Waterbury

STATE OF VERMONT
Division For Historic Preservation

Montpelier, VT 05602
HISTORIC SITES & STRUCTURES SURVEY
Individual Structure Survey Form

SURVEY NUMBER:

NEGATIVE FILE NUMBER:

UTM REFERENCES:
Zone/Easting/Northing

U.S.G.S. QUAD. MAP: Bolton Mt., Stowe

PRESENT FORMAL NAME: Waterbury Dam

ORIGINAL FORMAL NAME: Waterbury Dam

COUNTY: Washington, Lamoille

TOWN: Waterbury (and Stowe → Reservoir)

PRESENT USE: flood control, hydroelectric recreation

LOCATION: Little River

ORIGINAL USE: flood control

COMMON NAME:

ARCHITECT/ENGINEER: Corps of Engineers

PROPERTY TYPE: dam

BUILDER/CONTRACTOR: Civilian Conservation Corps

OWNER: State of Vermont
ADDRESS:

PHYSICAL CONDITION OF STRUCTURE:
Excellent ☐ Good ☒ Fair ☐ Poor ☐

ACCESSIBILITY TO PUBLIC:
Yes ☒ No ☐ Restricted ☐

STYLE:

LEVEL OF SIGNIFICANCE:
Local ☐ State ☒ National ☐

DATE BUILT:
1935-38

GENERAL DESCRIPTION:

Structural System

1. Foundation: Stone ☐ Brick ☐ Concrete ☐ Concrete Block ☐
2. Wall Structure
   a. Wood Frame: Post & Beam ☐ Balloon ☐
   b. Load Bearing Masonry: Brick ☐ Stone ☐ Concrete ☐ Concrete Block ☐
   c. Iron ☐ d. Steel ☐ e. Other:
3. Wall Covering: Clapboard ☐ Board & Batten ☐ Wood Shingle ☐ Shiplap ☐
   Novelty ☐ Asbestos Shingle ☐ Sheet Metal ☐ Aluminum ☐ Asphalt Siding ☐
   Brick Veneer ☐ Stone Veneer ☐ Bonding Pattern: Other:
4. Roof Structure
   a. Truss: Wood ☐ Iron ☐ Steel ☐ Concrete ☐ b. Other:
5. Roof Covering: Slate ☐ Wood Shingle ☐ Asphalt Shingle ☐ Sheet Metal ☐
   Built Up ☐ Rolled ☐ Tile ☐ Other:
6. Engineering Structure: rolled earthfill dam with associated structures 7. Other:

Appendages: Porches ☐ Towers ☐ Cupolas ☐ Dormers ☐ Chimneys ☐ Sheds ☐
Ells ☐ Wings ☐ Bay Window ☐ Other:

Roof Styles: Gable ☐ Hip ☐ Shed ☐ Flat ☐ Mansard ☐ Gambrel ☐ Jerkinhead ☐
Saw Tooth ☐ With Monitor ☐ With Bellcast ☐ With Parapet ☐ With False Front ☐
Other:

Number of Stories:
Entrance Location:
Number of Bays:
Approximate Dimensions: 1,850 ft. long, 187 ft. high

SIGNIFICANCE: Architectural ☐ Historic ☐ Archeological ☐

Historic Contexts:
Civil Works, CCC - 1930s

Level of Significance:
Local ☐ State ☒ National ☐

ADDITIONAL ARCHITECTURAL OR STRUCTURAL DESCRIPTION:

attached

RELATED STRUCTURES: (Describe)

attached

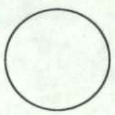
STATEMENT OF SIGNIFICANCE:

attached

REFERENCES:

none

MAP: (Indicate North in Circle)



attached

SURROUNDING ENVIRONMENT:

