

BEDROCK GEOLOGIC MAP OF THE ILLINOIS CITY 7.5' QUADRANGLE, MUSCATINE COUNTY, IOWA, AND ROCK ISLAND COUNTY, ILLINOIS

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Open File Map: OFM-22-6
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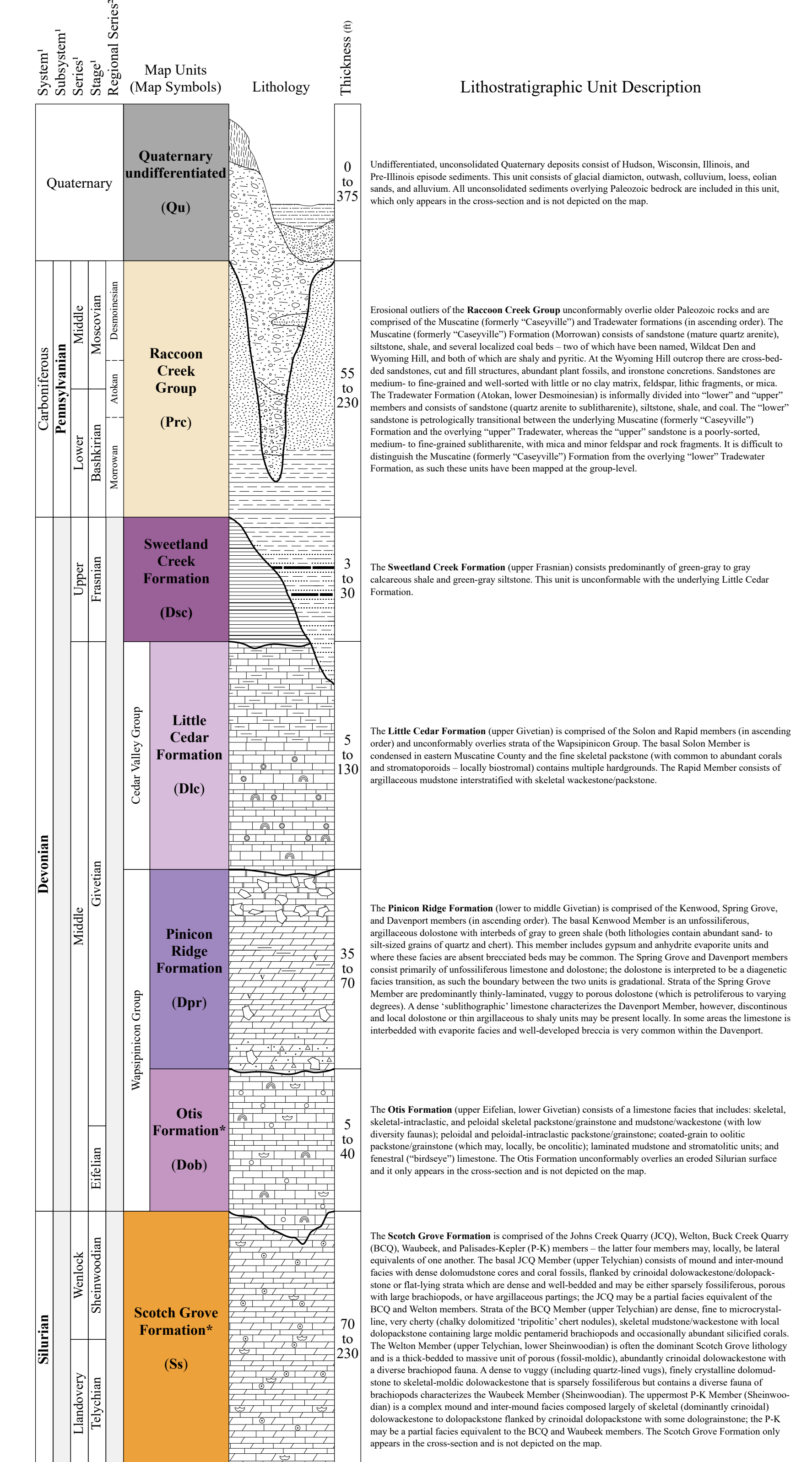
INTRODUCTION

The Illinois City Quadrangle in Muscatine County, Iowa, and Rock Island County, Illinois, is located within the Southern Iowa Drift Plain (SIDP) and Mississippi Valley Alluvial Plain (MVAP) landform regions. The SIDP is an area with a topography defined by loess-mantled uplands and slopes, whereas the MVAP is a low-relief floodplain consisting of sediment deposited by the Mississippi River. The top of the till package of the SIDP in this map area is Illinoian-age diamicton of the Glasford Formation. Glacial till is largely missing in the MVAP due to the development of the Mississippi River Bedrock Channel throughout the Quaternary. There is very little bedrock outcrop in the map area due to burial by Quaternary materials.

