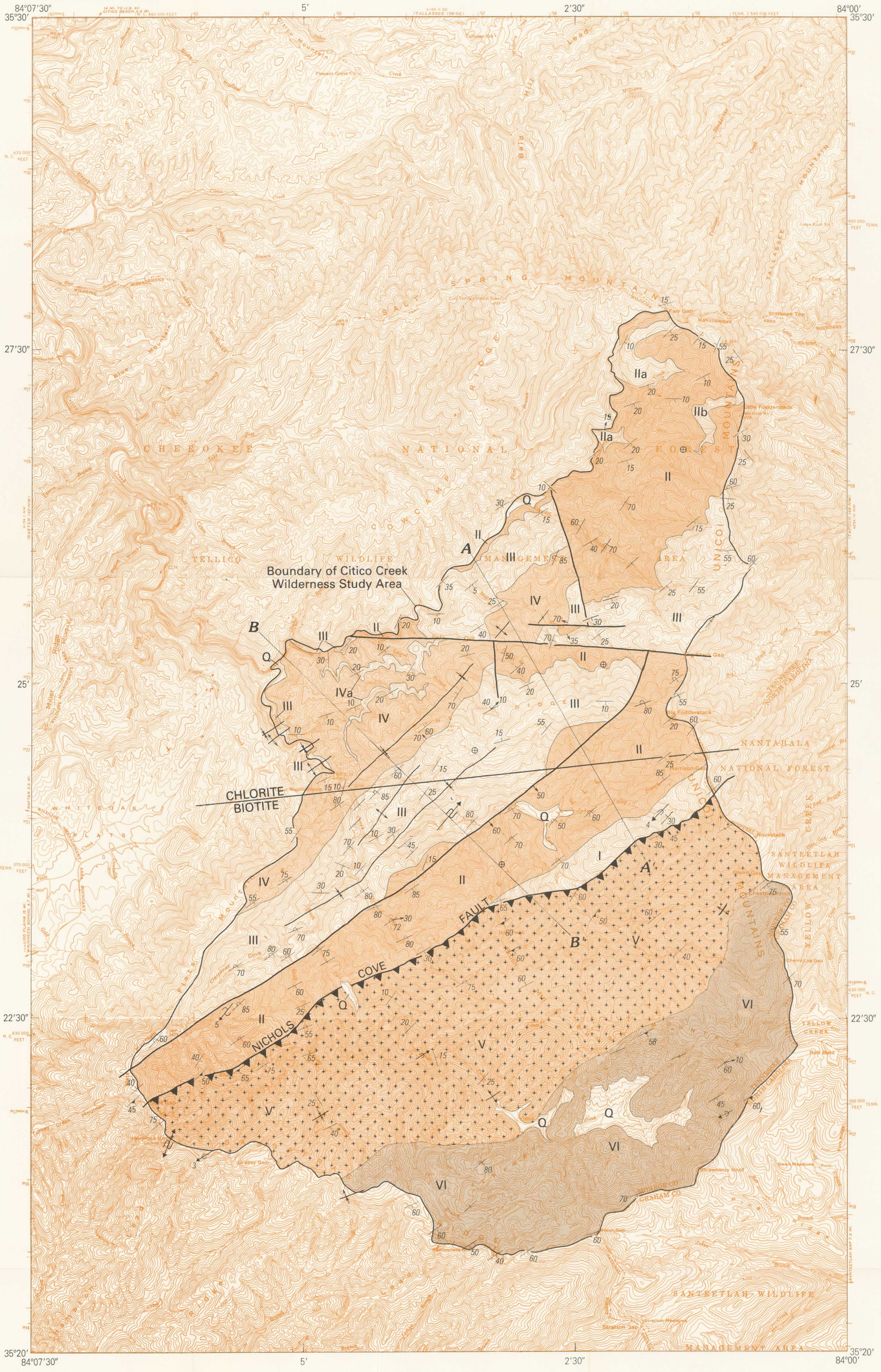
UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

BULLETIN 1552
PLATE 1



Base from Tennessee Valley Authority and U.S. Geological Survey, 1:24 000 Whiteoak Flats and Big Junction, Tenn.–N. C., 1957

SCALE 1:48 000

1 ½ 0 1 2 3 MILES

1 .5 0 1 2 3 4 5 KILOMETERS

CONTOUR INTERVAL 40 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1929

Geology by J. F. Slack, E. R. Force, and F. G. Lesure, assisted by A. E. Grosz, C. E. Brown, and M. P. Foose, 1976. Additional mapping by J. F. Slack and E. R. Force, assisted by A. E. Grosz and R. H. Ketelle, 1977

