

VLR-3/17/99

United States Department of the Interior  
National Park Service

NATIONAL REGISTER OF HISTORIC PLACES  
REGISTRATION FORM

**DRAFT**

This form is for use in nominating or requesting determinations for individual properties and districts. See instructions in How to Complete the National Register of Historic Places Registration Form (National Register Bulletin 16A). Complete each item by marking "x" in the appropriate box or by entering the information requested. If any item does not apply to the property being documented, enter "N/A" for "not applicable." For functions, architectural classification, materials, and areas of significance, enter only categories and subcategories from the instructions. Place additional entries and narrative items on continuation sheets (NPS Form 10-900a). Use a typewriter, word processor, or computer, to complete all items.

**1. Name of Property**

historic name Elizabeth Furnace

85-940

other names/site number Fort Furnace, Locust Grove Furnace

**2. Location**

street & number Route 678, on Passage Creek  
George Washington and Jefferson National Forests

city or town Waterlick not for publication   
state Virginia code VA county Shenandoah vicinity   
zip code \_\_\_\_\_ code 171

**3. State/Federal Agency Certification**

As the designated authority under the National Historic Preservation Act of 1986, as amended, I hereby certify that this \_\_\_\_\_ nomination \_\_\_\_\_ request for determination of eligibility meets the documentation standards for registering properties in the National Register of Historic Places and meets the procedural and professional requirements set forth in 36 CFR Part 60. In my opinion, the property \_\_\_\_\_ meets \_\_\_\_\_ does not meet the National Register Criteria. I recommend that this property be considered significant \_\_\_\_\_ nationally \_\_\_\_\_ statewide \_\_\_\_\_ locally. ( \_\_\_\_\_ See continuation sheet for additional comments.)

Signature of certifying official \_\_\_\_\_ Date \_\_\_\_\_

State or Federal agency and bureau \_\_\_\_\_

In my opinion, the property \_\_\_\_\_ meets \_\_\_\_\_ does not meet the National Register criteria. ( \_\_\_\_\_ See continuation sheet for additional comments.)

Signature of commenting or other official \_\_\_\_\_ Date \_\_\_\_\_

State or Federal agency and bureau \_\_\_\_\_

4. National Park Service Certification

I, hereby certify that this property is:

- entered in the National Register  
See continuation sheet.
- determined eligible for the National Register  
See continuation sheet.
- determined not eligible for the National Register
- removed from the National Register
- other (explain): \_\_\_\_\_

Signature of Keeper Date of Action

5. Classification

Ownership of Property (Check as many boxes as apply)

Category of Property (Check only one box)

- private
- public-local
- public-State
- public-Federal

- building(s)
- district
- site
- structure
- object

Number of Resources within Property (Do not include previously listed properties in the count)

Contributing	Noncontributing	
<u>2</u>	<u>4</u>	buildings
<u>4</u>	<u>    </u>	sites
<u>    </u>	<u>    </u>	structures
<u>    </u>	<u>    </u>	objects
<u>6</u>	<u>4</u>	Total

Number of contributing resources previously listed in the National Register N/A

Name of related multiple property listing (Enter "N/A" if property is not part of a multiple property listing.) The Iron Industry of Virginia, 1620-1920

6. Function or Use

Historic Functions  
(Enter categories from instructions)

Industry/Processing/Extraction  
Iron Furnace

Current Functions  
(Enter categories from instructions)

Recreation and Culture  
Interpretive area of George Washington and Jefferson National Forests

7. Description

Architectural Classification  
(Enter categories from instructions)

No Style

Materials  
(Enter categories from instructions)

foundation: Stone  
walls: Stone  
roof: N/A  
other: N/A

Narrative Description (Describe the historic and current condition of the property on one or more continuation sheets.)

8. Statement of Significance

Applicable National Register Criteria (Mark "x" in one or more boxes for the criteria qualifying the property for National Register listing)

- A Property is associated with events that have made a significant contribution to the broad patterns of our history.
- B Property is associated with the lives of persons significant in our past.
- C Property embodies the distinctive characteristics of a type, period, or method of construction or represents the work of a master, or possesses high artistic values, or represents a significant and distinguishable entity whose components lack individual distinction.
- D Property has yielded, or is likely to yield information important in prehistory or history.

