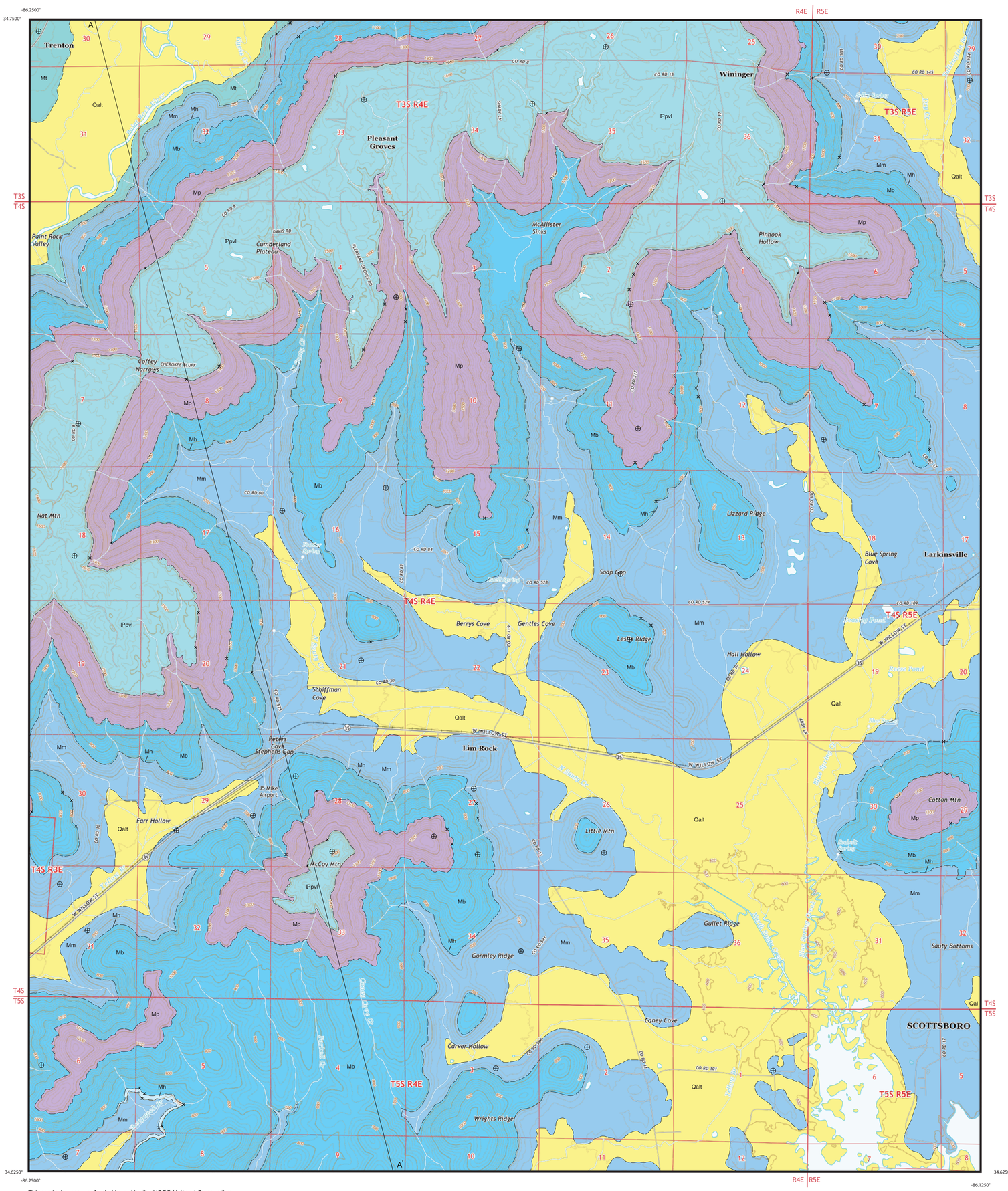
Version 2024.07.30




## CORRELATION OF MAP UNITS

| | | |
|---|---|---|
| Qalt | Quaternary | CENOZOIC |
| unconformity | | |
| IPpvl | Pennsylvanian | PALEOZOIC |
| unconformity | | |
| Mp, Mb, Mh, Mm, Mt | Mississippian | PALEOZOIC |

## DESCRIPTION OF MAP UNITS

**Qalt** — **Alluvium and terrace (Quaternary)**—Unconsolidated fluvial deposits of clay, silt, sand, gravel, and cobbles including clasts of local bedrock. Mapped only along larger streams and valleys.

**IPpvl** — **Pottsville Formation (lower part) (Lower Pennsylvanian)**—Light-gray to tannish-brown, medium- to very coarse grained, thin- to massive-bedded, well-cemented to friable quartzarenite and quartz-pebble (< 3 cm) conglomerate. Commonly crossbedded.

**Mp** — **Pennington Formation (Upper Mississippian)**—Light-gray to yellowish-tan, thin- to massive-bedded, dolostone and limestone, locally interbedded with thin beds of fissile mudstone and contains siliceous nodules and sparry vugs; uppermost part primarily light-gray, fine-grained, flaser bedded sandy siltstone, and thin-bedded, fissile, reddish to greenish mudstone.