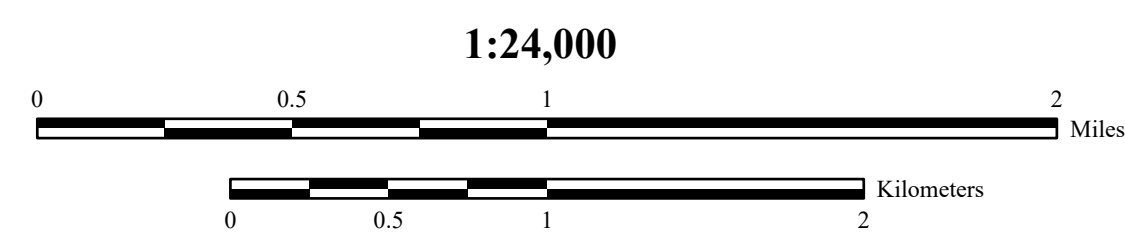
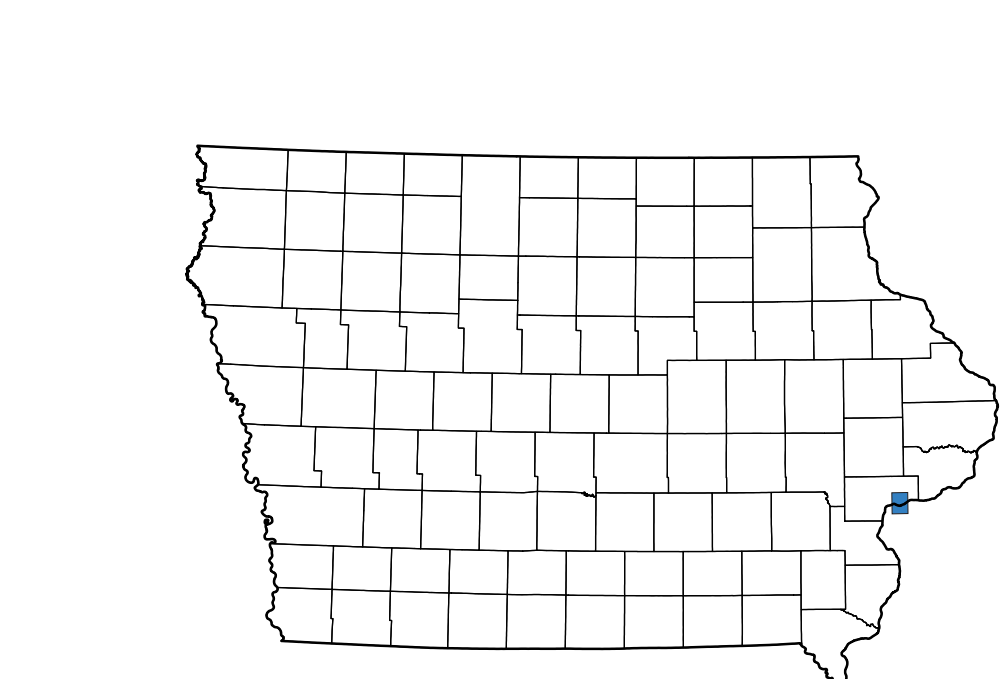
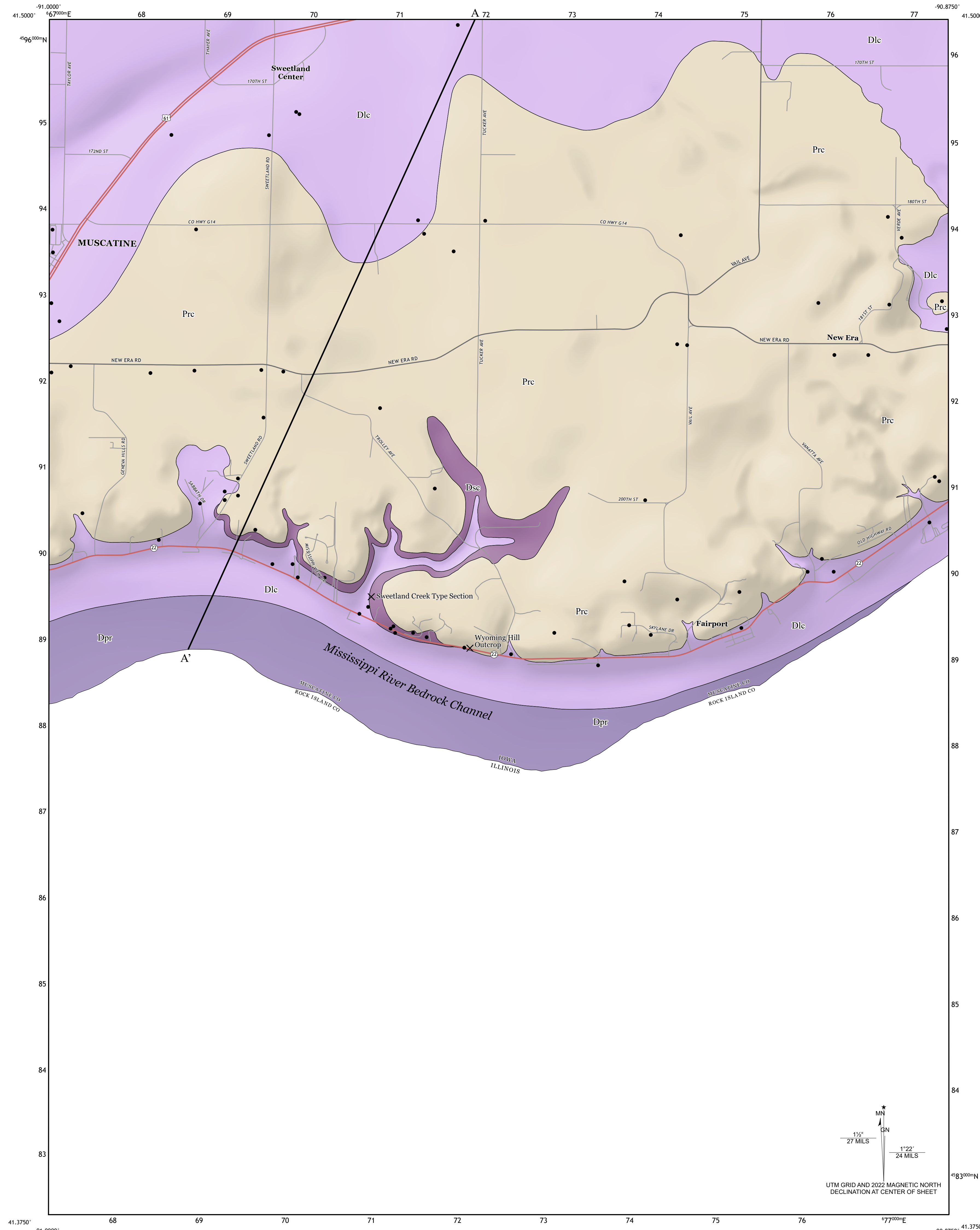
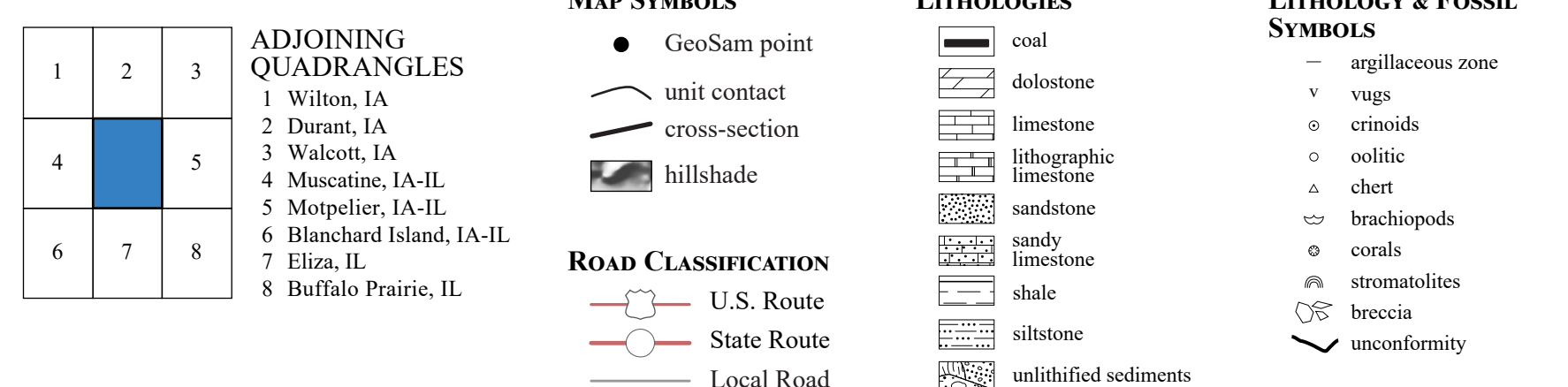
The resulting bedrock surface is dominated by Lower and Middle Pennsylvanian strata of the Racoon Creek Group (Muscatine [formerly "Caseville"] and Tradewater formations), which unconformably overlie Middle and Upper Devonian strata of the Wapsipicon and Cedar Valley groups and the Sweetland Creek Formation. Erosion during the Quaternary has exposed Devonian units along the Mississippi River Bedrock Channel, however both Devonian and Pennsylvanian strata outcrop along its bluffs. One of the best exposures of the Lower and Middle Pennsylvanian succession in the area is the Wyoming Hill outcrop (along Iowa Highway 22). The type section of the Upper Devonian Sweetland Creek Formation occurs within the quadrangle along the lower reaches of Sweetland Creek.

