

VLR - 6/16/99
NRHP - 10/14/99

United States Department of the Interior
National Park Service
**NATIONAL REGISTER OF HISTORIC PLACES
REGISTRATION FORM**

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 Union Mills Canal Outlet Locks #1 and #2

other names/site number DHR File # 32-5010 and DHR Site File # 44FV72

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2. Location

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street & number About one-half mile southeast of Crofton Bridge over the Rivanna River
on Virginia State Route 600. Not for publication
city or town Crofton vicinity
state Virginia code VA county Fluvanna code 065 zip code
22963

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3. State/Federal Agency Certification

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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] August 23, 1999
Signature of certifying official Date
VIRGINIA DEPARTMENT OF HISTORIC RESOURCES
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 Date

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)

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

Category of Property (Check only one box)

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

Number of Resources within Property

Contributing	Noncontributing
<u> 0 </u>	<u> 0 </u> buildings
<u> 1 </u>	<u> 0 </u> sites
<u> 2 </u>	<u> 0 </u> structures
<u> 0 </u>	<u> 0 </u> objects
<u> 3 </u>	<u> 0 </u> Total

Number of contributing resources previously listed in the National Register 0

Name of related multiple property listing (Enter "N/A" if property is not part of a multiple property listing.)

 N/A

6. Function or Use

Historic Functions (Enter categories from instructions)

Cat: Transportation Sub: Canal

_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

Current Functions (Enter categories from instructions)

Cat: Transportation Sub: Vacant/ Not in use

_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

7. Description

Architectural Classification (Enter categories from instructions)

N/A

Materials (Enter categories from instructions)

foundation _____
roof _____
walls granite; limestone

other iron

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

See Continuation Sheet #1

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)

- Transportation _____
- Architecture _____
- Commerce _____
- Engineering _____
- Maritime history _____
- _____
- _____
- _____

Period of Significance 1850 through 1908

Significant Dates _____

1850-1854: Construction

1855 - 1908: Period of operation

Significant Person

(Complete if Criterion B is marked above) N/A

Cultural Affiliation _____

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

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9. Major Bibliographical References
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(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

- _X_ State Historic Preservation Office
X Other State agency
___ Federal agency
___ Local government
X University
X Other

Name of repository: __Fluvanna County Historical Society, Palmyra, VA
See Continuation Sheet No. 10.

=====
10. Geographical Data
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Acreage of Property __1 acre_____

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

Table with 4 columns: Zone, Easting, Northing, Zone, Easting, Northing. Row 1: 1 17 737650 4199660 3 17 737670 4199620. Row 2: 2 17 737700 4199590 4 _____

___ 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.)

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 Alan P. Sullivan, Jr.

organization Lake Monticello Owners' Association date December 1998

street & number 37 Bolling Circle telephone 804-589-6673

city or town Palmyra state VA zip code 22963

=====

Additional Documentation

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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 Lake Monticello Owners' Association

street & number 41 Ashlawn Boulevard telephone 804-589-8263

city or town Palmyra state VA zip code 22963

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Paperwork Reduction Act Statement: This information is being collected for applications to the National Register of Historic Places to nominate properties for listing or determine eligibility for listing, to list properties, and to amend existing listings. Response to this request is required to obtain a benefit in accordance with the National Historic Preservation Act, as amended (16 U.S.C. 470 et seq.). Estimated Burden Statement: Public reporting burden for this form is estimated to average 18.1 hours per response including the time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding this burden estimate or any aspect of this form to the Chief, Administrative Services Division, National Park Service, P.O. Box 37127, Washington, DC 20013-7127; and the Office of Management and Budget, Paperwork Reductions Project (1024-0018), Washington, DC 20503.