Open Woodland ☐ Woodland ☒

Scattered Buildings ☐

Moderately Built Up ☐

Densely Built Up ☐

Residential ☐ Commercial ☐

Agricultural ☐ Industrial ☐

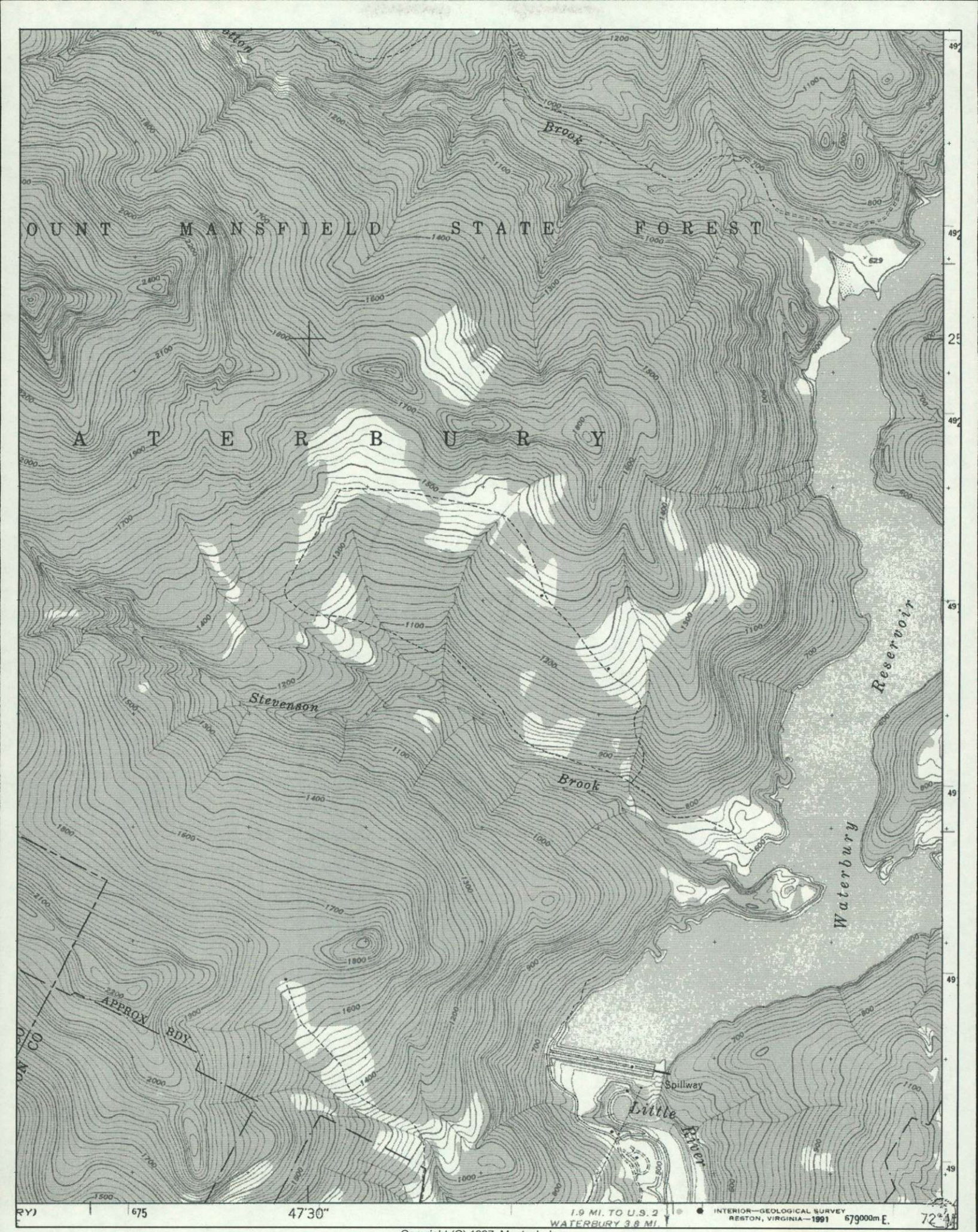
Roadside Strip Development ☐

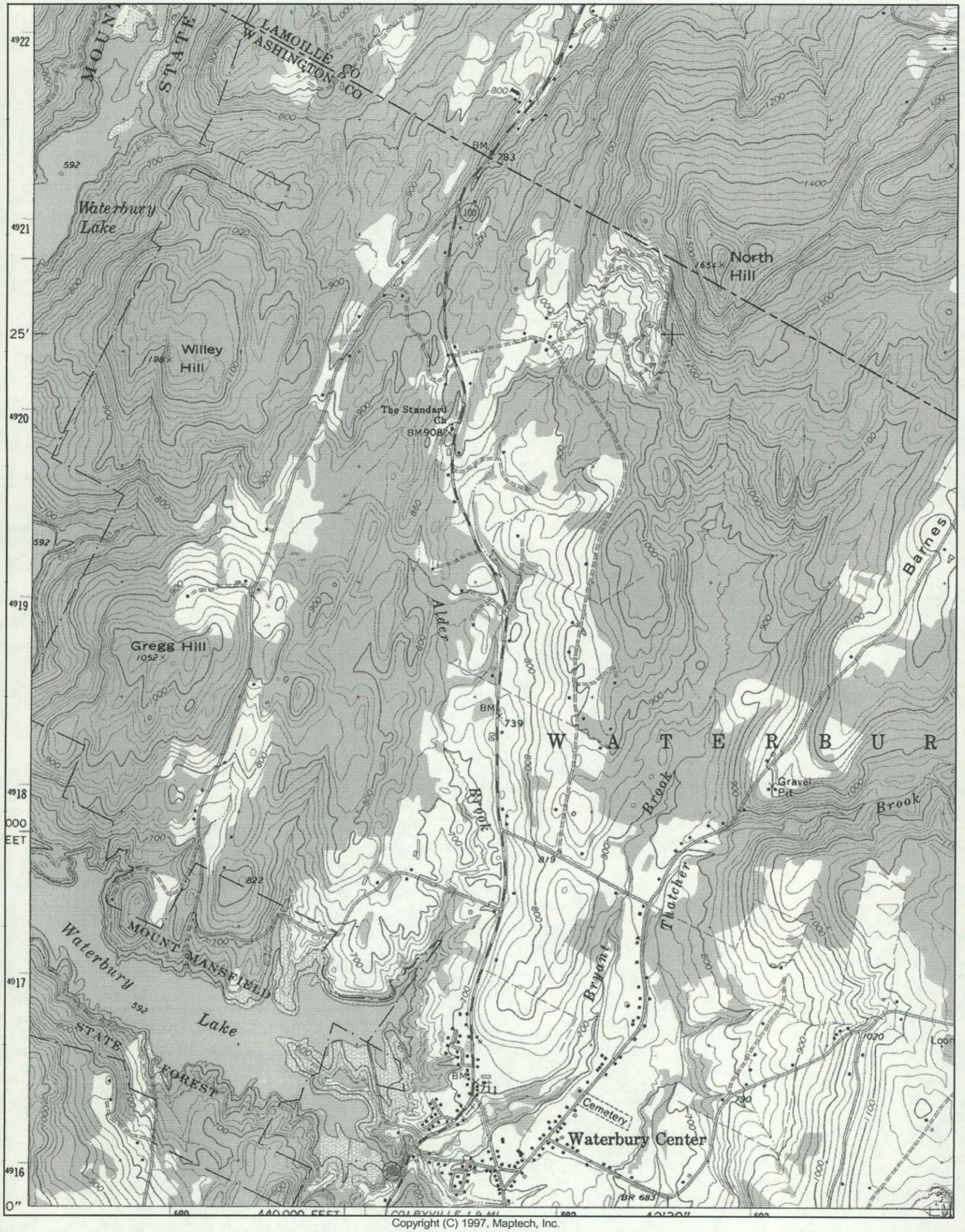
Other:

RECORDED BY:
Kathleen A. Atwood

ORGANIZATION: U.S. Army Corps of Engineers, New England District

DATE RECORDED:
June 6, 2000





Continuation Sheet

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ADDITIONAL ARCHITECTURAL OR STRUCTURAL DESCRIPTION

The Waterbury Dam project primarily serves a flood control purpose for the Little River and Winooski River basins during major rainfall events, but also serves as a hydroelectric power supply and a recreational area.

The dam consists of a rolled earth embankment approximately 1,850 feet (ft.) at its crest, 187 ft. high at its maximum section above the original river channel, and approximately 1,000 ft. wide at the maximum section. With a top elevation of 633 ft. NGVD (National Geodetic Vertical Datum), the embankment has a crest width of approximately 23 ft. The embankment consists of a wide central impervious core, sand and gravel shells flanking the core, a large downstream rockfill toe, and a small upstream rockfill toe section. Both slopes are surfaced with a hand-placed riprap on a bedding layer. Construction of the earthfill embankment required approximately 2,300,000 cubic yards of material. The project diverted flow of the Little River, which originally passed through a natural gorge at the site, into an outlet tunnel roughly parallel to the gorge section.

A combined spillway and outlet works are located on the eastern side of the dam. The outlet works consist of a 252 ft. long, concrete overflow crest and three, 25.5 ft. high, electrically operated tainter gates. Two older gates (ca. 1938) are 20 ft. wide and the newest (ca. 1956) gate is 35 ft. wide. The spillway is an uncontrolled, concrete, gravity ogee section with a crest elevation of 617.5 ft. NGVD. The tainter gate sills are at elevation, 592.0 ft.

The outlet tunnel consists of a semi-circular concrete conduit that transitions into two 54-inch steel conduits. The semi-circular conduit is 882 ft. long and has an emergency sluice gate and gatehouse located on the top of the embankment. These two steel pipes are approximately 230 ft. long and deliver from 150 cubic ft. per second to 580 cubic ft. per second of flow to the 5,500 kilowatt hydroelectric facility operated by Green Mountain Power Company at the downstream dam base. A third steel pipe is 290 ft. long with a 48 inch diameter, constructed in 1985, that allows emergency bypass of flows through the dam.

