2-8,210
M139

54-194

Commonwealth of Massachusetts
Department of Public Works
John A. Volpe, Commissioner

U. S. Department of the Interior
Geological Survey
W. E. Wrather, Director

(Quincy
Route 128)
[no. 79]

Cooperative Geologic Project

File Report

Geologic and Seismic Investigations

for

Relocation of Route 128 near Route 28

in Quincy, Mass.

by

James E. Maynard, Geologist, U. S. Geological Survey

2 pages of text
3 plates

Boston, Massachusetts.
December 1953.

Seismic Series #____

Geologic and Seismic Investigations

for

Relocation of Route 128 near Route 28

in Quincy, Mass.

by

James E. Maynard, Geologist, U. S. Geological Survey

General Statement

In order to obtain information that would aid in locating a base line for the proposed relocation of Route 128 near Route 28 in Quincy, Mass., exploratory geologic and seismic studies were made of an area along a line between a point on present Route 128 approximately 800 feet east of the Milton-Quincy town line to a point on Route 28 approximately 600 feet to the north of the intersection of Routes 28 and 128. This work was performed in September 1953 as part of a cooperative program of the Massachusetts Department of Public Works and the United States Department of the Interior, Geological Survey.

Mr. M. E. Chandler and Mr. W. L. Carney, of the Mass. Dept. of Public Works, did the survey work for the project and prepared the plans and profiles. Mr. Chandler also operated the seismic equipment and assisted in the preparation of the seismic velocity data.

Surface Geology

The area studied for this report lies in an east-west direction, along the southern slopes and parts of the lower uplands of the Blue Hills. In general the hills consist of granite that is covered with till a few inches

to a few tens of feet thick. However, the bedrock underlying traverses H to R may be partly or wholly conglomerate (Pondville). Most of the till is moderately compact with a relatively large content of silt size materials, but in places it contains many cobbles and boulders. One exposure of bedrock occurs along the line explored by the seismic traverses; this outcrop is located between shot points G and H.

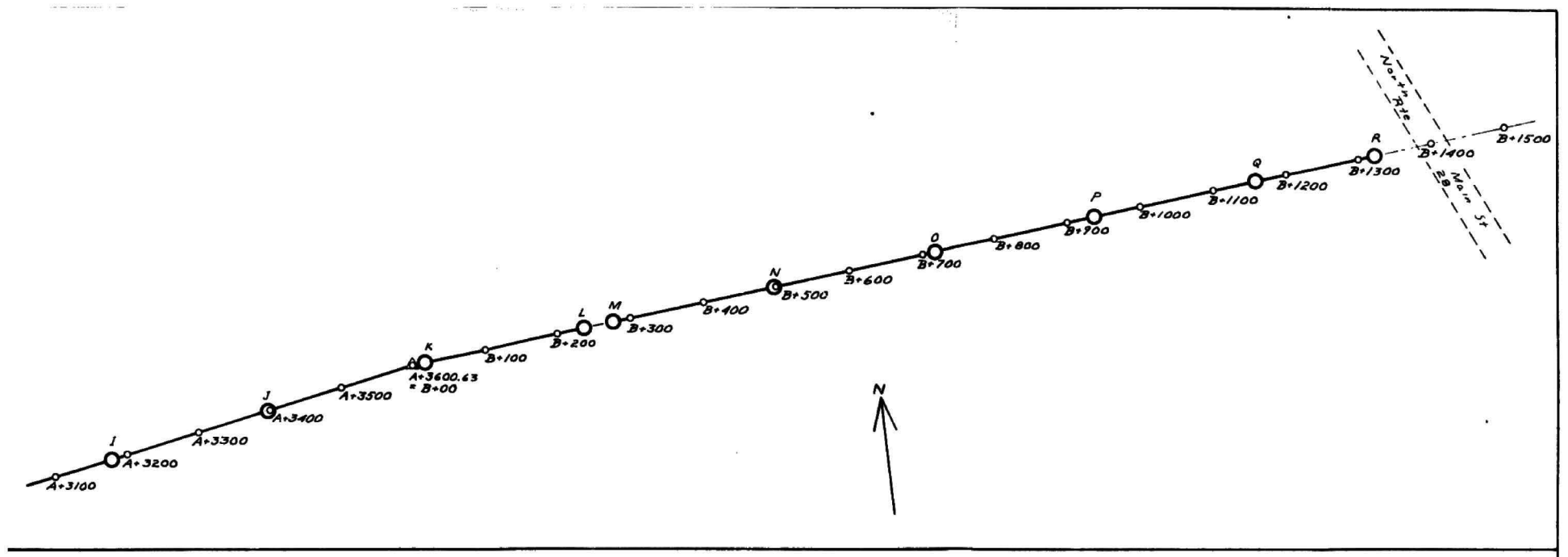
Small areas of poorly sorted gravel, or very loose gravelly till, occur at shot points A and G.