United States Department of the Interior
National Park Service

**NATIONAL REGISTER OF HISTORIC PLACES
CONTINUATION SHEET**

Section 7 Page 1

Union Mills Canal Outlet Locks #1 and #2
Fluvanna County, VA

Summary Description

Constructed between 1850 and 1854, the Union Mills Canal Outlet Locks #1 and #2 are part of the Rivanna River canal system that ran from the outskirts of Charlottesville, Virginia through Fluvanna County to the James River at Columbia, Virginia. There, it connected with the James River and Kanawha Canal, enabling farmers in the central part of Virginia to ship their products to Richmond and, ultimately, overseas. The locks are built of finely finished and hammer-dressed blocks of granite varying in size and thickness. Cast-iron hardware and masonry silt aprons remain, as do the niches that once held hinged wooden gates. Historically, the Rivanna River canal system exemplifies the development of regional transportation systems that formed the foundations for American economic expansion during the nineteenth century. Today, the canal and its locks are unused. The Virginia Canals and Navigation Society has endeavored to record various parts of the Rivanna River canal system, including the Union Mills Outlet Locks, to ensure their availability for future historical and archaeological research.

Narrative Description

The Union Mills Canal Outlet Locks #1 and #2 are at the lower end of the 2.5 mile-long Union Mills Canal. The locks were built for horse-drawn freight boats (freight boats also carried passengers), one company-owned packet, and one steamboat owned by C. C. Cooke. The upriver lock (Lock #1) is well exposed and is in excellent condition. The down river lock (Lock #2), whose capstones only are exposed, appears nonetheless to have the same structure and dimensions as the upriver lock. Each lock is approximately 128 feet long and has a main chamber that is about 15.25 feet wide. The locks are approximately 300 yards apart.

The granite walls of the upriver lock (Lock #1), which is essentially a "lift" lock, are not filled with silt and, consequently, the beautiful stone structure is easily viewed. This lock is symmetrical in design when approached from either end (i.e., upriver or down river). Abutments or wing-walls extend 11 feet perpendicular to the lock's long axis. The abutments are rounded at the entrance to the locks, presumably to prevent damage to canal boats. Eight feet into the lock, the walls are recessed about one foot for a distance of ten feet to provide space for the lock gates to lie flush with the lock walls when they are opened. Past the gate recesses, the main chamber of the lock extends for 92 feet. Then, another gate recess and entrance complete the symmetrical design. Also, Lock #1 clearly reveals a low stone wall or "silt apron" at its upriver entrance. This feature would have prevented silt in the canal from washing into the main lock chamber. The "silt apron" connects both walls of the lock; its top is about 10 feet below the top of the lock walls.

United States Department of the Interior
National Park Service

**NATIONAL REGISTER OF HISTORIC PLACES
CONTINUATION SHEET**

Section 7 Page 2

Union Mills Canal Outlet Locks #1 and #2
Fluvanna County, VA

The stone blocks that make up the walls vary in size from two to three feet in length, from 1.5 to two feet in width, and are 1.5 feet thick. The stone masons finished five sides of the blocks so that they could be fitted together neatly to form very straight walls. The sides of the blocks facing the lock chamber were "hammer dressed" to a smooth surface that would not damage boats that rubbed against it. The rough sixth side of each block was set against the earth around the lock. The stone masons curved the blocks of the abutments that led into the locks. They also curved the blocks at each end of the gate recesses to secure a vertically placed log (about one foot in diameter) that acted as a hinge for the lock gates.

The two Union Mills outlet locks are extremely well preserved.¹ The masonry is intact (including some of the mortar) and the massive walls are straight and sound, preserving all of the original built-in engineering and architectural features.² Even much of the cast-iron hardware remains in place and intact, an unusual feature in any canal remnant. The canal channel and towpath are still obvious from their intersection with Route 600 (where it crosses the Rivanna River) nearly to where the canal once debouched into the Rivanna River at the lower of the two outlet locks. The two locks (the lower one is silted in) stand as magnificent, all-masonry examples of the Rivanna River locks and as impressive, tangible reminders of Virginia's canal era. (The two locks are contributing structures and the canal area inbetween the locks is a contributing site).

