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

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

Cooperative Geologic Project.

File Report

Geology and Geologic Interpretation of Seismic Data

for

Relocation of Route 2 in Athol, Mass.

Cut, Stations 215 - 245

by

C. R. Tuttle, Geologist, U. S. Geological Survey

2 pages of text
5 plates

Boston, Massachusetts
May 1954

Seismic Series #____

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General Statement

Preliminary plans of the Massachusetts Department of Public Works for relocation of Route 2 in Athol, indicate a cut 20 to 35 feet deep between Stations 215 and 245. This study was made in March 1954 to obtain data on the probable depths to bedrock and on the nature of the subsurface materials at this site.

Surface Geology

The base-line of the proposed road site traverses the undulatory surface of ground moraine between Stations 221+50 and 245+00. At this locality the ground moraine is essentially a cobble-boulder pavement with a sandy matrix. From Stations 218+00 to 221+50 the base line traverses sand and gravel of an isolated high-level kame terrace. No bedrock is exposed at this site. North and west of the site, in various places along Route 32, there are knobs of granite gneiss.

Boulders of 1.5 to 2 cubic yards in volume, and some boulders up to 5 cubic yards in volume, occur along and on either side of the base line; particularly between Stations 225 and 240.

Subsurface Interpretation

The geologic sections as interpreted from the surface geology and seismic data are shown on sheets 3, 4, and 5 accompanying this report. Depth to bedrock at shot holes averages 10 to 12 feet. The ground water surface is at a depth of 1 to 3 feet, particularly between stations 223 and 237, and side-hill drainage is accomplished by numerous closely-spaced small streams, so that the area uphill from the base-line is swampy, and may necessitate more than the usual provisions for control of drainage throughout the proposed cut.