

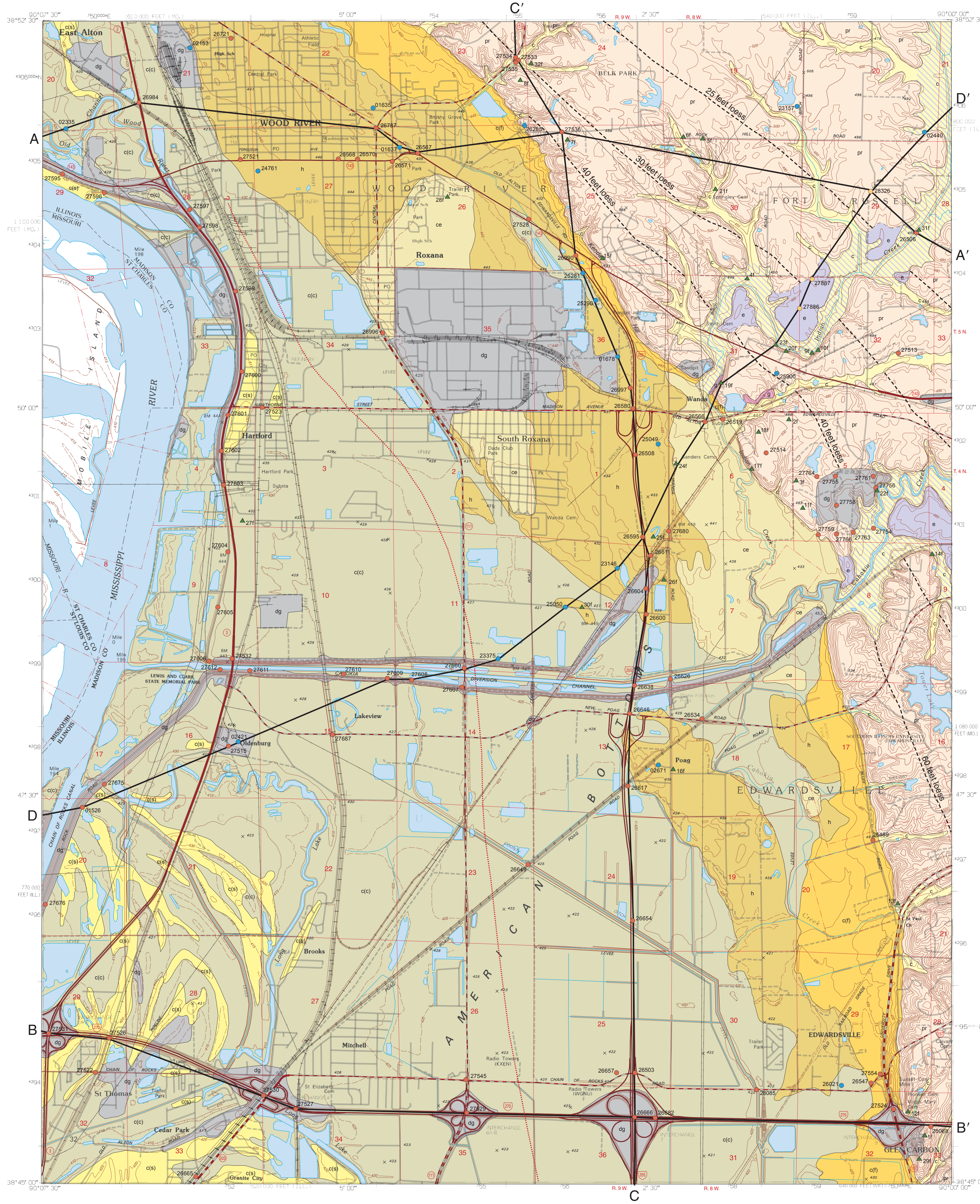
SURFICIAL GEOLOGY OF WOOD RIVER QUADRANGLE

MADISON COUNTY, ILLINOIS

David A. Grimley and Scott W. Lepley
2005

Illinois Preliminary Geologic Map
IPGM Wood River-SG

Illinois Department of Natural Resources
ILLINOIS STATE GEOLOGICAL SURVEY
William W. Shilts, Chief