Further detail about the bedrock elevation and quaternary thickness in the Illinois City Quadrangle can be found on the accompanying map (Open File Map OFM-22-7). An in-depth summation of the data resources and mapping methods utilized, as well as a more detailed account of the stratigraphy of the Illinois City Quadrangle, is included in the associated Summary Report.

STRATIGRAPHIC COLUMN AND LEGEND



¹ Global Chronostratigraphic Units
² North American Regional Chronostratigraphic Units



Base map from U.S. Geological Survey (USGS) Illinois City 7.5' Quadrangle map, published by the USGS in 2018. Bedrock topography raster created internally for this map project Illinois_09_PRC_Ss.mxd, version 8/01/22 (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.

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GEOLOGIC CROSS-SECTION A-A'

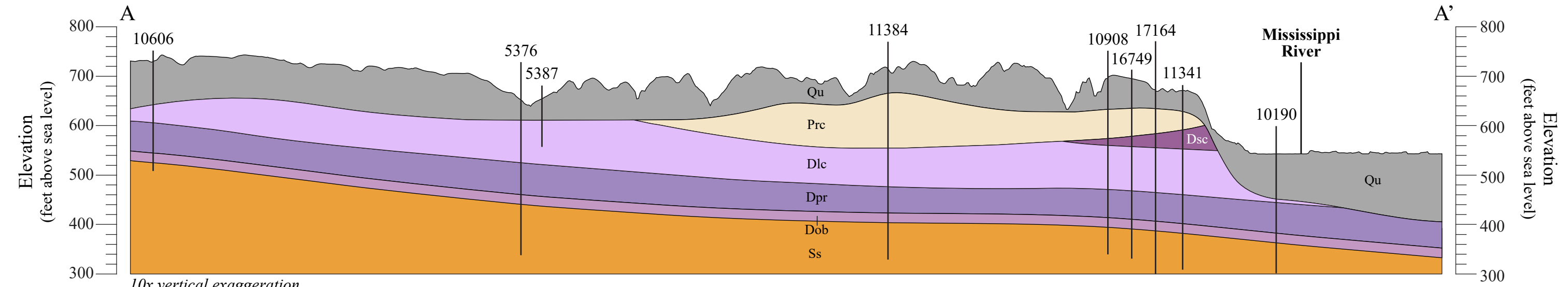


Figure 1. The location of Illinois City quadrangle in Iowa.