

## EXPLANATION

### GEOLOGIC UNITS

- Artificial Fill  
Surficial sediments composed of sand, gravel, and crushed rock anthropogenically transported and used for construction purposes.
- Alluvium (Qa)  
Sorted and stratified silt, sand, gravel, and cobbles deposited by rivers and streams. Alluvium includes channel, overbank, and fan deposits.
- Wetland Deposit (Hw)  
Peat, muck, clay, silt, and sand deposited in modern wetland environments. There is often a gradational change to alluvial or lacustrine deposits.
- Ice-contact Stratified Drift (Pisc)  
Well-sorted and stratified sand, gravel, and cobbles, deposited in contact with former glaciers. Stratified drift includes kames, kame moraines, and kame terraces.
- Lacustrine Sand (Pls)  
Sorted and stratified sand and occasional gravel deposited in near-shore settings of paleolakes, including shorelines and deltas.
- Lacustrine Silt and Clay (Plsc)  
Stratified silt and clay deposited in deepwater settings of paleolakes.
- Till (Pt)  
Massive diamicton composed of sediments ranging in size from clay through boulders, deposited directly by glacial ice. Sediments are highly compacted due to deposition beneath glacial ice.
- Bedrock

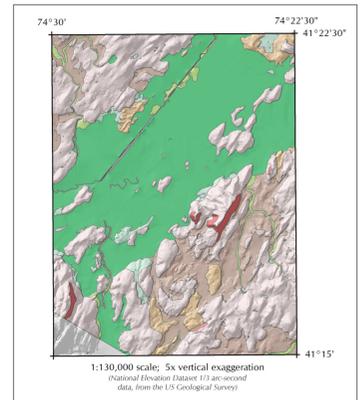
### GEOLOGIC SYMBOLS

- Contact
- Streamlined Landform  
Hill streamlined in the direction of ice flow.
- Esker  
Sinuous sand and gravel ridge deposited in a sub-glacial stream.
- Slump Scarp  
Over-steepened slope in surficial sediments marking the uppermost extent of a slope failure or mass movement.
- Hummocky Terrain (overprint)  
Thermal karst topography formed by the melting of buried ice. Areas may include kames and kettles.

### OTHER SYMBOLS

- New York - New Jersey border

### SHADED TERRAIN MAP

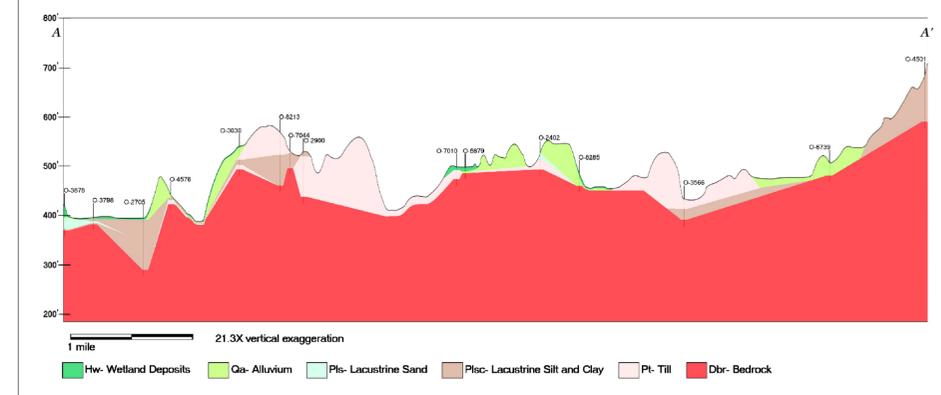


### LOCATION MAP



**NOTICE**  
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### CROSS-SECTION



Universal Transverse Mercator, Zone 18  
North American Datum of 1983

Elevation contours, hydrography, and planimetry layers from the New York State Dept. of Transportation Base Quadrangle separates for the Pine Island and Warwick 7 1/2' minute quads. D01 edition date 1991 for both. USGS contour dates 1969 Pine Island and 1992 Warwick.

Magnetic declination from the NOAA online Declination Calculator: <http://www.ngdc.noaa.gov/geomagmodels/Declination.jsp>

Calculated declination 13°W for the year 2011, at the center of the map.

Scale 1:24,000

0.5 0.25 0 0.5 1 1.5 Miles

0.5 0.25 0 0.5 1 1.5 Kilometers

Contour interval 20 feet

Surficial geologic mapping by CA Smith, PA Stefanik, and AL Kozlowski 2010.

Digital data and cartography, J. Manchester, 2011.

# SURFICIAL GEOLOGY OF THE PINE ISLAND QUADRANGLE, NEW YORK

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