United States Department of the Interior
National Park Service

**NATIONAL REGISTER OF HISTORIC PLACES
CONTINUATION SHEET**

Section 8 Page 3

Union Mills Canal Outlet Locks #1 and #2
Fluvanna County, VA

Summary Statement of Significance

The outlet locks of the Union Mills Canal in Fluvanna County, Virginia, were constructed between 1850 and 1854 to connect the Rivanna River canal system that ran from Charlottesville to Columbia, Virginia with the James River and Kanawha Canal that ran along the James River from Fluvanna County to Richmond. With their massive, well-laid and finely dressed masonry walls, the locks represent the culmination of decades of work, begun ca. 1763 by Thomas Jefferson, to make the Rivanna River navigable. They are exceptionally well preserved examples of 19th-century Euro-American architectural and engineering techniques ingeniously adapted to localized needs and conditions. The locks may have been built, at least in part, with the labor of Black slaves, and thus also stand as a testament to their efforts and as an example of the non-agricultural role of slavery in the antebellum South. The outlet locks are visual reminders of the long history of large-scale navigation modifications made to the region's inland waterways. In addition, the locks played an important part in the transporting of people (and thus both information and services), the furthering of commerce in Rivanna Valley agricultural products, and in fostering the change from an agrarian economy to an industrial one. The Union Mills Canal outlet locks are eligible for listing in the National Register at the local level under Criterion A for their association with the development of a regional transportation system along the Rivanna River and the related economic growth and development of the Central Virginia communities along the Rivanna. The locks are also eligible under Criterion C as an outstanding and well-preserved example of 19th-century lock-building techniques.

Historical Context

As part of the Rivanna River canal system, the history of the Union Mills Canal Outlet Locks is bound up with the entire history of Euro-American navigation on the Rivanna, James, and Kanawha rivers.

In 1763, Thomas Jefferson returned from William and Mary College and took a canoe trip down the Rivanna River as far as Columbia, Virginia. Deciding it was worthwhile to improve the Rivanna's navigation, Jefferson raised 200 pounds to clear the channel.³ In 1765, he was appointed by the Virginia legislature as one of 11 trustees to oversee the expenditure of the 200 pounds.⁴ George and Roger Thompson were subsequently hired to remove trees and hummocks blocking the river and to blast sluices through rocky shoals in the channel. These "improvements" made it possible for two canoes, lashed together and loaded with tobacco hogsheads, to reach the eastern markets. This public service accomplishment apparently helped win Jefferson a seat in the Virginia legislature, where he was instrumental in formulating legislation to clear more of the Rivanna River for navigation. Indeed, before he became President in 1801, Jefferson made a list of accomplishments, probably in chronological order, that he felt had been most beneficial to

United States Department of the Interior
National Park Service

**NATIONAL REGISTER OF HISTORIC PLACES
CONTINUATION SHEET**

Section 8 Page 4

Union Mills Canal Outlet Locks #1 and #2
Fluvanna County, VA

society -- making the Rivanna River navigable leads the list, followed by drafting the Declaration of Independence.⁵

The Early Years: 1771 - 1850

In 1771, the first bateaux were made, partially replacing the double canoes. The shallow-draft bateaux were up to 60 feet long and 8 feet wide and carried agricultural produce down river. They were then poled back upstream, loaded with goods for the local markets. These bateaux also proved of great worth to the Americans for moving supplies (barrels of powder, coal, arms, wheat) and troops on the Rivanna River during the Revolutionary War. The bateaux could operate 7 or 8 months out of the year from about November on, barring ice obstructions in some winters. During the summer, the Rivanna River usually was too shallow and the bateaux would run only when rains raised the water level sufficiently. Obviously, the success of river shipping was heavily weather dependent and could fail miserably with prolonged droughts or cold spells. Tobacco inspection warehouses were built in the 1780s, as the Rivanna's navigation became more dependable. Towns such as Columbia, located at the mouth of the Rivanna River, and Milton, which served as the port for nearly all of Albemarle County, then developed around the warehouses.⁶

In 1805, the Rivanna Company was formed to make further navigational improvements, with the authority to charge tolls for the use of its facilities. Gradually, many more improvements were made. Even after the founding of this company, the James River Company apparently was instrumental in providing funds to build a milldam and locks at Union Mills (at the upper end of what 40-plus years later would become the Union Mills Canal). Eventually, the shipping channel along the Rivanna River consisted of slack water stretches punctuated by sections of canals that skirted obstacles in the natural channel and lifted or lowered boats in accordance with changes in the water level or the elevation of the channel. Thus, milldams across the Rivanna River by law had to incorporate a navigation lock. Locks built to accommodate the 7-foot wide bateaux were constructed of parallel, plank and rock-lined walls placed 8 feet apart.⁷