EXPLANATION

QUATERNARY

Q COLLUVIUM AND ALLUVIUM—Unconsolidated scree, poorly sorted gravel, sand, and clay in surficial deposits

PROTEROZOIC Z

GREAT SMOKY GROUP OF OCOEE SUPERGROUP

Units northwest of Nichols Cove fault—Lower plate

I Lowermost sandstone and slates—Medium gray fine to very coarse arkosic and ankeritic(?), metasandstone and pebble metaconglomerate with minor pale-green medium-grained quartzite, interbedded with medium to dark-gray fissile slate. Base truncated by Nichols Cove fault, minimum thickness 300 m. In part equivalent to unit 3 and one outcrop area of unit 7 of Lesure and others (1977) reinterpreted to be equivalent to unit 3

II Lower slate and sandstone—Interbedded gray to black platy or fissile slate and minor fine to coarse arkosic metasandstone with rare lenses of arkosic pebble metaconglomerate. Slate locally (as at Farr Gap) with pyrite porphyroblasts. Some finely laminated buff to gray slate and siltstone. Base not exposed; minimum thickness 300 m, including separately mapped sand (below). Equivalent to unit 4 of Lesure and others (1977)

IIa Lower sandstone—Brownish-gray medium- to coarse-grained arkosic metasandstone in beds up to 10 m thick, locally with beds of quartz pebble metaconglomerate. Thickness 30–100 m. Equivalent to sandy parts of unit 3 of Lesure and others (1977)

IIb Upper sandstone—Olive-gray, yellow, or medium-gray arkosic metasandstone and interbedded siltstone. Thickness 0–60 m. Equivalent to unit 6 of Lesure and others (1977)

III Conglomerate and sandstone—Gray or buff arkosic pebble metaconglomerate and medium to coarse arkosic metasandstone. Base marked by dominant metaconglomerate with abundant dark slate fragments and thin slate partings; top mostly metasandstone with minor pale-green quartzite. Both conglomerate and sandstone locally contain reddish carbonate spots, probably ankerite. Unit appears to grade into more abundant slates to southwest, near Flats Mountain. Thickness about 200–250 m. In part, equivalent to units 7 and 8 of Lesure and others (1977)

IV Upper slate and sandstone—Interbedded pale- to dark-gray or olive-gray platy or fissile slate and minor gray metasiltstone and fine- to coarse-grained arkosic metasandstone. Slate rarely contains porphyroblastic pyrite cubes, generally along bedding planes. Interlayered fine- to medium-grained metasandstone and pebble conglomerate in beds up to 30 m thick separately mapped northwest of Pine Ridge (Unit **IVa**). Top of unit not exposed; thickness approximately 150–250 m

Units southeast of Nichols Cove fault—Upper plate

V Graphitic graywacke and slate—Buff to gray medium- to very coarse grained massive metagraywacke and interlayered dark-gray to black graphitic slate, with minor laminated slate and siltstone. Near Eagle Gap, slates are highly graphitic and highly sulfidic, commonly with extensive coatings of secondary sulfate minerals. Graywacke is typically very dense and contains prominent blue quartz grains, disseminated sulfides (pyrite and pyrrhotite), and variable graphite; locally the graywacke is schistose, with conspicuous megascopic biotite. Base truncated by Nichols Cove fault, top gradational into Unit **VI**; minimum thickness about 700 m. Equivalent to units 9 and 10 of Lesure and others (1977)

VI Upper sandstone, graywacke, and slate—Fine- to coarse-grained gray arkosic metasandstone and metagraywacke interbedded with gray to dark-gray slate and metasiltstone. Graywacke similar to Unit **V**, with local calcareous concretions or nodules up to 1 m and thin (<2 m) sulfidic black slate interbeds. Top not exposed; minimum thickness approximately 800 m. Equivalent to units 11 and 12 of Lesure and others (1977)

