DIVISION OF MINES
IAN CAMPBELL, CHIEF
GORDON B. OAKESHOTT, DEPUTY CHIEF

STATE OF CALIFORNIA
DEPARTMENT OF NATURAL RESOURCES

GEOLOGIC MAP OF CALIFORNIA
SANTA MARIA SHEET

Scale 1:250,000

Statute Miles 5 0 5 10 15 20

5 0 5 10 15 20 25 30 Kilometers

CONTOUR INTERVAL 200 FEET
WITH SUPPLEMENTARY CONTOURS AT 100 FOOT INTERVALS

SECOND PRINTING 1971

Williams & Heintz Map Corporation, Washington 27, D.C.

EXPLANATION

SEDIMENTARY AND METASEDIMENTARY ROCKS / **IGNEOUS AND META-IGNEOUS ROCKS**

CENOZOIC

QUATERNARY

Recent
- Qs — Dune sand
- Qal — Alluvium
- Qsc — Stream channel deposits (GREAT VALLEY)
- Qf — Fan deposits (GREAT VALLEY)
- Qb — Basin deposits (GREAT VALLEY)
- Qrv — Recent volcanic: Qrv[r] —rhyolite; Qrv[a] —andesite; Qrv[b] —basalt; Qrv[p] —pyroclastic rocks
- Qst — Salt deposits
- Ql — Quaternary lake deposits
- Qg — Glacial deposits

Pleistocene
- Qt — Quaternary nonmarine terrace deposits
- Qm — Pleistocene marine and marine terrace deposits
- Qpv — Pleistocene volcanic: Qpv[r] —rhyolite; Qpv[a]—andesite; Qpv[b] —basalt; Qpv[p] —pyroclastic rocks
- Qc — Pleistocene nonmarine
- QP — Plio-Pleistocene nonmarine
- Quaternary and/or Pliocene cinder cones

TERTIARY

Pliocene
- Pc — Undivided Pliocene nonmarine
- Puc — Upper Pliocene nonmarine
- Pu — Upper Pliocene marine
- Pv — Pliocene volcanic: Pv[r] —rhyolite; Pv[a]—andesite; Pv[b] —basalt; Pv[p] —pyroclastic rocks
- Pmlc — Middle and/or lower Pliocene nonmarine
- Pml — Middle and/or lower Pliocene marine

Miocene
- Mc — Undivided Miocene nonmarine
- Muc — Upper Miocene nonmarine
- Mu — Upper Miocene marine
- Mv — Miocene volcanic: Mv[r] —rhyolite; Mv[a] —andesite; Mv[b] —basalt; Mv[p] —pyroclastic rocks
- Mmc — Middle Miocene nonmarine
- Mm — Middle Miocene marine
- Ml — Lower Miocene marine

Oligocene
- Φc — Oligocene nonmarine
- Φ — Oligocene marine
- Φv — Oligocene volcanic: Φv[r]—rhyolite; Φv[a] —andesite ; Φv[b] —basalt; Φv[p]—pyroclastic rocks

Eocene
- Ec — Eocene nonmarine
- E — Eocene marine
- Ev — Eocene volcanic: Ev[r] —rhyolite; Ev[a] —andesite; Ev[b] —basalt; Ev[p] —pyroclastic rocks

Paleocene
- Epc — Paleocene nonmarine
- Ep — Paleocene marine

Undivided
- QTc — Cenozoic nonmarine
- QTv — enozoic volcanic: QTv[r]—rhyolite; QTv[a]—andesite; QTv[b] —basalt; QTv[p] —pyroclastic rocks
- Tc — Tertiary nonmarine
- Ti — Tertiary intrusive (hypabyssal) rocks: Ti[r]—rhyolite; Ti[a] —andesite; Ti[b] —basalt
- Tl — Tertiary lake deposits
- Tm — Tertiary marine
- Tv — Tertiary volcanic: Tv[r] —rhyolite; Tv[a] —andesite; Tv[b] —basalt; Tv[p] —pyroclastic rocks

MESOZOIC

CRETACEOUS
- K — Undivided Cretaceous marine
- Ku — Upper Cretaceous marine
- Kl — Lower Cretaceous marine
- KJf — Franciscan Formation
- KJfv — Franciscan volcanic and metavolcanic rocks
- gr — Mesozoic granitic rocks: gr[a]-granite and adamellite; gr[g]-granodiorite; gr[t]-tonalite and diorite

JURASSIC
- Jk — Knoxville Formation
- bi — Mesozoic basic intrusive rocks
- Ju — Upper Jurassic marine
- ub — Mesozoic ultrabasic intrusive rocks
- Jml — Middle and/or Lower Jurassic marine
- JRv — Jura-Trias metavolcanic rocks

TRIASSIC
- R — Triassic marine

UNDIVIDED
- m ls — Pre-Cretaceous metamorphic rocks (ls = limestone or dolomite)
- mv — Pre-Cretaceous metavolcanic rocks
- ms — Pre-Cretaceous metasedimentary rocks
- gr-m — Pre-Cenozoic granitic and metamorphic rocks
- P ls — Paleozoic marine (ls = limestone or dolomite
- Pv — Paleozoic metavolcanic rocks

