

UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

FOR NPS USE ONLY
JAN 18 1977
 RECEIVED
 DATE ENTERED **FEB 14 1978**

**NATIONAL REGISTER OF HISTORIC PLACES
INVENTORY -- NOMINATION FORM**

SEE INSTRUCTIONS IN *HOW TO COMPLETE NATIONAL REGISTER FORMS*
TYPE ALL ENTRIES -- COMPLETE APPLICABLE SECTIONS

1 NAME

HISTORIC

Beckley Furnace

AND/OR COMMON

East Canaan Iron Furnace Industrial Monument

2 LOCATION

STREET & NUMBER

Lower Road

___ NOT FOR PUBLICATION

CITY, TOWN

North Canaan

CONGRESSIONAL DISTRICT

6th - Toby Moffett

STATE

Connecticut

___ VICINITY OF

CODE

09

COUNTY

Litchfield

CODE

005

3 CLASSIFICATION

CATEGORY

OWNERSHIP

STATUS

PRESENT USE

___ DISTRICT

PUBLIC

___ OCCUPIED

___ AGRICULTURE

___ MUSEUM

___ BUILDING(S)

___ PRIVATE

___ UNOCCUPIED

___ COMMERCIAL

PARK

STRUCTURE

___ BOTH

___ WORK IN PROGRESS

___ EDUCATIONAL

___ PRIVATE RESIDENCE

___ SITE

PUBLIC ACQUISITION

ACCESSIBLE

___ ENTERTAINMENT

___ RELIGIOUS

___ OBJECT

___ IN PROCESS

YES: RESTRICTED

___ GOVERNMENT

___ SCIENTIFIC

___ BEING CONSIDERED

___ YES: UNRESTRICTED

___ INDUSTRIAL

___ TRANSPORTATION

___ NO

___ MILITARY

___ OTHER:

4 OWNER OF PROPERTY

NAME

State of Connecticut

Department of Environmental Protection

STREET & NUMBER

State Office Building

CITY, TOWN

Hartford

___ VICINITY OF

STATE

CT

5 LOCATION OF LEGAL DESCRIPTION

COURTHOUSE,
REGISTRY OF DEEDS, ETC.

North Canaan Town Hall

STREET & NUMBER

Pease Street

CITY, TOWN

North Canaan

STATE

CT

6 REPRESENTATION IN EXISTING SURVEYS

TITLE

CT Statewide Inventory of Historic Resources

DATE

1975

FEDERAL STATE ___ COUNTY ___ LOCAL

DEPOSITORY FOR
SURVEY RECORDS

Connecticut Historical Commission

CITY, TOWN

Hartford

STATE

Connecticut

JAN 17 1977

7 DESCRIPTION

CONDITION		CHECK ONE	CHECK ONE
<input type="checkbox"/> EXCELLENT	<input type="checkbox"/> DETERIORATED	<input type="checkbox"/> UNALTERED	<input checked="" type="checkbox"/> ORIGINAL SITE
<input type="checkbox"/> GOOD	<input checked="" type="checkbox"/> RUINS	<input checked="" type="checkbox"/> ALTERED	<input type="checkbox"/> MOVED DATE _____
<input type="checkbox"/> FAIR	<input type="checkbox"/> UNEXPOSED		

DESCRIBE THE PRESENT AND ORIGINAL (IF KNOWN) PHYSICAL APPEARANCE

On the banks of the Blackberry River in rural East Canaan, Connecticut, are the impressive remains of the Beckley Furnace¹, part of a large ironmaking operation in the latter half of the 19th century. The stack itself, built in 1847 and modified in 1896, is the central feature of the site. It is 40' high, 30' square at the base and about 20' at the top, with a base diameter of 9'. It is built of rough-surfaced limestone in random ashlar and has four pointed-arch openings (with the main opening larger), which are outlined by finished limestone blocks. The masonry is reinforced at the corners by iron plates and rods. The stack is in reasonably good condition despite some crumbling of the firebrick lining in the hearth area.

