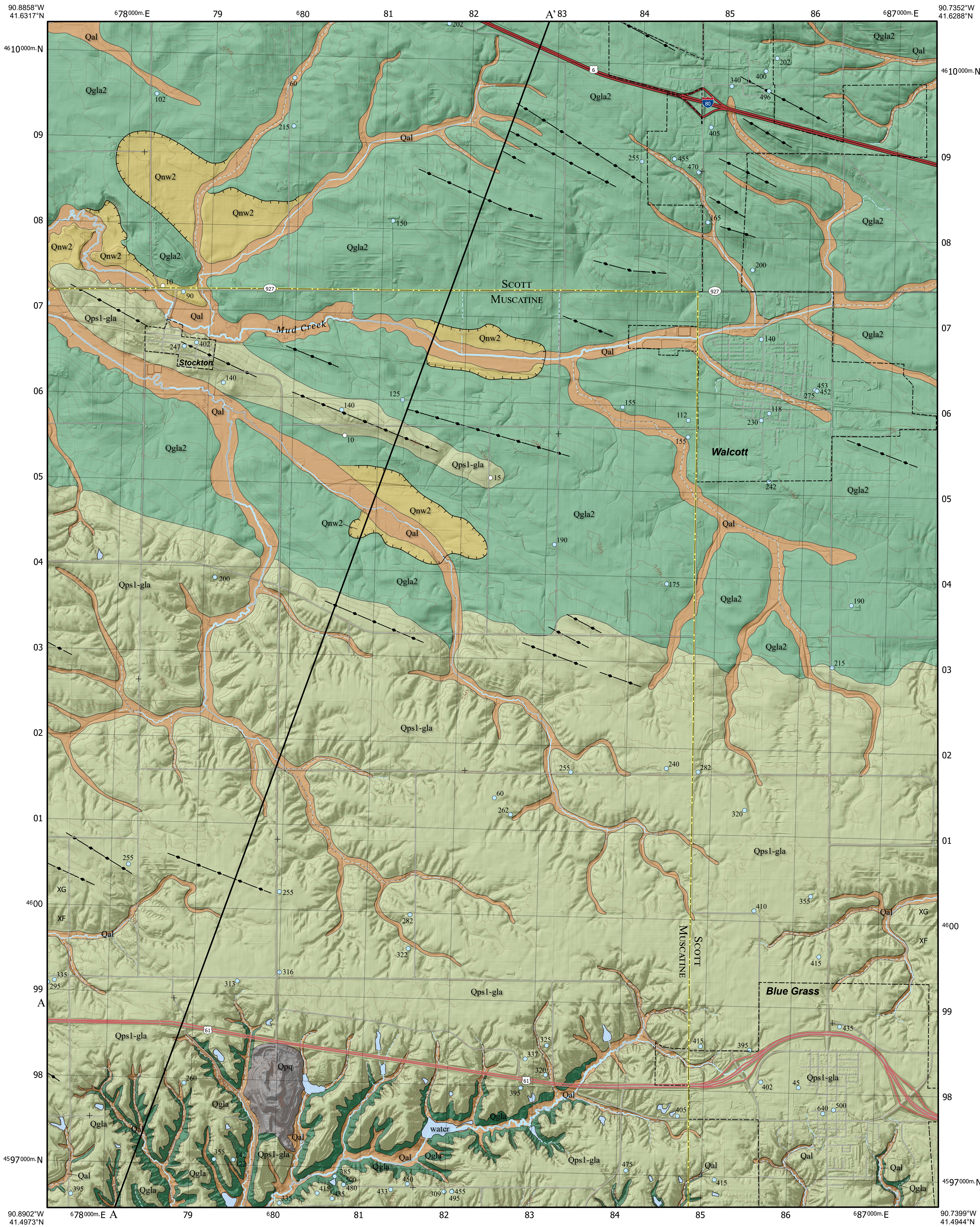


SURFICIAL GEOLOGIC MAP OF THE WALCOTT 7.5' QUADRANGLE, MUSCATINE AND SCOTT COUNTIES, IOWA

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INTRODUCTION

The Walcott 7.5' Quadrangle is located in Muscatine and Scott counties, Iowa, Fig. 1. The surficial geology of this quadrangle is dominated by Quaternary-aged sediments since bedrock does not outcrop in the mapping area. This landscape is exclusively on the Illinoian Till Plain, Fig. 2., and the thickness of the Quaternary package is generally 10 to 20 m (32-66 ft). The Cleona Bedrock Channel is found in the northwestern corner of the mapping area where bedrock can be as much as 100 m (330 ft) below the surface. This buried valley contains glacial deposits from multiple Quaternary ice advances.

