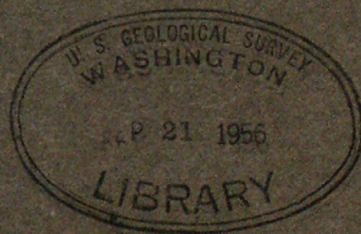


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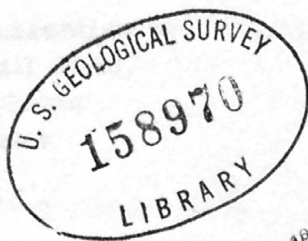


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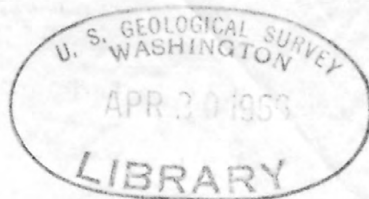


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Open File Report

Geologic map of proposed relocation of
route 2 between Ward Hill Road,
Phillipston, and Templeton
town line, Massachusetts

by

original
D. F. Eschman ¹⁹²³⁻ and Joseph H. Hartshorn ^{original} 1922-
U. S. Geological Survey

This report and/or map is preliminary and has
not been edited or reviewed for conformity
with Geological Survey standards or nomenclature.

March 1956

Geologic Map of Proposed Relocation of
Route 2 Between Ward Hill Road,
Phillipston, and the Templeton Town Line, Massachusetts

by

Donald F. Eschman and Joseph H. Hartshorn
U. S. Geological Survey

General Statement

This brief report outlines the surface geology along the proposed relocation of a segment of Route 2, and indicates areas of sand and gravel suitable for select borrow.

A reconnaissance geologic map was prepared and is included as a part of this report (see attached map).

Field work was done in 1953 and 1955 under a cooperative geologic program of the Massachusetts Department of Public Works and the United States Department of the Interior, Geological Survey.

Location

The area mapped for this report is about 4 miles long and 1-1/2 miles wide extending from Beaver Brook, about half-mile east of Phillipston Four Corners (Athol, Mass., quadrangle), to the junction of Mohawk Road, and South Royalston Road in the town of Athol.

Surface Geology

The topography of the area adjacent to the present Route 2 appears to be bedrock-controlled, even though relatively few outcrops are present. Within an area not yet mapped in detail, between Cross and Royalston roads, the only slope which is most likely to be of bedrock is indicated on the accompanying map by diagonal lines; some of the smaller knolls between Baldwin Hill and Royalston Road, in the same area, are also probably knobs of bedrock.

For the most part the bedrock throughout the area is granitic, being part of the Hardwick granite (of Emerson's map), and is in most places a relatively dark-colored, biotitic granite gneiss, though in other places it includes some light, nearly ^{biotite}-free granite. It is commonly porphyritic in texture, with relatively large phenocrysts of feldspar in a coarse, fairly even-textured groundmass. A road cut on the north side of Route 2 just west of BM 1188 indicates that the Hardwick granite contains inclusions of the Brimfield schist; the till at this locality contains many fragments of Brimfield schist and overlies deeply weathered schist. The rest of the outcrop areas shown on the map are of massive granite gneiss. None of the bedrock found along the proposed route should raise any particular engineering problems.

The best sand and gravel sources are described briefly in the succeeding paragraphs in order of relative importance.

The valley drained by Lamb City Brook, a short distance west of South Royalston Road, is the site of several rather large kames and relatively small ice-channel fillings. The deposits are composed of gravel of medium texture, with a matrix of relatively coarse sand. The thickness of the gravel deposits at the south end of the valley is probably not more than ten feet.

The outwash at Phillipston Four Corners and along the Baldwinsville Road is composed, for the most part, of medium-to coarse-grained sand, with comparatively few cobbles and large pebbles in the upper few feet.

The outwash deposits along Route 2 east of Beaver Brook, at the Templeton town line and southwest of the confluence of Dunn and Chickering Brooks, and at Lower Cemetery along Athol Road, Phillipston, are composed of medium-to fine gravel and coarse-to very fine sand.

Other areas of sand and gravel can be located on the geologic map, but are generally thin or of poorer quality than those mentioned above.

The area within the heavy inked lines was mapped in detail. For other areas only major sand and gravel sources are shown.

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