

Surficial Geologic Map and Geologic Cross-Sections of the Brookfield 7.5-Minute Quadrangle, Vermont

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Explanation

af	af Artificial Fill: Artificially-emplaced material along road beds, embankments and in developed areas. Material varies from natural sand, gravel, or till to various artificial waste materials. Thickness varies.	Pi	Pi Ice Contact Deposits, Undifferentiated: Unsorted to poorly-sorted stratified sand, gravel, and silt deposited in contact with glacial ice. Surface may contain scattered kettle holes formed by melting of buried ice blocks or be a highly complex kame and kettle.
Hw	Hw Wetlands Deposits: Accumulations of organic matter and/or clastic sediment in low-lying areas. Includes a wide variety of wetland types. Commonly overlying other deposits such as alluvium, lacustrine sediment, or till. Larger deposits are shown.	Pie	Pie Esker Deposits: Elongate ridge of ice-contact stratified sand and gravel deposited by glacial meltwater streams in tunnels within or beneath the glacial ice.
Ha	Ha Alluvium: Silt, sand, and gravel deposited by modern streams. Includes stream channel, bar, and floodplain deposits. Wetland deposits are common within these areas and are not distinguished. Thickness in tributary valleys is typically less than 3 meters, although the depth may be much greater in the valleys of the larger streams.	Pt	Pt Glacial Till: Very dense to loose, unsorted to very poorly sorted material deposited directly by glacial ice. Contains a wide range of grain sizes, from clay or silt up to large boulders. Matrix commonly dominated by the silt or sand fraction. Surface boulders are generally common. Thickness is highly variable, from less than 3 meters to greater than 30 meters.
Hat	Hat Alluvium Terrace Deposits: Silt, sand, and gravel deposited on terraces above the modern floodplains of streams. They are composed of a variety of channel, bar, and floodplain deposits. May include late Pleistocene alluvial sediment deposited onto freshly-drained glacial lake bottoms before the main stream and its tributaries incised down into the lacustrine deposits. Commonly less than 5 meters thick.	Symbols	
Haf	Haf Alluvial Fan Deposits: Boulder, cobble, and pebble gravel, pebbly sand, and diamict deposited at sites where steep, stream gradients are sharply reduced. Holocene alluvial fans are common at the mouths of steep tributaries where they meet the main stream.		Bedrock Outcrop
Hdf	Hdf Debris Flow Fan Deposits: Alluvial fan consisting largely of diamict and subordinate lenses of boulder, pebble, and cobble gravel, and pebbly sand.		Glacial Striation
Hld	Hld Modern Delta: Well-sorted sand and gravel deposited in a present-day lake at the mouth of a tributary stream. Includes topset and foreset beds. May also include proximal bottomset beds if exposures permit.		Water Well
Pfb	Pfb Glacial Flood Bars/Terraces: Boulder, cobble, pebble gravel and coarse sand deposited in bars and terraces along the floor of Glacial Lake Hitchcock following drainage of the lake. Thickness commonly <10 m.		Large Erratics
Pfl	Pfl Lacustrine Deposits, Fine-grained: Clay, silt, and very-fine to fine sand deposited in quiet-water environments of a glacial lake. Commonly laminated.		Landslides
Pl	Pl Lacustrine Deposits, Undifferentiated: Coarse- to fine-grained sediment deposited in a glacial lake, generally in an ice-proximal environment. Grain size generally decreases up-section, but marked changes in grain size occur over short distances both laterally and vertically.		Kettle
Pldw	Pldw Glacial Lake Winooski Delta: Well-sorted sand and gravel deposited in Glacial Lake Winooski at the mouth of a tributary stream. Includes topset, foreset, and proximal bottomset beds.		Sand/Gravel Pit
Pldh	Pldh Glacial Lake Hitchcock Delta: Well-sorted sand and gravel deposited in Glacial Lake Hitchcock at the mouth of a tributary stream. Includes topset, foreset, and proximal bottomset beds.		Geologic Cross-Section
	Projected Shorelines of Glacial Lake Hitchcock (south) and Glacial Lake Winooski (north)		

