Geologic map, cross section, and map units of the
Lemitar Mountains, Socorro County, New Mexico
by R. M. Chamberlin, 1982

New Mexico Bureau of Geology and Mineral Resources
Open File Report 169 - Plate I

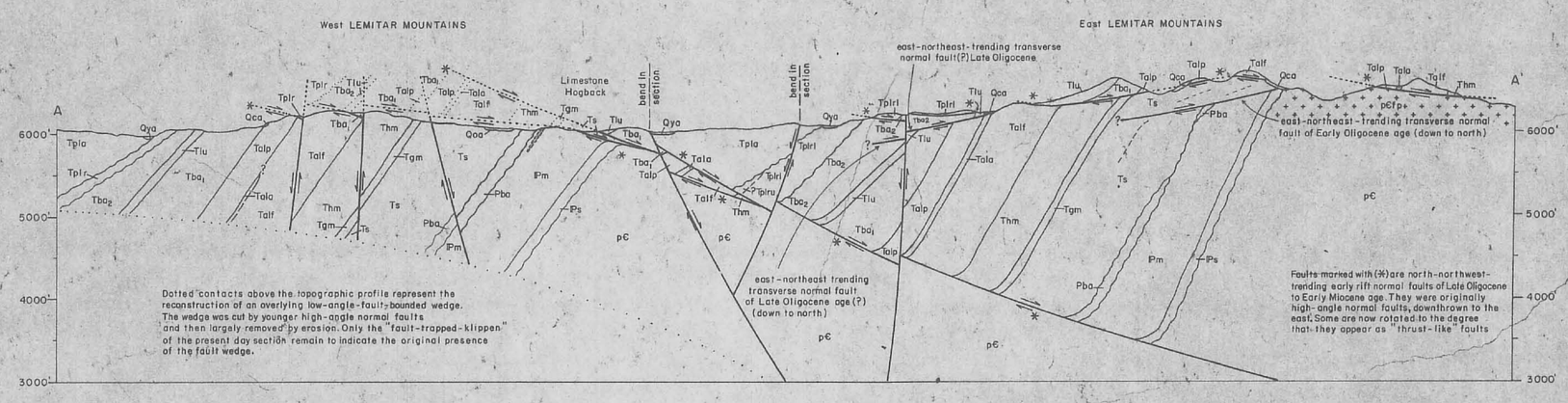
scale 1 : 12.000

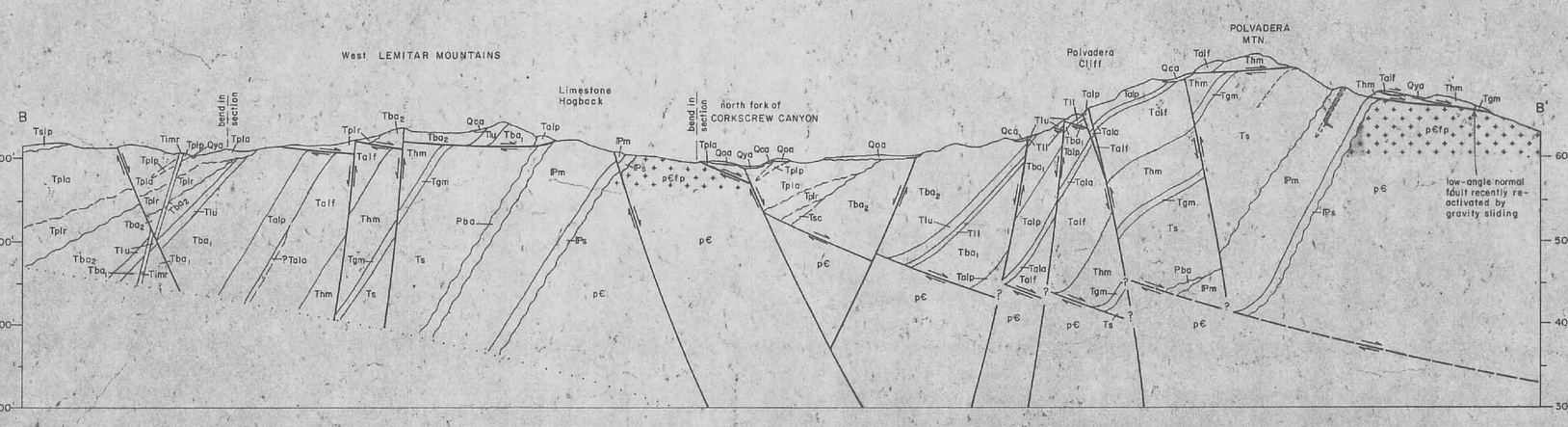
RED MTN.
1/2 mi.
POLVADERA MTN.
Microwave Tower
Polvadera Ridge
Limestone
Hackberry
Canyon
Mines Road Peak
Corkscrew
Lemitar Arroyo
Puerteciito
Pueblito Arroyo
Lone Hill
Little Badlands
J.B. KELLY RANCH
Powerline Cliff
conglomerates
ash bed
ash beds
andesitic laharic breccias
Qca
Qoa
Qya
Tplr
Tslp
Tpkp
Tpkf
Tpke
Tpkb
Tpkc
Tsr
Tsrt
Tsd
Tsdt
Tsc
Tbo2
Tlsr
Tlrs
Tlrst
Tlrbt
Tlrb
Tlo4
Tlo3
Tlt2
Tlt1
Tlo2
Tlo1
Tlst
Tlm
Tpsd
Tpsi
Tpsw
Tplb
Tplp
Tpla
Tplru
Tplrl
Tplc
Tslf
Tslo
Tsbsh
Tsbsht
Tsic
Tsip
Tsic
Tsip
Tsic
Tsic
Tsic

