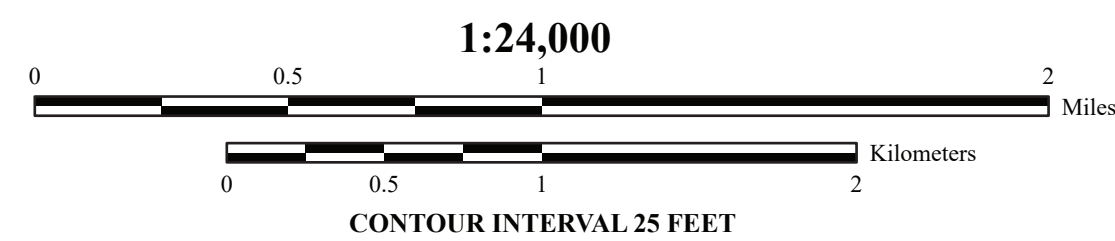
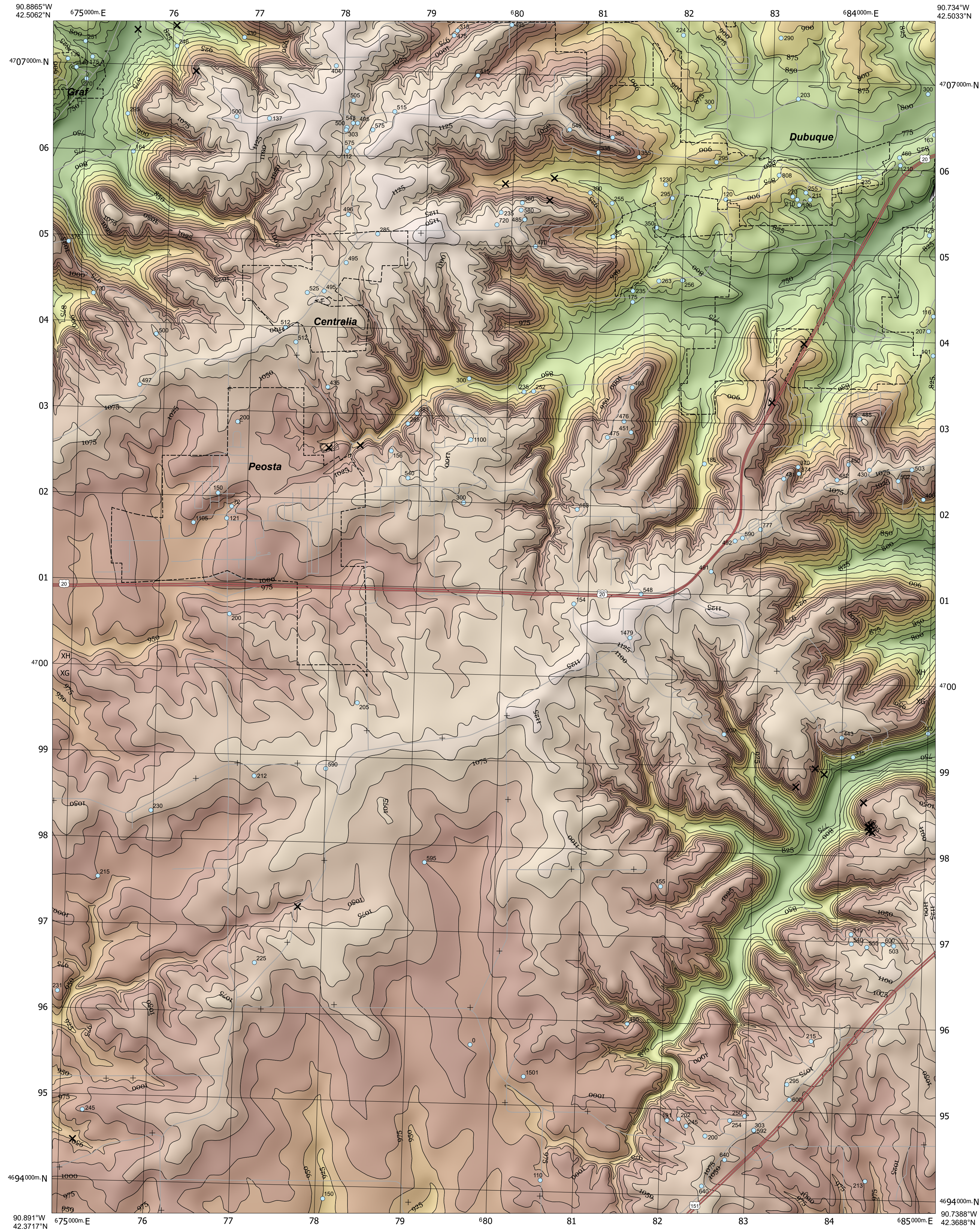