Waterbury Dam has been modified twice since initial construction. The first modification involved a 3 ft. increase in the dam's crest and the addition of a third tainter gate to the spillway. The purpose was to add to the structural integrity of the dam and to

assure safe passage of the probable maximum flood. Construction work was begun in September 1956 and completed in November 1959. The second modification involved remedial measures accomplished primarily in 1985. These measures consisted of: addition of a 48 inch bypass to increase drawdown capability; filter injection and rock tow reconstruction in the vicinity of the dam-terrace junction; and, injection of filter materials in gorge voids beneath the shell of the dam and grouting of gorge voids beneath the core of the dam.

Waterbury Reservoir is nearly 6 miles in the north-south direction with a width of about 2.3 miles at the widest point. The normal pool elevation is 592 ft., which provides a pool of 890 acres. In the winter, the pool is drawn down to approximately 550 ft. NGVD, with a surface area of 420 acres.

STATEMENT OF SIGNIFICANCE

On November 2-4, 1927, a disastrous storm hit the State of Vermont. Severe flooding resulted in the loss of 84 lives and financial damages of $30,000,000 (1927 price level). In the Winooski River, Basin, 55 lives were lost and damages totaled $13,500,000.

A Corps of Engineers study was initiated soon thereafter by the First District (now known as the New York District) which investigated "the improvement of the Winooski River, VT, for the purposes of navigation in combination with the development of waterpower, the control of floods, and the needs of irrigation." The study was performed under the provisions of House Document No. 308, Sixty-ninth Congress, first session, which was enacted into law with modifications in Section 1 of the River and Harbor Act of 1927. Also, following the 1927 flood, an "advisory committee of engineers on flood control" was formed by the State of Vermont.

The report completed by New York District presented a comprehensive plan for flood control and power development, consisting of: the construction of seven reservoirs; the enlargement of existing channels; the installation of seven new hydropower plants, and the enlargement or improvement of 12 existing plants. There was no need for navigation or irrigation improvements. Waterbury Dam and Reservoir was one of the seven considered in the report. Its estimated construction cost was $2,358,000.

Construction of the Waterbury Dam and Reservoir was authorized by the Director, Emergency Conservation Work on June 2, 1933 as an emergency relief project. The dam and reservoir were designed and built by the Corps of Engineers using contract services and Civilian Conservation Corps (CCC) labor. Work began in April 1935 and the project was completed in October 1938.

The CCC program was established under the Emergency Work Act of 1933, signed by President Franklin Roosevelt. The CCC provided jobs during the Depression and also constructed the Wrightsville and East Barre dams before starting work on the Waterbury Dam. The base camp for the CCC was located just down stream from the dam on the west side of the Little River. This site, Camp S-53, commonly called Camp Smith (for

the current governor, Charles M. Smith), housed several CCC companies, which numbered around 2,000 during the peak of construction. The former camp-site is designated as an archaeological district (VT-WA-26) by the VDHP.

We believe that the Waterbury Dam is eligible for the National Register of Historic Places under Criterion A at the local level: "associated with events that have made a significant contribution to the broad patterns of our history." The Waterbury Dam is representative of the Corps of Engineers large-scale civil works projects that were completed in the early twentieth century in Vermont and the rest of New England in response to natural disasters. Each project has unique aspects depending on site location, the topography of the river valley, and the project's authorized purpose. Waterbury Dam is one of the largest in the State of Vermont. The dam ranks third in height and fifth in storage volume. In addition, to being an imposing engineering structure, the dam is significant as being one of several CCC work projects in Vermont. Although modified several times over the last sixty years, the structure still retains integrity and NR significance.

