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PLEASE REPLACE IN POCKET
IN BACK OF BOUND VOLUME

U.S. GEOLOGICAL SURVEY
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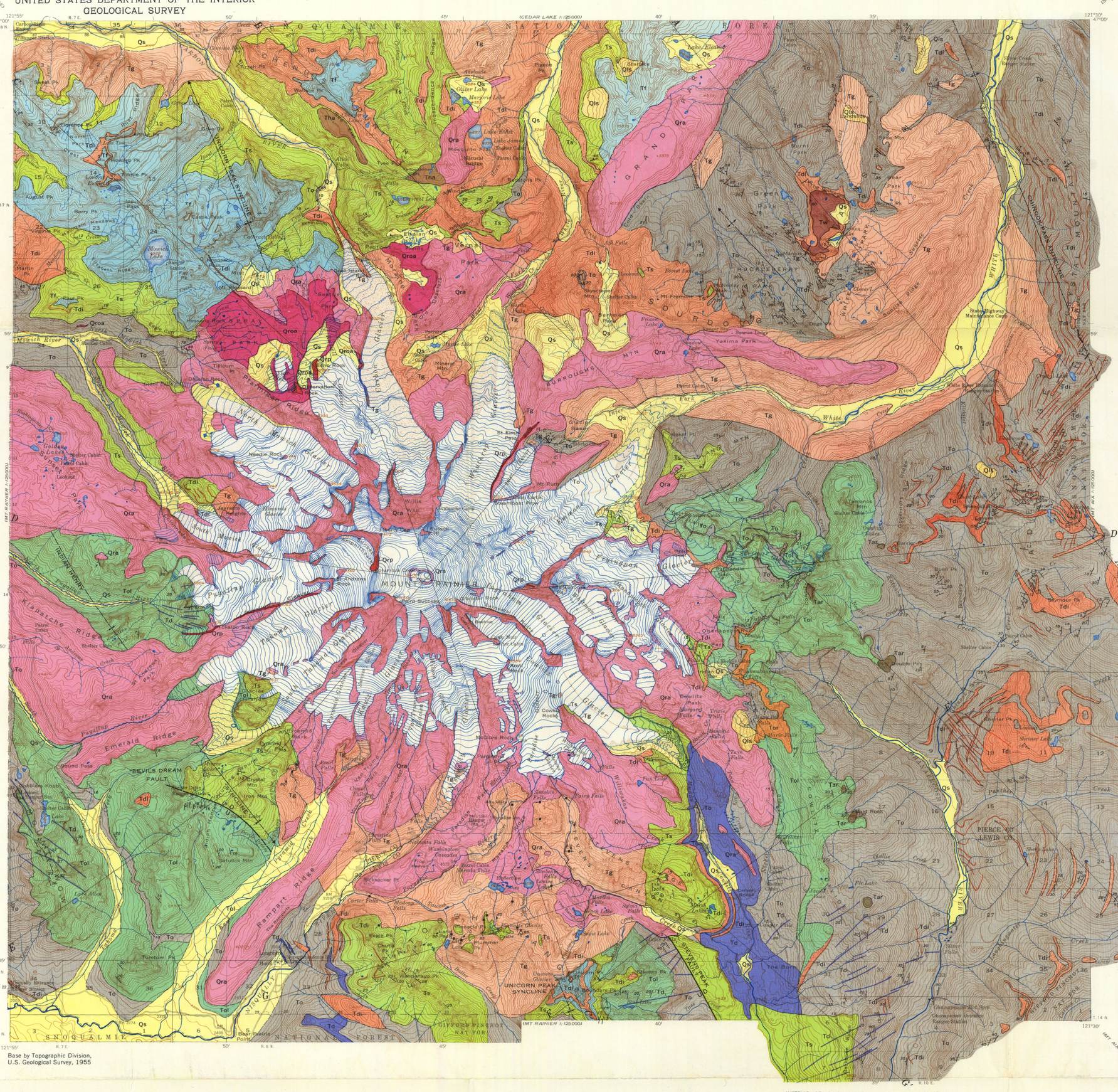