**Mb** — **Bangor Limestone (Upper Mississippian)**—Light- to medium-gray, thin- to massive-bedded, bioclastic limestone; thin beds of gray silty limestone; isolated thin beds of nodular medium-gray chert; and yellow-gray very fine silty dolostone. Locally oolitic, stylolitic, crossbedded, and fossiliferous with lag beds containing bryozoans, crinoids, brachiopods, and solitary rugosa.

**Mh** — **Hartselle Sandstone (Upper Mississippian)**—Light- to dark-gray, thin-bedded shale, fine-grained quartzose sandstone, and marl; primarily crops out as thin beds of friable shale; locally contains plentiful *Archimedes* bryozoans, blastoids, crinoids and brachiopods.

**Mm** — **Monteagle Limestone (Upper Mississippian)**—Light- to medium-gray, thin- to thick-bedded, crossbedded, oolitic, bioclastic limestone; locally contains thin horizons of light- to dark-gray chert nodules and isolated thin layers of calcareous shale with plentiful *Archimedes* bryozoans.

**Mt** — **Tuscumbia Limestone (Upper Mississippian)**—Light- to medium-gray, thin- to medium-bedded bioclastic limestone. The upper part of the unit contains plentiful beds and nodules of light-tan to dark-gray chert, vugs filled with calcite spar, as well as plentiful fossils of colonial rugose corals *Acrocyathus floriformis* and *A. proliferus*, bryozoa, and isolated *Syringopora* tabulate coral.

## SYMBOLS FOR GEOLOGIC MAP

- Contact, identity and existence certain, location approximate
- Contact, identity and existence certain, showing location of control point (contact exposed or closely located)
- Horizontal bedding

For additional geologic information (including detailed rock descriptions and outcrop photos, etc.), please refer to the accompanying report: Whitmore, J. P., 2024, Geology of the Lim Rock 7.5-minute quadrangle, Jackson County, Alabama: Alabama Geological Survey Quadrangle Series 79, 33 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. Original date field mapping was completed: 2022.

Base topographic map USGS 2020. This topographic map 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, 2021.

Spatial Reference: Universal Transverse Mercator Projection (UTM), Zone 16N. North American Datum of 1983 (NAD83). Geodetic Reference System of 1980 (GRS 1980).

Map rotated -0.46 degrees for display

MN 4°18' 73 MILS; GN 0°28' 8 MILS

UTM GRID AND 2019 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

U.S. National Grid — 100,000-m Square ID: ED — Grid Zone Designation: 16S

SCALE 1:24 000

1 0.5 0 KILOMETERS 1 2

1000 500 0 METERS 1000 2000

1 0.5 0 MILES 1

1000 0 1000 2000 3000 4000 5000 6000 7000 8000 9000 10000 FEET

CONTOUR INTERVAL 20 FEET
NORTH AMERICAN VERTICAL DATUM OF 1988

ALABAMA — QUADRANGLE LOCATION

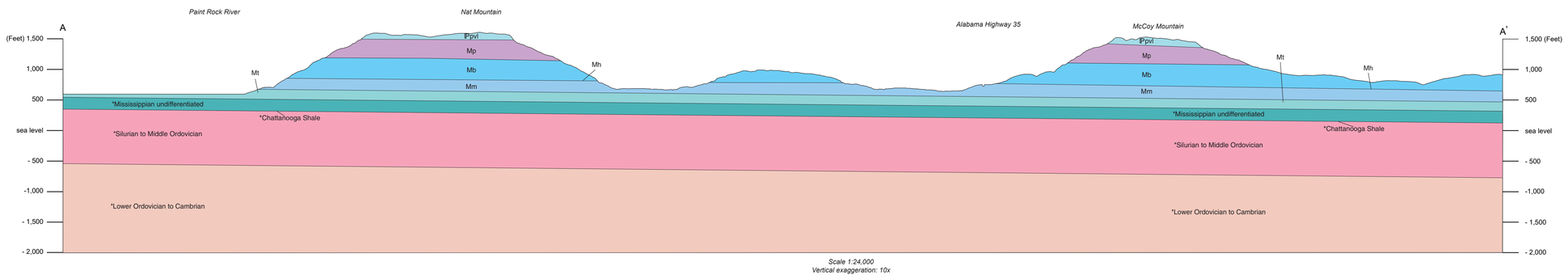
| | | |
|---|---|---|
| 1 | 2 | 3 |
| 4 | | 5 |
| 6 | 7 | 8 |

1 Hollytree
2 Princeton
3 Mud Creek
4 Paint Rock
5 Scottsboro
6 Grant
7 Swearengin
8 Langston

ADJOINING QUADRANGLES

ROAD CLASSIFICATION

Expressway; Secondary Hwy; Ramp; Local Connector; Local Road; 4WD; Interstate Route; US Route; State Route




Scale 1:24,000
Vertical exaggeration: 10x

## SYMBOLS FOR CROSS SECTION A-A'

- Stratigraphic contact
- * Units older than the Middle Mississippian Tuscumbia Limestone were not observed in the study area. Undifferentiated Lower Mississippian, Chattanooga Shale, undifferentiated Silurian to Middle Ordovician, and undifferentiated Lower Ordovician and Cambrian units are illustrated on the cross section to show stratigraphic relationships at depth.

# GEOLOGIC MAP AND CROSS SECTION OF THE LIM ROCK 7.5-MINUTE QUADRANGLE, JACKSON COUNTY, ALABAMA

*By*
*John P. Whitmore and Elizabeth M. Bollen*
*2024*

GEOLOGICAL SURVEY OF ALABAMA — Founded 1848

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