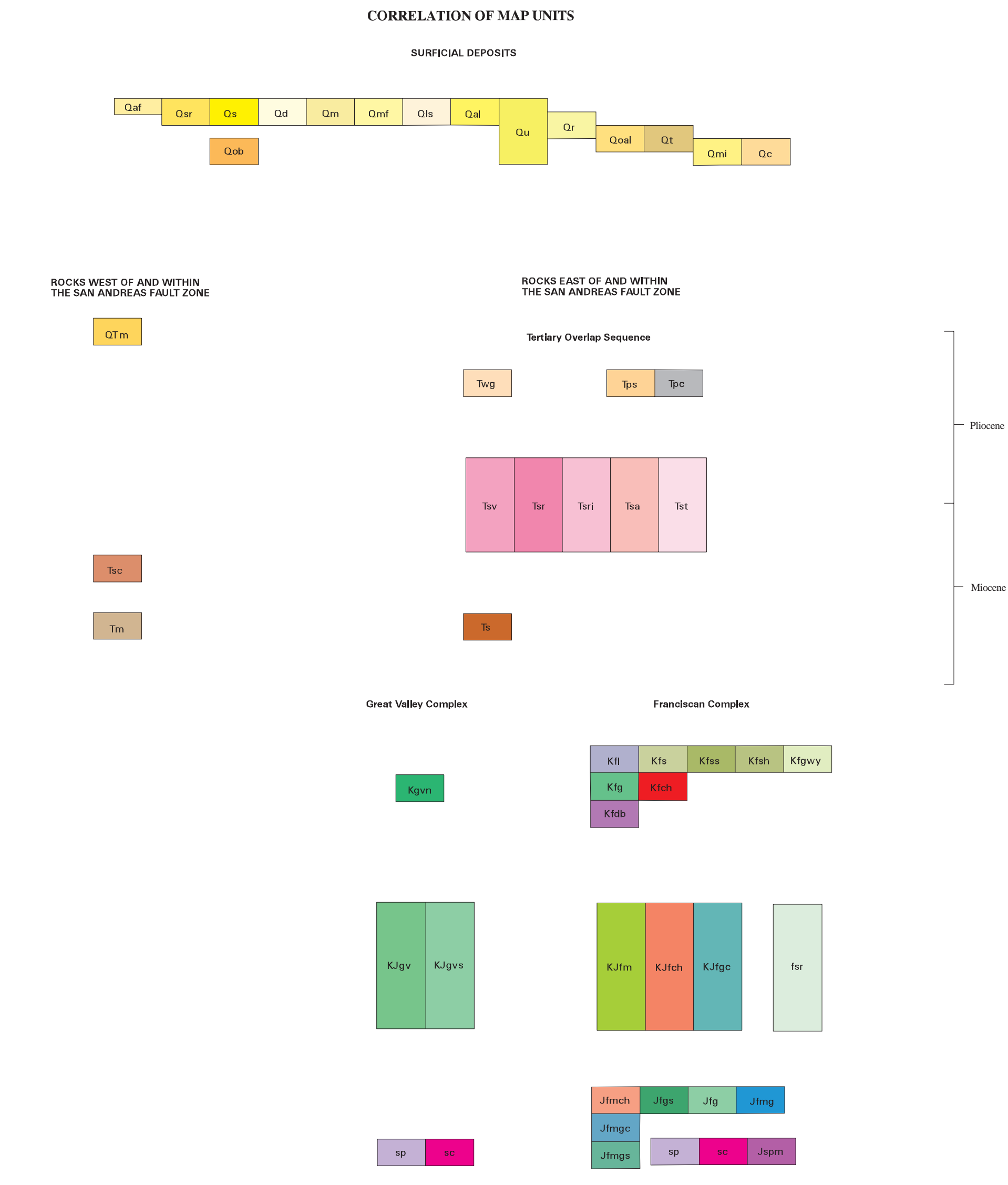
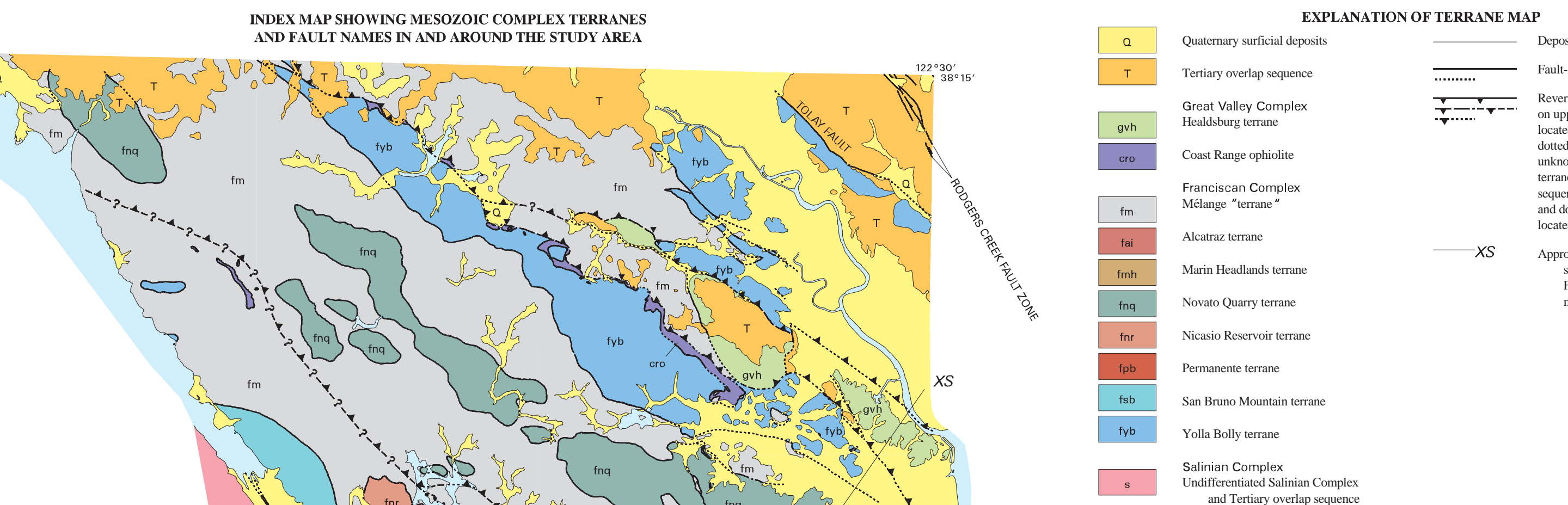