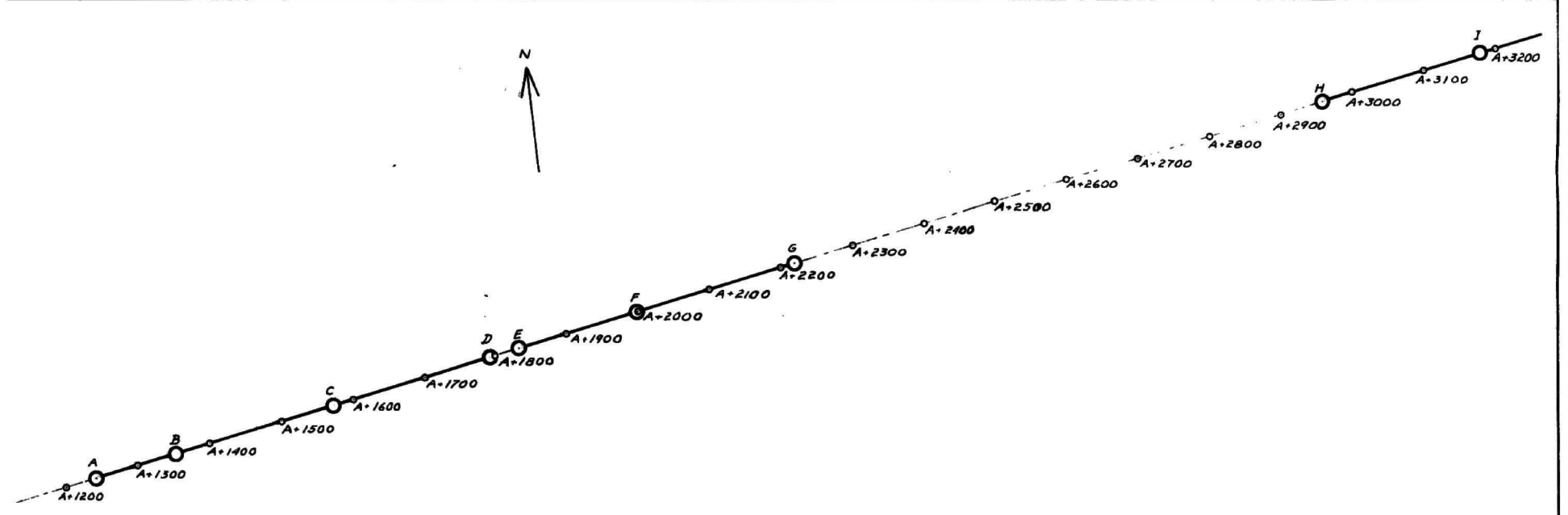
Seismic Traverses

Fourteen seismic traverses were made at this site. The locations of the shot points and the arrangement of the traverses are shown on sheet one.

Subsurface Interpretation

The geologic sections as interpreted from the surface geology and the seismic data are shown on sheets two and three. In general these sections show moderately compact till overlying bedrock that is relatively shallow, 3 to 25 feet below the surface of the ground. For 50 feet from A toward B along section A-B, and for 45 feet from G toward F along section F-G, the surface layer is probably poorly sorted gravel, very loose gravelly till. The bedrock profile is shown on the sections by smooth curves but numerous small knobs, ridges and depressions may actually occur at altitudes above and below these lines.