Criteria Considerations (Mark "X" in all the boxes that apply.)

- A owned by a religious institution or used for religious purposes.
- B removed from its original location.
- C a birthplace or a grave.
- D a cemetery.
- E a reconstructed building, object, or structure.
- F a commemorative property.
- G less than 50 years of age or achieved significance within the past 50 years.

Areas of Significance

(Enter categories from instructions)

Architecture \_\_\_\_\_  
 Industry \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Period of Significance

1836-1861 \_\_\_\_\_  
 1861-1865 \_\_\_\_\_  
 1883-1889 \_\_\_\_\_

Significant Dates

1836 \_\_\_\_\_  
 1861 \_\_\_\_\_  
 1889 \_\_\_\_\_

Significant Person

(Complete if Criterion B is marked above)

\_\_\_\_\_  
 \_\_\_\_\_

Cultural Affiliation

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Architect/Builder

Unknown \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Narrative Statement of Significance (Explain the significance of the property on one or more continuation sheets.)

9. Major Bibliographical References

(Cite the books, articles, and other sources used in preparing this form on one or more continuation sheets.)

Previous documentation on file (NPS)

\_\_\_ preliminary determination of individual listing (36 CFR 67) has been requested.

\_\_\_ previously listed in the National Register

\_\_\_ previously determined eligible by the National Register

\_\_\_ designated a National Historic Landmark

\_\_\_ recorded by Historic American Buildings Survey # \_\_\_\_\_

\_\_\_ recorded by Historic American Engineering Record # \_\_\_\_\_

Primary Location of Additional Data

State Historic Preservation Office

\_\_\_ Other State agency

\_\_\_ Federal agency

\_\_\_ Local government

\_\_\_ University

\_\_\_ Other

Name of repository: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

10. Geographical Data

Acreage of Property   4  

UTM References (Place additional UTM references on a continuation sheet)

	Zone	Easting	Northing	Zone	Easting	Northing
A	<u>17</u>	<u>731900</u>	<u>4311825</u>	D	___	___
B	___	___	___	F	___	___
C	___	___	___	F	___	___
	___ See continuation sheet.					

Verbal Boundary Description (Describe the boundaries of the property on a continuation sheet.)

Boundary Justification (Explain why the boundaries were selected on a continuation sheet.)

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**11. Form Prepared By**name/title Heather Crawl; Steven H. Moffson, Architectural Historianorganization Dames & Moore, Cultural Resource Servicesdate 9-26-96street & number 7101 Wisconsin Avenue, Suite 700telephone (301) 652-2215city or town Bethesdastate MDzip code 20814

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**Additional Documentation***Submit the following items with the completed form:*

Continuation Sheets

Maps

A USGS map (7.5 or 15 minute series) indicating the property's location.  
A sketch map for historic districts and properties having large acreage  
or numerous resources.

Photographs

Representative black and white photographs of the property.

Additional items (Check with the SHPO or FPO for any additional items)

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**Property Owner** (Complete this item at the request of the SHPO or FPO.)name George Washington and Jefferson National Forests, USDA Forest Service  
C/O Mike Barberstreet & number 5162 Valley Pointe Parkway telephone (540) 265-5100city or town Roanokestate VAzip code 24019-3050

United States Department of the Interior

Elizabeth Furnace

National Park Service

*name of property*

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### Description of Historic Resources

Elizabeth Furnace is situated on the south bank of Passage Creek, and on Route 678. The furnace is located within the George Washington and Jefferson National Forests, in an area of young deciduous forest.