Separating the furnace from the nearby road is a retaining wall (perhaps at one time a foundation), and across the road, a trestle embankment, both of the same limestone ashlar. About 100 yards upstream is the dam, mostly intact, as well as the foundation of the wheel house. Here there are the remains of an iron elbow penstock which leads from the top of the dam to what is apparently a turbine. The blast was at one time driven by a waterwheel which powered a vertical blowing tub with pistons of 6' bore and stroke, and was injected through four 3¼" tuyeres. Also nearby are the remnants of another, similar dam which provided the head for two other furnaces located 1/3 mile downstream; only a trestle support and a few foundations are visible to mark their location. Across the river from the Beckley furnace are very large hills of slag, at the foot of which are the remains of some iron structure, perhaps a trestle, and some ore or slag handling equipment, including wheeled carts and a conveyor device. In the stream are some large (3' diameter) chunks of iron, roughly disk-shaped.

These remains only suggest the 19th-century appearance of the site. The stack was almost entirely enclosed by the buildings within which the various operations were performed. Across the road were large charcoal storage sheds, connected to the furnace by a covered wooden trestle. On top of the stack was the charging floor from which the ore and charcoal were dumped in. At the base was a large building where the casting was done; a low wall near the river may be part of the casting house foundation. The company office was located near the dam. Although these structures are no longer in existence, the most important element of the iron making process, the stack, remains.

¹There has been some confusion over the names of the Canaan furnaces. Rolando did not realize that the two earlier furnaces, the Beckley and the Forbes, were renamed Cannan #1 and Canaan #2 when in 1872 Canaan #3 was built. In an otherwise authoritative book, Keith and Harte confuse the Forbes and Beckley remains and imply the Beckley was discontinued (instead of sold) in 1857. This error has been continued in other histories, but probably was a typo, since Harte's notes identified the present furnace as the Beckley. See W.J. Prendergast, "Monument to Industry," New Haven Register, June 4, 1967. Photos and Pynchon's article confirm this identification.

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CONTINUATION SHEET

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- | | |
|------------------------------------|---|
| 1. Perotti & Sons, Inc. | East Canaan, CT 06024 |
| 2. Fred Contoreggi | 6729 31st, N. Arlington, VA 22213 |
| 3. James R. and Vivian F. Erviti | Lower Road, East Canaan, CT 06024 |
| 4. Thomas O'Brien | 49 Barholin Ave., Springdale,
CT 06907 |
| 5. State of Connecticut | |
| 6. Elsie Arrigoni | 823 Norfolk Road, Torrington,
CT 06790 |
| 7. William A. and Marion E. Potter | Box 347, East Canaan, CT 06024 |
| 8. John Clayton | Lower Road, East Canaan, CT 06024 |

JUN 2 1977

TAX REFORM ACT

UNITED STATES DEPARTMENT OF THE INTERIOR
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Beckley Furnace

New England: An Inventory of Historic Engineering and Industrial
Sites
Historic American Engineering Record

1974 - Federal
Library of Congress
Washington, D.C.

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Beckley Furnace

8

one

furnaces, forests in Vermont, local supporting facilities, and railway wheel manufacturies in Connecticut and Chicago (iron from the Beckley also went to the South Boston Gun Foundry). By imitating the methods of the steel men, the B-R Company was able to survive longer than other Connecticut iron makers. At the same time, of course, iron for Pennsylvania steel mills was being made in huge furnaces, with machines which dumped entire railroad cars of ore into the furnace, and automatically removed the iron and slag. Most jobs in the process were done by unskilled labor, whereas charcoal iron-making continued to rely on trained judgment and careful work. Salisbury iron could not compete in price. There is a touch of regret in one of the last catalogs of Barnum-Richardson's successor, which advertized "an iron made, not in modern, large tonnage furnaces, but in small, open-top furnaces, an iron of high strength and quality, made in the old-fashioned way of our forefathers."

The Beckley Furnace is valuable not only as a symbol of the area's iron-making heritage, but as evidence of the height and limits of this technology. Further investigation into the archaeological remains - the foundations on the site, the rusting machinery, and the stack itself - as well as the historical sources, which include photos, site plans and measured drawings, could date the improvements cited herin with precision, and could assay their effectiveness more conclusively.

