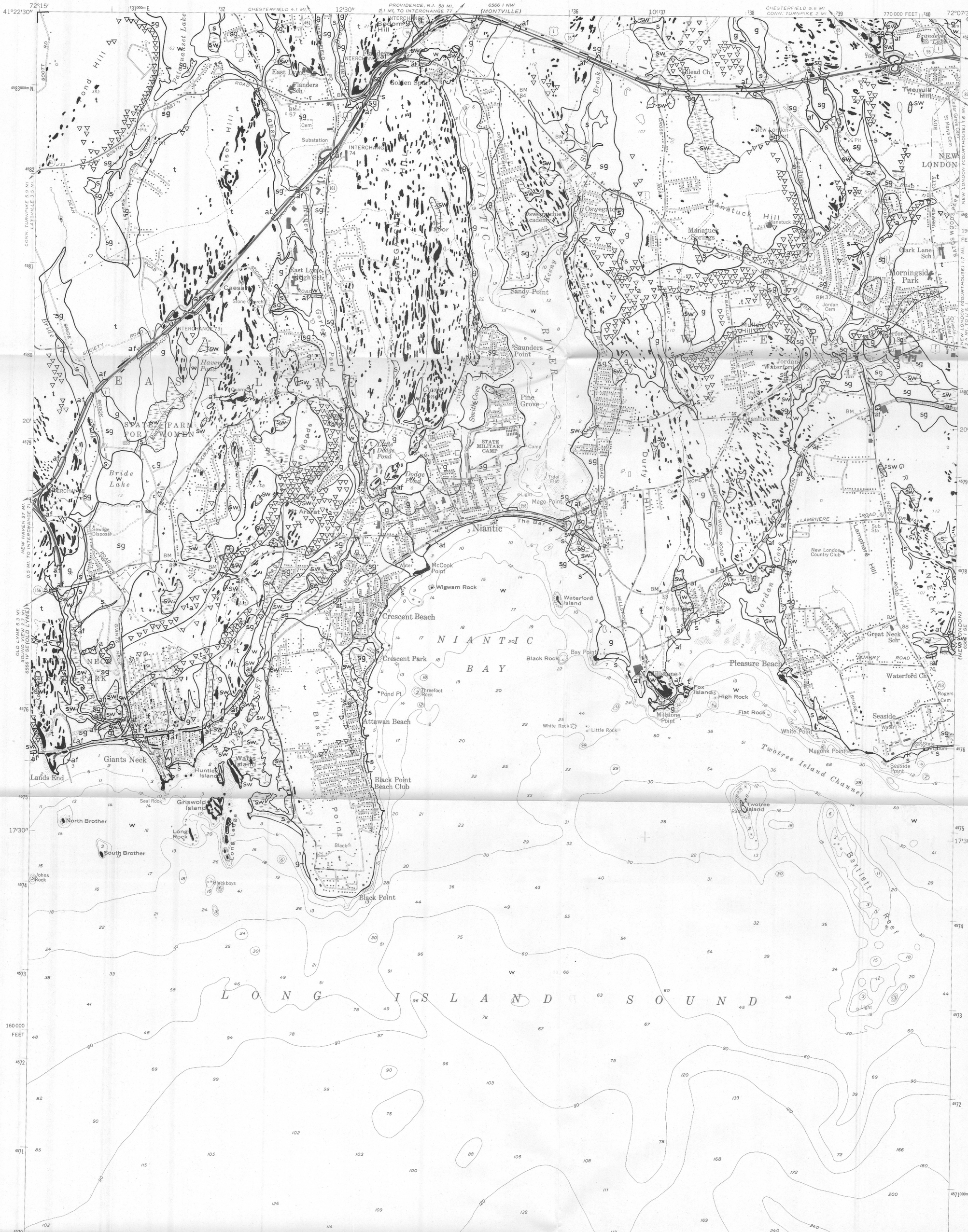
DEPARTMENT OF THE INTERIOR
UNITED STATES GEOLOGICAL SURVEY

MISCELLANEOUS FIELD STUDIES
MAP MF-593 A



EXPLANATION

This map is intended to serve as an aid in reconnaissance evaluation of unconsolidated materials and can be used to identify areas of potential interest.