### Original

The Elizabeth iron furnace complex included the iron furnace and its support facilities, as well as facilities necessary to support the workers and animals who operated the furnace. The original cold-blast charcoal stack was 33' high, and 9' across the bosh. The furnace was constructed of dry-laid local sandstone, with a brick chimney. It was connected to an embankment to the south by a charging bridge over which iron ore, limestone flux, and charcoal were wheeled and dumped into the central, brick-lined cavity. A casting house where molten iron was formed into pigs and sows in sand molds was located on the tap arch side of the furnace. The tub bellows that produced a blast were powered by a waterwheel set close to the stack. A race ran to the waterwheel west of the furnace. In later years a steam engine was added for backup. Air was heated for the hot-blast through circulation around the stack before reaching the tuyere. In 1883 the new operators of the furnace rebuilt it, reducing the width of the stack, closing the top, and adding a hot blast stove. In 1885 the furnace was again altered; the height of the stack was reduced and the top was once again opened.

### Present

Elizabeth Furnace is a stone, square trapezoid with two tuyere holes and one tap hole. The outside stone structure is 30 feet wide. Much of the furnace has collapsed. Although parts of the exterior structure are intact (at least up to 10'), much reconstruction and stabilization has taken place through the process of preparing Elizabeth Furnace for interpretation by the Forest Service. In particular, the arch on the west face has been filled in with stone and mortar. Although the width of the arch can be seen, the reconstruction does not demonstrate the proper stepped form of the arch, or the proper dry-laid construction seen on the rest of the furnace. The other two arches have collapsed, making identification of the tuyere versus tap arch difficult.

Retaining walls about fifty feet south of the furnace supported the charging deck bridge. A stone embankment is located fifty feet south of the retaining wall. This embankment appears to be the remnant of a charcoal house, with a road grade on the slope above it, and charcoal on the soil below. Evidence of a trench feature, possibly a head race and wheel well, is west of the furnace. The race does not actually connect to the creek; it runs from near the creek for approximately 400 feet to a collapsed stone wall thirty feet west of the furnace. Construction of trails around the site have probably destroyed the evidence of a casting area and tail race.

A stone wall aligned with the southern face of the furnace runs west for about 30 feet until it reaches the collapsed wall near the trench feature. Although the wall appears to be original, nearby reconstructions make it difficult to confirm authenticity. Other possible features exist, including two road grades, ore cuts or mines, and the remains of a horse/oxen drawn cart. However, because of trails that follow the road grade and recently dug demonstration mine pits, the features' authenticity cannot be determined; these four features are non-contributing.

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## History

Elizabeth Furnace was built by an unknown local group in 1836. Situated at the entrance to Fort Valley, this furnace was originally called Fort Furnace. Although Elizabeth Furnace was built in an area that already contained seven furnaces, its exact location offered some advantages over its nearby competitors. Important resources were found on the property including high quality hematite ore, limestone, abundant forests, and water power in Passage Creek. A fairly good road led to the furnace, and a forge was located about two miles away. The proximity of forges to the site allowed pig iron to be easily converted into marketable wrought iron.

This charcoal furnace was similar in construction to its contemporaries; it was square, trapezoidal in shape and 33' high and 9' in diameter at the bosh. The heated blast to run the furnace was provided by bellows operated by water power. Later, a steam plant was added for backup.

By 1859, the name of Fort Furnace had been changed to Elizabeth Furnace. It was then owned by Gilease and Brown of Front Royal, VA. Iron was transported over the mountain to the Shenandoah River, and then floated on barges to Harper's Ferry and Hall Iron Works.

In 1861, J. R. Anderson of Tredegar Iron Works sent a letter to J. S. Davidson at Elizabeth Furnace to contract for pig iron to help with the Confederate war effort. In 1862, Anderson leased the furnace in order to control the output. The pig iron was at this time transported by rail to Staunton and Lexington, and carried on barges down the James River to Richmond. In 1863 Anderson asked the Secretary of War of the Confederacy for wagons and teams to haul pig iron from Columbia, Caroline, and Fort (Elizabeth) Furnaces to Staunton. He also asked for men to help work the furnaces. Elizabeth Furnace is believed to have been burned by General David Hunter during the Civil War; there is no record of its operation between 1865 and 1883.

