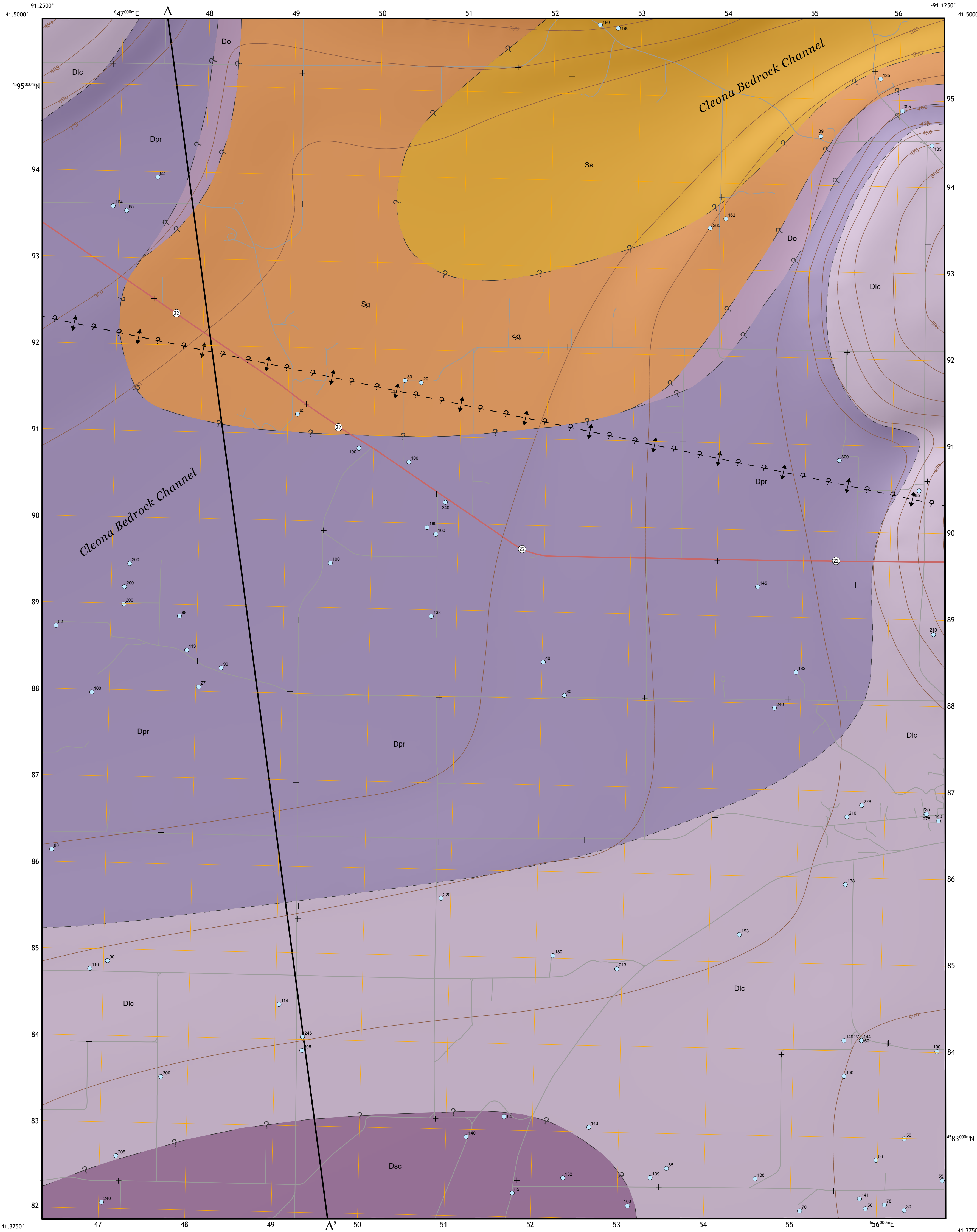


BEDROCK GEOLOGIC MAP OF THE MUSCATINE NW 7.5' QUADRANGLE, MUSCATINE COUNTY, IOWA

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IOWA Iowa Geological Survey

Open File Map: OFM-24-3
Keith Schilling, State Geologist
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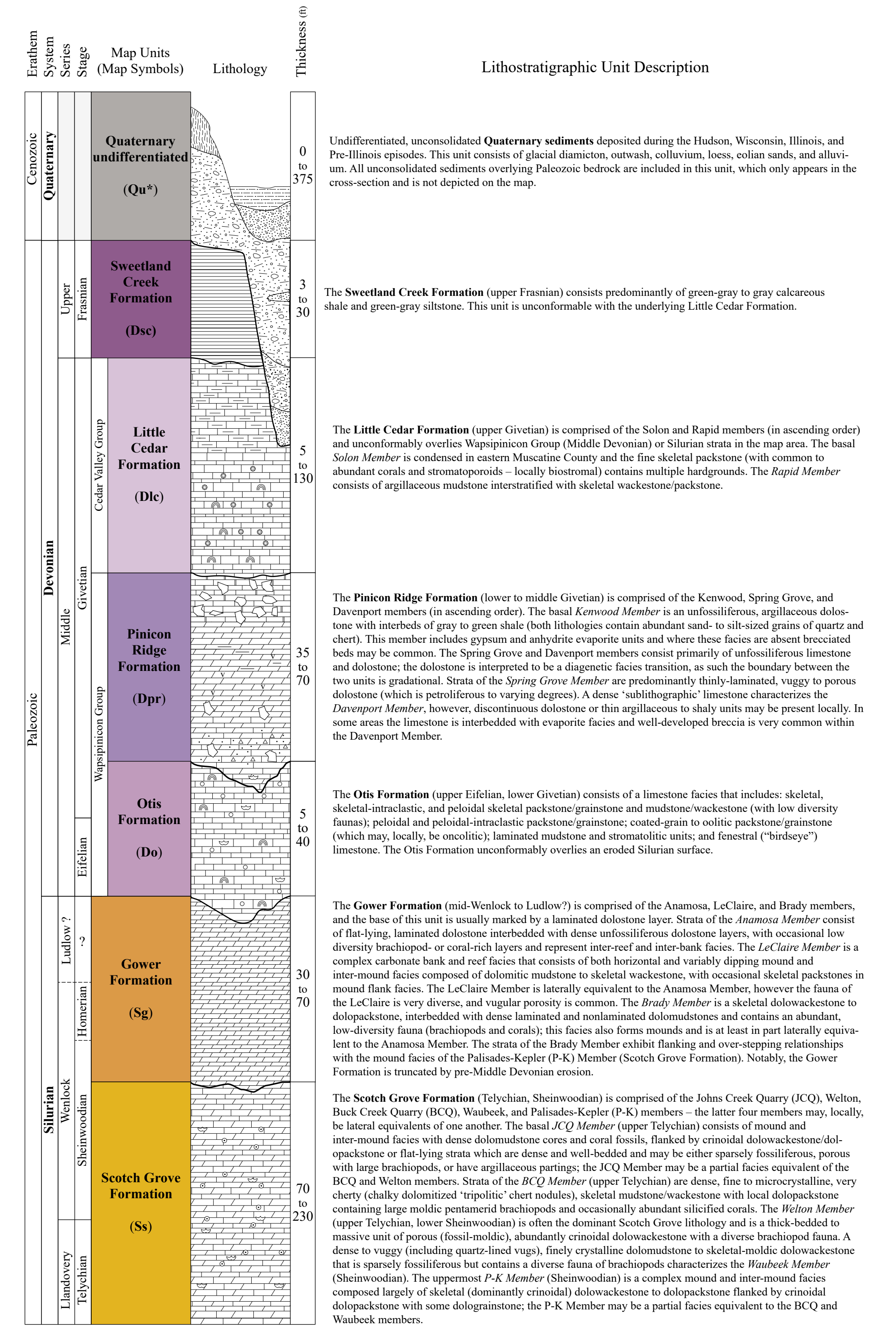


INTRODUCTION

The Muscatine NW 7.5' Quadrangle in Muscatine County, Iowa, is located within the Southern Iowa Drift Plain (SIDP) and Iowa-Cedar Lowland (ICL) landform regions. There are no bedrock exposures in the map area due to burial by Quaternary materials. The SIDP is an area with surface topography defined by loess-mantled uplands and slopes, whereas the ICL is a low-relief floodplain consisting of sediment deposited by the Cedar River. The top of the till package of the SIDP in the map area is likely Pre-Illinoian-age diamicton of the Wolf Creek/Alburnett formations. The ICL is a broad, flat lowland that is comprised of outwash deposited during the Late Wisconsin Episode and the Cedar River has formed Holocene terraces in this valley. The shape of the ICL does not directly correspond with the underlying bedrock channel (Cleona Channel).