- LIST OF MAP UNITS**
[See pamphlet for Description of Map Units]
- SURFICIAL DEPOSITS**
- Qaf Artificial fill over marine and marsh deposits (Quaternary)
 - Qaf Artificial fill over marine and marsh deposits (Quaternary)
 - Qa Beach sand (Quaternary)
 - Qd Dune sand (Quaternary)
 - Qm Marine and marsh deposits (Quaternary)
 - Qls Landslide deposits (Quaternary)
 - Qa Alluvium (Quaternary)
 - Qar Slope debris and ravine fill (Quaternary)
 - Qu Undifferentiated surficial deposits (Quaternary)
 - Qr Volcanic gravel (Quaternary)
 - Qob Older beach deposits (Quaternary)
 - Qol Older alluvium (Quaternary)
 - Qm Marine and stream terrace deposits (Quaternary)
 - Qml Milerton Formation (Quaternary)
 - Qc Colma Formation (Quaternary and late Pliocene)
 - Qth Merced Formation (early Quaternary and late Pliocene)
 - Tm Santa Cruz Sandstone (late Miocene)
 - Th Monterey Shale (late and middle Miocene)
- ROCKS WEST OF AND WITHIN THE SAN ANDREAS FAULT ZONE**
- Qth Merced Formation (early Quaternary and late Pliocene)
 - Tm Santa Cruz Sandstone (late Miocene)
 - Th Monterey Shale (late and middle Miocene)
- ROCKS EAST OF AND WITHIN THE SAN ANDREAS FAULT ZONE**
- Tertiary overlap sequence**
- Tug Wilson Grove Formation (Pliocene)
 - Tp Palmdam Formation (Pliocene)
 - Tm Siliceous and claystone member
 - Tg Gray claystone member
 - Tv Sonoma Volcanics (Pliocene and Miocene)
 - Tu Rhyolite lava flows
 - Td Rhyolite plugs and dikes
 - Ta Andesite and basalt lava flows
 - Tf Pumiceous ash flow tuff
 - Ms Sandstone (Miocene)
- Franciscan Complex**
- Kfs Sandstone and shale (Cretaceous)
 - Kms Massive sandstone (Cretaceous)
 - Ksh Thin-bedded sandstone and shale (Cretaceous)
 - Kl Limestone and chert (Cretaceous)
 - Kp Greenstone (Cretaceous)
 - Kc Chert (Cretaceous)
 - Kgwy Graywacke (Cretaceous)
 - Ksb Diabase (Cretaceous)
 - Kjm Metamorphic rocks (Cretaceous and Jurassic)
 - Kjc Chert (Cretaceous and Jurassic)
 - Kjgs Greenstone and chert (Cretaceous and Jurassic)
 - Jmg Metagreenstone (Jurassic)
 - Jmch Metachert (Jurassic)
 - Jmgs Metagreenstone and metachert (Jurassic)
 - Jm Greenstone (Jurassic)
 - Jms Metamorphic rocks (Jurassic)
 - Jsp Massive serpentinite (Jurassic)
 - Jsp Serpentinite (Jurassic)
 - Jsc Silica-carbonate rock (Jurassic)
 - Ms Milage
- Great Valley Complex**
- Kjgv Undivided Great Valley complex, shale, sandstone, and conglomerate (Cretaceous and/or Jurassic)
 - Kjvt Novato Conglomerate (Cretaceous)
 - Kjvt Sandstone and claystone (Cretaceous and/or Jurassic)
 - sp Serpentinite (Jurassic)
 - sc Silica-carbonate rock (Jurassic)
- Legend for Symbols:**
- Contact - Depositional or intrusive contact, dashed where approximately located, dotted where concealed, quoted where uncertain
 - Fault - Dashed where approximately located, small dashes where inferred, dotted where concealed, quoted where location is uncertain
 - Thrust fault - Sawtooth on upper plate, dashed where approximately located, small dashes where inferred, dotted where concealed, quoted where location is uncertain
 - Normal fault - Tics on upper plate, dashed where approximately located, small dashes where inferred, dotted where concealed, quoted where location is uncertain
 - Strike and dip of bedding
 - Strike and dip of bedding, top indicator observed
 - Approximate strike and dip of bedding
 - Overturned bedding
 - Vertical bedding
 - Strike and dip of foliation
 - Vertical foliation
 - Approximate strike and dip of pillow lava
 - Regions of hydrothermal alteration
 - High-grade milage block - Letter code for rock type (=Jmgs, =Jmch, =Jm, =Jmg)
 - Low-grade milage block - Letter code for rock type (=Tm, =Tg, =Tf, =Tg, =Tf, =Tg, =Tf, =Tg)