INTERIOR—GEOLOGICAL SURVEY, WASHINGTON, D. C.—62205

EXPLANATION

SEDIMENTARY AND EXTRUSIVE IGNEOUS ROCKS

QUATERNARY — Pleistocene and Recent

Qs — Surficial deposits
Alluvium, mudflows, and glacial deposits; only large deposits shown

Qls — Landslides

Qra, Qroa — Andesite of Mount Rainier volcano
Qra, *chiefly hypersthene-augite andesite and minor olivine andesite in thick intracanyon lava flows and associated mudflows near base of volcano; thinner flows and interlayered breccia on upper slopes*
Qroa, *olivine andesite flows from Echo Rock and Observation Rock vents*

UNCONFORMITY

TERTIARY — Pliocene(?)

Tha — Andesite of Bee Flat
Intracanyon lava flow of hypersthene-hornblende andesite

Miocene or Pliocene

Tw — Welded tuff of The Palisades
Pyroclastic rocks that grade downward into The Palisades plug

UNCONFORMITY

Oligocene or Miocene

Tf — Fifes Peak Formation
Basalt, basaltic andesite, and andesite flows; minor rhyolite flows, ash flows, and tuff breccia, volcanic sandstone, and volcanic siltstone of epiclastic and pyroclastic origin

Ts — Stevens Ridge Formation
Rhyodacitic ash flows; subordinate amounts of volcanic breccia, sandstone, and siltstone of epiclastic and pyroclastic origin

UNCONFORMITY

Eocene

To, Tol, Tor — Ohanapecosh Formation
To, *volcanic breccia, sandstone, and siltstone of epiclastic and pyroclastic origin*
Tol, *local thick accumulations of basaltic andesite flows and coarse mudflows*
Tor, *rhyolite*

INTRUSIVE IGNEOUS ROCKS

QUATERNARY — Pleistocene

Qrp — Mount Rainier plugs and dikes
Central plug of opalized andesite in Sunset Amphitheater; satellite plugs of olivine andesite at Echo Rock and Observation Rock; radial dikes

TATOOSH PLUTON AND ASSOCIATED INTRUSIVES

TERTIARY — Miocene or Pliocene

Tg — Granodiorite and quartz monzonite
Subordinate amounts of quartz diorite, contact breccia, and fine-grained border rocks; central pluton and associated stocks

Tdi — Diorite, quartz diorite, granodiorite, and quartz monzonite porphyries
Subordinate amount of microgranite, porphyritic granophyre, and felsite. Swarms of sills, dikes, and irregular small intrusive bodies clustered mainly near borders of the Tatoosh pluton and associated stocks. Includes unmapped septa of older rocks. Numerous poorly exposed sills and dikes not shown, especially in valleys of Panther, Laughingwater, and Chenuis Creeks. Some small bodies shown schematically; sills with blunt ends extend for an unknown distance along strike

PRE-TATOOSH INTRUSIVE ROCKS

Oligocene or Miocene

Td — Diabase and basalt
Chiefly in dikes and sill swarms. The Box Canyon sill complex along Cowlitz River contains unmapped septa of Ohanapecosh rocks

Eocene

Tar — Basaltic andesite and rhyolite
Plugs of massive and brecciated basaltic andesite which supplied lavas and fragmental material to the Ohanapecosh Formation. South Cowlitz Chimney is a flow-banded rhyolite plug

Contact
Dashed where approximately located; dotted where hidden or inferred

Fault
Dashed where approximately located. U, upthrown side; D, downthrown side

Axis of syncline
Dashed where approximately located; dotted where concealed. Arrow shows direction of plunge

Axis of anticline
Dashed where approximately located; dotted where concealed. Arrow shows direction of plunge

