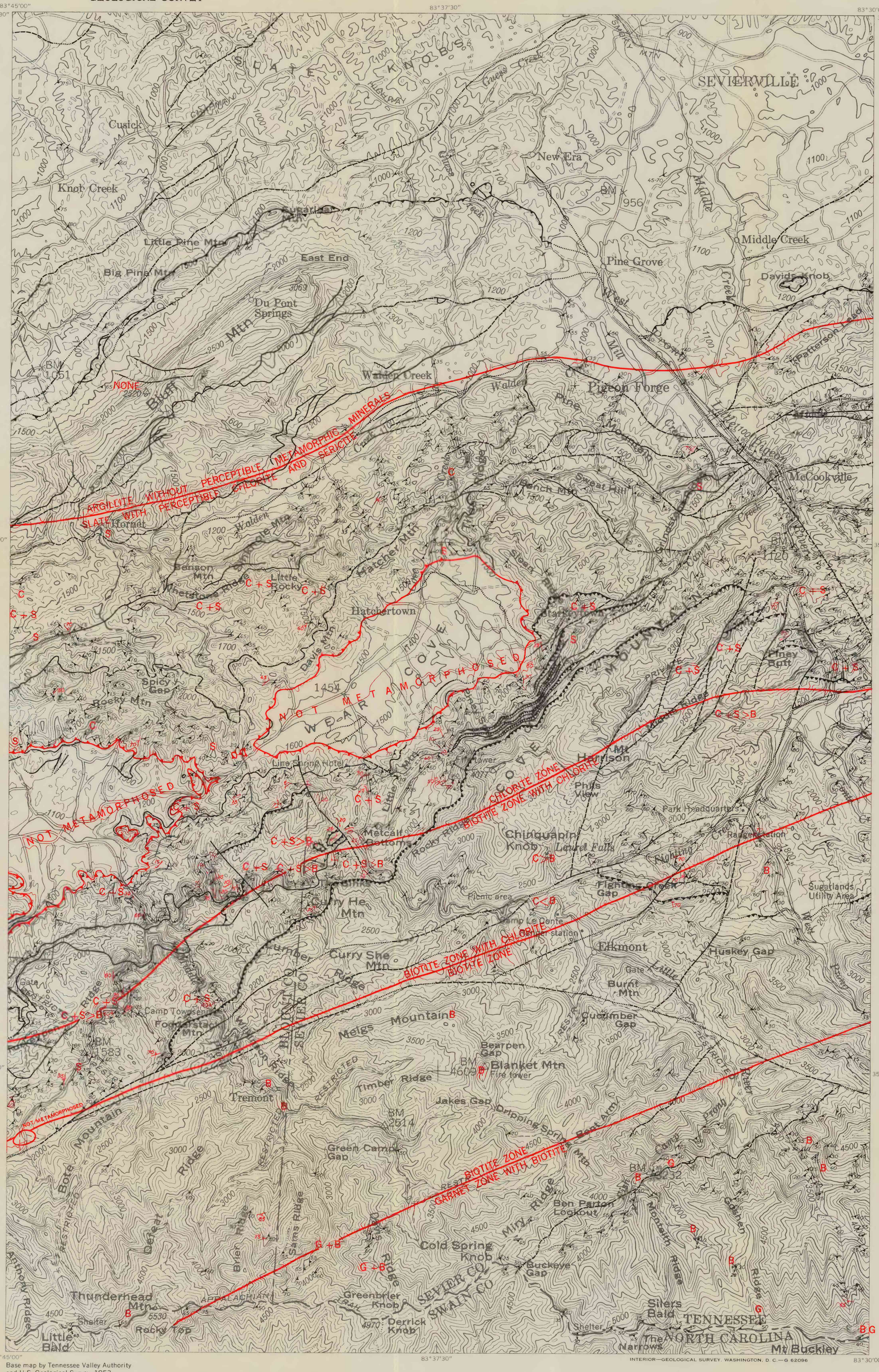

Base map by Tennessee Valley Authority
and U.S. Geological Survey, 1953

INTERIOR—GEOLOGICAL SURVEY, WASHINGTON, D. C.—G 62096

STRUCTURAL MAP OF CENTRAL GREAT SMOKY MOUNTAINS

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

EXPLANATION

Faults
Solid lines where accurately located, dashed where poorly located or hypothetical; dotted where concealed by younger deposits. For details, see geologic maps, plates 1–6

Great Smoky fault
Shown in red where fault bounds unmetamorphosed areas

Greenbrier fault

Faults at base of intermediate slices beneath Greenbrier fault

Metamorphic isograds
Generalized boundaries between metamorphic zones

Trend and plunge of linear structures
Measured on elongated grains and pebbles, or on streaks of mineral segregations

Strike and dip of first-generation foliation
Mainly slaty cleavage and schistosity, but includes fracture cleavage in north part of area. Where observations are closely spaced, symbol represents one observation typical of several; elsewhere, all observations are shown by symbols

Strike and dip of vertical first-generation foliation

Strike and dip of first-generation foliation, where parallel to bedding

Strike and dip of slip cleavage
Second-generation cleavage which generally dips at high angles, and produces offsets, crimps, and folds in primary cleavage

Strike of vertical slip cleavage

Strike and dip of shear cleavage
Second-generation cleavage which generally dips at low angles, slicing and shearing primary cleavage, to accompaniment of much differential movement

Horizontal shear cleavage

KEY METAMORPHIC MINERALS DETERMINED BY PETROGRAPHIC STUDY

NONE
No metamorphic minerals observed in thin section

C
Chlorite

S
Sericite

B
Biotite

G
Garnet

C + S
Chlorite and sericite

C > B
Chlorite and minor biotite

C < B
Dominant biotite, with minor chlorite

G + B
Garnet and biotite