- EXPLANATION**
- See pamphlet for digital file names, map scale, or map for subsections about
1. K.F. Roy, A. unpublished geologic investigations, 1971; active fault traces from Brown (1972)
 2. Wainwright (1970), C. unpublished geologic investigations, 1968-70; modified based on unpublished photography and field reconnaissance by J.A. Barton, 1972
 3. Blake and Wright (1971)
 4. R.L. Rice, unpublished geologic investigations, additions based on unpublished geologic mapping by Blake, 1970; Blake and Wright, 1970-71; and unpublished photography by Wainwright, 1971
 5. Barton (1969)
 6. O'Rourke (1959); minor additions based on unpublished geologic mapping by Blake and Wright, 1970-71
 7. Sauer (1959); minor additions based on unpublished geologic mapping by Blake and Wright, 1970-71; Vlahovitch (1958, 1959); minor additions based on unpublished geologic mapping by Blake and Wright, 1970-71
 8. J. Sullivan, unpublished geologic investigations, 1970-71; Vlahovitch (1958, 1959); minor additions based on unpublished geologic mapping by Blake and Wright, 1970-71
 9. Collins (1971); Collins (1968) modified after unpublished field reconnaissance by Barton, 1970-71
 10. Wright and Blake, unpublished geologic investigations, 1970-71
 11. Wright and Blake, unpublished geologic investigations, 1971; Collins (1968); additions based on unpublished geologic mapping by Blake and Wright, 1970-71
 12. C. Long, unpublished geologic investigations, 1971; Collins (1968); additions based on unpublished geologic mapping by Blake and Wright, 1970-71
 13. Quisenberry (1968); Wright (1970); additions based on unpublished geologic mapping by Blake and Wright, 1970-71
 14. Quisenberry (1968); Collins and Blake (1967)
 15. J.A. Barton, unpublished field reconnaissance, 1971; additions based on unpublished geologic mapping by Blake and Wright, 1970-71
 16. Weaver (1949); modified based on unpublished geologic mapping by Blake and Wright, 1970-71
 17. Lawson (1941); modified based on unpublished geologic mapping by Blake and Wright, 1970-71
 18. Sullivan and others (1961); minor additions based on unpublished geologic mapping by Blake, 1971
 19. J. Sullivan, unpublished geologic investigations, 1970-71
 20. Brown and Wright (1972); additions based on unpublished geologic mapping by Blake, J.A. Kelly, and K.L. Lakin, 1971
 21. Wainwright (1970); additions based on unpublished geologic mapping by Blake, 1971
 22. Quisenberry (1968); additions based on unpublished geologic mapping by Blake and Wright, 1970-71
 23. Blake, 1971



GEOLOGIC MAP AND MAP DATABASE OF PARTS OF MARIN, SAN FRANCISCO, ALAMEDA, CONTRA COSTA, AND SONOMA COUNTIES, CALIFORNIA

By
M.C. Blake, Jr., R.W. Graymer, and D.L. Jones
Digital database by Adam Soule and R.W. Graymer

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