The uplands in the mapping area are formed from Illinoian till the Glasford Formation. This diamict may have the Sangamon Geosol developed in the uppermost 1 to 2 m (3-7 ft) when buried by Wisconsin-age eolian sediments on the southern half of the map area. Here, loess Peoria Formation ranges from 2 to 5 meters and typically includes a sandy zone at the base. The northern half of the quadrangle typically has thin eolian sediments over locally-derived colluvium. Data collected for this mapping project included 2 drill cores and 3 hand probe locations.

DESCRIPTION OF MAP UNITS

- Alluvium**
- Qal - Alluvium (DeForest Formation-Undifferentiated)** Variable thickness of less than 1 to 5 m (3-16 ft) of very dark gray to brown, noncalcareous to calcareous, stratified silty clay loam, clay loam, loam to sandy loam alluvium and colluvium in stream valleys, on hill slopes, and in closed depressions. May overlie Wolf Creek/Alburnett formation till or Noah Creek Formation sand and gravel. Associated with low-relief modern floodplains, closed depressions, modern draineways, or toeslope positions on the landscape. Unit also includes colluvial deposits derived from adjacent map units. Seasonal high water table and potential for frequent flooding.
- Eolian Sediment**
- Qps1-gla - Loess and Intercalated Eolian Sand (Peoria Formation-silt facies)** Two to five meters of yellowish brown to gray, massive, fractured, noncalcareous grading downward to calcareous silt loam and intercalated fine to medium, well sorted, sand. Sand is most abundant in lower part of the eolian package- eolian dunes 0.5 to 2.5 m (2-8 ft) thick may be present at the base of this unit. Overlies massive, fractured, loamy glacial till of the Illinoian Glasford Formation with or without intervening clayey Farmdale/Sangamon Geosol.
- Colluvial Sediment**
- Qnw2 - Sand and Gravel (Noah Creek Formation)** Generally 2 to 8 m (7-26 ft) of yellowish brown to gray, poorly to well-sorted, massive to well stratified, coarse to fine feldspathic quartz sand, pebbly sand and gravel with few intervening layers of silty clay. A thin mantle of loess, reworked loess or fine-grained alluvium may be present. This unit includes silty colluvial deposits derived from the adjacent map units. This unit encompasses deposits that accumulated in low-relief stream valleys during the Late Wisconsin. Seasonal high water table and some potential for flooding.
- Glacial Sediment**
- Qgla2 - Periglacial and Eolian Sediments Shallow to Glacial Till (unnamed erosion surface sediment)** Generally 1 to 3 m (3-10 ft) of yellowish brown to gray, massive to weakly stratified, well to poorly sorted loamy, sandy and silty erosion surface sediment. Map unit includes some areas mantled with less than 2 m (7 ft) of Peoria silt or sand. Overlies glacial till of the Glasford Formation.
 - Qgla - Till (Glasford Formation)** Generally 3 to 15 m (10-50 ft) of very dense, massive, fractured, loamy glacial till of the Illinoian Glasford Formation. Overlies the Yarmouth Paleosol formed in Pre-Illinoian till. This mapping unit encompasses narrowly dissected interfluvial and side slopes, as well as side valley slopes. Drainage is variable from well drained to poorly drained.
 - Qwa3 - Till (Wolf Creek & Alburnett formations)** Generally 15 to 60 m (50-200 ft) of very dense, massive, fractured, loamy glacial till of the Wolf Creek and/or Alburnett formations. This unit overlies Paleozoic bedrock and is only shown on the cross-section.