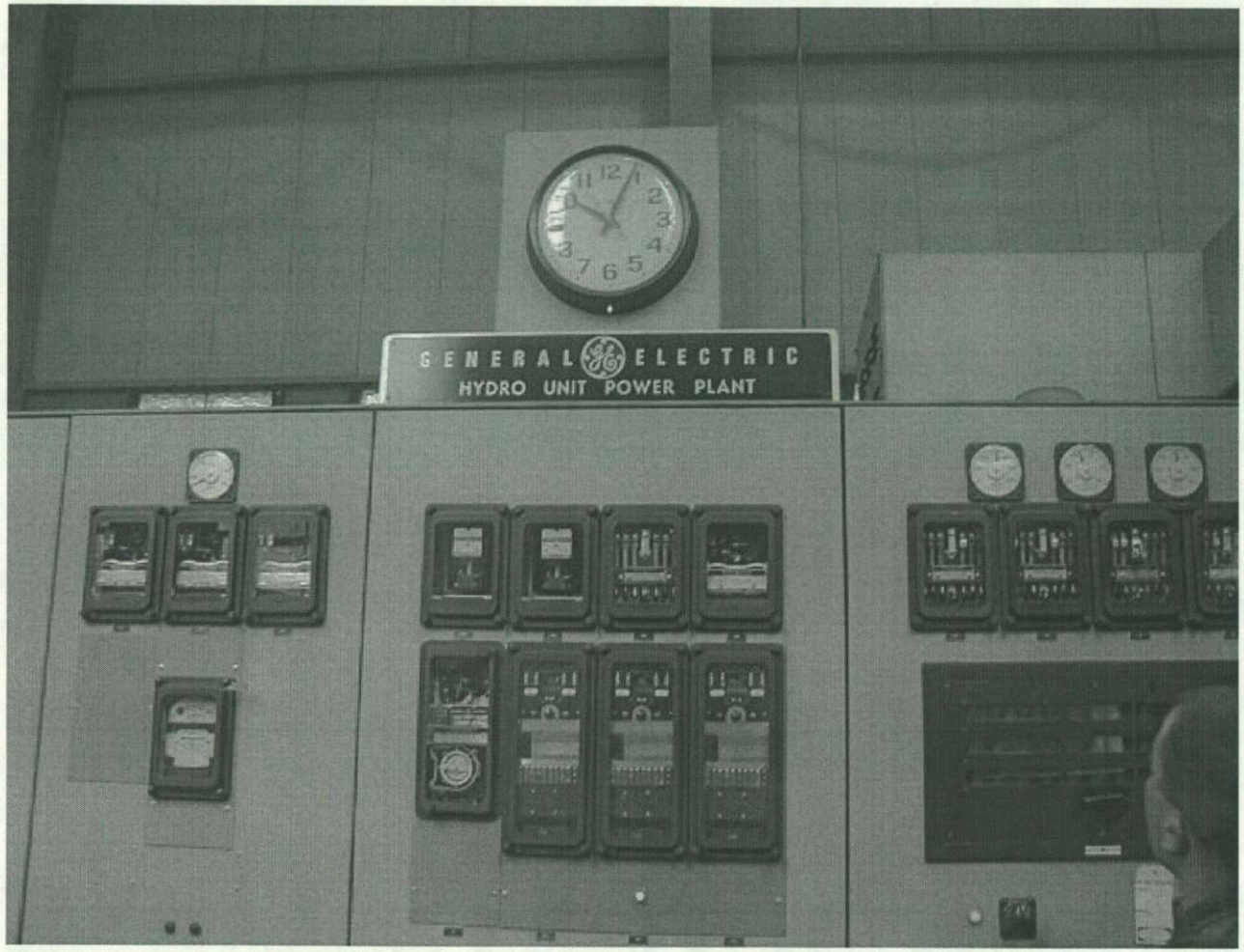
Waterbury Dam, downstream face of the dam with the gatehouse atop