In 1827, in response to the need for year-round shipping, a new company was formed. The Rivanna River Navigation Company replaced the Rivanna Company and the water rights of navigation superseded the water rights of millers, a reversal of earlier conditions. In 1831, the state invested in the company through the Virginia Board of Public Works. The Virginia Board of Public Works was first established in 1816 to foster the building of canals and turnpikes by performing engineering surveys and investing state money in the stock of private companies chartered to construct the facilities. Claudius Crozet, the Board's Principal Engineer, surveyed the Rivanna River in 1826. The new Rivanna River Navigation Company's first order was to build 8 new dams and 13 locks, including a crib dam at

United States Department of the Interior
National Park Service

**NATIONAL REGISTER OF HISTORIC PLACES
CONTINUATION SHEET**

Section 8 Page 5

Union Mills Canal Outlet Locks #1 and #2
Fluvanna County, VA

Bernardsburg (across the Rivanna River from Crofton, near where Lake Monticello presently is located and just upstream from the Union Mills outlet locks).^{9, 10}

Period of Significance: 1850-1908

When the James River and Kanawha Canal Company completed its canal along the James River through Fluvanna County to the mouth of the Rivanna River around 1840, there was no lock allowing Rivanna River bateaux to enter the route to Richmond. Thus, the James River and Kanawha Canal Company joined with the Rivanna River Navigation Company to remedy the situation and to further improve navigation on the Rivanna River (then known as the north fork of the James River) for larger canal boats towed by horses or mules.^{11, 12}

Between 1850 and 1854, the Union Mills outlet locks were constructed as part of this endeavor. The entire project included a total of 7 large stone locks, 6 miles of canals (including the 2.5 miles of the Union Mills canal), 20 miles of towpath, and several new dams (including rebuilding the one at Union Mills) to offer 27 miles of navigable channel in the Rivanna River. The bateaux locks at Union Mills and the dam and bateaux locks at Bernardsburg were inundated or bypassed. John Couty supervised the Union Mills outlet locks' construction. It marked the culmination of decades of work in the vicinity, beginning with Thomas Jefferson's efforts to clear the natural channel ca. 1765, followed by the James River Company's role in constructing an early mill and milldam at Union Mills in 1809, the rise of Union Mills as a commercial site, and the building of a crib dam and bateaux locks at Bernardsburg.^{13, 14}

A few attempts were made to destroy the Rivanna River canal system during the Civil War. During Sheridan's raid across Fluvanna County, Stoneman's brigade tried unsuccessfully to blow up the Rivanna aqueduct.¹⁵ What the war did not accomplish, however, the devastating flood of 1870 nearly did. The Rivanna River Navigation Company also ran out of money and never completed new improvements as far as Charlottesville. In 1880, the railroad era came to central Virginia when the Richmond and Alleghany railroad bought the James River and Kanawha Canal and laid its tracks along the towpath as far upriver as the confluence with the Rivanna River. But no railroad was built along the Rivanna River for another 28 years, and the Rivanna canal system continued its transportation and commercial services until after the turn of the century. In its later years, steamboats plied the Rivanna River. However, in 1908, when the Chesapeake and Ohio system completed the "Virginia Air Line's" nearly 30 miles of track across Fluvanna County, the demise of the Rivanna canals had come.¹⁶ In the 1970s, a proposed high dam (the Roundabout Dam) would have impounded the Rivanna River, inundating the remaining features of the canal era. The proposal was defeated and, in 1975, the Rivanna was declared a scenic river.¹⁷

United States Department of the Interior
National Park Service

**NATIONAL REGISTER OF HISTORIC PLACES
CONTINUATION SHEET**

Section 8 Page 6

Union Mills Canal Outlet Locks #1 and #2
Fluvanna County, VA

Maritime History

Maritime history along the Rivanna River began as early as 1763 with Thomas Jefferson's efforts to clear the Rivanna's channel of obstructions. It ended ca. 1908 when this canal system, like so many others, was made obsolete by railroads. The Rivanna system, however, lasted far longer than many of its contemporaries.