BEDROCK ELEVATION AND QUATERNARY THICKNESS MAPS OF THE PEOSTA 7.5' QUADRANGLE, DUBUQUE COUNTY, IOWA

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BEDROCK ELEVATION



INTRODUCTION

The South 7.5' Quadrangle in Dubuque County, Iowa, is within two landform regions, the East-Central Drift Plain and Paleozoic Plateau. The Silurian Escarpment, a prominent ridge of resistant dolostone, roughly marks the boundary between the East-Central Drift Plain and the Paleozoic Plateau. Both of these landform regions are characterized by thin (less than 30 feet) glacial deposits of loess and/or till draped over Silurian- and Ordovician-age bedrock units. The Mississippi Alluvial Plain occupies the northeastern corner of the quadrangle and is bounded by steep bluffs of Ordovician-age carbonates of the Galena Group. The bedrock surface of the Peosta 7.5' Quadrangle is mostly strata of the Ordovician System with carbonates of the Silurian System northern portion of the mapping area.

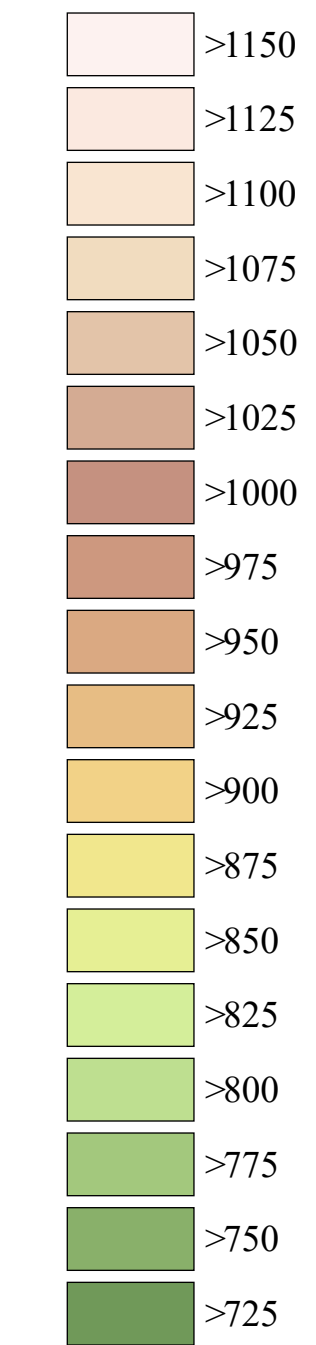
METHODOLOGY

The Bedrock Elevation and Quaternary Thickness Maps of the Peosta 7.5' Quadrangle were constructed using the same datasets as the Bedrock Geologic Map (Open File Map OFM-25-12). Numerous bedrock exposures exist in the mapping area, primarily exposing dolostones of the Silurian System along the escarpment as well as Galena Group carbonates along roadcuts, stream valleys, and the Mississippi River Valley. One rock quarry is within the quadrangle. Geologic reconnaissance located 23 bedrock outcrops in the mapping area. Further subsurface information was derived from the analysis of more than 150 borehole records, 91 of which have lithologic strip logs. An additional 81 strip logs were created for this mapping project.

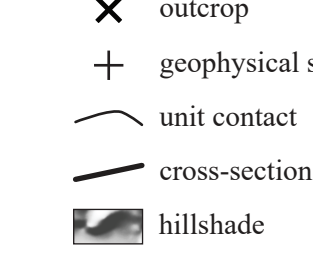
Each of these records was checked for locational accuracy using information from the driller's logs, historic plat books, county assessor information, and direct communication with landowners. The depth to the surficial-bedrock contact was determined for each well and assigned an elevation value by subtracting it from the surface digital elevation model (DEM). These data points provided the framework for the Bedrock Elevation Map. Additional information was gained from an assessment of the Natural Resources Conservation Service (NRCS) County Soil Survey by identifying soil series that indicate shallow bedrock.