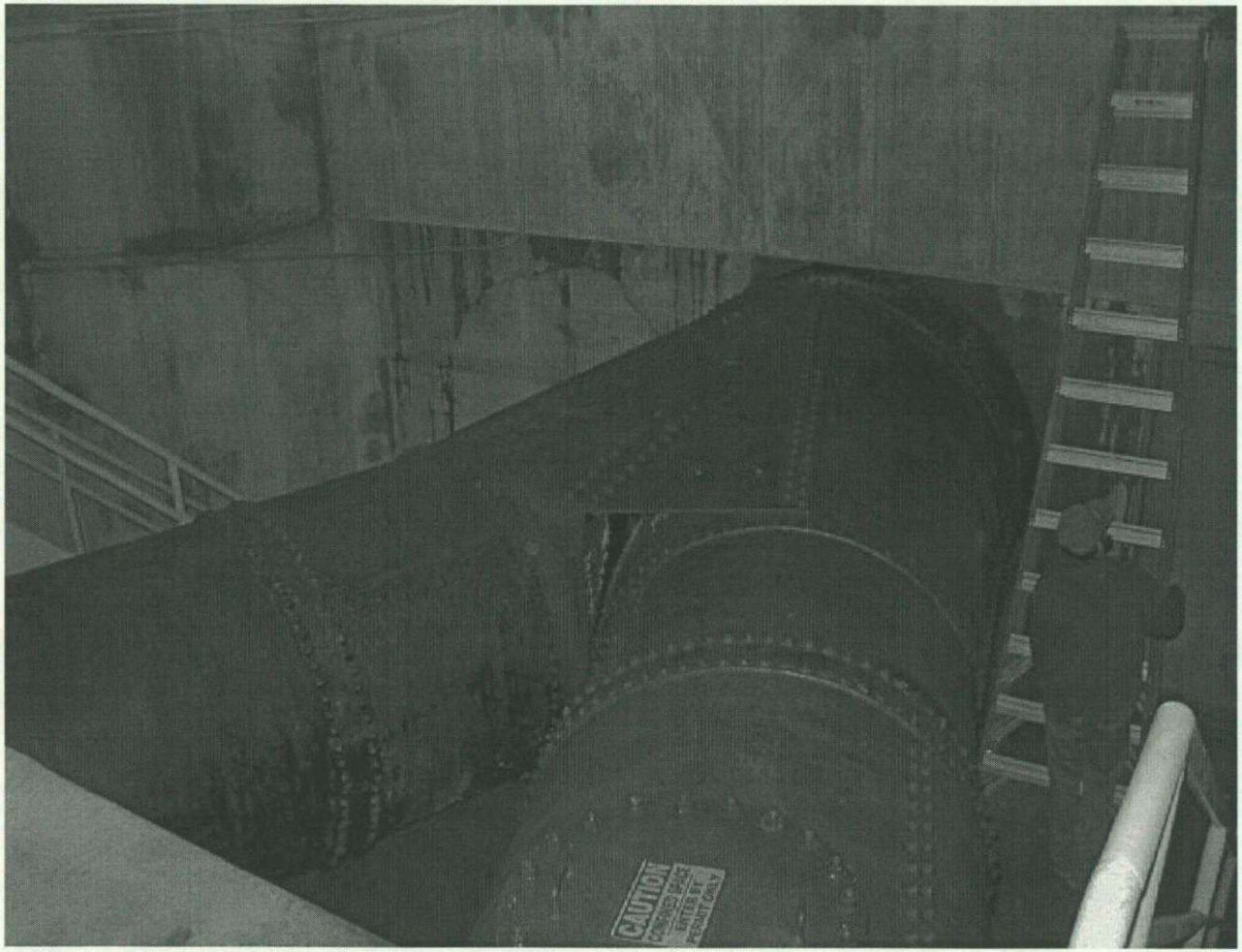
Waterbury Dam, Waterbury, VT


WATERBURY
DAM

Hydroelectric facility at Waterbury Dam

Spillway and tainter gates at Waterbury Dam


GENERAL ELECTRIC
HYDRO UNIT POWER PLANT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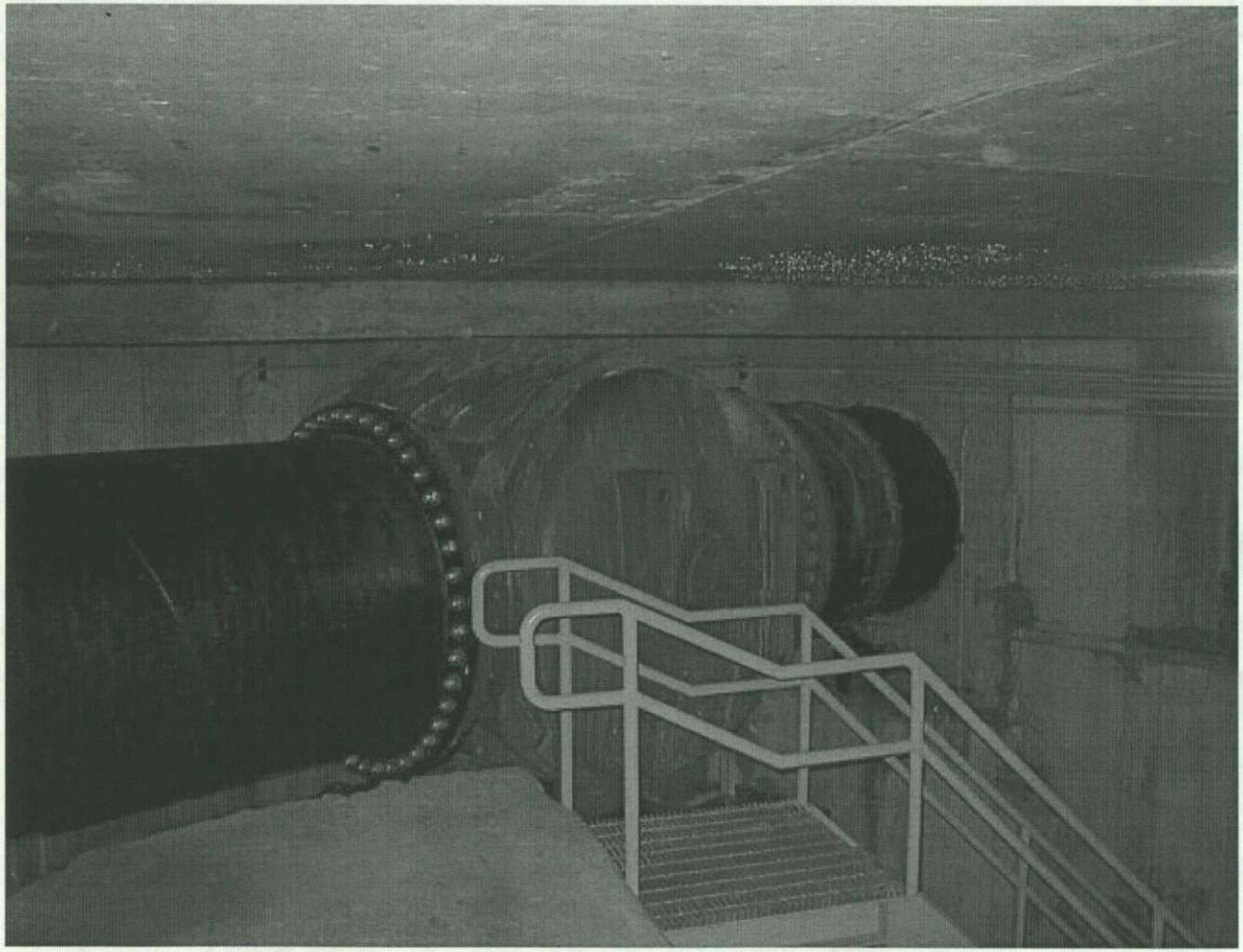