Roughly at the midpoint of this span of time, in the 1840s, the James River and Kanawha Canal Company joined with the Rivanna River Navigation Company to further improve navigation on the Rivanna River (then known as the north fork of the James River) for larger canal boats towed by horses or mules. Between 1850 and 1854, the Union Mills outlet locks were constructed as part of this particular endeavor and remain as salient hallmarks of this stage in the Nation's history of canal construction and inland waterway commerce.

Transportation

The Rivanna River canal system was the primary route for hauling goods (including slaves) in central Virginia between the Charlottesville area and Richmond from the mid 1700s until the early 1900s. Canal boats also offered passenger transport, and served as vehicles for supplies and troops during both the Revolutionary and Civil wars. The canals, like other transportation routes, also provided for the transmittal of information and the services that the passengers offered.

Strictly as a transportation system for goods, the Rivanna River canals in Fluvanna County (including the Union Mills canal) included wing dams and sluices dating to Thomas Jefferson's original navigation improvements ca. 1763, slack water stretches of river, dams, boat landings, wharves, docks, sections of canals, locks for bateaux originally and later for canal boats (including locks in milldams), lock keepers' quarters, stone arched culverts, turning and mooring basins, towpaths, bridges to carry the towpath from one side of the river to the other, and an aqueduct.

The Union Mills outlet locks were built to upgrade canal facilities on the Rivanna and James rivers so that the system could handle large freighters. The outlet locks also were constructed to allow the smooth transition of boats from the Rivanna to the James (and thus on to Richmond) and remain as a visible reminder of the early years of the development of transportation in Virginia and the Nation.

Engineering and Architecture

Canal construction and operation represented the epitome of the application of inland

United States Department of the Interior
National Park Service

**NATIONAL REGISTER OF HISTORIC PLACES
CONTINUATION SHEET**

Section 8 Page 7

Union Mills Canal Outlet Locks #1 and #2
Fluvanna County, VA

maritime engineering skills during the heyday of the Rivanna canals. The Rivanna River canals and locks (and their associated features) are quite varied and reflect ingenious adaptations to local conditions. Some canals were built by substituting elements of the natural topography for an artificial construction, such as when a steep-sided bluff was used as one wall of the Union Mills canal. Some locks took similar, cost-effective advantage of the landscape, as in the example of the Union Mills canal inlet locks, ca. 2.5 miles upstream of the outlet locks, which substituted existing bedrock for a masonry wall.¹⁸

The Union Mills outlet locks, in contrast, are an unparalleled example of the lock-building technique of the times, with massive, well-laid masonry walls incorporating wall niches to accommodate hinged gates, cast-iron hardware, and masonry silt aprons to slow the accumulation of debris in the lock's bed.

Ethnic Heritage (Euro-American and Black)

Like the canals in the Old World, such as those Jefferson visited in 1787 while serving as Ambassador to France that so stimulated his engineering talents, those of Virginia drew directly on the hydraulic techniques and architectural heritage of Europe and England. Begun in the colonial era, and lasting through both the Revolutionary and Civil wars, the canals were developed and operated by the Euro-American bourgeois and profited both that class as well as the "yeoman" farmers and smaller business interests. As transportation arteries serving Rivanna Valley plantations, they also were part of the infrastructure of the South's slave-holding economy.

Indeed, according to Fluvanna County deeds, the Rivanna Navigation Company itself owned slaves up until the Civil War, perhaps not only for construction work, but also for work on the canal boats, as well. Black slaves may have performed much of the manual labor involved in digging the Union Mills canal and building the locks.¹⁹ The history of slavery in the South so often is couched almost completely in an agrarian framework, ignoring the economic importance of slavery in other pursuits and the myriad other contributions made by the slaves themselves. Although it may currently appear that the vital role of the Black slaves in constructing the Union Mills outlet locks and other facilities remains somewhat anonymous -- including the part they may have played as skilled laborers -- perhaps one day it will be revealed that the enigmatic mason's marks often found carved in the bridge abutments and lock walls (and reported for the Union Mills locks) belong to Black stoneworkers.

