

Location of cross-section traverses. End moraines, a significant topographic feature on the cross sections, are shown for reference. Moraines are from a smaller scale map by Willman and Frye (1976).

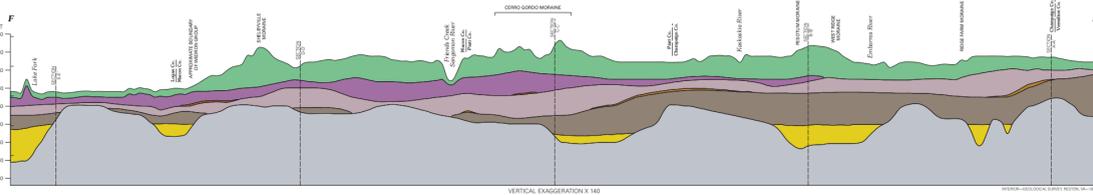
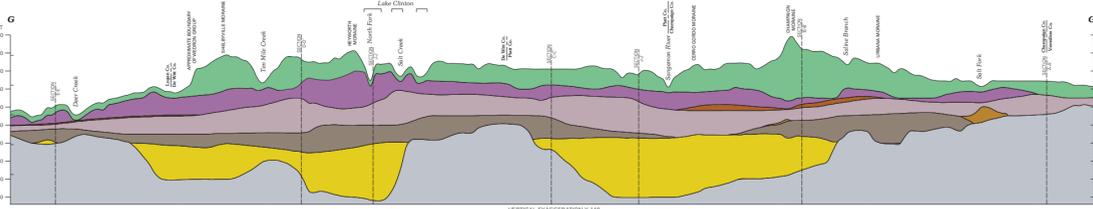
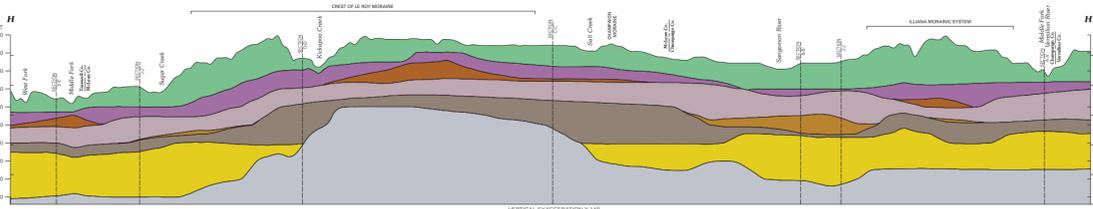
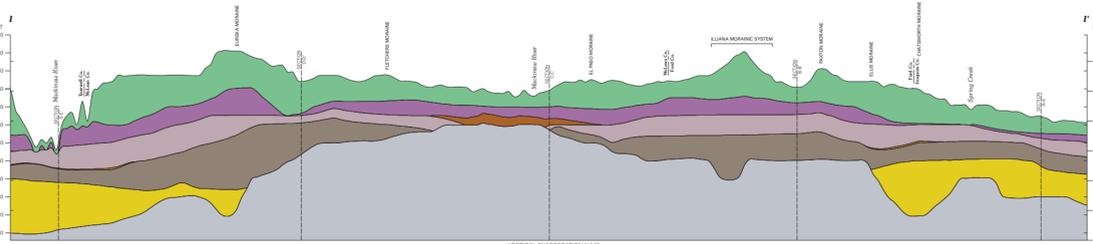
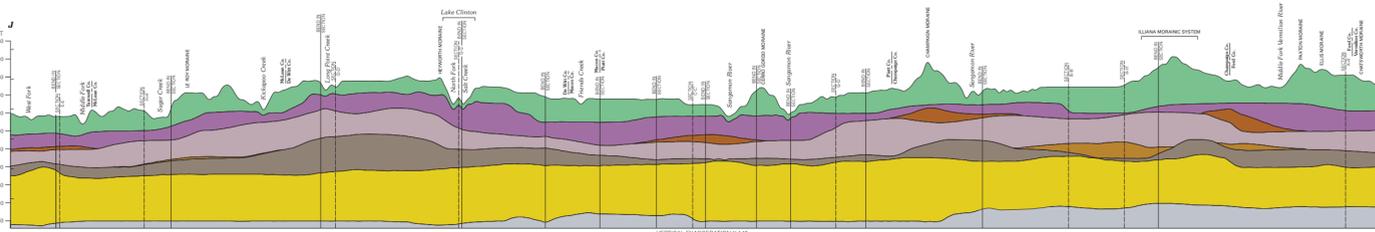
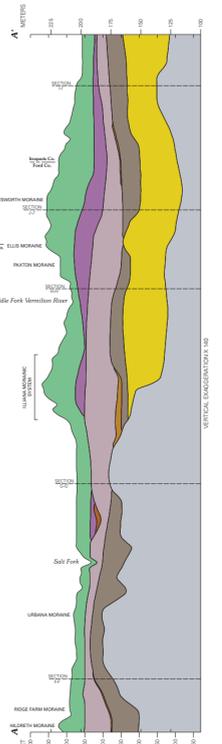
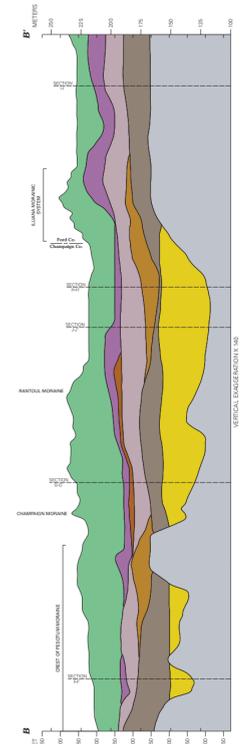
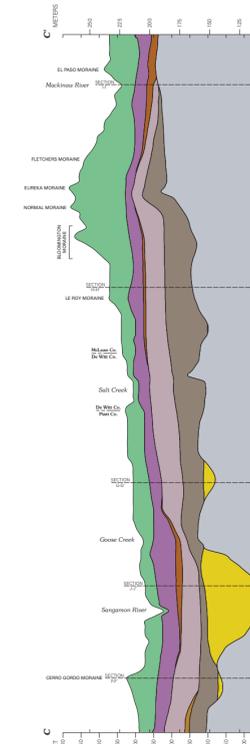
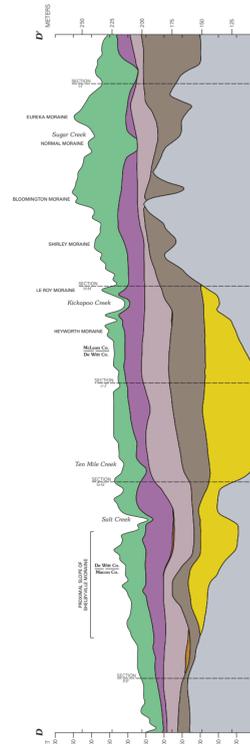
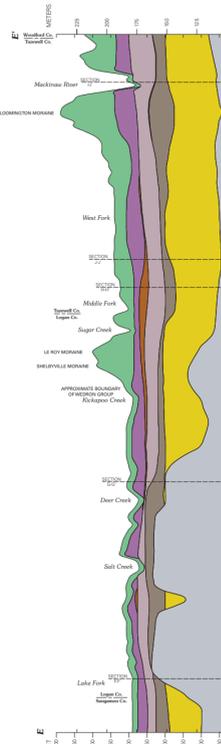