PALEOZOIC

PERMIAN
- P — Permian marine
- Pmv — Permian metavolcanic rocks

CARBONIFEROUS
- C — Undivided Carboniferous marine
- Cv — Carboniferous metavolcanic rocks
- CP — Pennsylvanian marine
- CM — Mississippian marine

DEVONIAN
- D — Devonian marine
- Dv — Devonian metavolcanic rocks
- Dv? — Devonian and pre-Devonian? metavolcanic rocks

SILURIAN
- S — Silurian marine
- pSs — Pre-Silurian metasedimentary rocks
- pS — Pre-Silurian metamorphic rocks
- pSv — Pre-Silurian metavolcanic rocks

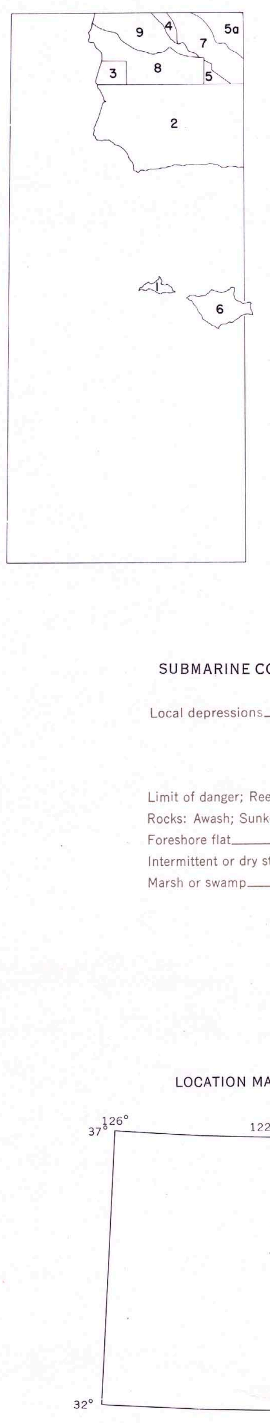
ORDOVICIAN
- O — Ordovician marine

CAMBRIAN
- Є — Cambrian marine

PRECAMBRIAN
- Є? — Cambrian – Precambrian marine
- pЄc — Precambrian igneous and metamorphic rock complex
- pЄ — Undivided Precambrian metamorphic rocks pЄg = gneiss, pЄs = schist
- pЄgr — Undivided Precambrian granitic rocks
- lpЄ — Later Precambrian sedimentary and metamorphic rocks
- epЄ — Earlier Precambrian metamorphic rocks

HEAVY BORDER ON BOXES INDICATES UNITS THAT APPEAR ON THIS SHEET

INDEX TO GEOLOGIC MAPPING
(COMPLETE INDEX ON EXPLANATORY DATA SHEET)



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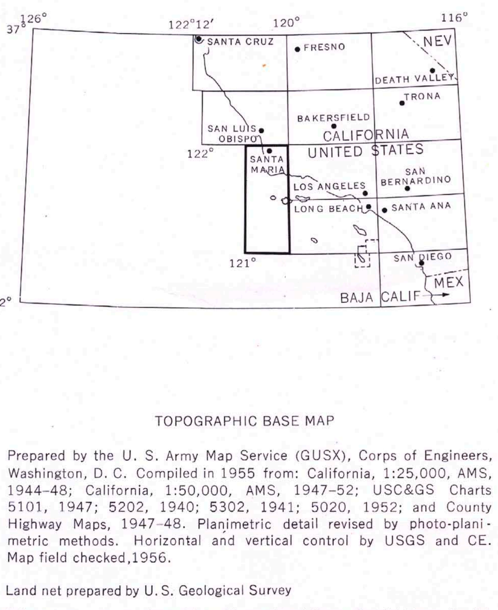
SUBMARINE CONTOUR INTERVAL 300 FEET

Local depressions

Limit of danger; Reef
Rocks: Awash; Sunken
Foreshore flat
Intermittent or dry stream
Marsh or swamp

LOCATION MAP FOR SANTA MARIA SHEET



TOPOGRAPHIC BASE MAP

Prepared by the U. S. Army Map Service (GUSX), Corps of Engineers, Washington, D. C. Compiled in 1955 from: California, 1:25,000, AMS, 1944-48; California, 1:50,000, AMS, 1947-52; USC&GS Charts 5101, 1947; 5202, 1940; 5302, 1941; 5020, 1952; and County Highway Maps, 1947-48. Planimetric detail revised by photo-planimetric methods. Horizontal and vertical control by USGS and CE. Map field checked,1956.

Land net prepared by U. S. Geological Survey

Submarine contours adapted from Shepard and Emery Special Paper No. 31, Geol. Soc. America

GEOLOGIC MAP OF CALIFORNIA
OLAF P. JENKINS EDITION
SANTA MARIA SHEET
COMPILATION BY CHARLES W. JENNINGS, 1959