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John A. Volpe, Commissioner

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Cooperative Geologic Project

File Report

Geology and Geologic Interpretation of Seismic Data

Relocation of Route 102

in Lee, Mass.

Proposed Cut, Stations 30-36



by

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

and

Robert M. Hazlewood, Geophysicist, U. S. Geological Survey

2 pages of text
1 plate

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Boston, Mass.

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COOPERATIVE GEOLOGIC PROGRAM
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Seismic Series # _____

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General Statement

Geologic and seismic studies were made at this site for the purpose of obtaining data that would aid in determining the kinds of material underlying the site, and estimating the amounts of these materials to be excavated. The work was done in May 1952 as part of a cooperative program of the Massachusetts Department of Public Works and the United States Geological Survey.

Surface Geology

At this site a surface layer of fine sand and silt is underlain by poorly sorted sand and gravel or very loose till. No bedrock was noted at or near the site. The general geology of the region, however, suggests that it is biotite gneiss.

Seismic Traverses

Four seismic traverses were made at this site. The locations of the shot points and the arrangement of the traverses as surveyed and plotted by the State Engineers are shown on sheet 1.

Subsurface Interpretation

The geologic sections as interpreted from the surface geology and the seismic data are shown on sheet 1. The surface profiles for these sections were prepared by the State Highway Engineers.

These sections show sand and gravel overlying very compact material, probably till, that rests on bedrock. At shot point A two possible depths to bedrock are shown, 25 and 47 feet below the surface of the ground; the latter figure is the preferred value. Two values are also shown for shot point D, 21 and 62 feet below the surface of the ground; the latter figure is also the preferred value for this shot point. The additional seismic work necessary to establish the actual depths to bedrock at these shot points was not performed because the depths of the proposed cut at these shot points were less than 20 feet.