Commerce

The savings in both time and cost in shipping goods by canal, in contrast to overland

United States Department of the Interior
National Park Service

**NATIONAL REGISTER OF HISTORIC PLACES
CONTINUATION SHEET**

Section 8 Page 8

Union Mills Canal Outlet Locks #1 and #2
Fluvanna County, VA

shipping by wagon, were enormous. The Union Mills outlet locks played a critical role in the transporting of people (and thus both information and services) and the furthering of commerce in Rivanna Valley agricultural products. Somewhat ironically, because they provided such an efficient and cost-effective means for moving milled and manufactured products, the Rivanna canals fostered the change from the agrarian economy that Jefferson himself had ideally envisioned for the Nation to an industrial one.

During its peak years of operation, canal freighters up to 93 feet long and 14.5 feet wide were towed along the Rivanna River as far upstream as the Albemarle County line; for a brief time, they were even towed as far as Charlottesville. As a network for commerce and the movement of people, the Rivanna River canal system also included flour mills, sawmills, cotton and woolen mills, tobacco warehouses, quarries, foundries, stores, taverns, and inns. Tobacco inspection warehouses were built in the 1780s as the Rivanna's navigation became more dependable. Towns such as Columbia, located at the mouth of the Rivanna River, and Milton, which served as the port for nearly all of Albemarle County, then developed around the warehouses.

Towns, such as Columbia and Union Mills, burgeoned as the canal trade made them prosperous. Union Mills, across the Rivanna River from the inlet locks of the Union Mills Canal, was established as early as 1796. It became a small industrial complex with three mills, a cotton factory, and a tan yard.²⁰ Union Mills operated until 1900 and may have owned its own canal boat, the "Star of Albemarle". The Rivanna River canals were clearly one of the major underpinnings of the tobacco and cotton industries, and the Union Mills outlet locks are a tangible reminder of the social and economic evolution of Virginia and the Nation.

Endnotes

1. Minnie Lee McGehee, *The Bulletin of the Fluvanna County Historical Society, Palmyra, Virginia*, No. 5, October 1967, p. 14.
2. W. E. Trout III, *The Rivanna River Scenic Atlas*, Virginia Canals and Navigation Society, 1992, p. 29.
3. *Ibid.*, p. 19.
4. Dumas Malone, *Jefferson the Virginian*. Little, Brown, and Company, Boston, 1948, pp. 115-116.
5. *Thomas Jefferson, Writings*, edited by Merrill D. Peterson. The Library of America, 1984, pp. 702-703.
6. *Ibid.* #1, pp. 2-3.
7. *Ibid.* #2, pp. 20-21.
8. *Ibid.* #2, pp. 21-24.

United States Department of the Interior
National Park Service

**NATIONAL REGISTER OF HISTORIC PLACES
CONTINUATION SHEET**

Section 7, 8, 9 Page 9

Union Mills Canal Outlet Locks #1 and #2
Fluvanna County, VA

Endnotes, continued

9. Ibid. #2, pp. 24-25.
10. Ibid. #1, pp. 6-10.
11. Ibid. #1, pp. 10-11.
12. Ibid. #2, pp. 27-28.
13. Ibid. #1, pp. 11-14.
14. Ibid. #2, pp. 28-29.
15. Ibid. #2. p. 30.
16. Ibid. #2, p. 32.
17. Ibid. #2, p. 32.
18. Ibid. #2, p. 29.
19. Ibid. #2, p. 30.
20. Minnie Lee McGehee, *The Bulletin of the Fluvanna County Historical Society, Palmyra, Virginia*, No. 10 and 11, October 1970, pp. 26-28.