QUATERNARY DEPOSITS

Description	Unit	Interpretation
HUDSON EPISODE (~12,000 years before present (B.P.) to today)		
Fill or disturbed earth; sediment of various types; up to 40 feet thick	Disturbed ground (dg)	Disturbed ground or fill in interstate interchanges, landfills, sand and gravel pits, levee fills, and borrow pits
Silt loam with some silty clay and sand, some gravel; gray to brown; massive to well stratified; may contain wood, coal, or manmade debris; up to 30 feet thick	Cahokia Formation (hatched where underlain by Equality Fm)	Alluvium (river deposits); contains significant redeposited loess and historically eroded material
Silt loam with some thin sand and diamiction beds; brown; weakly stratified; soft; up to 25 feet thick	Cahokia Formation (fan facies)	Alluvium deposited in distributary channels; includes much redeposited loess, some mud flows
Silty clay loam, silty clay, and silt with some fine sand lenses; gray to brown, some thin red layers; massive to well stratified; soft to stiff; up to 50 feet thick	Cahokia Formation (clay facies)	Abandoned channel fill, swale fill, and backswamp alluvium; deposited in floodplain of Mississippi River; interfingers with fan and sandy facies of Cahokia Formation
Very fine, fine, and medium sand; with some fine sand and gravel and some silt and clay layers; light brown to gray, stratified, loose to soft; up to 55 feet thick, but typically 20 to 40 feet thick	Cahokia Formation (sand facies)	Point bar and channel alluvium of the Mississippi River
Silty clay to silt with some fine sand; gray to brown; massive to stratified; stiff; up to 20 feet thick	Cahokia or Equality (undifferentiated)	Fine-grained alluvium and/or lake deposits; occurs on and adjacent to the Wood River Terrace and in Indian and Cahokia Creek valleys
WISCONSIN EPISODE (~75,000–12,000 years B.P.)		
Silty clay to silt with some fine sand; gray to brown to pinkish-brown; massive to stratified; stiff; calcareous; may contain wood fragments or aquatic snails; up to 100 feet thick	Equality Formation	Lake deposits; in terraces and below Cahokia Formation in Indian and Cahokia Creek valleys; deposited, interfingers with fan and sandy facies of Cahokia Formation during glacial times
Medium to coarse sand with gravel and some fine sand; fine sand where exposed near surface; light brown to gray to pinkish-brown; stratified; various pebble compositions; up to 145 feet thick, but typically 55 to 70 feet thick west of red clay line	Henry Formation	Glacial outwash of the Mississippi River; occurs near surface in the Wood River Terrace; buried by postglacial Cahokia alluvium
Silt to silt loam; yellow-brown to gray to pinkish brown; massive with some dark organic layers; friable; mainly dolomitic; terrestrial gastropods common; contains modern soil solum in upper 2 to 4 feet; carbonate nodules common; up to 80 feet thick	Peoria and Roxana Silt	Loess; some slope deposits and redeposited loess; upper portion is Peoria Silt (tan to gray; up to 45 feet thick); lower portion is Roxana Silt (pink to tan-gray; higher clay content; up to 35 feet thick); thickest near bluffs
ILLINOIS EPISODE (~200,000–130,000 years B.P.)		
Silt, silt loam, and silty clay loam; some very fine sand and diamiction beds; reddish brown to light brown to olive-brown; abundant pedogenic features in upper portion; up to 12 feet thick	Berry Clay Member, Glasford Formation (cross sections only)	Weathered loess, slope sediments, and lake sediment; mostly within solum of Sangamon Geosol; includes some areas of weathered Tenebris Silt
Pebbly silt loam to loam diamiction with common sand and silt bodies; olive to gray; weathered brown in upper portion; typically massive, dense, and calcareous, with common wood and shale fragments; up to 60 feet thick	Glasford Formation	Till and ice marginal sediment; upper portions may contain lower horizons of Sangamon Geosol; includes up to 45 feet of outwash in buried bedrock valleys near Indian and Cahokia creeks
PRE-ILLINOIS AND YARMOUTH EPISODE (~500,000–200,000 years B.P.)		
Pebbly silty clay loam to silt loam diamiction, some silt loam and silty clay loam; contains some sand lenses; brown, orange-brown or gray; rarely olive or green; massive to weakly laminated; up to 60 feet thick	Banner Formation (cross sections only)	Till, outwash, lake deposits, and alluvium; may contain Yarmouth Geosol weathering profile in upper 10 feet (if not truncated)