Figure 17—Cross sections along nine straight-line traverses and along one traverse section J-J' that follows the Mahomet Bedrock Valley thalweg (the thalweg is the valley axis, connecting the deepest points along the valley). Cross sections were compiled from the three-dimensional model of stratigraphic units based on the elevation maps shown in figure 14 (sheet 2). Elevation maps were encountered in mapping the stratigraphic unit comprising the Woodson and Mason Groups and Cahokia Formation, especially in the southeastern part of the study area, where these sediments are thin or absent. To integrate this unit with the upper Glasford Formation, which is in places exposed, required assigning the Woodson and Mason Groups and Cahokia Formation a minimum thickness of 15 ft (see discussion on sheet 1 under "An internally consistent geologic model and set of maps," fourth paragraph). This permitted a smooth integration of the Woodson and Mason Group surface with the upper Glasford Formation surface across the area. The assumption of a minimum thickness also affects areas where modern streams have incised Glasford Formation and older deposits; there, the top of the older deposits in these valleys has been effectively lowered by 15 ft, producing a minimum 15-foot thickness of Cahokia Formation alluvium in the riverbeds. The presence of Cahokia Formation alluvium is reasonable and is generally supported by field observations. However, as a consequence of the assumed minimum 15-foot thickness, thin surficial deposits also are shown along valley margins where they may not actually occur; in such places, modern erosion has locally exposed upper Glasford Formation and older deposits.

- EXPLANATION OF STRATIGRAPHIC UNITS**  
As shown in figures 17 (cross sections) and figures 18 and 19
- Woodson and Mason Groups, including Cahokia Formation (Woodson and Mason Episodes). This unit is assigned a minimum thickness of 15 ft.
  - Upper Glasford Formation (Illinoian Episode)
  - Upper Glasford base sand
  - Lower Glasford Formation (Illinoian Episode)
  - Lower Glasford base sand
  - Upper Benser Formation (pre-Illinoian Episode)
  - Middle Benser Formation—mostly Mahomet Sand Member (pre-Illinoian Episode)
  - Bedrock (undifferentiated)

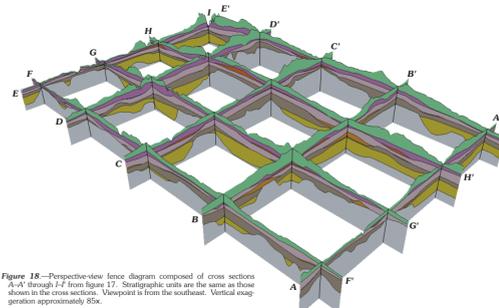


Figure 18—Perspective-view force diagram composed of cross sections A-J' through J-J' from figure 17. Stratigraphic units are the same as those shown in the cross sections. Viewpoint is from the southeast. Vertical exaggeration approximately 85x.