COMMONWEALTH OF MASSACHUSETTS
DEPARTMENT OF PUBLIC WORKS

U. S. DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

COOPERATIVE GEOLOGIC PROJECT

PLAN OF TRAVERSES

SCALE: 1 INCH = 100 FEET

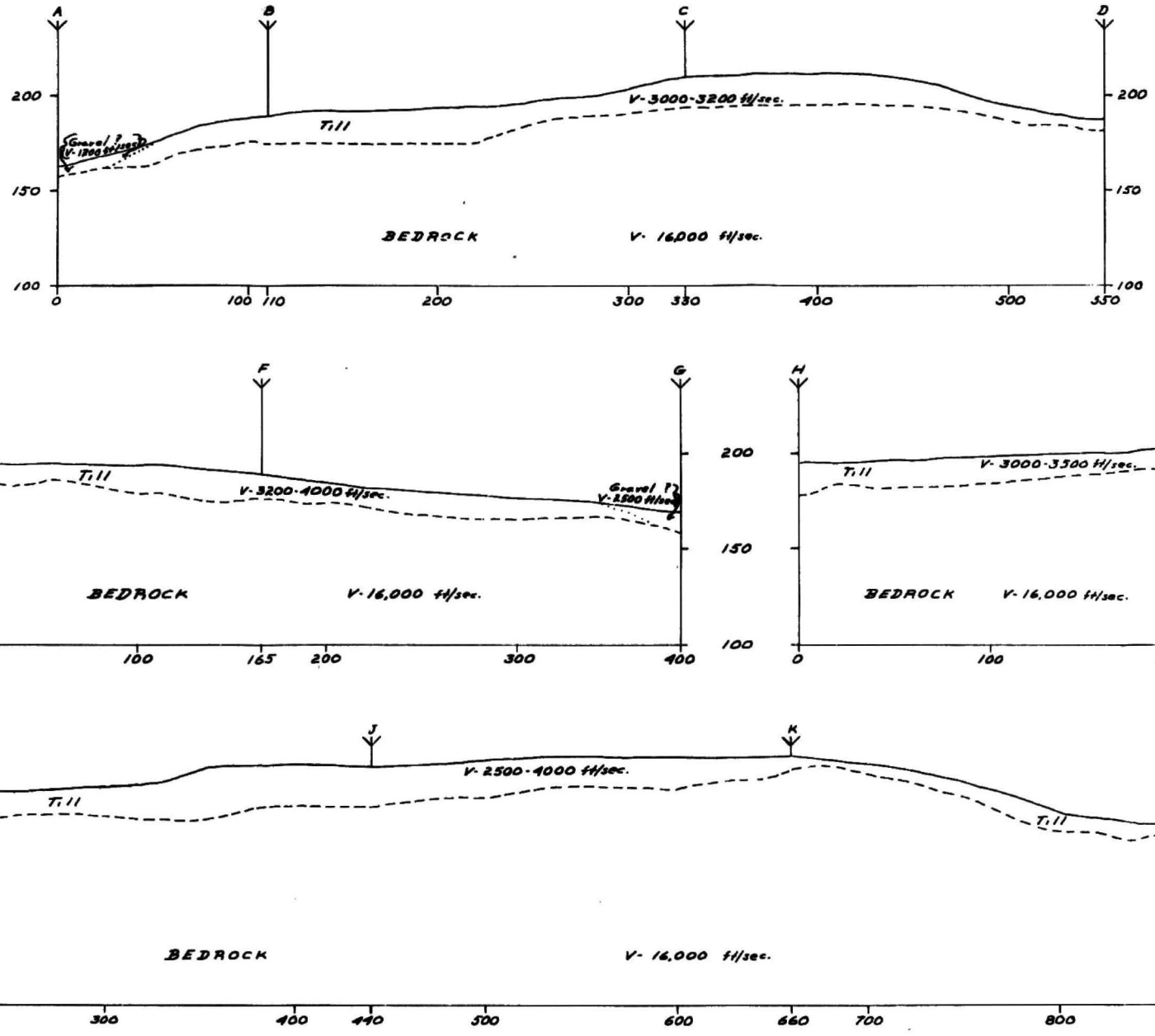
Letters refer to shot points at ends of traverses.

Numbers refer to D. P. W. stations on baseline.