1977

8 SIGNIFICANCE

PERIOD	AREAS OF SIGNIFICANCE -- CHECK AND JUSTIFY BELOW			
<input type="checkbox"/> PREHISTORIC	<input type="checkbox"/> ARCHEOLOGY-PREHISTORIC	<input type="checkbox"/> COMMUNITY PLANNING	<input type="checkbox"/> LANDSCAPE ARCHITECTURE	<input type="checkbox"/> RELIGION
<input type="checkbox"/> 1400-1499	<input checked="" type="checkbox"/> ARCHEOLOGY-HISTORIC	<input type="checkbox"/> CONSERVATION	<input type="checkbox"/> LAW	<input type="checkbox"/> SCIENCE
<input type="checkbox"/> 1500-1599	<input type="checkbox"/> AGRICULTURE	<input type="checkbox"/> ECONOMICS	<input type="checkbox"/> LITERATURE	<input type="checkbox"/> SCULPTURE
<input type="checkbox"/> 1600-1699	<input type="checkbox"/> ARCHITECTURE	<input type="checkbox"/> EDUCATION	<input type="checkbox"/> MILITARY	<input type="checkbox"/> SOCIAL/HUMANITARIAN
<input type="checkbox"/> 1700-1799	<input type="checkbox"/> ART	<input type="checkbox"/> ENGINEERING	<input type="checkbox"/> MUSIC	<input type="checkbox"/> THEATER
<input checked="" type="checkbox"/> 1800-1899	<input type="checkbox"/> COMMERCE	<input type="checkbox"/> EXPLORATION/SETTLEMENT	<input type="checkbox"/> PHILOSOPHY	<input type="checkbox"/> TRANSPORTATION
<input checked="" type="checkbox"/> 1900-	<input type="checkbox"/> COMMUNICATIONS	<input checked="" type="checkbox"/> INDUSTRY	<input type="checkbox"/> POLITICS/GOVERNMENT	<input type="checkbox"/> OTHER (SPECIFY)
		<input type="checkbox"/> INVENTION		

SPECIFIC DATES 1847 - built

BUILDER/ARCHITECT

STATEMENT OF SIGNIFICANCE

The Salisbury region of western Connecticut was once a leading producer of pig iron; dozens of blast furnaces were built on its fast-running streams. Today, only a handful remain. The Beckley furnace is significant, therefore, because it is a rare artifact of the iron industry. The great stack, the careful stonework in the embankments and dams, and the tremendous slagheaps testify to the important place of iron-making in East Canaan and surrounding area. The site is also of interest to industrial archaeologists and historians: it provokes questions about the decline of the iron industry and, through a careful examination of remaining materials, may contribute to a better understanding of the development and processes of iron-making technology.

The furnace was built in 1847 by John Beckley and William Pierce. Like other sites in the region, this one seemed optimally located in terms of essential resources: unlimited lime was available about a mile up the road, a small iron mine, the Peet mine, was close by, the surrounding mountains were covered with hardwood forests, and the swift Blackberry River provided adequate power. Except for the lime, these considerations were all ineffective by 1880: the ore, which came principally from nearby Salisbury mines (Ore Hill and the Davis Mine), was being taken from ever deeper and more expensive tunnels. Charcoal was being brought in from Pennsylvania and Vermont, and coal was imported, probably for the ore-roaster. Finally, the blast powered by water was incapable of the expansion in scale achieved by the huge Pennsylvania furnaces. Most Salisbury furnaces, including one at East Canaan, went out of production in the 1880's and 90's.

In spite of rising costs, the Beckley Furnace and its mate, Canaan #3, continued in operation until 1920-1923. Part of the explanation for this longevity is technological. Materials handling was improved: whereas horses had originally hauled ore over the mountain in leather sacks, the furnace site was by 1875 well developed with railroad spur lines, and trestles, "dinky cars" and conveyor devices moved ore and slag. Metallurgists were employed to analyze the product. After a fire in 1896, the Beckley Furnace was completely modernized; it is probable that a plate-iron, water-cooled hearth was built and the blast converted to steam power, since these refinements were present in Canaan #3. Such improvements raised the blast temperature from 400 to 650°F. and doubled its pressure. By the end of decade, the furnace was operated on a continuous basis and output was greatly increased, perhaps doubled.

