

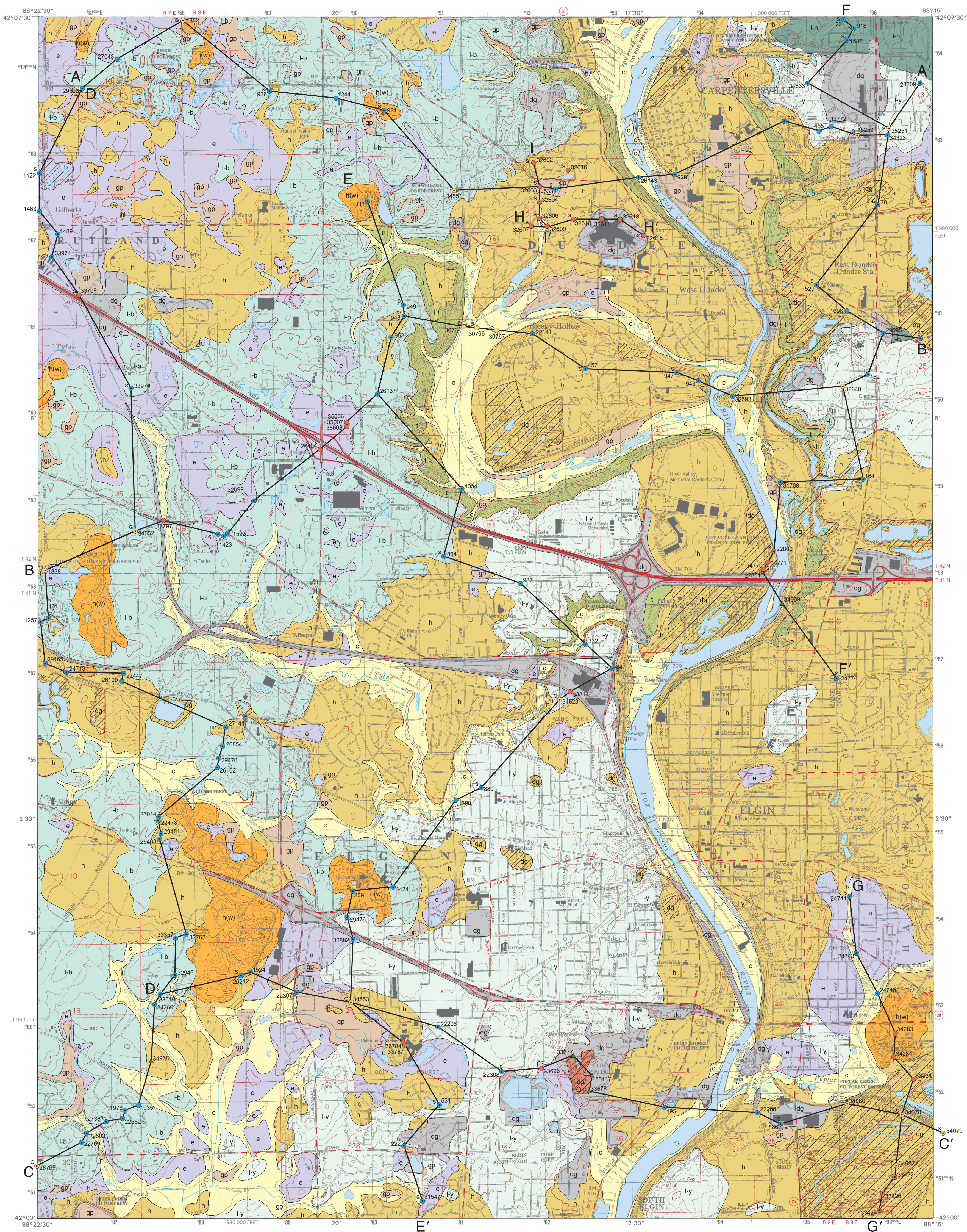
SURFICIAL GEOLOGY OF ELGIN QUADRANGLE

KANE AND COOK COUNTIES, ILLINOIS

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

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2007

Illinois Geologic Quadrangle Map
IGQ Elgin-SG



Base map compiled by Illinois State Geological Survey from digital data provided by the United States Geological Survey. Topography compiled 1988. Planimetry derived from imagery taken 1998. PLSS and survey control current as of 1991. Boundaries current as of 2002.