Elizabeth Furnace was not in use in 1869, however, a survey of the area reported that the property contained 6,605 acres; this property included timber, valuable iron ore banks, limestone quarries, mineral springs, the furnace and workers' cabins. Elizabeth Furnace was easily accessible. By 1869, the Chesapeake and Ohio Railroad ran through and along part of the furnace property. A station was located about a mile from the furnace, connecting the furnace to the entire Atlantic railway system for transport of products. Also the "free turnpike" to Virginia Springs passed within a half mile to the furnace and connected to the Staunton and Parkersburg turnpikes. Other public and private "well constructed" roads traveled through and around the Elizabeth Furnace property. The furnace in 1869 awaited connection of the Chesapeake and Ohio Railroad to the Ohio River, and the western markets and coal supplies.

In 1883 the furnace was leased to Knaver & Murette of Douglasville, PA, who changed the name to Locust Grove Furnace. The new operators of the furnace rebuilt it, reducing the width of the stack, closing the top, and adding a hot blast stove. The owners, however, were apparently unable to obtain productive results from the new design of the furnace. In 1885 the lease was transferred to H. A. Long, who changed the name back to Elizabeth Furnace, reduced the height of the stack, and opened the top. As seen in other altered furnaces, however, he was unable to successfully extract iron. Elizabeth Furnace was abandoned in 1889.



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The USDA Forest Service acquired Elizabeth Furnace as part of the George Washington National Forest in 1913. The Forest Service has reconstructed part of the furnace and is currently using it for interpretation. Trails with numbered interpretive stations run through the property, and a campground and parking lot are located nearby. Elizabeth Furnace provides an important opportunity for education and recreation.

### **Significance and Integrity**

Elizabeth iron furnace is representative of the importance of the iron industry in the Shenandoah Valley of Virginia during the nineteenth century. The furnace reflects the nationwide trends in furnace construction during this time period. It was built in the plan common to the early nineteenth century, and later altered in an attempt to compete with more modern iron production methods.

The activities of Elizabeth Furnace altered the local landscape through deforestation for charcoal production, and brought money and people into the area of the Virginia valley. Elizabeth Furnace was an important part of the iron industry of Virginia. Its construction in the 1830s, increased production during the Civil War, decline following the war, attempted revival in the 1880s and final defeat due to competition closely parallels the history of the Virginia iron industry as a whole. Elizabeth Furnace gained national importance as a key producer of iron for the Confederacy during the Civil War.

The potential for archeological investigation is significant at Elizabeth Furnace. Research could provide information about workers' living conditions, ethnicity, and economic background. Transportation of raw materials and finished products could be investigated as well as the relations between the rural furnace and the urban manufacturer, Tredegar Iron Works. The furnace and surrounding features would yield information about iron extraction technology, innovation, and change through time.

The Forest Service has effectively used Elizabeth Furnace to illustrate the iron industry and its important contribution to the historic character of the Valley of Virginia. Elizabeth Furnace provides an opportunity for education and recreation.

Although Elizabeth Furnace is deteriorating, it has been stabilized and important features of the complex are still evident. The area contains information that could contribute to our understanding of the nineteenth century iron industry in Virginia.

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### **Bibliography**

Capron, John D.

1964 *History of Elizabeth Furnace. Personal Files of John D. Capron. Typescript dated November 11, 1964. Lynchburg College, Virginia.*

Dew, Charles B.

1966 *Ironmaker to the Confederacy: Joseph R. Anderson and the Tredegar Iron Works. Yale University Press, New Haven.*

Hotchkiss, Jed and Commodore M. F. Maury

1869 *A Description of the Elizabeth Furnace Iron Property, Augusta County, Virginia. Washington D.C.: McGill & Witherow, Printers and Stereotypers.*

Lesley, J. Peter

1859 *The Iron Manufacturers Guide to the Furnaces, Forges and Rolling Mills of the United States. New York: Wiley.*

Preston, R.G.

