DEPARTMENT OF THE INTERIOR
UNITED STATES GEOLOGICAL SURVEY

MISCELLANEOUS FIELD STUDIES
MAP MF-604-B
KOZA — UNCONSOLIDATED MATERIALS,
ELLINGTON QUAD., CONN.

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

Base from U.S. Geological Survey, 1967

10,000-foot grid based on Connecticut coordinate system

1000-meter Universal Transverse Mercator grid ticks, zone 18

UTM GRID AND 1967 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

SCALE 1:24 000

CONTOUR INTERVAL 10 FEET
DATUM IS MEAN SEA LEVEL

CONNECTICUT
QUADRANGLE LOCATION

Materials mapped in 1974–75

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MAP SHOWING UNCONSOLIDATED MATERIALS, ELLINGTON QUADRANGLE, CONNECTICUT

By
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1979

For the purposes of this map, unconsolidated material is any aggregate of loose natural (sand, gravel, clay, etc.) or manmade (solid waste) particles occurring beneath the soil layer. The unconsolidated materials are classified on the basis of texture (for example, particle-size distribution).

This map shows the areal distribution and texture of the first unconsolidated material of substantial thickness (generally greater than 3 feet (approximately 1 meter)) encountered beneath the soil layer. The soil layer, commonly 1 to 2 feet thick (0.3 m–0.6 m), is not mapped.

This map is intended to serve as an aid in land-use evaluation, in planning, and in identifying areas of potential economic deposits.

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

Unconsolidated materials are commonly classified on the basis of particle size. Particle sizes are grouped into three major classes: coarse (gravel-sized particles), medium (sand-sized particles), and fine (very fine sand, silt-, and clay-sized particles). The particle size classification for this map is shown below.

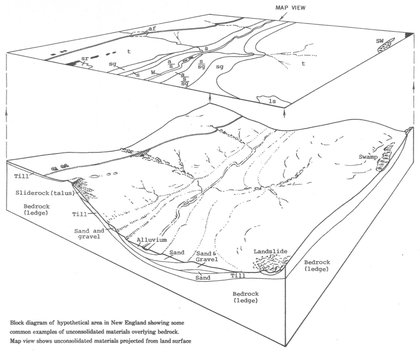
PARTICLE-SIZE CLASSIFICATION USED IN THIS REPORT
Modified from Wentworth (1922)

Diameter of particles	10 256	2.5 64	.16 4	.08 2	.04 1	.02 .5	.01 .25	.005 .125	.0025 .063	.00015 .004	inches millimeters
Boulders	Cobbles	Pebbles	Granules	Very coarse sand	Coarse sand	Medium sand	Fine sand	Very fine sand	Silt	Clay	
Gravel-sized particles				Sand-sized particles							
COARSE				MEDIUM				FINE			

Some unconsolidated materials such as till (hardpan), artificial fill, alluvium, and swamp deposits commonly contain a wide range of particle sizes in variable proportions. These materials have not been mapped on the basis of texture, but the general composition of these map units is described in this explanation. Water bodies and areas that do not have a substantial thickness of unconsolidated material are also shown on the map.

Materials mapping involves a visual estimate of particle-size distribution by the field geologist. Percentages of particle sizes, therefore, may vary somewhat from the limits defined for the map units. Within a unit there may also be small lenses of material that differ in particle-size distribution from the material of the main deposit.

The diagram below shows the general spatial relationships between unconsolidated map units and bedrock commonly observed 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

EXPLANATION
STRATIFIED DEPOSITS

NOTE: Stratified deposits are composed of interbedded layers of gravel, sand, silt, and clay deposited by glacial melt water. These deposits are generally restricted to valley areas. Stratified materials at the land surface (directly below the soil layer) are often underlain by stratified materials of differing textures. These underlying materials are shown on the map where known or inferred to be present.

g

GRAVEL

Particle sizes range from 100 percent coarse particles to 50 percent coarse particles and 50 percent medium particles. Locally contains minor amounts of fine particles

sg

SAND AND GRAVEL

Particle sizes range from 50 percent coarse particles and 50 percent medium particles to 25 percent coarse particles and 75 percent medium particles. May also contain minor amounts of fine particles. Material occurs as:
(1) thin layers of sand and thin layers of gravel
(2) layers that are a mixture of sand and gravel
(3) (shown by pattern) distinct pockets of sand, gravel, and sand and gravel

s

SAND

Particle sizes range from 25 percent coarse particles and 75 percent medium particles through 50 percent medium particles and 50 percent fine particles

f

VERY FINE SAND, SILT, AND CLAY

Particle sizes range from 50 percent medium particles and 50 percent fine particles to 100 percent fine particles

g / s | sg / s | s / f | sg / f | t / sg

SUPERPOSED MATERIALS

Areas where surface materials are known or inferred to be less than 15 feet (4.6 m) thick and overlie thicker stratified materials

NONSTRATIFIED DEPOSITS

a | a_s

ALLUVIUM

Composed of layers or mixtures of all particle sizes and contains variable amounts of organic matter. Locally there may be as much organic matter as occurs in swamp deposits. Alluvium occurs in close proximity to rivers and streams, and areas underlain by this material may be subject to periodic flooding

a, undifferentiated alluvium
a_s, alluvium composed predominantly of sand

sw

SWAMP DEPOSITS

Composed of partly decomposed organic matter intermixed with varying amounts of sand, silt, and clay. Locally contains scattered stones. Swamp deposits are generally underlain by the adjacent map unit

t

TILL (HARDPAN)

Nonsorted mixture of all particle sizes in differing proportions. Varies from compact to loose. Till is present at the surface over most upland areas and is also present at depth beneath most other unconsolidated materials in the map area

BEDROCK (LEDGE) OUTCROP

Consolidated rock exposed at the land surface. Bedrock underlies all other map units at varying depths below the land surface. Ruled pattern indicates areas of numerous, closely spaced outcrops, and areas where bedrock is less than 10 feet (3.05 m) below the land surface

af

ARTIFICIAL FILL

Composed of earth materials or manmade debris (trash). Shown only in areas of major emplacement, such as highway and railroad embankments, dams, and landfills. In areas of dense development, artificial fill of variable thickness may overlie the map units shown

w

WATER BODIES

In general, lakes and ponds greater than 5 acres (20,235 m^2) in area or streams wider than 200 feet (61 m)

CONTACTS BETWEEN UNITS

Surface contact between materials units

Inferred subsurface contact between superposed map units

REFERENCES

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Ryder, R. B., and Weiss, L. A., 1971, Hydrologic data for the upper Connecticut River basin, Connecticut: Connecticut Water Resources Bull. 25, 54 p.
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