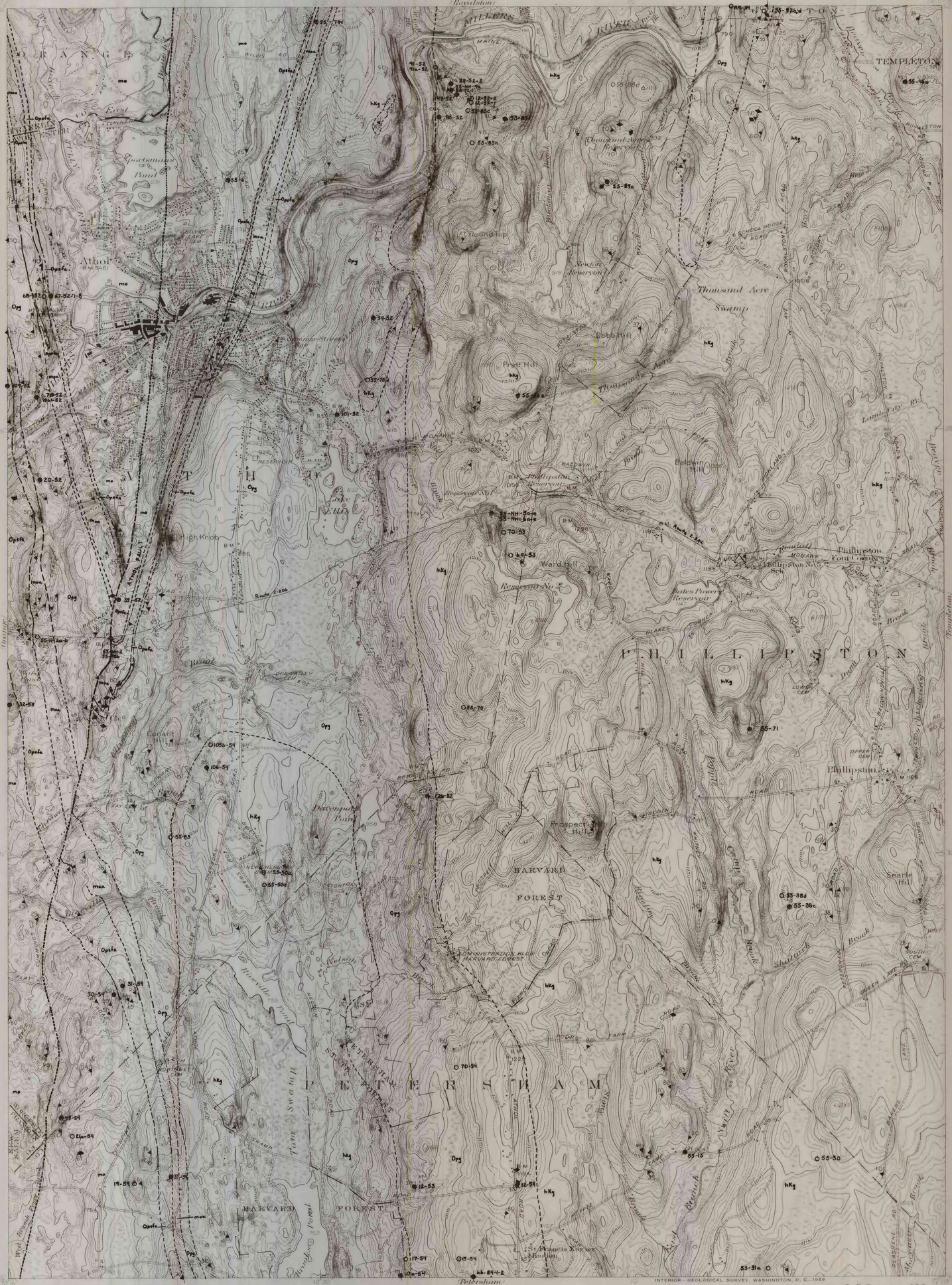
UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

STATE OF MASSACHUSETTS
DEPARTMENT OF PUBLIC WORKS

ATHOL QUADRANGLE
MASSACHUSETTS
7.5-MINUTE SERIES (TOPOGRAPHIC)

68-185



Base by U.S. Geological Survey, 1954

Geology mapped by D. F. Eschman, 1952-1955, and A. L. Mook, June, 1964. Western sixth modified from Robinson (1963) by A. L. Mook

INTERIOR—GEOLOGICAL SURVEY, WASHINGTON, D. C.—1958

SCALE 1:24000

CONTOUR INTERVAL 10 FEET
DATUM IS MEAN SEA LEVEL

QUADRANGLE LOCATION

PRELIMINARY BEDROCK GEOLOGIC MAP OF THE ATHOL QUADRANGLE, WORCESTER AND FRANKLIN COUNTIES, MASSACHUSETTS

BY

D. F. ESCHMAN

EXPLANATION

Dark-green- to black, medium- to coarse-grained, hornblende-biotite-plagioclase diorite dike

hkg

Hardwick Granite

Gray, coarse-grained, blotchy, feldspar-quartz-biotite granite. Commonly porphyritic. Composition varies from granite to granodiorite to tonalite

Lined overprint indicates areas of the following:

Concord Granite: light-gray, fine-grained, equigranular, feldspar-quartz-biotite-muscovite orthogneiss

Kinsman Quartz Monzonite: gray, coarse-grained, porphyritic, feldspar-quartz-biotite orthogneiss

Bethlehem Gneiss: gray, medium- to coarse-grained, feldspar-quartz-biotite orthogneiss

Partridge Formation: gray, graphitic, plagioclase-quartz-mica-garnet-sillimanite schist

Partridge Formation: fine-grained, equigranular, calc-silicate gneiss

Middle to Late Devonian

Opg
Opsfa

Partridge Formation

Opg: gray, graphitic, plagioclase-quartz-mica-garnet-sillimanite schist. Minor rusty-weathering schist, biotite gneiss, and pegmatite. Lined overprint indicates areas of fine-grained, equigranular calc-silicate gneiss

Opsfa: interbedded, rusty-weathering, micaceous and sulfidic schist; fine-grained, equigranular calc-silicate gneiss; light-gray, feldspar-quartz-biotite gneiss; and feldspar-hornblende-quartz gneiss

Middle Ordovician

moa
mo

Monson Gneiss

mo: light-gray, medium- to coarse-grained, feldspar-quartz-biotite gneiss. Interbedded with medium- to coarse-grained, feldspar-quartz-hornblende gneiss and amphibolite near contact with Opsfa

moa: interbedded feldspar-quartz-hornblende gneiss, amphibolite, and feldspar-quartz-biotite gneiss

pre-Middle Ordovician

Contact

Long dashed where approximately located; short dashed where inferred; dotted where concealed by water

D

Fault

Long dashed where approximately located; short dashed where inferred; dotted where concealed by water

U, upthrown side; D, downthrown side

45

Strike and dip of bedding parallel to foliation

73

Inclined

Vertical

Strike and dip of foliation

18

Bearing and plunge of lineation

3

Bearing and plunge of minor fold axis

45

Bearing and plunge of minor anticline. Used in combination with bedding or foliation symbol

O 55-NH-1

Thin section locality

To accompany Bedrock Geologic Map of the Athol ~~Massachusetts~~ Quadrangle
by ~~D. F. Eschman~~
D. F. Eschman