CORRELATION OF MAP UNITS

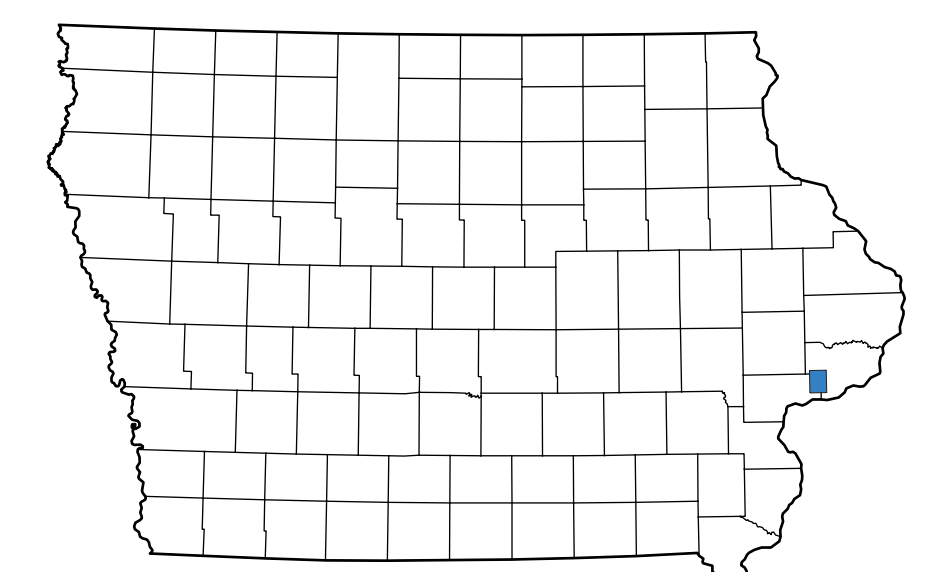
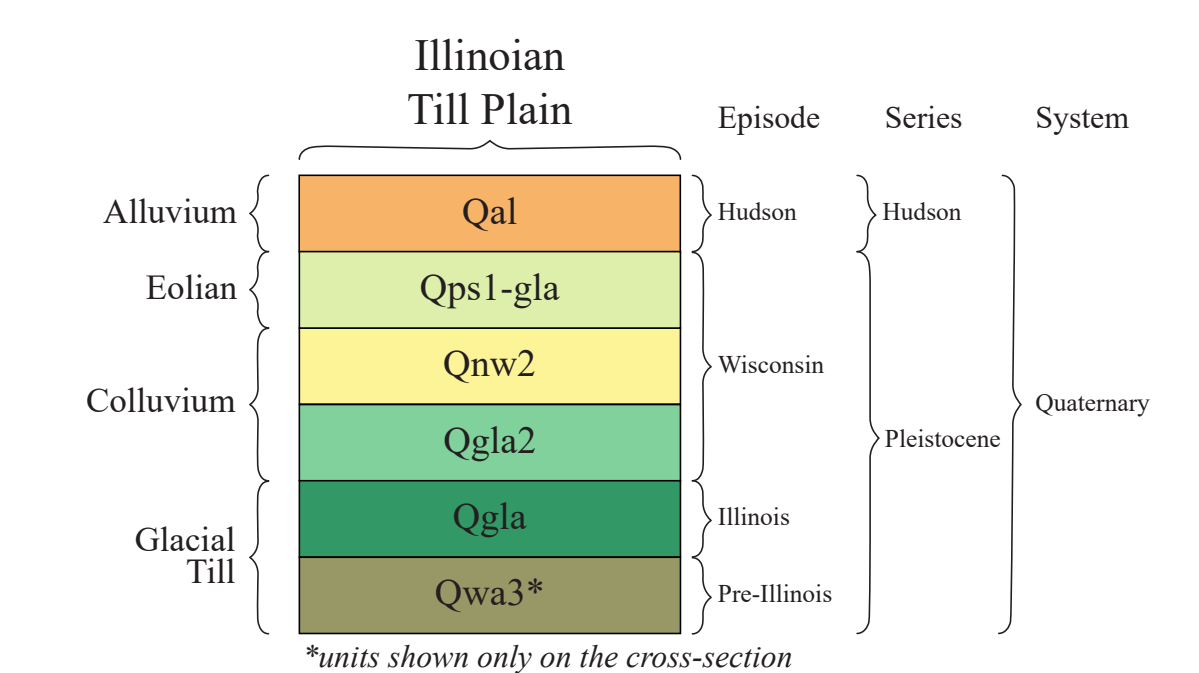


Figure 1. The location of the Walcott Quadrangle in Iowa.