Major Bibliographic Resources

- Betts, Edward Morris. *Thomas Jefferson's Farm Book*. Charlottesville: University Press of Virginia, 1950.
- Malone, Dumas. *Jefferson the Virginia*. Boston: Little, Brown, and Company, 1948.
- McEwan, Barbara. *Thomas Jefferson, Farmer*. Jefferson, North Carolina: McFarland and Company, Inc., 1991.
- McGehee, Minnie Lee. *The Bulletin of the fluvanna County Historical society, Palmyra, Virginia*. No. 5, October 1967 and No. 10, October 1970.
- _____. "Remains of Locks and Dams Still Exist along Rivanna River." *The Daily Progress*, Charlottesville, Virginia, August 13, 1966.
- _____. "Rivanna river Navigational Improvements Started on Organized Scale in 1805." *The Daily Progress*, Charlottesville, Virginia, August 13, 1966.
- _____. "1830s Was Era of Great Progress on Rivanna River Navigational System." *The Daily Progress*, Charlottesville, Virginia, August 16, 1966.
- _____. "Find of Old Maps Thrilled rivanna River Historians." *The Daily Progress*, Charlottesville, Virginia, August 17, 1966.
- _____. "Rivanna Excursions Were Gala Affairs." *The Daily Progress*, Charlottesville, Virginia, August 18, 1966.
- _____. "Rivanna River Navigation System Developed Despite Charlottesville Railroad." *The Daily Progress*, Charlottesville, Virginia, August 19, 1966.
- Parton, James. *Life of Thomas Jefferson*. Boston: James Osgood and Company, 1874.

United States Department of the Interior
National Park Service

**NATIONAL REGISTER OF HISTORIC PLACES
CONTINUATION SHEET**

Section 9, 10 Page 10

Union Mills Canal Outlet Locks #1 and #2
Fluvanna County, VA

Major Bibliographic Resources, continued

- Peterson, Merrill D. *Thomas Jefferson and the New Nation*. New York: Oxford University Press, 1970.
- Peterson, Merrill D. *Thomas Jefferson, Writings*. Washington, D.C.: the Library of America, 1984.
- Pierson, Hamilton W., Rev. *Jefferson of Monticello*. New York: Charles Scribners, 1862.
- Trout, W. E., III. *The Rivanna River Scenic Atlas*. Richmond: Virginia Canals and Navigation Society, 1992.

Primary Location of Additional Data

Other State Agency: Library of Virginia

University: University of Virginia, Alderman Library, Charlottesville, VA.

Other: Albemarle County Historical Society
Monticello Research Library
Virginia Historical Society Library

Verbal Boundary Description

The boundary of the nominated property is delimited by three squares whose centers are marked by the following three UTM reference points (Zone 17) on USGS topographic map Boyd Tavern, Virginia (1987):

Lock #1:	Easting 737650, Northing 4199660
Lock #2:	Easting 737700, Northing 4199590
Area of former canal between the locks:	Easting: 737670, Northing 4199620

Boundary Justification

The boundary is drawn to include the two ca. 1850 canal locks, one exposed and one silted over, and the 300 yards of the path of the former canal that lies between them.

United States Department of the Interior
National Park Service

**NATIONAL REGISTER OF HISTORIC PLACES
CONTINUATION SHEET**

Section Photo List Page 11 Union Mills Canal Outlet Locks #1 and #2
Fluvanna County, VA

List of Photographs

All photographs are of the Union Mills Canal Outlet Locks #1 and #2, Fluvanna County, Virginia.

The negatives (number 17443) are on file at the Department of Historic Resources, Richmond, Virginia.

Credit: Dr. Alan P. Sullivan, III, Professor and Head, Department of Anthropology, University of Cincinnati, Cincinnati, Ohio.

With the exception of views 12 and 13, all photographs were taken in June 1998.

- | | |
|----------|--|
| 1 of 13 | Lock #1, View of gate recess and silt apron |
| 2 of 13 | Lock #1, Curved entrance |
| 3 of 13 | Lock #1, Upriver view showing lower gate recesses, main chamber, and silt apron |
| 4 of 13 | Lock #1, Down river view showing upper gate recesses, main chamber, and silt apron |
| 5 of 13 | Lock #1, View of top of gate recess showing curved block and gate hinge supports |
| 6 of 13 | Lock #1, Gate recess and silt apron |
| 7 of 13 | Lock #1, Gate recess and silt apron |
| 8 of 13 | Lock #1, View of curved stone and iron gate hinge supports |
| 9 of 13 | Lock #1, Silt apron and gate recesses of upstream entrance |
| 10 of 13 | Lock #1, Down river entrance showing hammer dressing of curved entrance blocks |
| 11 of 13 | Lock #1, Iron strap for gate hinge |
| 12 of 13 | Lock #2, Down river view showing excavated cap stones and gate recess on left. Photograph taken March 1995. |
| 13 of 13 | Lock #2, Down river view showing cap stones, two gate recesses, and iron strap holders. Photograph taken March 1995. |