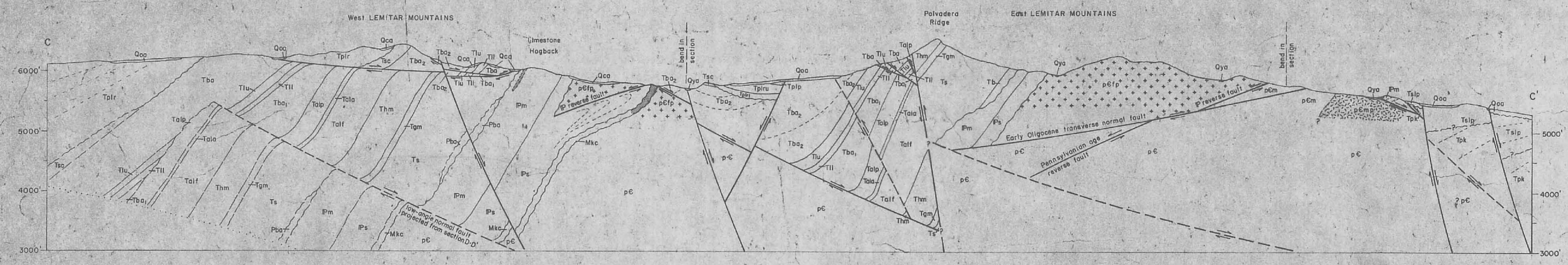
NMBM&MR OF-169

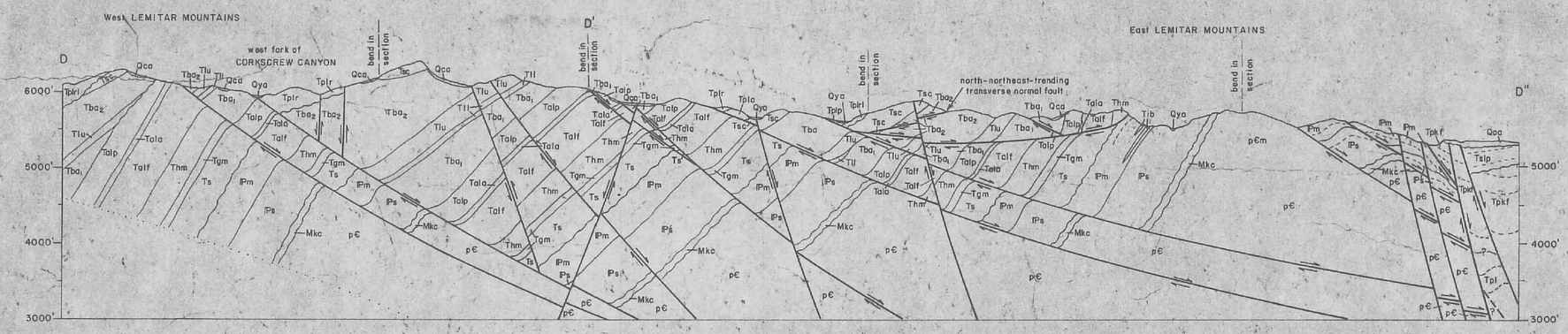
GEOLOGIC CROSS SECTIONS OF THE LEMITAR MOUNTAINS, SOCORRO COUNTY, NEW MEXICO

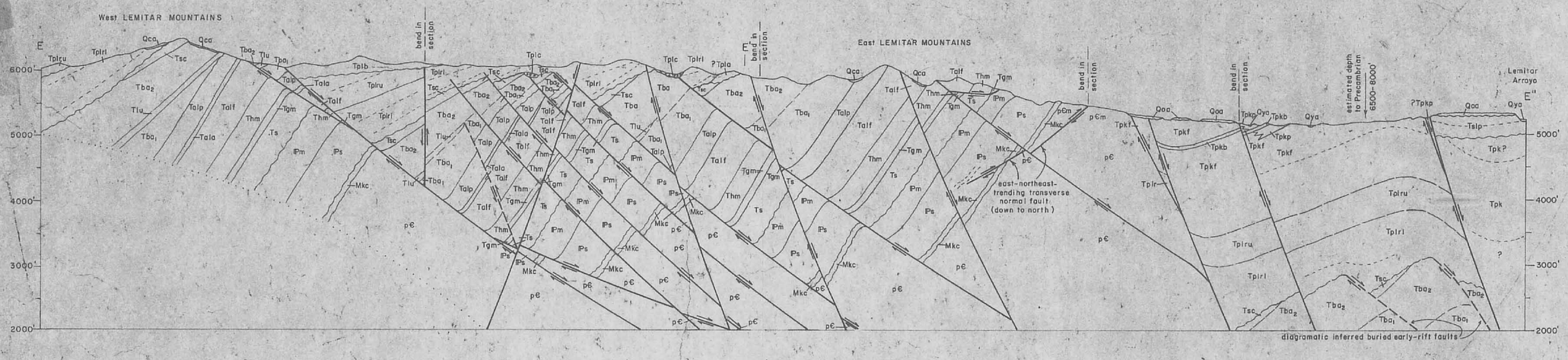
by
Richard M. Chamberlin, 1978

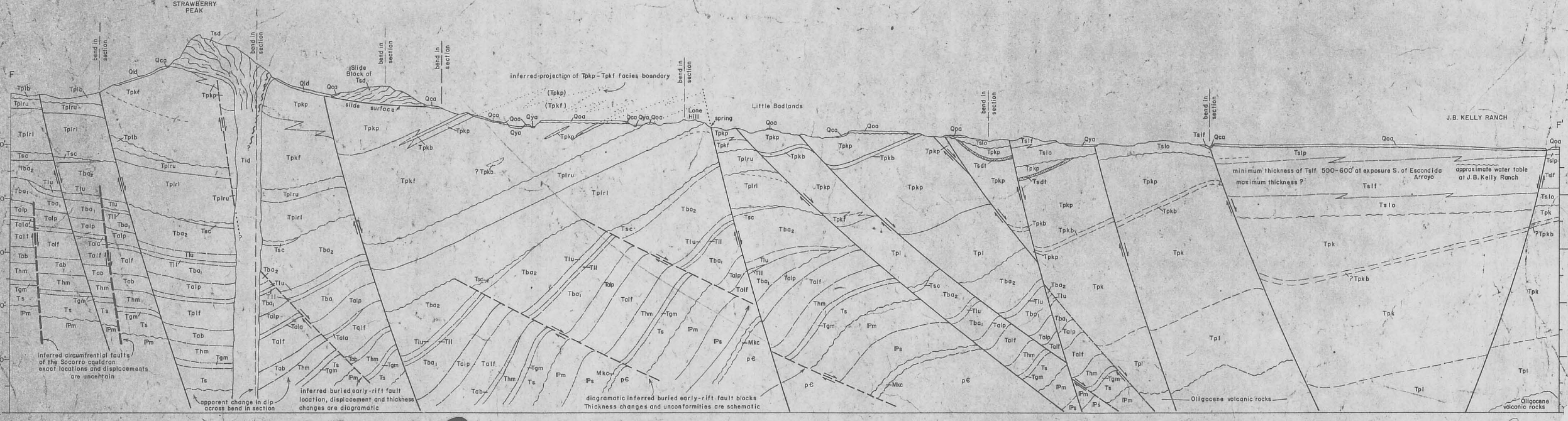












Note: contacts and faults dashed where uncertain; short dashed lines indicate stratification

OF: 169 2 of 3

GEOLOGIC MAP OF THE LEMITAR MOUNTAINS SOCORRO COUNTY, NEW MEXICO

by Richard M. Chamberlin, 1978

CORRELATION OF MAP UNITS

(See NMBM&MR OF-118 for detailed description of most map units)

post Santa Fe

Qcc — Colluvium and minor alluvium undivided

Qya — Younger alluvium

Qoa — Older alluvium

Qls, Qlr, Qld — Landslide areas characterized by large lava blocks, hummocky topography and small closed basins. Includes undifferentiated alluvium and colluvium. Modifying suffixes: b=basalt blocks, r=rhyolite blocks, d=dacitic blocks