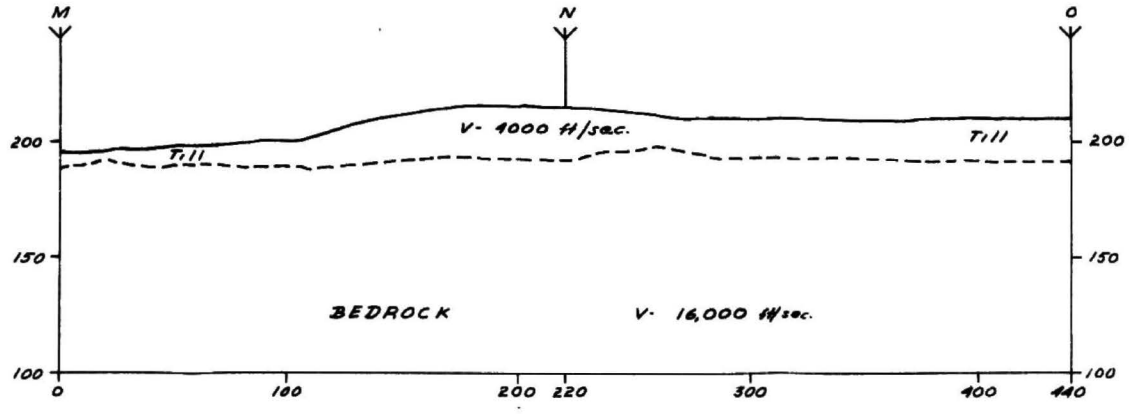
INTERPRETATIVE GEOLOGIC SECTIONS ALONG SEISMIC TRAVERSES

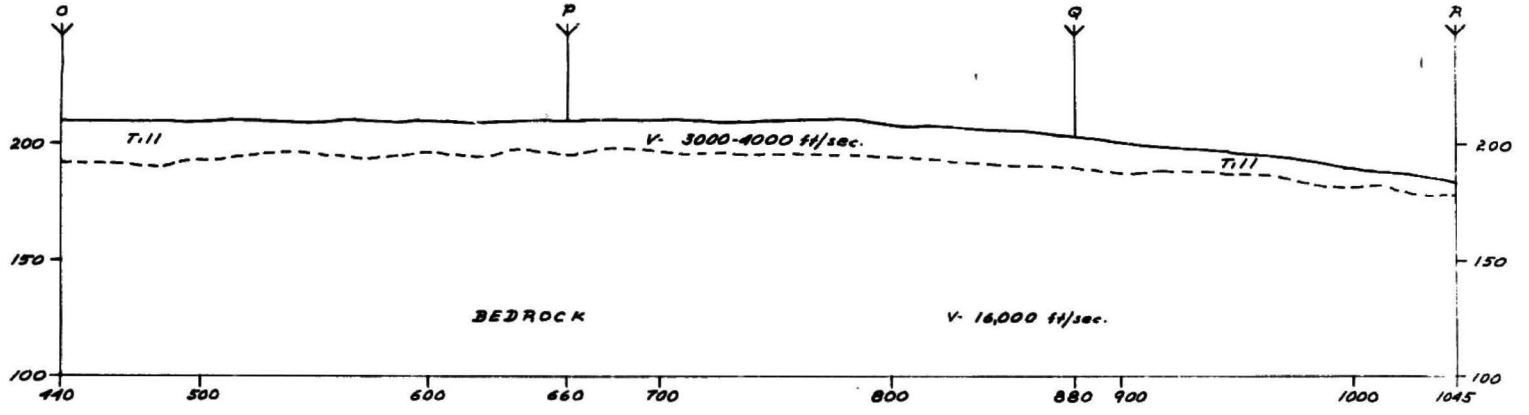
Y Shot point.
V – Apparent seismic velocity(ies) in feet per second.
Dotted bedrock lines indicate inconclusive seismic data.
Vertical measurements refer to elevations above mean sea level (datum 1929).
Numerals at shot points indicate depths to bedrock, as A Y21 , B Y16

GEOLOGY BY: James E. Maynard	QUINCY	ROUTE NO. 128
SEISMIC DATA BY: James E. Maynard	Special Baseline near Route 28	
ENGINEERING BY: M.E. Chandler W.L. Carney	SCALE: 1 INCH = FEET	DATE: Sept. 1953 — SHEET 1 OF 3



COMMONWEALTH OF MASSACHUSETTS DEPARTMENT OF PUBLIC WORKS U.S. DEPARTMENT OF THE INTERIOR GEOLOGICAL SURVEY COOPERATIVE GEOLOGIC PROJECT	PLAN OF TRAVERSES SCALE: 1 INCH = FEET Letters refer to shot points at ends of traverses. Numbers refer to D. P. W. stations on baseline.	INTERPRETATIVE GEOLOGIC SECTIONS ALONG SEISMIC TRAVERSES Y Shot point. V – Apparent seismic velocity(ies) in feet per second. Dotted bedrock lines indicate inconclusive seismic data. Vertical measurements refer to elevations above mean sea level (datum 1929). Numerals at shot points indicate depths to bedrock, as A Y 21, B Y 16	GEOLOGY BY James E. Maynard SEISMIC DATA BY: James E. Maynard ENGINEERING BY: M.E. Chandler, W.L. Carney	QUINCY Special Baseline near Route 28 SCALE: 1 INCH = 40 FEET	ROUTE NO. 128 DATE Sept. 1953 SHEET 2 OF 3





COMMONWEALTH OF MASSACHUSETTS
DEPARTMENT OF PUBLIC WORKS

U. S. DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

COOPERATIVE GEOLOGIC PROJECT

PLAN OF TRAVERSES

SCALE: 1 INCH= FEET

Letters refer to shot points at ends of traverses.

Numbers refer to D. P. W. stations on baseline.

Y Shot point.

V - Apparent seismic velocity(ies) in feet per second.

Dotted bedrock lines indicate inconclusive seismic data.

Vertical measurements refer to elevations above mean sea level (datum 1929).

Numerals at shot points indicate depths to bedrock, as A 21 , B 18

INTERPRETATIVE GEOLOGIC SECTIONS ALONG SEISMIC TRAVERSES

GEOLOGY BY. James E. Maynard | QUINCY | ROUTE NO. 128

SEISMIC DATA BY. James E. Maynard | Special Baseline near Route 28

ENGINEERING BY M.E. Chandler W.L. Carney | SCALE 1 INCH = 40 FEET | DATE Sept. 1953 | SHEET 3 OF 3