North American Datum of 1983 (NAD 83)
Projection: Transverse Mercator
10,000-foot ticks: Illinois State Plane Coordinate system, east zone (Transverse Mercator)
1,000-meter ticks: Universal Transverse Mercator grid system, zone 16

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Geology based on field work by B. Brandon Curry, 1998, 2003, 2004, and 2005.

Digital cartography by J. Carrell, M. Barrett, J. Baty, A. Tovey, and J. Domier, Illinois State Geological Survey.

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QUATERNARY DEPOSITS

Description	Unit	Interpretation
HUDSON EPISODE (~14,700 years before present (B.P.) to today)		
Fill (disturbed earth material); primarily material reworked from underlying deposits	Disturbed ground	Disturbed land; embankments and mounds (gray); pits and quarries (open diagonal lines with underlying unit showing through)
Peat and muck; black to brown; interbedded with sand and silty clay (gray) and marl (white to light gray); less than 10 feet thick in most places	Grayslake Peat	Decomposed wetland vegetation and sediment in depressions and on slopes associated with discharge of groundwater
Sand and gravel, well-sorted sand, and lenses of peat, grading laterally to organic-rich silt and clay with fossil wood, moss, snails, ostracodes, and rootlets in most places; as much as 30 feet thick in the Fox River valley; generally less than 10 feet thick in smaller upland valleys	Cahokia Formation	Floodplain alluvium
HUDSON EPISODE (~14,700 B.P. to today) and WISCONSIN EPISODE: Michigan Subepisode (~29,000–14,700 years B.P.)		
Silt, clay, and fine sand; gray to brown; layered to massive; with fossil wood fragments, moss, gastropod shells, ostracodes, leaves, and rootlets in many places; surficial deposits are generally less than 20 feet thick	Equality Formation	Lake deposits in ice-walled lakes, postglacial kettles, and proglacial slackwater lakes in valleys tributary to the Fox River
WISCONSIN EPISODE: Michigan Subepisode (~29,000–14,700 years B.P.)		
Sand and gravel, or sand; with lenses of silt and clay, or diamict; yellowish brown, brown to gray; generally stratified	Henry Formation	Proglacial outwash along Fox River valley, in uplands east of the Fox River, as channel fill west of the Minooka Moraine. Several terraces along the Fox River were formed by large flood (see text). West of the Fox River, outwash also was deposited in deltas and alluvial fans in stagnating ice environments
Sand and gravel (silty to clean), and sand with some beds of silt, and loam diamict; stratified to laminated; contorted and faulted bedding; yellowish brown to grayish brown; as much as 85 feet thick	Henry Formation (Wasco facies)	Kamic (ice-contact) deposits; complex structure due to collapse of sediment during melting of ice
Diamict; sandy loam to loam; friable; mostly oxidized yellowish brown; dolomite-rich; with lenses and beds of sand and gravel	Haeger Member, Lemont Formation	Till and debris flow deposits associated with the Woodstock Moraine
Sand and gravel; yellowish brown; stratified; as much as 60 feet thick; northeastern corner of map only	Beverly Tongue, Henry Formation (cross section F-F' only)	Proglacial outwash deposited primarily in alluvial fans; underlies deposits of the Haeger Member
Diamict; silty clay, silty clay loam, and clay; gray, oxidizing to yellowish brown; includes layers of sand and gravel, silt, and silty clay; as much as 65 feet thick	Yorkville Member, Lemont Formation	Till, debris flow deposits, and lake sediment associated with the St. Charles and Minooka Moraines
Sand and gravel with interbeds of silt and clay; gray; stratified to laminated; as much as 65 feet thick	Unnamed tongue, Henry Formation (cross sections only)	Proglacial outwash and deltaic deposits(?); underlies deposits of the Yorkville Member
Diamict; sandy loam to loam with abundant cobbles; friable; gray to grayish brown, oxidizing to yellowish brown to brown; includes common layers of sand and gravel, and stringers of silt and fine sand; as much as 65 feet thick	Batestown Member, Lemont Formation	Till and debris flow deposits, associated with the Gilberts Drift in western half of quadrangle
Sand and gravel; stratified; grayish brown to gray, oxidizing yellowish brown; as much as 70 feet thick; also silt and clay, laminated, fossiliferous; as much as 60 feet thick	Unnamed tongue, Henry Formation (cross sections only)	Proglacial outwash and slackwater lake sediment deposited in ice contact and in alluvial fans; underlies deposits of the Batestown Member
Diamict; clay loam to loam matrix (roughly equal amounts of sand, silt, and clay) with lenses of sand and gravel, or sand; reddish brown; as much as 160 feet thick	Tiskilwa Formation	Till and debris flow deposits
Sand and gravel, and sand with thin beds of diamict and silt; silty; gray to pinkish brown; stratified; as much as 80 feet thick	Ashmore Tongue, Henry Formation (cross sections only)	Proglacial outwash deposited in alluvial fans and in deltas; underlies deposits of the Tiskilwa Formation
Silt and clay; gray to pinkish brown; laminated; with fossils of ostracodes; as much as 50 feet thick at Carpentersville	Peddicoord Tongue, Equality Formation (cross sections only)	Proglacial lake deposits; underlies deposits of the Ashmore Tongue and Tiskilwa Formation