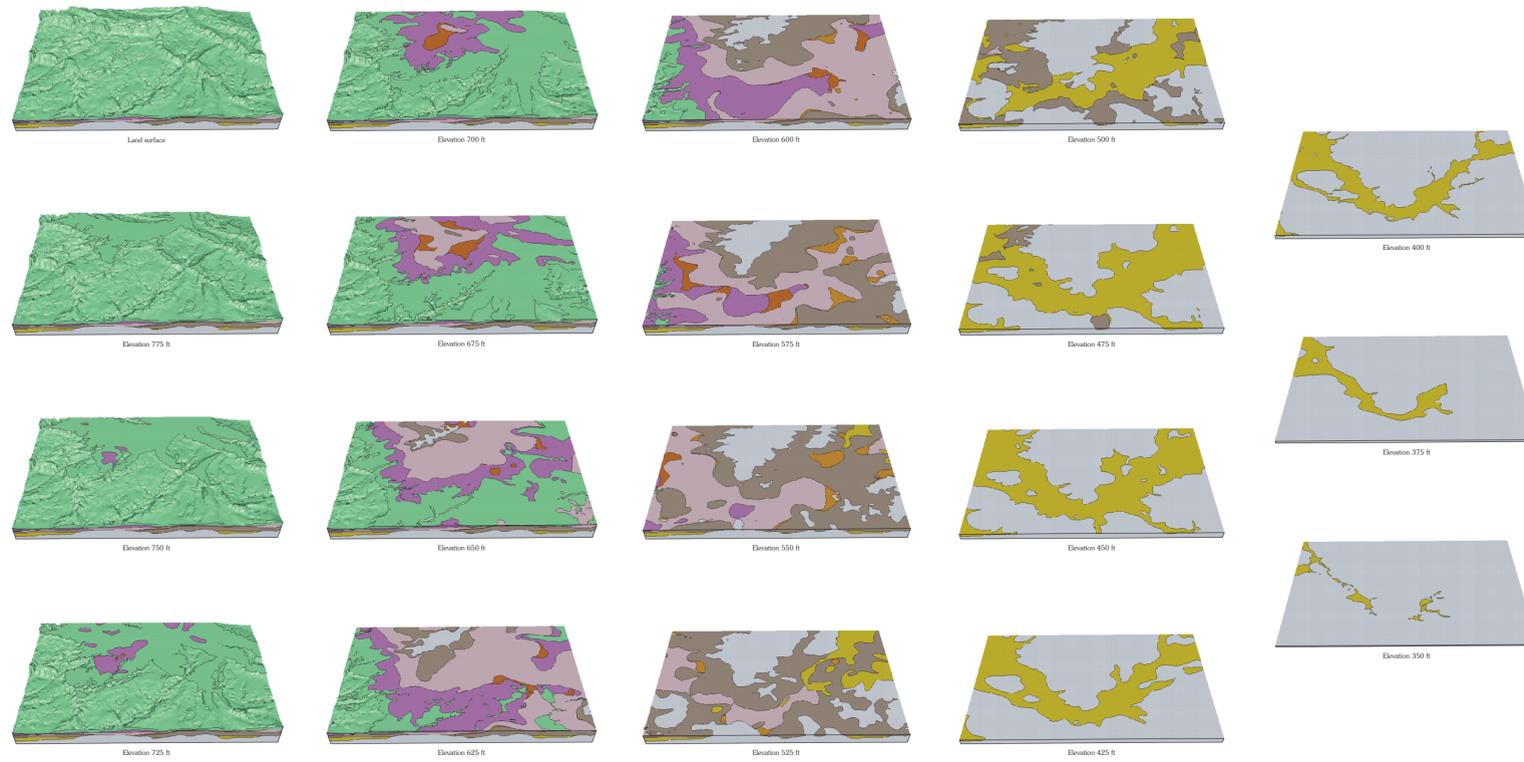


Figure 19—Horizontal "slices" through the geologic materials in the map area, showing the stratigraphic units encountered at different elevations above sea level. Viewpoint is from the south; vertical exaggeration is approximately 30x. Slices are shown from elevations 775 ft to 350 ft, in 25-foot increments. The upper left diagram shows the land surface, where elevations approach 950 ft, slices between 950 ft and 775 ft were omitted because they did not expose underlying units. Stratigraphic units are the same as those shown in the cross sections. Note in particular the gradual filling of the Mahomet Bedrock Valley, from pre-Illinoian time into the Wisconsin Episode.

**THREE-DIMENSIONAL GEOLOGIC MAPS OF QUATERNARY SEDIMENTS IN EAST-CENTRAL ILLINOIS**