Base from the U.S. Geological Survey, 1957; photorevised 1968

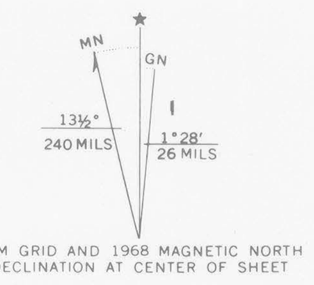
10,000-foot grid based on Connecticut coordinate system
1,000-metre Universal Transverse Mercator grid ticks, zone 18

SCALE 1:24000

1 ½ 0 1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

1 .5 0 1 KILOMETRE



UTM GRID AND 1968 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

QUADRANGLE LOCATION

Textures mapped in 1974 by J. A. Radway, assisted by E. A. Snider.

MAP SHOWING UNCONSOLIDATED MATERIALS, AVON QUADRANGLE, CONNECTICUT

By

Janet A. Radway and Robert W. Schnabel

1976

This map describes the type, thickness, and distribution of unconsolidated materials. It is intended to serve as an aid in areal planning, reconnaissance evaluation, and identifying areas of potential economic deposits.

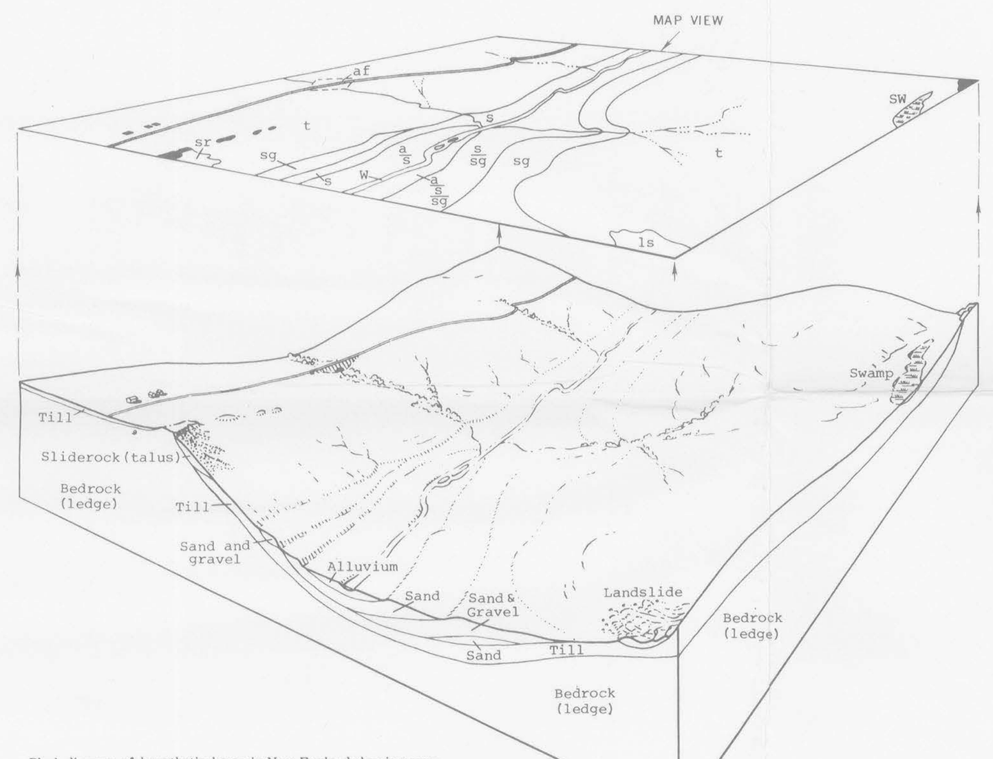
THIS MAP SHOULD NOT BE USED AS A SUBSTITUTE FOR ONSITE INVESTIGATION.

The map units indicate the distribution of particle sizes within the first material of significant thickness (greater than 3 feet[1]) beneath the soil layer. The soil layer, constituting the surface one or two feet, is not mapped.

Bedrock (ledge) is shown on the map only where it is at or near the land surface, but ledge is present over the total map area at various depths beneath the unconsolidated materials. The greatest known depth of burial (thickest unconsolidated materials) is 252+ feet at Simsbury testhole 129.

The most widespread unconsolidated material is *till*, which forms the mapped surface unit over wide areas. Also, it normally underlies the stratified materials and locally occurs within them.

Stratified deposits (gravel, sand, silt, clay, alluvium, swamp deposits) occur in layers and overlie till and bedrock in most large valleys. Surface stratified deposits are often underlain by stratified materials of different particle-size distribution. These underlying deposits have been shown on the map (see description of superposed deposits) where known or inferred to be present beneath thin (less than 15 feet) surface stratified deposits. The diagram below shows the vertical relationships often encountered in unconsolidated materials in New England.



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

Most unconsolidated materials are mixtures of the three particle-size classes defined on the diagram below. This classification, modified from Wentworth (1922), can be compared with other classifications used in engineering and soil sciences. Coarse particles (stones) include granules, pebbles, cobbles, and boulders. Medium particles include all sand sizes except very fine sand. Fine particles include very fine sand, silt-, and clay-sized particles. Very fine sand is included in this class, because it commonly occurs with finer materials and because very fine sand, silt, and clay behave similarly when water-soaked and under stress.