UNCONFORMITY

Sierra Ladrones Formation

facies and basalt flows

- Talf — Fluvial sands of ancestral Rio Grande and tributaries
- Talo — Overbank mud-silt of ancestral floodplain
- Talp — Piedmont-slope and alluvial-fan gravels
- Talc — Ancient landslide mega-breccia and colluvium near Corkscrew Canyon
- Tbsb — Basalt flows of Sedillo Hill (4.0±0.3 m.y.)
- Tbsbt — Basaltic pyroclastics consisting of agglomerates, tuffs and cinders

UNCONFORMITY

Santa Fe Group

Popotosa Formation

member of Kelly Ranch

facies and basalt flows

- Tpkp — Mudstone, claystone, siltstone and gypsum, playa/alluvial flat
- Tpkf — Sandstone and conglomeratic sandstone, fluvial (braided channel)
- Tpka — Fanglomerates near Evergreen
- Tpkr — Rhyolite-vitrophyre-rich conglomerates and conglomeratic sandstones around the Grafton Sperlite mine, includes other small outcrops of rhyolitic sandstones and conglomerates locally derived from Socorro Peak Rhyolite lavas
- Tpkb — Basalt flows, lower flows near Kelley Ranch (9.1±0.5 m.y.), upper flows near Pound Ranch (exact areas unknown)
- Tpkc — Basal muddy conglomerates and sandy conglomerates, locally derived from reworking Tpsd, possibly equivalent to Tplb or Tplru

UNCONFORMITY

Socorro Peak Rhyolite (interbedded with member of Kelly Ranch, Popotosa Formation)

- Tsd — Dellenite, rhyodacite to quartz latite(?), domes and flows with phenocrysts of plagioclase, 2 hornblende, 2 biotite, 2 quartz (11.8 to 10.3 m.y.). Locally subdivided into older (Tsd$_1$) and younger (Tsd$_2$) flows west of Socorro Peak
- Tsdt — Dellenitic tuffs and agglomerates associated with Tsd, includes pumiceous conglomerate near Kelly Ranch (11.7 m.y.) and silicified lapilli tuff-breccia and laharic breccias near Socorro Peak

member of Lemitar Mountains

facies and basal units

- Tplb — Buff fanglomerates near Strawberry Peak (?may locally intertongue with basal Tpk strata)
- Local unconformity
- Tplp — Playa/alluvial flat/piedmont toe-slope mudstone, siltstone and fine sandstone
- Tpla — Andesite-rich fanglomerates
- Tplru — Upper red fanglomerates, in part derived from reworking Tplrl
- Local unconformity
- Tplrl — Lower red fanglomerates and laharic breccias
- Tplc — Ancient colluvium related to buried fault scarps
- Tplr — Undivided Tplrl and Tplru

UNCONFORMITY

Mafic intrusive near Red Mountain (age uncertain, cuts Tpla)

Tuff of South Canyon (26.2±1.0 m.y.)

Upper basaltic andesite lavas (upper tongue of (?) La Jara Peak basaltic andesite)

Lemitar Tuff

- Upper crystal-rich member (26.3±1.0 m.y.)
- Lower crystal-poor member

Lower basaltic-andesite lavas (lower tongue of (?) La Jara Peak basaltic)

PARACONFORMITY TO DISCONFORMITY

A-L Peak Tuff

- Pinnacles member
- Basaltic-andesite lavas and minor rhyolitic sandstones
- Lower-lithic, mottled, gray-massive, flow-banded, and upper-lithic members undivided

Tongue of andesite flows near Bug Mountain

Hells Mesa Tuff

Biotite-rich mafic dikes near Corkscrew Canyon (age uncertain, in fault zone cutting Hells Mesa Tuff)

Spears Formation

- Tgm — Tuff of Granite Mountain
- Ts — volcaniclastic member
- Tsn — (?) Tuff of Nipple Mountain member

Basaltic sills and dike cutting Pennsylvanian rocks near Corkscrew Canyon (age uncertain)

(?) Baca Formation

REGIONAL UNCONFORMITY

Bursum and Abo Formations undivided

PARACONFORMITY

Madera Limestone

Sandia Formation

PARACONFORMITY TO NONCONFORMITY

Kelly Limestone and Calosso Formation undivided

NONCONFORMITY

Mafic dikes

Felsic plutonic rocks

Mafic plutonic rocks

Metamorphic rocks: gneiss, quartzite, argillite, schist, and (?) amphibolite

Tibs

Basaltic andesite dikes in Lemitar Mountains (dike Talc, Tbs, and Tbsb)

Tibb

Tibb

Tibb