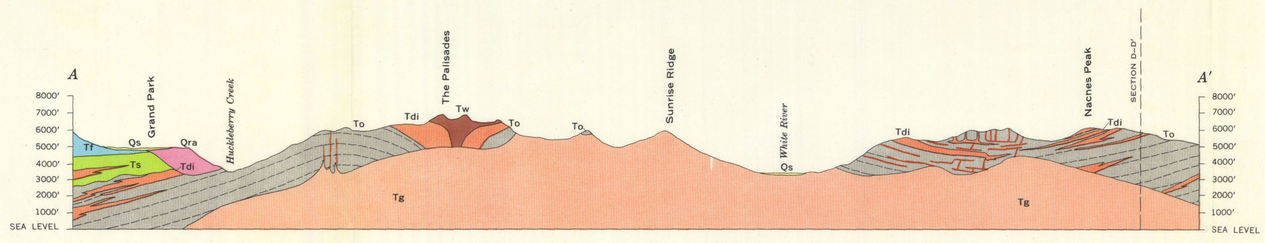
Strike and dip of bedding

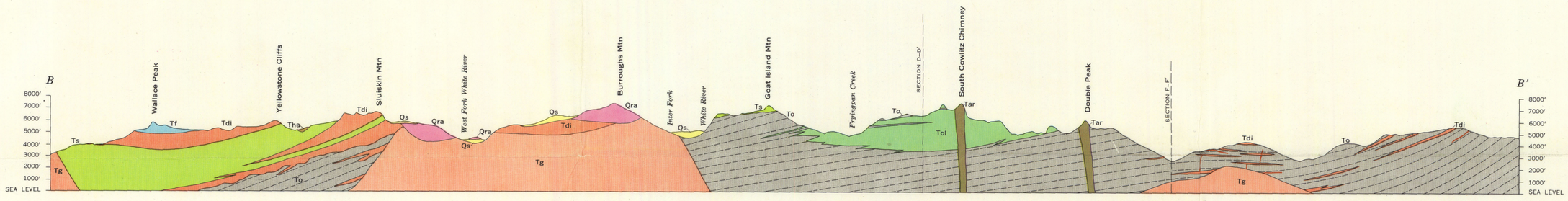
Horizontal beds

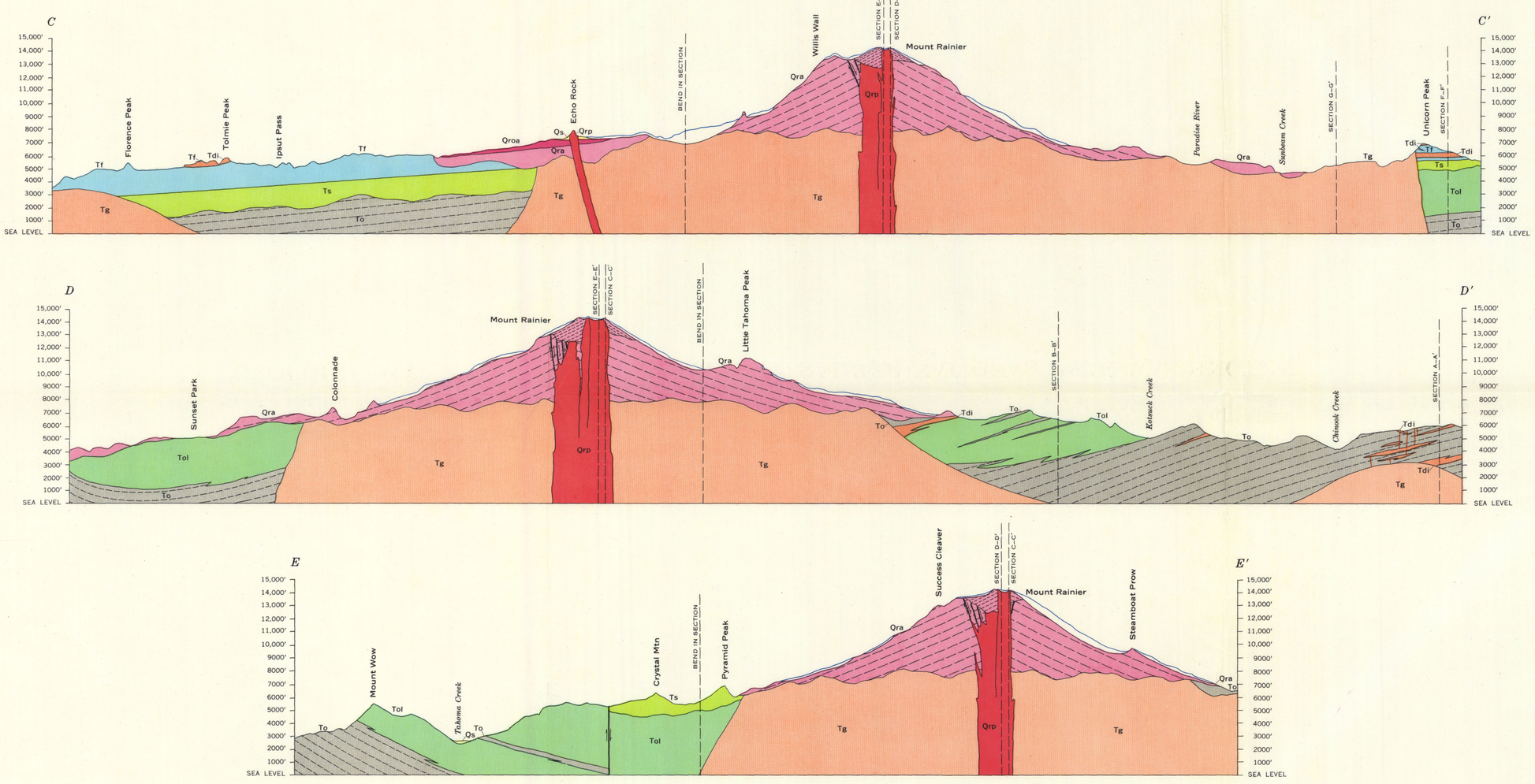
Strike and dip of joints

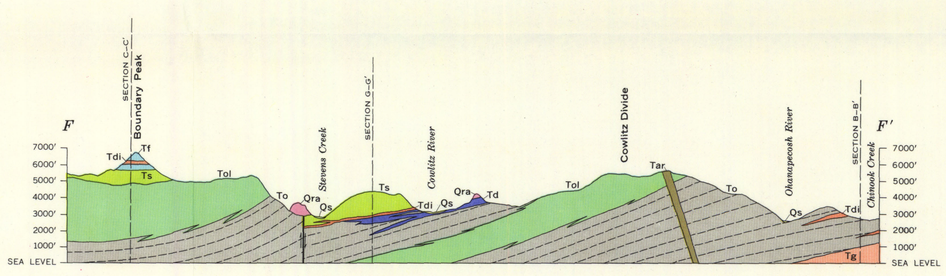
Strike of vertical joints

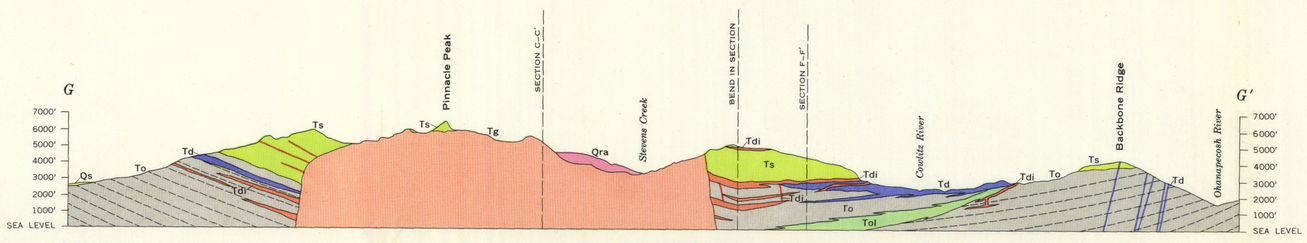
NOTE: Glacial outline as shown by dashed blue line was mapped by author in 1959











GEOLOGIC MAP AND SECTIONS OF MOUNT RAINIER NATIONAL PARK, WASHINGTON

SCALE 1:62 500

1 ½ 0 1 2 3 4 5 MILES

1 .5 0 1 2 3 4 5 KILOMETERS

CONTOUR INTERVAL 100 FEET
DATUM IS MEAN SEA LEVEL