45 Contact, showing direction and degree of dip

60 Fault, showing direction and degree of dip

Thrust fault—Sawteeth on upper plate

Folds

Monocline

Syncline

Anticline

Minor fold axis, showing plunge and down-plunge view of fold

Minor anticline, showing plunge of axis

Minor syncline, showing plunge of axis

Strike and dip of bedding

⊕ Horizontal

30 Inclined

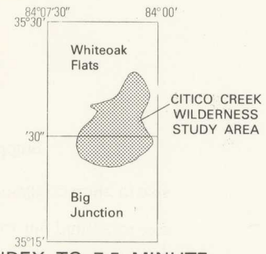
Vertical

60 Overturned

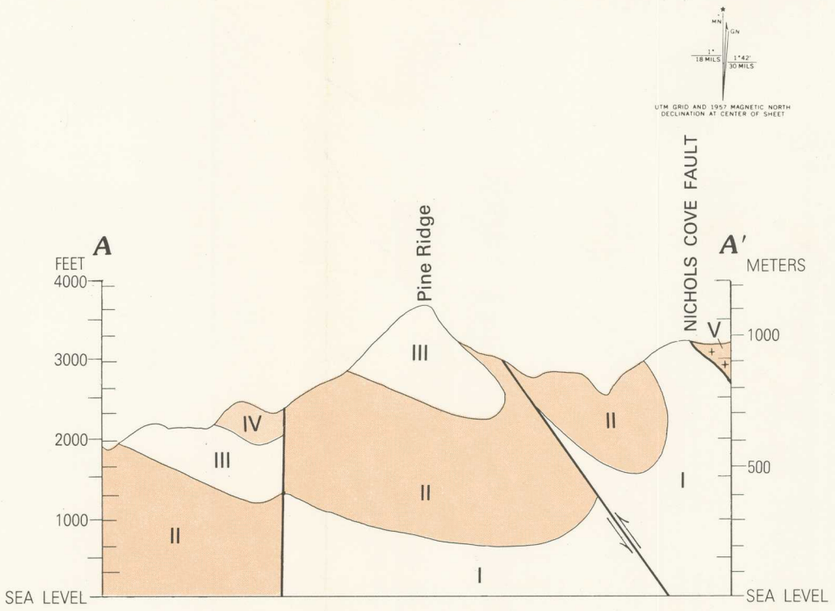
10 Trend and plunge of crinkle axis on bedding

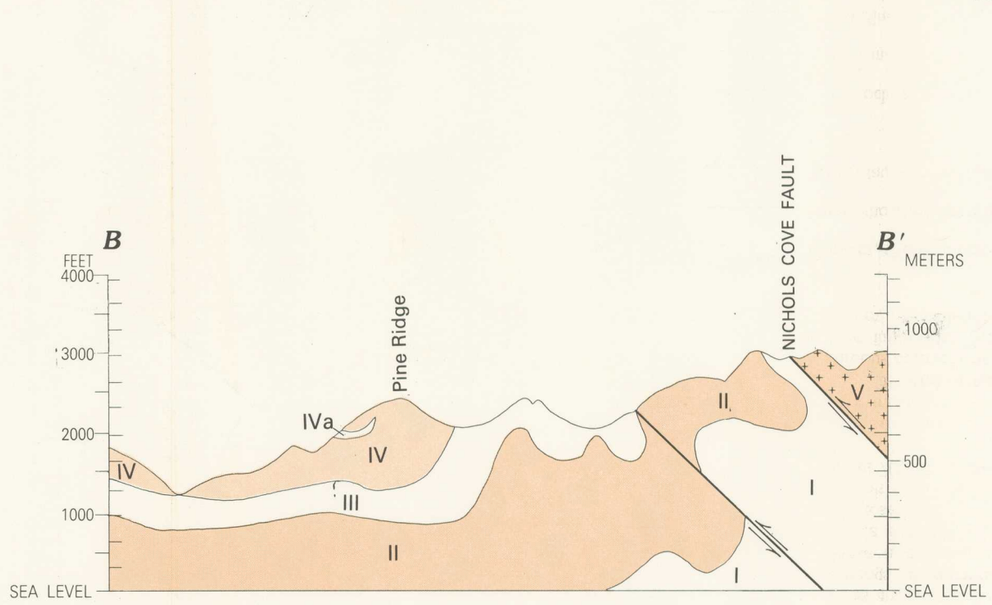
60 Bedding parallel to foliation

CHLORITE / BIOTITE Metamorphic isograd



INDEX TO 7.5-MINUTE TOPOGRAPHIC MAPS





GEOLOGIC MAP AND CROSS SECTIONS OF THE CITICO CREEK WILDERNESS STUDY AREA, MONROE COUNTY, TENNESSEE