

- DESCRIPTION OF MAP UNITS**
- Al** Artificial fill—Reclaimed mine tailings, construction materials, and levees.
 - Qat** Alluvial and low terrace deposits (Quaternary)—Fine- to medium-grained sand with interbedded lenses of gravel and clay. Locally, an interval containing cobbles and boulders of diverse composition is present near the base.
 - Gr** High terrace deposits (Quaternary)—Medium to coarse gravel in a sand or sandy clay matrix.
 - Mf** Floyd Shale (Upper Mississippian)—Dark-gray to black shale and shaly mudstone, locally fossiliferous and calcareous, interbedded with some tan/brown siltstone and fine-grained sandstone. A distinctive basal limestone unit is mapped in this area, which is exposed as medium- to dark-gray, locally fossiliferous, argillaceous lime mudstone. Regionally, a tongue of the Bangor Limestone is recognized in the formation.
 - Mfpm** Tusculmia Limestone, Fort Payne Chert, and Maury Formation undifferentiated (Lower and Upper Mississippian)—Tusculmia Limestone: (Not exposed on map) Light-gray, micritic, bioclastic, and locally oolitic limestone commonly containing white and light-gray elongate chert nodules. Fort Payne Chert: In unweathered outcrops, mostly dark-gray, siliceous, partly shaly, micritic limestone containing dark-colored chert in irregular nodules, stringers and thin beds. In weathered outcrops, typically thin, irregularly bedded, partly fossiliferous grayish-orange chert containing thin clay partings. Maury Formation: Grayish-yellow-green, moderate-red, and medium-gray, glauconitic, pyritic, and phosphatic claystone.
 - Dc** Chattanooga Shale (Upper Devonian)—Dark-gray to black, fissile, carbonaceous shale and mudstone.
 - Sm** Red Mountain Formation (lower and upper Silurian)—*Kingston thrust sheet*: Lower part dominantly thin- to medium-bedded, greenish-gray, and medium to dark brown, fine- to coarse-grained sandstone interbedded with grayish-green shale and, locally, beds of argillaceous, light to greenish gray thin-bedded limestone. The upper part includes thin- to thick-bedded, light-gray, fine-grained, fossiliferous sandstone that weathers to a distinctive light-grayish-orange color and contains the brachiopod *Pentamerus oblongus*. Contains thin calcareous and fossiliferous ironstone ore beds in the middle part. *Chattanooga thrust sheet*: Dominantly thin- to medium-bedded, medium-gray to ochre, very fine- to very coarse-grained sandstone interbedded with olive-green siltstone and shale. Some conglomerate beds contain small pebbles in discrete layers. Red Mountain red ore beds are hard, calcareous, fossiliferous hematite where fresh and are soft, fossiliferous, iron-enriched ore where weathered.
 - Osc** Sequatchie Formation and Chickamauga Limestone undifferentiated (Middle and Upper Ordovician)—*Sequatchie Formation*: Lower part includes light- to medium-gray, thin- to medium-bedded dolomitic limestone interbedded with variegated maroon and tan, silty limestone. Greenish-gray shale, mudstone, and siltstone containing grayish-red, coarse- to very coarse-grained, crossbedded, hematitic sandstone in the upper part. *Chattanooga thrust sheet*: Very fine-grained sandstone, locally conglomeratic, in thick to massive beds. The Sequatchie overall weathers to a distinctive reddish color. *Chickamauga Limestone*: Blue to gray, flaggy to thick-bedded, silty limestone locally containing dolomite at the base.
 - Ock** Knox Group undifferentiated (upper Cambrian and Lower Ordovician)—Light- to dark-gray, very fine- to medium-crystalline, predominantly massive-bedded dolomite locally containing irregular nodules and stringers of dark-gray, dense chert. Laminated to ribbon-bedded, partly intraclastic limestone and dolomite locally present. Weathers to dominantly light-colored residual chert in an orange-brown to dark-reddish-brown clay matrix. Residual chert commonly preserves the texture of the original carbonate rocks.
 - Cc** Conasauga Formation (middle and upper Cambrian)—*Chattanooga thrust sheet*: (Not exposed on map) Mostly light to medium gray stylonitic limestone. *Rome thrust sheet*: Olive-green and medium- to dark-gray fissile shale containing lenticular and nodular to thin beds of medium- to dark-gray limestone. Thin, platy interbeds of limestone are particularly diagnostic. Thicker limestone beds are partly stylonodular, stylonitic, bioturbated, or bioclastic.

- SYMBOLS FOR GEOLOGIC MAP**
- Contact, dashed where location is inferred, showing location of control point (contact exposed or closely located)
 - Contact, concealed beneath mapped units
 - Thrust fault, location inferred, sawtooth on upper plate
 - Thrust fault, concealed beneath mapped units and water bodies
 - Water boundary
 - Strike and dip of bedding
 - Strike and dip of vertical bedding

- SYMBOLS FOR CROSS SECTIONS A-A' AND B-B'**
- Stratigraphic contact
 - Fault, showing relative movement

For additional geologic information (including detailed rock descriptions and outcrop photos, etc.), please refer to the accompanying report:
 Irvin, G. D., Osborne, W. E., Ebersole, S. M., and Cook, B. S., 2024, Geology of the Cedar Bluff 7.5-minute quadrangle, Cherokee County, Alabama: Alabama Geological Survey Quadrangle Series 78, 34 p.