Data Type

- ▲ Outcrop or hand auger
- Stratigraphic boring
- Water well
- Engineering boring
- Contact
- - - Inferred contact
- - - - - Loess thickness contour
- Red clay line (thin red clay beds are found east of this line at base of Cahokia Formation)
- A—A' Line of cross section
- Water

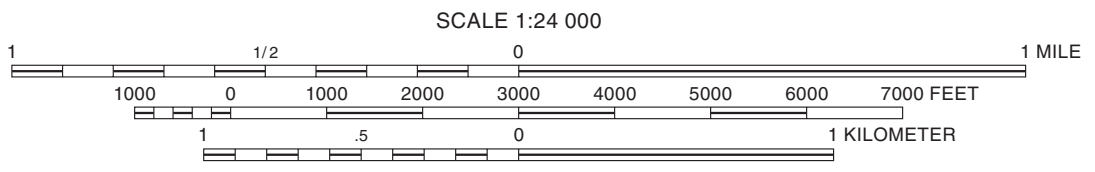
Note: Data symbol labels indicate the county number, a portion of the 12-digit API number on file at the ISGS Geologic Records Unit. Outcrop labels indicate field number. Online well and boring records are available at the ISGS web site.

Note: Loess contours (thick black dashed lines on map) show the combined thickness of Peoria and Roxana Silts on uneroded upland areas. The actual thickness at a given spot may be much less, especially along valley slopes where post-depositional erosion of loess has been significant (see cross sections).

Base map compiled by Illinois State Geological Survey from digital data provided by the United States Geological Survey. Hypsography and PLSS compiled in 1994. Transportation and hydrography updated from imagery dated 1998.

North American Datum of 1983 (NAD 83)
Projection: Transverse Mercator
10,000-foot ticks: Illinois State Plane Coordinate system, west zone and Missouri State Plane Coordinate system, east zone (Transverse Mercator)
1,000-meter ticks: Universal Transverse Mercator grid system, zone 15

Recommended citation:
Grimley, D.A. and S.W. Lepley, 2005, Surficial Geology of Wood River Quadrangle, Madison County, Illinois: Illinois State Geological Survey, Illinois Preliminary Geologic Map, IPGM Wood River-SG, 1:24,000.



BASE MAP CONTOUR INTERVAL, 10 FEET
SUPPLEMENTARY CONTOUR INTERVAL, 5 FEET
NATIONAL GEOLOGIC VERTICAL DATUM OF 1929

Released by the authority of the State of Illinois: 2005

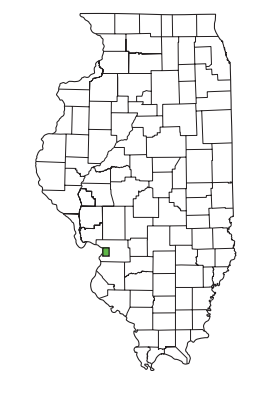
Geology based on field work by D. Grimley and S. Lepley, 2000-2001.
Digital cartography by A. Tovey, Illinois State Geological Survey.