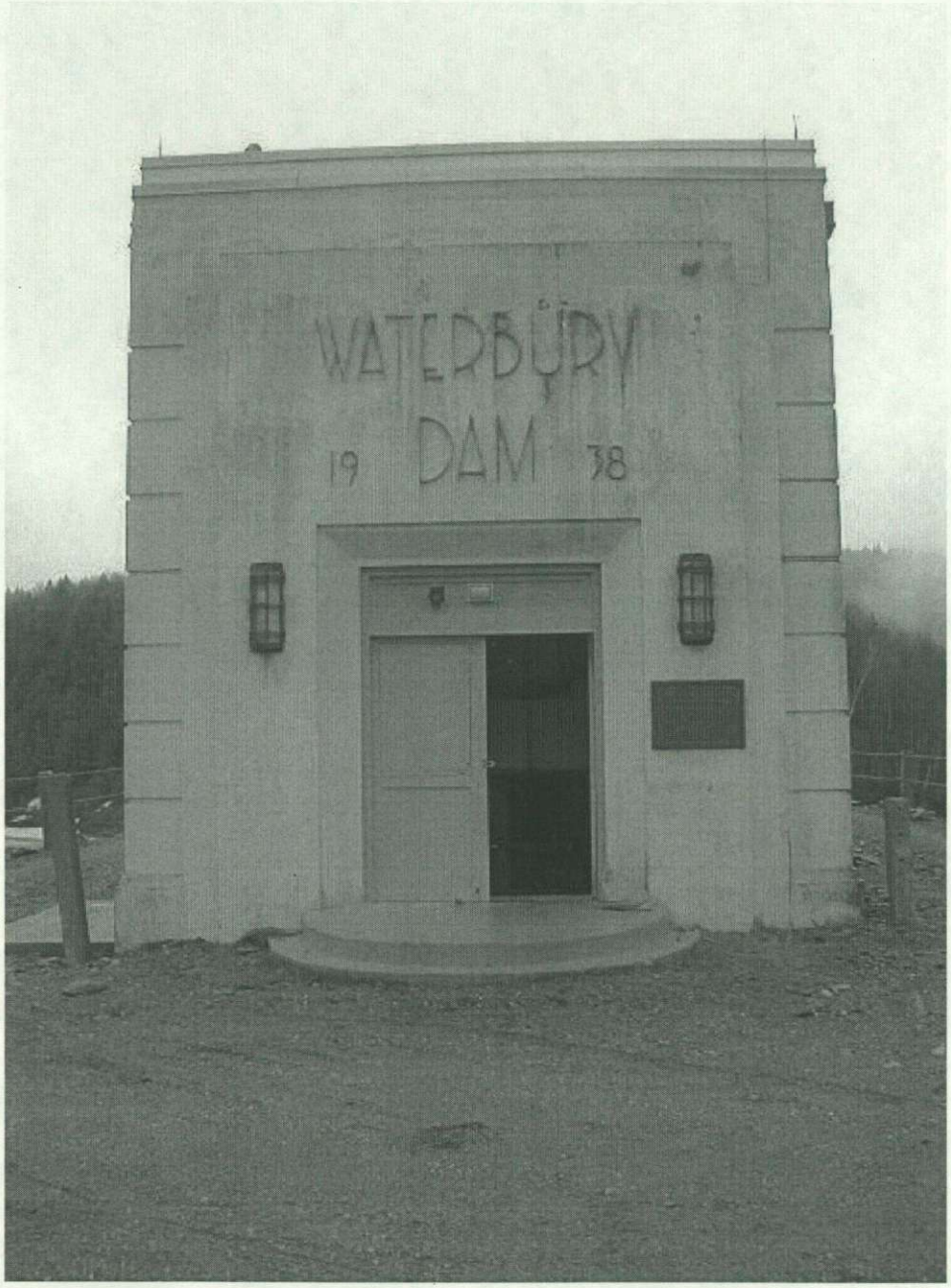
WATERBURY
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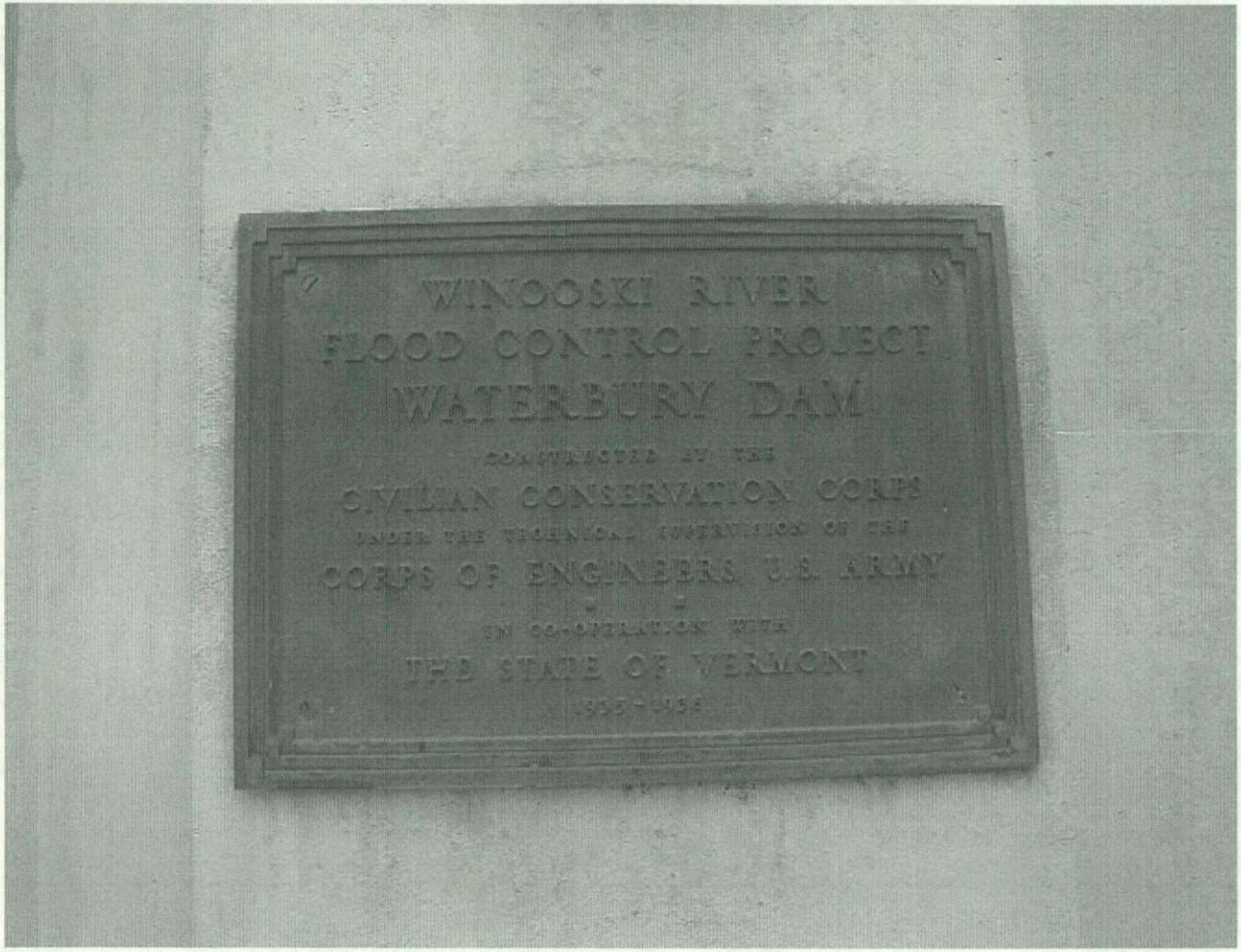
WINOOSKI RIVER
FLOOD CONTROL PROJECT
WATERBURY DAM
CONSTRUCTED BY THE
CIVILIAN CONSERVATION CORPS
UNDER THE TECHNICAL SUPERVISION OF THE
CORPS OF ENGINEERS U.S. ARMY
IN CO-OPERATION WITH
THE STATE OF VERMONT