

SURFICIAL GEOLOGIC MAP OF THE DOVER EAST QUADRANGLE IN NEW HAMPSHIRE

BY GRAHAME J. LARSON AND RICHARD GOLDSMITH

DESCRIPTION OF MAP UNITS

A layer of windblown sand and silt, generally mixed with underlying glacial deposits, is present over most of the map area but is not shown.

- sm** SALT MARSH DEPOSITS--Partly decomposed organic material mixed or interbedded with estuarine silt, clay, and sand
- sw** FRESH-WATER SWAMP AND MARSH DEPOSITS--Muck, peat, silt, and sand underlying poorly drained lowland areas. Thicknesses range from a few feet to perhaps tens of feet. Swamp deposits along streams generally contain less peat and more silt and sand than do deposits away from streams.
- al** ALLUVIUM--Sand, silt, and a little gravel in flood plains along present day streams. Deposits probably 10 ft thick or less and underlain by adjacent deposits. Included with swamp and marsh deposits where water table is at the surface.
- ms** MARINE SAND--Fine to locally coarse sand, a few feet to as much as 10 ft. thick, deposited in an estuarine environment; may contain thin beds of silt and clayey silt. Generally interbedded downward and seaward with marine silt and clay (msc) and in places forms a thin blanket a few feet thick over the marine silt and clay. Laps onto older surficial deposits such as glacial sand and gravel (gs) and till (t). Shoreward, may coarsen upward into gravelly beach or near shore deposits not shown separately.

- msc** MARINE SILT AND CLAY--Clayey silt, silty clay, and fine sand deposited on sea bottom. In some places grades upward and is interbedded with marine sand (ms). Highly variable in thickness. Unconformably overlies older glacial deposits and bedrock.
- m** MARINE SAND, AND SILT AND CLAY UNDIFFERENTIATED.
- gs** STRATIFIED GLACIAL SAND AND GRAVEL--Sand, and pebble to cobble gravel, well- to poorly sorted and stratified. Deposited by glacial meltwater streams from the retreating ice sheet. Coarse material, pebble and cobble gravel, usually at the top, lower part, seen in deep exposures (15-20 ft), largely to entirely sand. Most deposits are deltas built into the high sea, which at the time of ice retreat ranged from about 170 ft above present sea level at the southwest corner of the map to about 200 ft at the northwest corner. The deposits in the quadrangle probably represent successive northward-retreating positions of the mouth of the persistent major meltwater streams. The original form of the deposits in the southern and south-central parts of the quadrangle is unknown because of partial burial by the marine deposits and probable reworking by wave and current action. The material reworked is not separated on the map.