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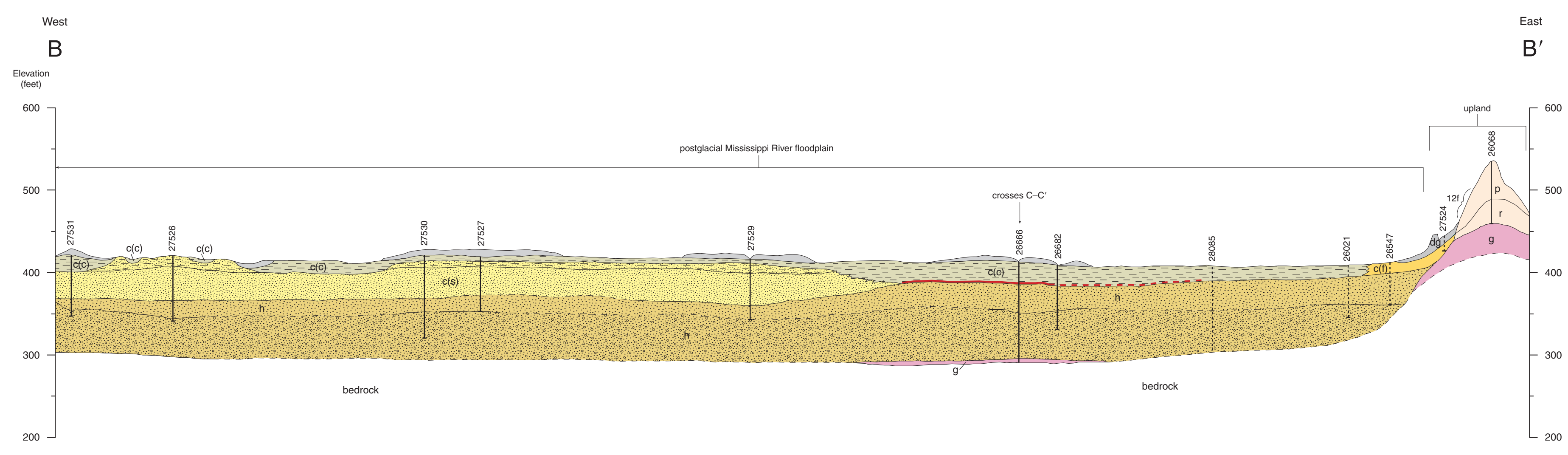
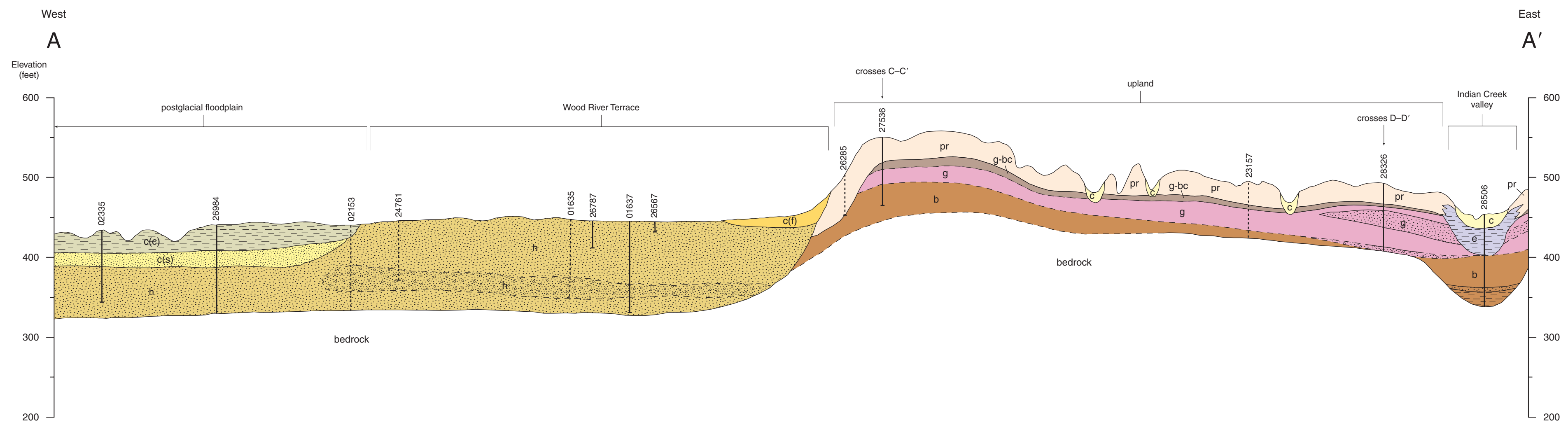
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1	2	3	ADJOINING QUADRANGLES 1 Alton 2 Bethalto 3 Pransietown 4 Columbia Bottom 5 Edwardsville 6 Granite City 7 Monks Mound 8 Collinsville
4	5		
6	7		

APPROXIMATE MEAN DECLINATION, 2005

ROAD CLASSIFICATION	
Primary highway, hard surface	Light-duty road, hard or improved surface
Secondary highway, hard surface	Unimproved road
Interstate Route	U.S. Route
	State Route



- Cross Sections**
- Stratified silt and clay
 - Silty sand
 - Mainly fine sand (some very fine medium sand)
 - Mainly medium sand (some fine and coarse sand)
 - Medium to coarse sand with gravel
 - Diamicton, massive silt, or other fine-grained sediment
 - Contact
 - Inferred contact
 - Red clay bed present
 - Red clay bed inferred
- Note: Labels above logs indicate the abbreviated API number. Outcrop labels indicate field number.
- Horizontal scale: 1 inch = 2000 feet
 Vertical scale: 1 inch = 100 feet
 Vertical exaggeration: 20x