Equally important were managerial developments. The Beckley Furnace was acquired in 1857 by the Barnum-Richardson Company. The B-R Company also owned another East Canaan furnace, the Forbes Furnace, next to which it constructed in 1872 Canaan #3. The B-R Company was able to achieve a high degree of horizontal and vertical integration. It owned the Salisbury mines, all the remaining

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9 MAJOR BIBLIOGRAPHICAL REFERENCES

Keith, Herbert and Charles Harte. The Early Iron Industry of Connecticut. New Haven: Connecticut Society of Civil Engineers, 1935.

Moldenke, Richard. Charcoal Iron. Lime Rock: Salisbury Iron Company, 1920.

Pynchon, W.H.C. "Iron Mining in Connecticut," Connecticut Magazine, V (1899), 20-26, 232-238, 277-285.

10 GEOGRAPHICAL DATA

ACREAGE OF NOMINATED PROPERTY c. seven

UTM REFERENCES

A	1,8	6,4,1	3,8,0	4,6	5,2	1,8,0	B					
	ZONE	EASTING	NORTHING	ZONE	EASTING	NORTHING						
C							D					

VERBAL BOUNDARY DESCRIPTION

The boundaries have been defined to reflect the 19th century extent of the site and include some slag and other remains not included in the state-owned site: beginning at the southern end of the Beckley dam, north to point 100' beyond Lower Road; westerly paralleling the road at a distance of 100'; then south to the remains of the lower dam; continuing south, the boundary parallels the river at a distance of 100 yards; then north to the first point.

LIST ALL STATES AND COUNTIES FOR PROPERTIES OVERLAPPING STATE OR COUNTY BOUNDARIES

STATE	CODE	COUNTY	CODE
STATE	CODE	COUNTY	CODE

11 FORM PREPARED BY

NAME / TITLE Bruce Clouette, Consultant

ORGANIZATION Connecticut Historical Commission DATE 23 March 1976

STREET & NUMBER 59 South Prospect Street TELEPHONE (203) 566-3005

CITY OR TOWN Hartford, STATE CT

12 STATE HISTORIC PRESERVATION OFFICER CERTIFICATION

THE EVALUATED SIGNIFICANCE OF THIS PROPERTY WITHIN THE STATE IS:

NATIONAL STATE LOCAL

As the designated State Historic Preservation Officer for the National Historic Preservation Act of 1966 (Public Law 89-665), I hereby nominate this property for inclusion in the National Register and certify that it has been evaluated according to the criteria and procedures set forth by the National Park Service.

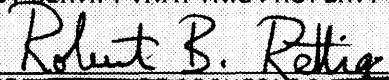

STATE HISTORIC PRESERVATION OFFICER SIGNATURE 

TITLE S.H.P.O.

DATE JAN 3, 1977

FOR NPS USE ONLY

I HEREBY CERTIFY THAT THIS PROPERTY IS INCLUDED IN THE NATIONAL REGISTER

 DIRECTOR, OFFICE OF ARCHAEOLOGY AND HISTORIC PRESERVATION	DATE <u>2/14/78</u> KEEPER OF THE NATIONAL REGISTER
ATTEST:  KEEPER OF THE NATIONAL REGISTER	DATE <u>2-7-78</u>

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Beckley Furnace	9	one
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Rodemeyer, John. Scrapbook of North Canaan. Canaan: C.H. Pease, 1898. Contains picture of furnace before fire of 1896.

Rolando, Victor. "Blast Furnaces of Connecticut." Unpub. Ms., Connecticut Historical Commission.

Site layout from:

Beers, F.W. (comp.). County Atlas of Litchfield, Connecticut. New York: F.W. Beers & Co., 1874.

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