1964 *Elizabeth Furnace. Typescript dated December 12, 1964.*

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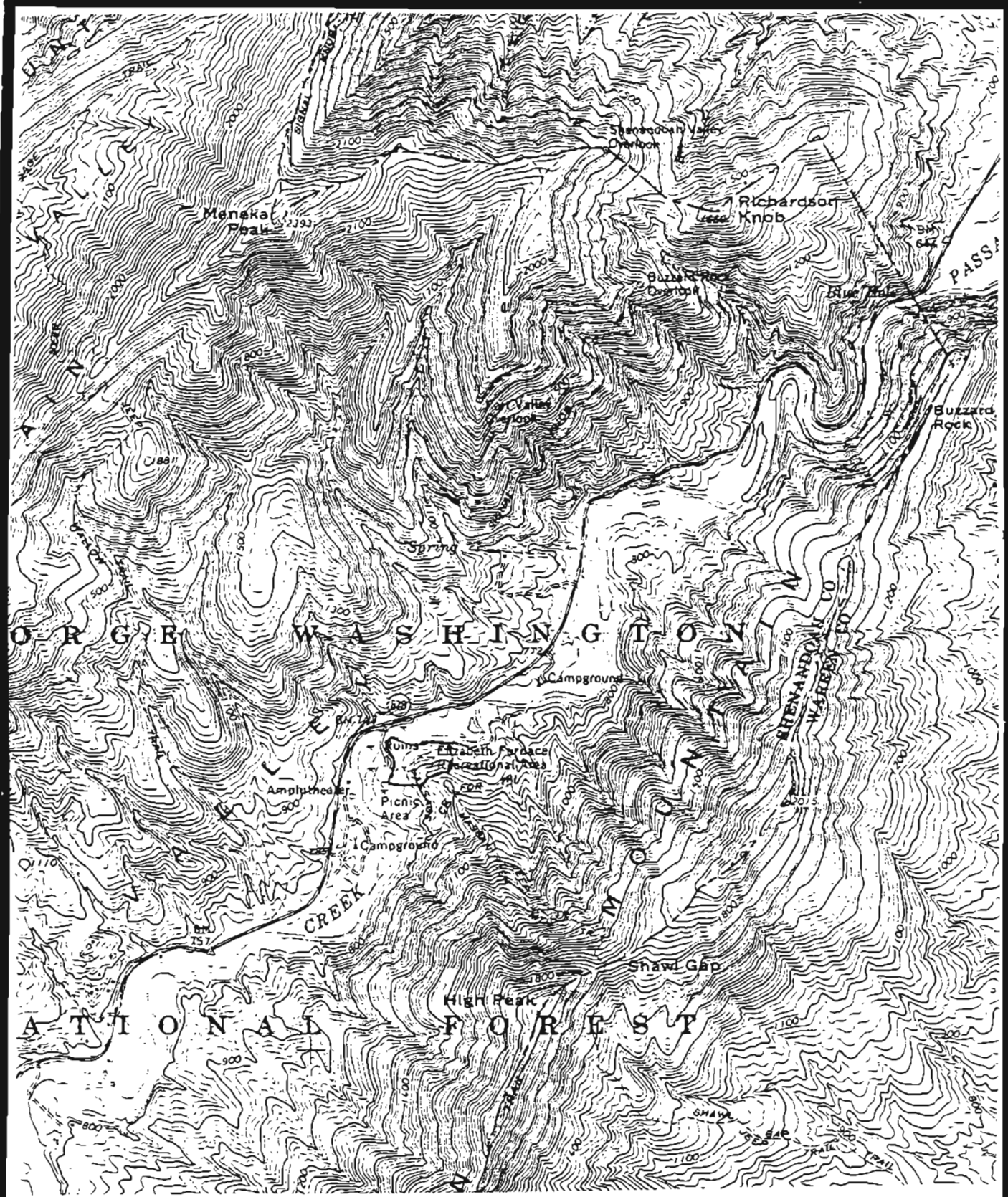
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### **Boundaries**

The boundary extends from Passage Creek south beyond the remains of a charcoal house. The property is bound on the west by the interpretation center parking lot, and on the east by exhibits six and seven explaining charcoal production. The boundary includes the furnace, race, charcoal storage area, and all other possible supporting structures that retain integrity and are likely to yield information about the Virginia iron industry.



ELIZABETH FURNACE

Strasburg, VA Quadrangle, 1966, Photorevised 1986

85-940

Shenandoah Co.