MAP SYMBOLS

- ₂₅ water well with total depth
- ₂₀ stratigraphic core
- ⊕ geophysical station
- unit contact
- aligned ridge
- elevation contour
- cross-section
- water body
- stream
- hillshade

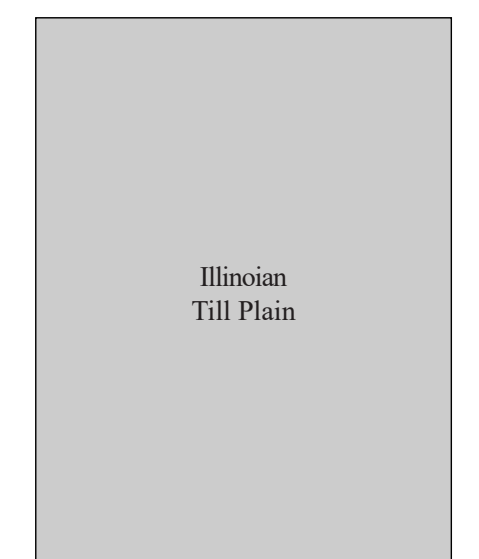


Figure 2. The Walcott 7.5' Quadrangle is located entirely on the Illinoian Till Plain. Shown at a 1:200,000 scale.

CROSS-SECTION LEGEND

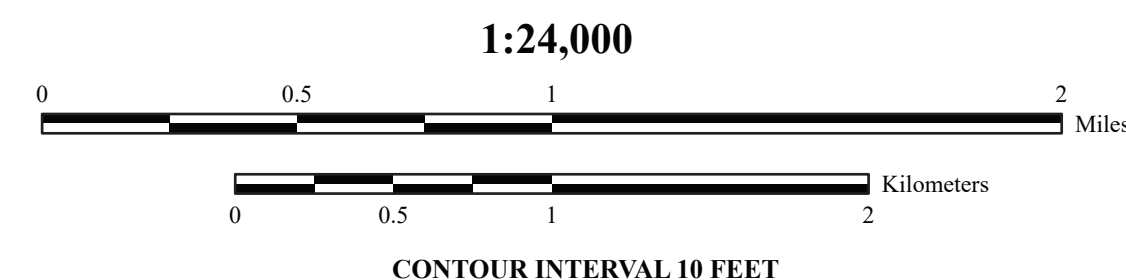
- W-73/65 GeoSam sampling point
- contact

Geology based on fieldwork done by P. Kerr 2024-2025. Digital cartography by P. Kerr. Base map generated using data from the [Iowa Environmental Data Clearinghouse](#). Map projection and coordinate system based on Universal Transverse Mercator (UTM) Zone 18N, Datum NAD83. The map and cross-section are based on interpretation 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.

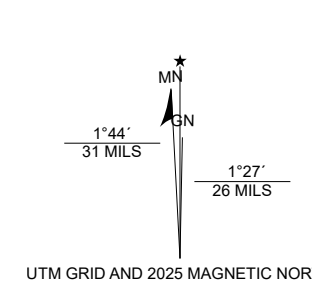
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- ROAD CLASSIFICATION**
- U.S. Interstate
 - State Route
 - U.S. Route
 - Local Road



ADJOINING QUADRANGLES		
1	2	3
4	5	
6	7	8

1 Bennett, IA
2 Dixon, IA
3 Donahue, IA
4 Durant, IA
5 Davenport West, IA
6 Illinois City, IA-IL
7 Montpelier, IA-IL
8 Andalusia IA-IL

GEOLOGIC CROSS-SECTION A-A'