WISCONSIN EPISODE: Athens Subepisode (~55,000–29,000 years B.P.)

Silt and clay; organic-rich, black to brown; leached of carbonate minerals; contains moss and wood fragments; less than 10 feet thick	Robins Member, Rockana Silt (cross sections only)	Accretionary paleosol; A-horizon of Farmdale Geosol; deposits accreted in low-lying areas; patchy distribution; underlies deposits of the Tiskilwa Formation, Peddicoord Tongue, and Ashmore Tongue
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ILLINOIS EPISODE (~200,000–130,000 years B.P.)

Diamict and sorted sediment, primarily sand and gravel; the diamict is bouldery in places, with abundant lenses, layers, and channel fills of sand and gravel; the diamict matrix is sandy loam to loam and reddish brown, pinkish brown, or brown. The diamict is as much as 135 feet thick, and the sand and gravel, 80 feet thick	Glasford Formation (cross sections only)	Till and debris flow deposits (diamict) and outwash (sand and gravel)
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PRE-QUATERNARY DEPOSITS

Description	Unit	Interpretation (from Graessle 1991)
SILURIAN SYSTEM (440–410 million years B.P.)		
Dolomite; microcrystalline; cherty and shaly in places; white, gray, and greenish gray; as much as 70 feet thick	Wilhelmi, Elwood, Kankakee, and Joliet Formations (cross sections only)	Dolomitized carbonate bank deposits
ORDOVICIAN SYSTEM (490–440 million years B.P.)		
Shale, shaly dolomite; dolomite; brown, gray and greenish gray; the dolomite is vuggy and fossiliferous; about 100 to 210 feet thick	Maquoketa Group	Subtidal to intertidal clastic deposits interbedded with the dolomitized carbonate bank deposits
Dolomite; microcrystalline; cherty and shaly in places; white, light yellowish brown, light gray, and greenish gray; about 160 to 200 feet thick (Graessle et al. 1988)	Galena Group (cross sections only)	Dolomitized carbonate shelf deposits

Data Type

- ▲ Outcrop
- △ Outcrop in field notes (ISGS archives)
- Stratigraphic boring
- Water boring
- Engineering boring

Labels indicate samples (s) or geophysical logs (g).
Numeric labels indicate the county number.
Outcrop labels indicate geologist's field number.
Dot indicates boring is to bedrock.

- Contact
- - - Inferred contact
- A—A' Line of cross section
- Water

Note: The county number is a portion of the 12-digit API number on file at the ISGS Geological Records Unit. Online well and boring records are available at the ISGS Web site.

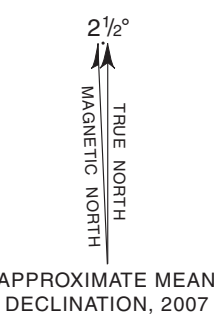


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ADJOINING QUADRANGLES
1 Huntley
2 Crystal Lake
3 Barrington
4 Pingree Grove
5 Streamwood
6 Elmhurst
7 Geneva
8 West Chicago



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

- Laminated silt and clay
- Sand and gravel
- Diamicton (above bedrock)
- Bedrock surface
- Contact
- Inferred contact

Horizontal scale: 1 inch = 2000 feet
Vertical scale: 1 inch = 100 feet
Vertical exaggeration: 20x