The units on this map indicate the first material of substantial thickness (generally greater than 3 feet (1 m) encountered beneath the soil layer. The soil layer (commonly a foot or two (about 0.5 m) thick) is not mapped. Other materials, different in composition, may underlie each map unit (see block diagram) or may occur as minor lenses within each map unit.

THIS MAP SHOULD NOT BE USED AS A SUBSTITUTE FOR ONSITE INVESTIGATION.

Most unconsolidated materials are mixtures of the three particle-size classes defined in the diagram below. This diagram also relates these three size classifications to the Wentworth classification (Wentworth, 1922) which can be compared with other classifications used in engineering and soil science.

PARTICLE-SIZE CLASSIFICATION
Classification used in this report
(Diameter, in inches)

COARSE			MEDIUM					FINE	
Boulders	Cobbles	Pebbles	Granules	vc	c	m	f	vf	Silt	Clay
			Sand							

0.08 0.005

256 64 4 2 1/8 1/16 1/256

Wentworth classification
Diameter, in millimeters

Coarse particles (stones) include granules, pebbles, cobbles, and boulders. Medium particles include very coarse, coarse, medium, and fine sand. Fine particles include very fine sand, silt, and clay-sized particles. Very fine sand is included in the fine particle class because it commonly occurs with finer materials, and because very fine sand, silt, and clay behave similarly when water-soaked and under stress.

Materials mapping involves a visual estimate of particle-size distribution in a deposit by the field geologist. Percentages of particle sizes therefore may vary somewhat from place to place beyond the limits defined in the map units below.

g

GRAVEL

Particle sizes range from 100 percent coarse to 50 percent coarse and 50 percent medium. Materials may occur as layers of well- to poorly-sorted gravel, or as layers of gravel interbedded with layers of sand. Minor amounts of fine particles occur in most deposits

sg

SAND AND GRAVEL

Particle sizes range from 50 percent coarse and 50 percent medium to 25 percent coarse and 75 percent medium. Material may occur as thin layers of well-sorted sand interbedded with thin layers of well-sorted gravel; as poorly-sorted layers of mixed sand and gravel; or as distinct pockets of well- to poorly-sorted sand and gravel. Minor amounts of fine particles occur in most deposits

s

SAND

Particle sizes range from 25 percent coarse and 75 percent medium through 100 percent medium to 50 percent medium and 50 percent fine. Material commonly occurs as well- to poorly-sorted sand in layers of different thickness. Minor amounts of fine particles occur in most deposits

t / t_a

TILL

Poorly sorted, nonlayered, mixture of large and small stones, and sand, silt, and clay in varying proportions.

t, ranges from compact silty and clayey till to less compact sandy and gravelly till. Locally includes layers of loose till and lenses of sand and gravel

t_a, loose, sandy, stony till; locally compact and silty and locally contains lenses of sand and gravel. In some places large boulders are concentrated on the surface and are inferred to be also present at depth

sw

SWAMP AND MARSH DEPOSITS

Dark, decomposed organic material intermixed with varying amounts of sand, silt, and clay. Locally contains scattered stones

af

ARTIFICIAL FILL

Shown only for roads, highways, dams, solid-waste disposal, and other major construction. In urban centers and other areas of dense development, fill of variable thickness and extent may overlie the natural materials shown on the map

BOULDERY AREA

Concentrations of boulders exposed at land surface

BEDROCK (LEDGE) OUTCROPS

Bedrock exposed at land surface; may be partly covered by thin soil

w

WATER BODY

In general, lakes and ponds greater than 5 acres, or streams wider than 200 feet (60 m)

CONNECTICUT
QUADRANGLE LOCATION

Block diagram of hypothetical area in New England showing some common examples of unconsolidated materials overlying bedrock. Map view shows unconsolidated materials projected from land surface

SOURCES OF DATA

Goldsmith, Richard, 1964, Surficial geology of the Niantic quadrangle, Connecticut: U.S. Geol. Survey Geol. Quad. Map GQ-329, scale 1:24,000.

Wentworth, C.K., 1922, A scale of grade and class terms for clastic sediments: Jour. Geology, v. 30, p. 377-392.

MAP SHOWING UNCONSOLIDATED MATERIALS, NIANTIC QUADRANGLE, CONNECTICUT

By

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1974

For sale by U.S. Geological Survey, price 50 cents