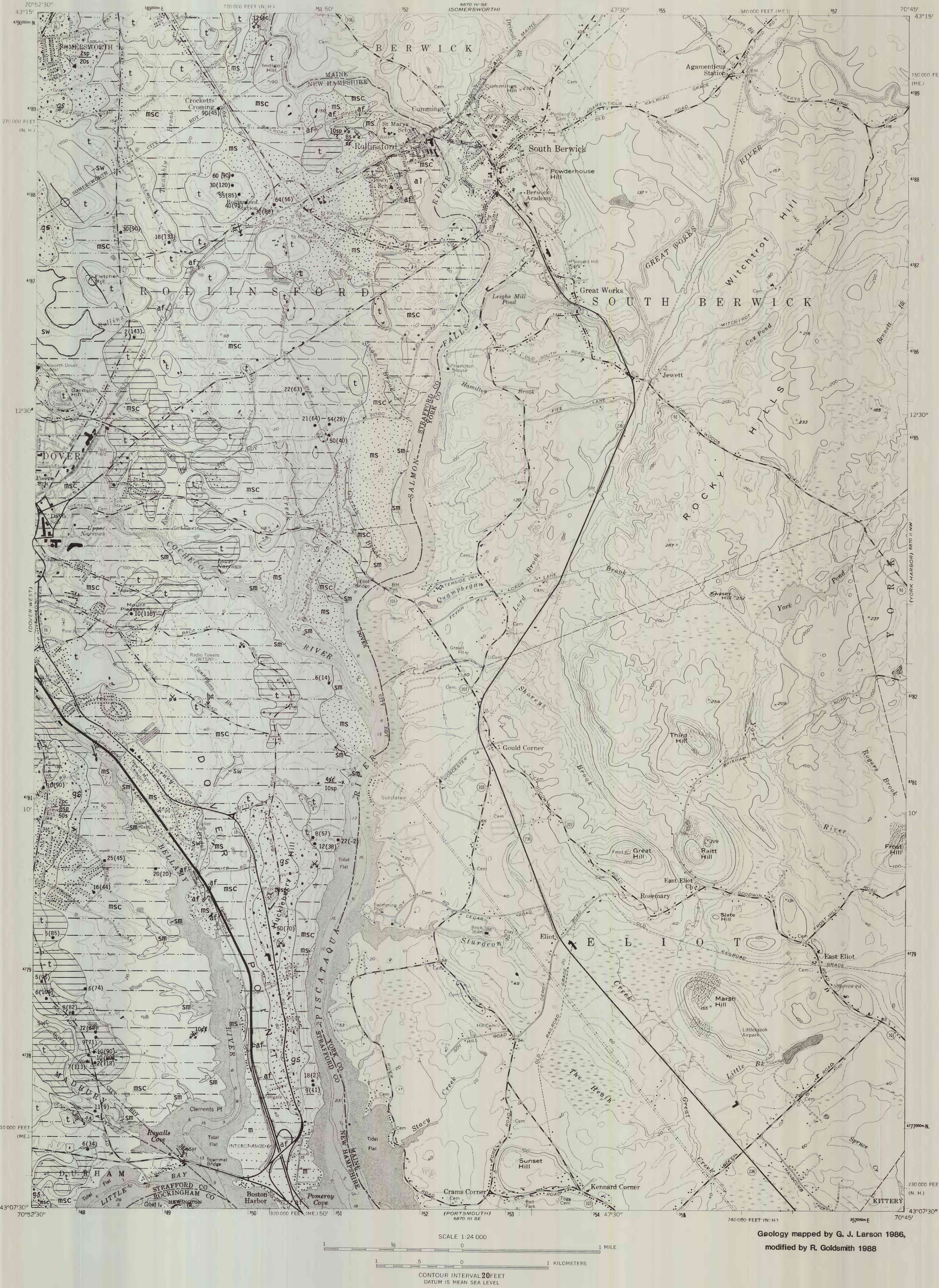
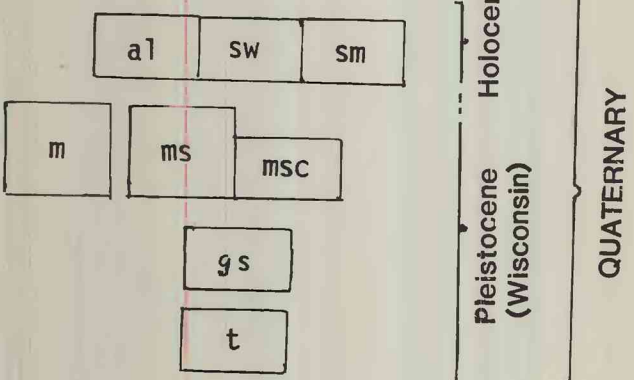
- t** TILL--Poorly to non-sorted mixture that ranges from clay-size particles to large boulders but is dominantly silt to pebble sizes. Locally includes small irregular masses of sorted and stratified sand and gravel. Matrix ranges from very loose and sandy to very compact and silty. Consists of material deposited directly by the ice sheet, with little or no modification by meltwater. In some places, mantles bedrock thinly (to about 10 ft) and discontinuously. In other places forms thick deposits (to as much as 50 ft or more, as in drumlins and streamlined hills of thick till, for example, Garrison Hill, Dover) believed to have been built and shaped beneath moving glacial ice
- af** ARTIFICIAL FILL--Earth-fill material in road and railroad embankments and made land. Many small bodies not shown on map. Includes small cut and fill graded construction areas.

- Bedrock Exposures**--Ruled pattern indicates areas of numerous outcrops and discontinuous, thin (less than 10 ft) surficial cover. A few individual outcrops are shown in some ruled areas.
- Contact**
- Glacial grooves and striations**--Observation is at tip of arrow. Number is in degrees east or west of south
- Long axis of drumlin**--Generally parallel to inferred direction of ice movement. Not shown on drumlins that are irregular or nearly circular in shape.
- Direction of dip of delta foreset beds**
- Pit**--Extent of large pit shown by hachures
- Active**
- Inactive or abandoned**
- Well or test boring reported as ending at or in bedrock.** Number is depth to bedrock. Altitude of bedrock surface in feet above mean sea level is shown in parentheses. Information from Water Well Board, New Hampshire Department of Environmental Services, Water Resource Division.

- MATERIALS OBSERVATIONS**
- Surficial materials in exposures. Letters indicate texture in decreasing order of abundance. Numbers indicate thickness in feet, generally not given where less than about 3 feet
- t till  
c cobble gravel  
p pebble gravel  
s sand (as separate beds; not including sand in matrix of gravel)  
sc silty clay and clayey silt

- Texture of stratified deposits--indicated to depth at least of 5 ft
- Mixed sand and gravel; predominately sand in the Dover East quadrangle
- Sand, minor silt
- Silt and clay

CORRELATION OF MAP UNITS



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This report is preliminary and has not been reviewed for conformity with U.S. Geological Survey editorial standards and stratigraphic nomenclature