PARTICLE-SIZE CLASSIFICATION USED IN THIS REPORT
Modified from Wentworth (1922)

Diameter of particles											
inches	10	2.5	.16	.08	.04	.02	.01	.005	.0025	.00015	
millimetres	256	64	4	2	1	.5	.25	.125	.068	.004	

Boulders	Cobbles	Pebbles	Granules	Very coarse	Coarse	Medium	Fine	Very fine	Silt	Clay
Gravel-sized particles				Sand-sized particles						
COARSE				MEDIUM				FINE		

Materials mapping involves a visual estimate of particle-size distribution by a field geologist. Percentages of particle sizes may, therefore, differ in places from the limits defined in the map units below. Mapped units may also contain lenses of material that differ in particle size from the main mass of the map unit, but are too small to show.

[1] 1 ft equals 0.3048 m

EXPLANATION

[sg / sg / g]

SAND AND GRAVEL DEPOSITS

Some layers consist wholly of coarse particles; others are mixtures of coarse and medium particles; some contain as little as 25 percent coarse particles. Minor amounts of fine particles are present in many layers. Particle sizes differ both laterally and vertically. Material may occur as: 1) thin beds of well to poorly sorted sand, poorly sorted sand and gravel, and well to poorly sorted gravel; 2) materials which range laterally from sand through sand and gravel to gravel deposits and may be well to poorly sorted; 3) layers of poorly sorted mixed sand and gravel; 4) poorly sorted gravel deposits in which particle sizes range from 100 percent coarse particles to 50 percent coarse and 50 percent medium particles

sg, undifferentiated sand and gravel
sg_s, known or inferred to occur as 1 and 2 above
g, known or inferred to occur as 4 above

[s_f / s / s_{f-m}]

SAND DEPOSITS

Some layers consist wholly of medium particles; others contain as much as 25 percent coarse particles; some contain as much as 50 percent fine particles. Material commonly occurs as well to poorly sorted layers of differing thickness; in many places layers are gently to steeply inclined

s, undifferentiated sand deposits
s_{f-m}, known or inferred deposits of fine to medium sand
s_f, known deposits of fine sand

[f]

VERY FINE SAND, SILT, AND CLAY DEPOSITS

Some layers consist wholly of fine particles; others contain as much as 50 percent medium particles. Deposits locally contain scattered coarser particles. Material may occur as well-sorted alternating layers of very fine sand and/or silt and/or clay, or as massive beds of very fine sand and/or silt and/or clay

[a_s / a / a_{sg}]

ALLUVIUM DEPOSITS

Some layers consist wholly of coarse, medium, or fine particles; other layers are poorly sorted mixtures of all three particle-size classes. Particle sizes are highly variable laterally and vertically. Organic matter occurs in differing amounts within deposits, and locally there may be as much organic matter as in swamp deposits. Areas mapped as alluvium may be subject to flooding

a, undifferentiated alluvium
a_s, predominantly sand
a_{sg}, predominantly sand and gravel

[SW]

SWAMP DEPOSITS

Dark decomposed organic material intermixed and interlayered with differing amounts of sand, silt, and clay. Locally contains scattered stones. Generally less than 10 ft thick and underlain by the map unit surrounding the deposit

$\frac{sg}{s}$	$\frac{sg}{t}$	$\frac{sg_s}{f}$	$\frac{f}{t}$	$\frac{a_s}{s}$	$\frac{a}{sg_s}$	$\frac{a}{t}$	a / sg_s / f	a / s / f

SUPERPOSED DEPOSITS

Areas where surface stratified deposits are known or inferred to be less than 15 ft thick and overlie thicker unconsolidated stratified materials

Note: [a / s / f] [a / sg_s / f] Areas where alluvium, less than 15 ft thick, overlies sand or sand and gravel up to 30 ft thick, which overlies very fine sand, silt, and clay

[t]

TILL (HARDPAN) DEPOSITS

Nonsorted mixture of coarse, medium, and fine particles in differing proportions. Some till, averaging less than 10 ft thick, is sandy, very stony, and loose; other till, commonly more than 10 ft thick, is less sandy, less stony, and very compact. Where these tills occur together, the loose sandy till is always on top. The compact till forms the bulk of many smooth elongate hills (drumlins), even where the sandy till is exposed at the surface. Till is present at depth beneath most other unconsolidated materials in the map area

[ls]

LANDSLIDE DEPOSITS

Nonsorted mixture of predominantly rock and till that has moved downslope by sliding, slumping, or flowing. Mapped only where longest dimension is greater than 300 ft

[sr]

SLIDE-ROCK (TALUS) DEPOSITS

Large angular rock fragments at the base of cliffs; locally contains intermixed organic matter and fine particles

[af]

ARTIFICIAL FILL

Shown only in areas of major emplacement such as highway and railroad embankments, dams, and landfills; materials differ from place to place. In addition, in urban centers and other areas of dense development, fill of differing thickness and extent may overlie the natural materials shown on the map

BEDROCK (LEDGE) OUTCROP

Solid black areas indicate bedrock exposed at the ground surface; it may be partly covered by thin soil. Ruled pattern shows areas where bedrock is less than 10 ft beneath the surface; includes numerous bedrock outcrops too small to map

[w]

WATER BODIES

In general, lakes and ponds larger than 5 acres, or streams wider than 200 ft

CONTACTS BETWEEN UNITS

Surface contact between map units

Surface contact within a map unit

Inferred location of concealed contact within superposed deposits

Inferred location of concealed gradational contact within superposed deposits

Note: Field mapping in this quadrangle has shown adjoining maps (Pessl, 1973; Pessl and Hildreth, 1972) to be incorrect where they disagree with this map along the northern and eastern borders.

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