A copy of this map and report is available from the GSA Publications office (<https://www.gsa.state.al.us/ogb/publications/>).

This map was compiled for a scale of 1:24,000 and any digital enlargement of the map to scales greater than 1:24,000 will not increase accuracy and can cause misrepresentation. Map and associated digital data files may be updated in future years.

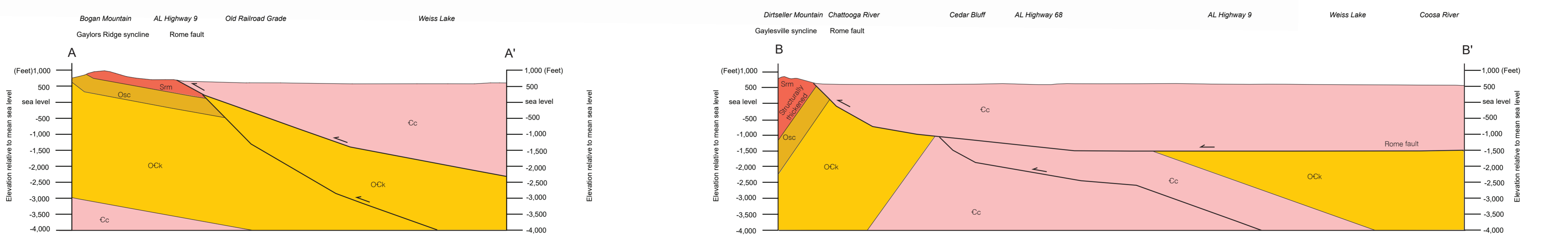
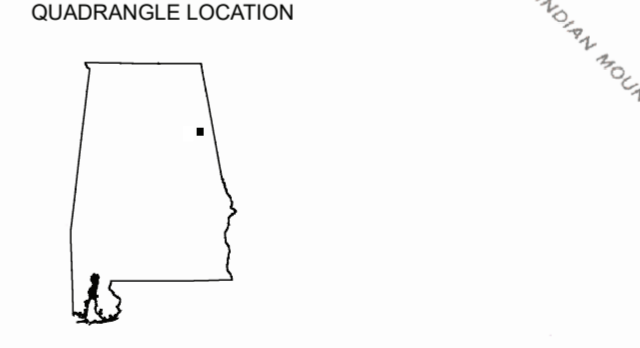
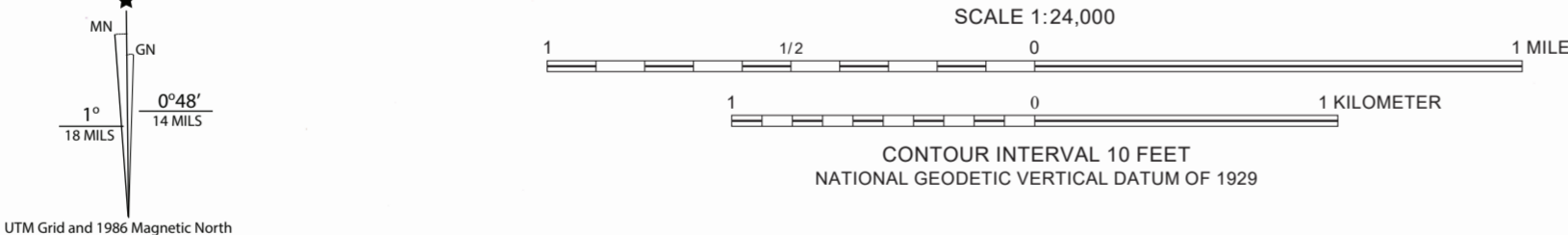
Map files are version dated, and users are responsible for obtaining the latest version of the map and associated data. Geologic map information was collected and recorded in the field by the Geological Survey of Alabama mapping staff and this map reflects an interpretation of the geology based on that data collected at the time of field mapping. Year field mapping was completed: 2022.

Base topographic map USGS 1967, photorevised 1986. This topographic map (and an updated version) is available on the USGS webpage "topoView" (<https://www.ngmdb.usgs.gov/topoview/>).

This geologic map was funded in part by the USGS National Cooperative Geologic Mapping Program under STATEMAP award number G21AC10846-00, 2021.

Spatial Reference: Universal Transverse Mercator Projection (UTM), Zone 16N, North American Datum of 1927 (NAD27), Clarke spheroid of 1866.

Map rotated -0.807 degrees for display.



GEOLOGIC MAP AND CROSS SECTIONS OF THE CEDAR BLUFF 7.5-MINUTE QUADRANGLE, CHEROKEE COUNTY, ALABAMA

by
 G. Daniel Irvin, W. Edward Osborne, John P. Whitmore, and Elizabeth M. Bollen
 2024



Berry H. (Nick) Tew, Jr.
 State Geologist