To create the Bedrock Elevation Map, bedrock elevation contours (drawn at a 25-foot contour interval) were digitized manually onscreen using Esri ArcGIS Pro 3.4 software. The bedrock elevation raster was then generated using interpolations of the bedrock surface created with the 'Topo to Raster' geoprocessing tool (ArcGIS Pro 3.4). The Quaternary Thickness Map was created by subtracting the bedrock elevation raster values from the surficial DEM raster. The resulting surface was rounded to the nearest integer and contours were generated from this result and then smoothed.

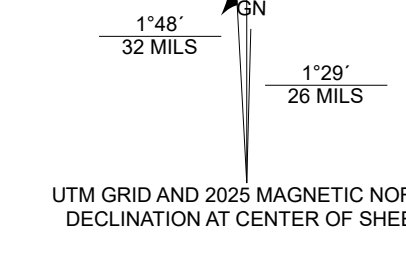
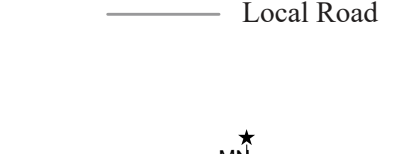
BEDROCK ELEVATION



MAP SYMBOLS



ROAD CLASSIFICATION



1	2	3	ADJOINING QUADRANGLES
			1 Holy Cross, IA
			2 Sherrill, IA
			3 Dubuque North, IA, WI, IL
			4 Epworth, IA
			5 Dubuque South, IA, IL
			6 Fillmore, IA
			7 Bernard, IA
			8 Zwingle, IA

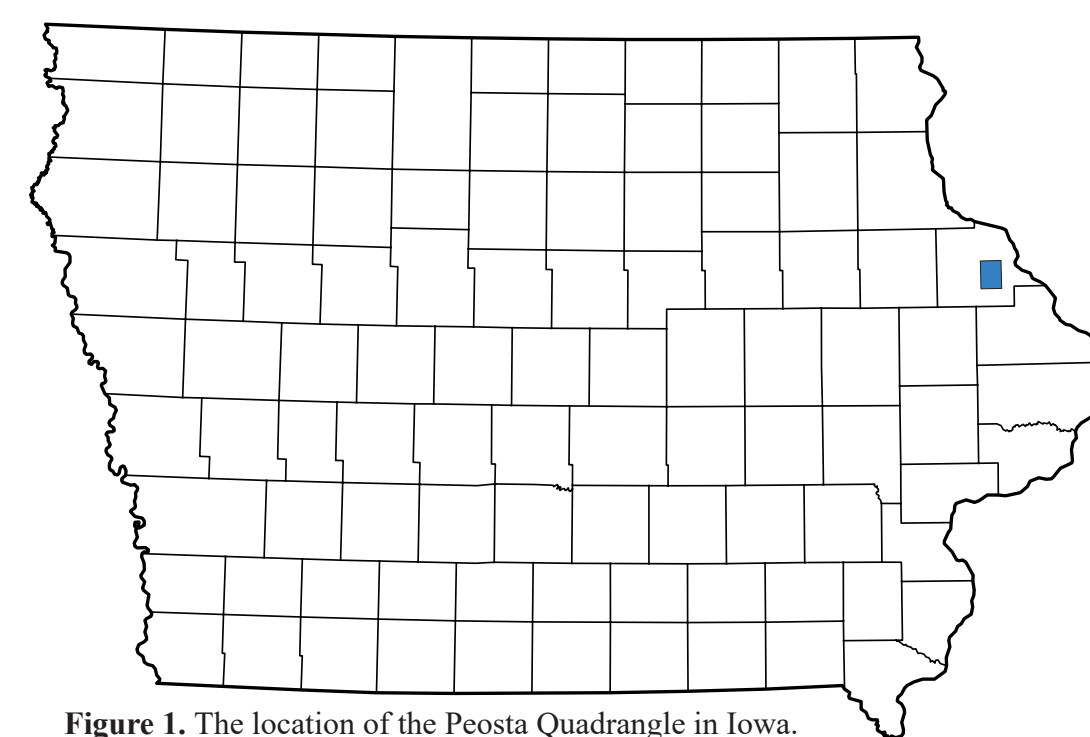


Figure 1. The location of the Peosta Quadrangle in Iowa.

ACKNOWLEDGEMENTS

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Geology based on fieldwork done by J. Malone and R. Clark, 2023-2025. Digital cartography by P. Kerr. Base map generated from the Iowa Geospatial Data Clearinghouse.

The map and cross-sections 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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QUATERNARY THICKNESS

