Massachusetts Cultural Resource Information System

Scanned Record Cover Page

Inventory No:	SBR.933
Historic Name:	Wachusett Aqueduct
Common Name:	
Address:	Wachusett Aqueduct
City/Town:	Southborough
Village/Neighborhood:	
Local No:	8-1; G
Year Constructed:	
Architect(s):	Metropolitan Water Board; Smith, E. D. and Company
Architectural Style(s):	
Use(s):	Abandoned or Vacant; Other Engineering; Utilities Other
Significance:	Engineering
Area(s):	SBR.G: Wachusett Aqueduct Linear District sbr.i: Water Supply System of Metropolitan Boston
Designation(s):	Nat'l Register District (1/18/1990); Nat'l Register TRA (1/18/1990)
Building Materials(s):	

FORM A - AREA

MDC

MASSACHUSETTS HISTORICAL COMMISSION
294 Washington Street, Boston, MA. 02108

Form numbers in this area	Area letter
H, G, I	8-1 933

NR DIS 1/18/90

P1 USGS MAP

Photo (3x3" or 3x5")
Staple to left side of form

Photo number 933-35

Town Clinton, Berlin, Northborough, Marlborough, Southborough

Name of area (if any) Wachusett Aqueduct

General date or period 1896-98

Sketch map. Draw a general map of the area indicating properties within it. Number each property for which individual inventory forms have been completed. Label streets (including route numbers, if any) and indicate north. (Attach a separate sheet if space here is not sufficient)

See USGS Map

Recorded by M.H.Bowers

Organization Louis Berger & Assoc.

Date March 1984

(Staple additional sheets here)

SBR.933

ARCHITECTURAL SIGNIFICANCE of area. (Describe physical setting, general character, and architecturally significant structures).

Wachusett Aqueduct, the first built by the Metropolitan Water Board, was begun in 1896 and completed in 1898. The gravity conduit, which carried water from the Nashua River to Sudbury Reservoir, is approximately 12 miles long. It consists of two miles of tunnel, seven miles of masonry conduit in trench or on earth embankment, and three miles of open channel. The covered portions of the aqueduct average 11'4" wide and 10'5" high. For about half its length, the tunnel section is unlined, the remainder being lined with concrete faced with three to six rings of brick. Construction of the tunnel required sinking four shafts, down which equipment and crews passed to reach the work sites. At shaft 4, a large air compressor plant was erected to operate the drills, pumps, and hoists. Here, the contractor, E.D. Smith & Co. of Philadelphia, erected a circular brick superstructure with conical roof.

The masonry portion of the Wachusett Aqueduct consists of concrete and brick, with a horseshoe shaped section. The bottom and side walls of the conduit are of natural cement concrete, lined with one or more rings of brick. The arch itself is of Portland cement concrete. Near the village of West Berlin, a metering chamber was built on the aqueduct. The square gray granite structure provided access to a manhole on the conduit through which the level and rate of flow within could be measured. At Woodside, in the town of Northborough, the aqueduct is carired across the Assabet River on a 359' long bridge. The seven round arches, each with a 29.5' span, are of mass concrete faced with light gray granite. The aqueduct, as it crosses the bridge, has 8" of brick lining backed by sheet lead. In the 1930's, a siphon was built under the Assabet River, and the bridge removed from service.

The seven-mile masonry conduit terminates in Marlborough. Marketing the transition from covered aqueduct to open channel is a terminal chamber that contains wooden stop planks. The concrete substructure is enclosed within a hipped roofed, gray granite superstructure.

Below the terminal chamber is the three mile open channel. This channel follows the original course of Stony Brook, winding through farmland and forest to Parkerville Road, where it empties into Sudbury Reservoir. To build this channel, the stream bed was stripped of organic material, dug out to a width of approximately 20 feet, and lined with sand and gravel on the slopes. Stone riprap was not used along the channel, because two small control dams were built to maintain a depth of 5-6 feet, thereby retarding the flow of water along the channel. These stone dams were built with indented spillways in order to provide an overflow greater than would have been possible with straight structures. At intervals along the channel are seven small bridges connecting portions of local private and public roads. All consist of single concrete arches faced with random granite ashlar to retard weathering. Much of the shore along the channel is lined with conifers or aborvitae.

A few hundred yards above the upper control dam is a stone circular dam, constructed in 1940. This dam raises the water level behind it sufficiently high to supply the Hultman Aqueduct, which begins at this point and is marked with a square granite head chamber on the north bank of the channel. With construction of the Wachusett-Marlborough Tunnel in 1965-67, the Wachusett Aqueduct was removed from service. The Hultman is now directly supplied via pressure reducing valves enclosed within a granite-faced building with glass block windows located a few feet away.

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INVENTORY FORM CONTINUATION SHEET

MASSACHUSETTS HISTORICAL COMMISSION
Office of the Secretary, Boston

Community:	Form No:
Property Name:	

HISTORICAL SIGNIFICANCE of area. (Explain development of area, what caused it, and how it affected community; be specific).

Wachusett Aqueduct was built in 1896-98. It was the first phase of the taking of water from the south branch of the Nashua to supply the water needs of Metropolitan Boston. Completion of Wachusett Reservoir and Dam (1906-07) created a supply that was the the principal source of water for the metropolitan area until completion of Quabbin Reservoir in the 1940's. Wachusett Aqueduct was removed from service when it was superceded by the Wachusett-Marlborough Tunnel in the mid-1960's.

BIBLIOGRAPHY and/or REFERENCES

Report of the Massachusetts State Board of Health upon a Metropolitan Water Supply. Boston: Wright & Potter, 1895: 139.
Metropolitan Water Board, 1st Annual Report (1896): 6; 2nd Annual; Report (1897): 50-54, 3rd Annual Report (1898): 52-59.