DEPARTMENT OF THE INTERIOR
UNITED STATES GEOLOGICAL SURVEY

Prepared In Cooperation With
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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

st STREAM-TERRACE DEPOSITS—Sand, pebbly sand, with minor silt on terraces cut into former marine sand, marine silt and clay, and stratified glacial sand and gravel. Formed by the Isinglass and Cocheco Rivers after withdrawl of marine waters from the area. Thicknesses from a few feet to perhaps 10 feet

ds DUNE SAND—Fine to medium sand, well-sorted, as much as 20 feet thick. Derived by wind action from and occurs on glacial stratified deposits in Somersworth and marine sand deposits in Barrington

mn MARINE NEAR SHORE GRAVEL AND SAND—Pebble, cobble, and boulder gravel and sand. Reworked from glacial deposits by marine wave and current action. Produced at the time of marine submergence, during and after ice retreat. Some deposits are beaches formed at a former shoreline; others were formed at depths of a few feet to a few tens of feet below water level

ms MARINE SAND—Fine to locally coarse sand, a few feet to as much as 10 ft thick, deposited on the sea bottom; may contain thin beds of silt and clayey silt. Generally intertongues 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 stratified glacial sand and gravel (gs) and till (t). Shoreward, may coarsen upward into gravelly near shore deposits (mn)

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

gs STRATIFIED GLACIAL SAND AND GRAVEL—Sand, and pebble to cobble gravel, well- to poorly sorted and stratified as much as 50 feet thick. Deposited by glacial meltwater streams from the retreating ice sheet. 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 southeast corner of the map to about 215 ft at the northwest corner. The deposits in the quadrangle probably represent successive northward-retreating positions of the ice margin. The original form of many of the deposits in the quadrangle is not well known because of reworking by wave and current action and partial covering by the resulting deposits. The material reworked is not shown 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. Includes drumlins, which are streamlined hills of thick till as much as 80 feet thick-built and shaped beneath moving glacial ice. Exposures in drumlins elsewhere in southern New England indicate that they generally are composed of very compact and silty till with a preserved weathered zone; this till is believed to represent an older glaciation

af **aft** ARTIFICIAL FILL—Earth-fill material in road and railroad embankments and made land. Many small bodies not shown on map.
aft — sanitary land fill

BEDROCK EXPOSURES—Ruled pattern indicates areas of numerous outcrops and discontinuous, thin (less than 10 ft) surficial cover

Contact

35 E Glacial grooves and striations—Observation is a 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, or whose alignment has been altered by wave erosion (for example, Beech Hill in Durham and Madbury)

Direction of dip of delta foreset beds

Direction of deposition of near shore gravel and sand

Pit in surficial materials—Extent of large pit shown by hachures

28(85) 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

3 - 10 spc / 20 sp

- b boulder
- c cobble
- p pebble
- s sand (as separate beds; not including sand in matrix of gravel)

TEXTURE OF STRATIFIED DEPOSITS—Indicated to depth at least of 5 ft

Gravel

Mixed sand and gravel

Sand, minor silt

Silt and clay

Geology mapped in 1988

SURFICIAL GEOLOGIC MAP OF THE DOVER WEST QUADRANGLE, STRAFFORD COUNTY, NEW HAMPSHIRE

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