The Cleona Channel is a buried bedrock valley that trends in a southwest – northeast direction across the entirety of the map area and this channel can have a depth up to 325 feet below the modern surface. Although entirely buried by Quaternary deposits, the bedrock surface of the Muscatine NW 7.5' Quadrangle is dominated by Upper Devonian (Frasnian) strata of the Lime Creek Formation, as well as Middle Devonian (Givetian) strata of the Little Cedar Formation (Cedar Valley Group) and the Pinicon Ridge and Otis formations (Wapsipinicon Group). Silurian strata of the Gowder and Scotch Grove formations make up the bedrock surface of the Cleona Channel. Just to the northeast of the mapping area these Paleozoic stratigraphic units are exposed in the Moscow Quarry (Wendling Quarries Inc., in the Wilton 7.5' Quadrangle; IGS Open File Maps OFM-24-01 and OFM-24-02). Due to sparse well data and the lack of bedrock exposures within the quadrangle, the contacts between these stratigraphic units are concealed and have been dashed on the map. The contact between the Gowder and Scotch Grove formations is concealed and its location is also inferred. Further detail about the bedrock elevation and Quaternary thickness in the Muscatine NW 7.5' Quadrangle can be found on the accompanying map (IGS Open File Map OFM-24-04), whereas further detail about the Quaternary geology can be found on the Surficial Geologic Map of the Muscatine NW 7.5' Quadrangle of Muscatine County, Iowa (IGS Open File Map OFM-23-04).

STRATIGRAPHIC COLUMN AND LEGEND



North American Regional Chronostratigraphic Unit Names correspond with Global Chronostratigraphic Unit Names
*Unit Appears Only on the Cross-Section

- MAP SYMBOLS**
 - water wells with depth shown
 - passive seismic station
 - contact, location approximate
 - contact, location inferred
 - antiform, location inferred
 - cross-section
 - hillshade
- LITHOLOGIES**
 - coal
 - dolomite
 - limestone
 - lithographic limestone
 - sandstone
 - sandy limestone
 - shale
 - siltstone
 - un lithified sediments
- LITHOLOGY & FOSSIL SYMBOLS**
 - argillaceous zone
 - vugs
 - crinoids
 - oolitic
 - chert
 - brachiopods
 - corals
 - stromatolites
 - breccia
 - unconformity
- ROAD CLASSIFICATION**
 - State Route
 - Local Road

