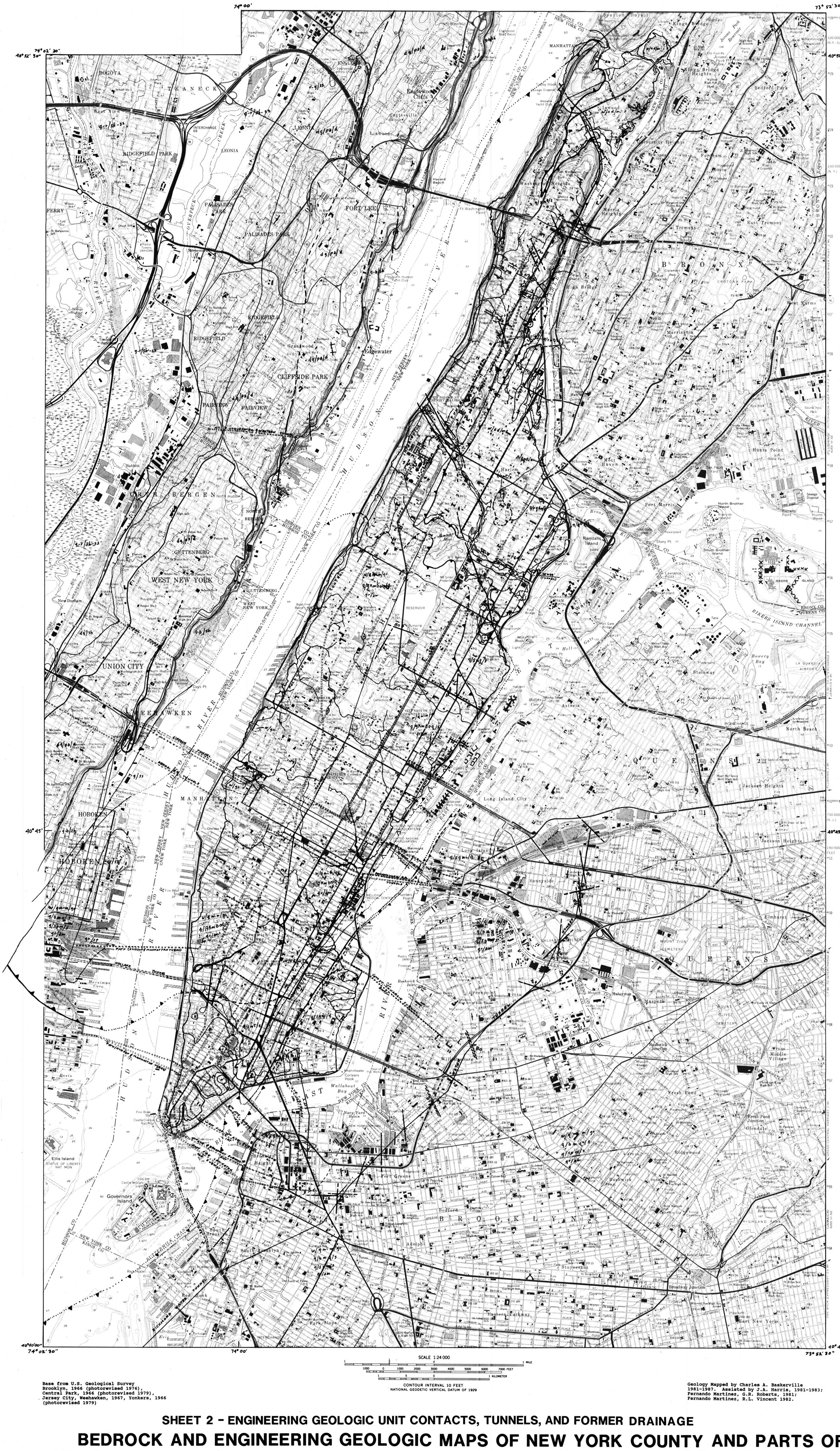
DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY

OPEN-FILE REPORT 89-462
SHEET 2 OF 3



SCALE 1:24 000

CONTOUR INTERVAL 10 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1929

DISCUSSION

Map sheet 2 is intended chiefly for use by engineers and other non-geologists to whom stratigraphic correlation and nomenclature are of little concern. Therefore, the geologic map units have been identified by lowercase letters, which describe the dominant lithology of the unit; e.g., w/cd/m.

The major common attributes of engineering significance for these units is that they can be grouped according to similarity of rock type that should give rise to reasonably uniform strength characteristics for intact rock (rock without faults or other discontinuities); e.g., schists are generally softer and have lower shear strength than gneisses due to the greater amount of mica controlling the foliation in schists. An exception to this is the Hartland schists, which tend to be harder, stronger, and more resistant to weathering than the Manhattan schists.

Field observations indicate that the rocks in the map area form good foundations, especially the schists, gneisses, and diabase. When the serpentinite and shaley portions of the Triassic rocks are excavated and exposed slopes are formed, such as in highway cuts, rapid weathering and disintegration generally occurs. This is especially so in closely jointed portions of these units. The diabase is also subject to small block falls on exposed slopes with time, building talus residue at the slope base. Retaining walls may have to be considered where structures are located at the top of cut slopes or ravelling material must be kept from road shoulders.

KEY TO TERMS OF LITHOLOGIC DESCRIPTORS

[The three categories of terms are separated by slashes in the lithologic descriptors]

Color (Prefix)	Principal minerals	Rock name (Suffix)
b - black	a - augite	d - diabase
bw - black & white	b - biotite	g - gneiss
dg - dark gray	c - calcite	gr - granite
g - gray	d - dolomite	m - marble
gr - green	g - garnet	s - schist
r - red	h - hornblende	sh - shale
w - white	k - kyanite	sp - serpentine
	m - muscovite	
	mi - microcline	
	o - oligoclase	
	p - plagioclase	
	q - quartz (ite)	
	s - sillimanite	

EXPLANATION

Old and new Croton aqueducts

1 City tunnel #1

2 City tunnel #2

3 City tunnel #3

Subway and railroad tunnels

GAS Consolidated Edison gas tunnels

SEWER Sewer tunnels

City tunnel #3 and old and new Croton aqueducts with the same alignment, one above the other

F P Former drainage and shorelines. Very straight furrows and ditches in fields and parallel to roads may be artificial drainage features built to lower the water table ("P" represents a pond)

S Swamp or marsh (Lines broken with "S" indicate swamp or marsh limits)

Contact between rock types; dotted under water

Approximate contact between rock unit members; dotted under water

Thrust fault, teeth on upper plate; dotted under water

D U 25 Fault, showing dip: U, upthrown side; D, downthrown side

Crush or shear zone encountered in underground workings, usually water-bearing with chloritic gouge

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

Base from U.S. Geological Survey
Brooklyn, 1966 (photorevised 1976),
Central Park, 1966 (photorevised 1979),
Jersey City, Weehawken, 1967, Yonkers, 1966
(photorevised 1979)

Geology Mapped by Charles A. Baskerville
1981-1987. Assisted by J.A. Harris, 1981-1983;
Fernando Martinez, G.R. Roberts, 1981;
Fernando Martinez, R.L. Vincent 1982.

SHEET 2 - ENGINEERING GEOLOGIC UNIT CONTACTS, TUNNELS, AND FORMER DRAINAGE

BEDROCK AND ENGINEERING GEOLOGIC MAPS OF NEW YORK COUNTY AND PARTS OF KINGS AND QUEENS COUNTIES, NEW YORK, AND PARTS OF BERGEN AND HUDSON COUNTIES, NEW JERSEY

By Charles A. Baskerville

1990