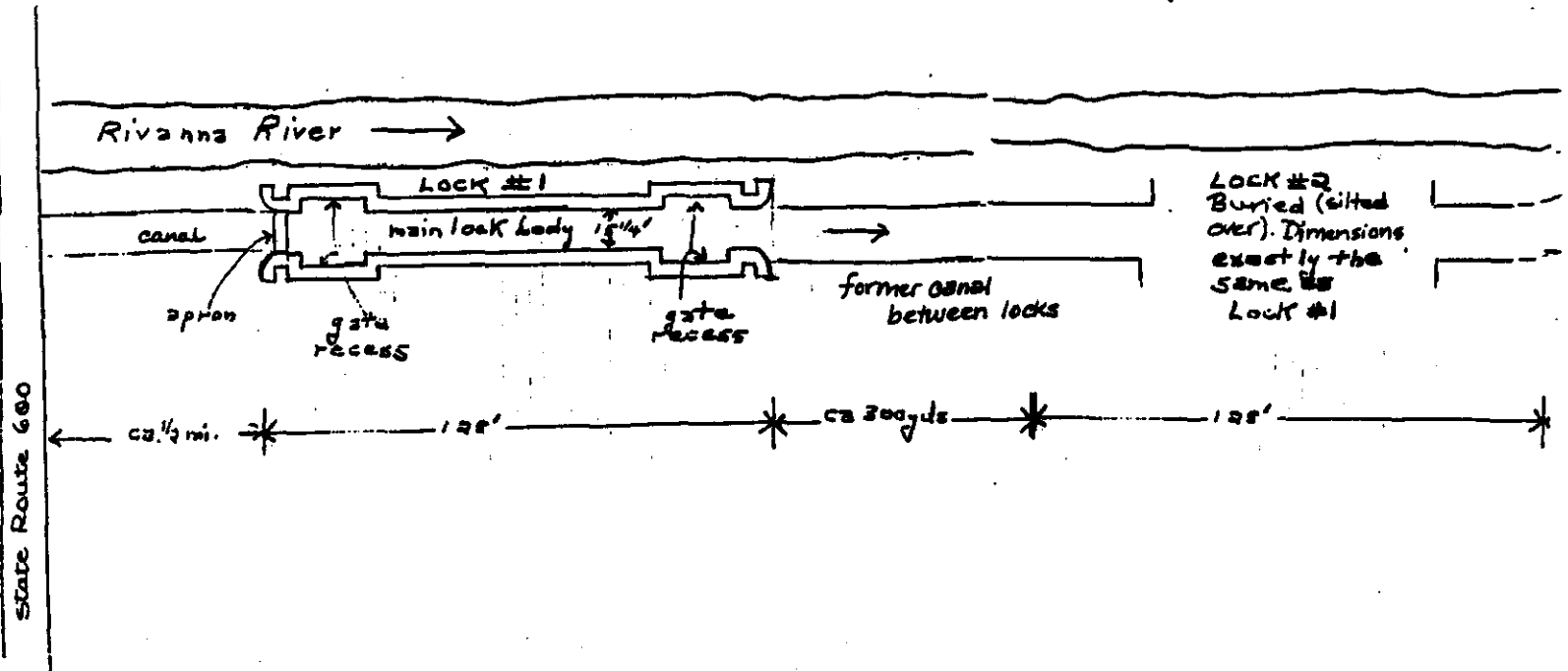
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**NATIONAL REGISTER OF HISTORIC PLACES
CONTINUATION SHEET**

Section **Sketch Map** Page 12 Union Mills Canal Outlet Locks #1 and #2
Fluvanna County, VA

Sketch Map

Union Mills Canal Outlet Locks #1 and #2
Fluvanna County, VA





Union Mills Canal
Outlet Locks
1 = upper lock
2 = lower lock
3 = area between lock.
Lake Monticello,
Fluvanna County,
Virginia

UTMs for locks:

1 = 17 | N 4199660
E 737650

2 = 17 | N 4199590
E 737700

3 = 17 | N 4199620
E 737670