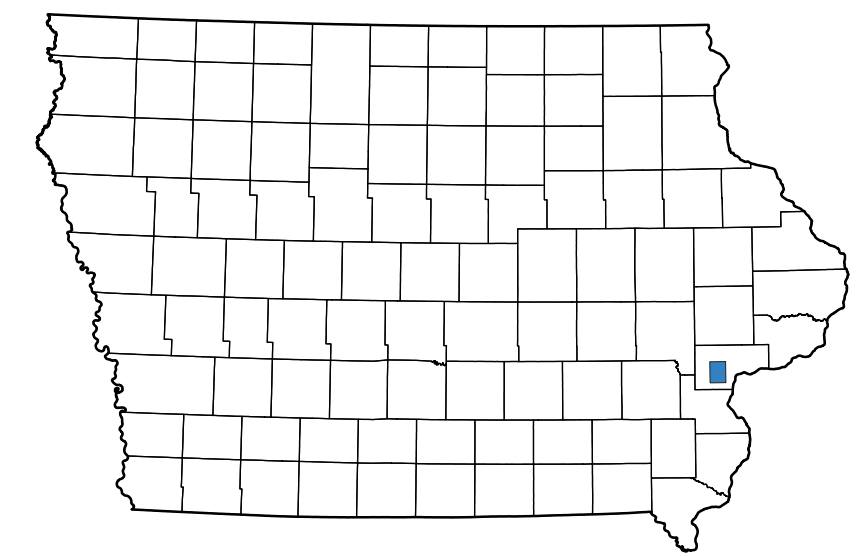
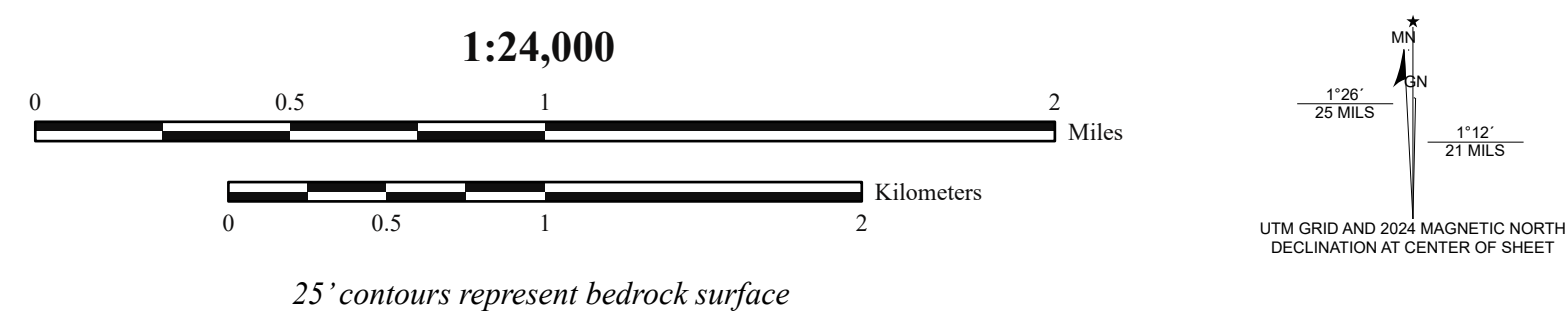


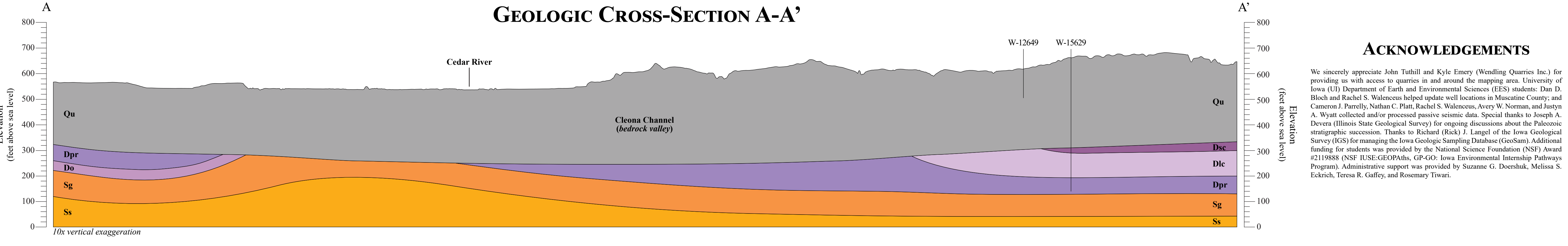
Figure 1. The location of Muscatine NW Quadrangle in Iowa.

Base map from U.S. Geological Survey (USGS) Muscatine NW 7.5' Quadrangle map, published by the USGS in 2022. Bedrock topography raster created internally for this map project. MuscatineNW_483_30a.mxd, version 7/31/24 (ArcGIS Pro 3.0). Map projection and coordinate system based on Universal Transverse Mercator (UTM) Zone 15N, datum NAD83. The map and cross-section are based on interpretations of the best available information at the time of mapping. Map interpretations are not a substitute for detailed site-specific studies. The views and conclusions contained in this document are those of the authors and should not be interpreted as necessarily representing the official policies, either expressed or implied, of the U.S. Government. Supported in part by the USGS Cooperative Agreement Number G23AC00497 National Cooperative Geologic Mapping Program (STATEMAP).



ADJOINING QUADRANGLES		
1	2	3
4	5	
6	7	8

1 West Liberty, IA
2 Atalissa, IA
3 Wilton, IA
4 Nichols, IA
5 Muscatine, IA-IL
6 Columbus Junction, IA
7 Letts, IA
8 Blanchard Island, IA-IL



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