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National Historic Landmark Nomination Federal Agency Nomination

Potomac (Potowmack) (Patowmack) Canal Historic District

United States Department of the Interior **National Park Service**

National Register of Historic Places Inventory—Nomination Form

See instructions in How to Complete National Register Forms Type all entries—complete applicable sections

Name

historic

and/or common Location 9200 Old Dominion Drive street & number (within Great Falls Park, VA) not for publication Great Falls _ vicinity of city, town 51 Virginia Fairfax code 059 code state county 3. Classification Status Category **Ownership Present Use** X__ district <u>x</u> public ____ occupied _ agriculture __ museum building(s) private __ unoccupied commercial structure both _x_ work in progress educational private residence Accessible _ site **Public Acquisition** _ entertainment _ religious _ object _ in process _ yes: restricted government _ scientific _ being considered _ X_ ves: unrestricted industrial _ transportation _ no ___ military other: 4, **Owner of Property** name National Capital Region, National Park Service street & number 1100 Ohio Drive, S.W. Washington, D.C. 20242 ____ vicinity of city, town state Location of Legal Description 5. Fairfax County Courthouse courthouse, registry of deeds, etc. 4000 Chain Bridge Road street & number Fairfax state Virginia 22030 **Representation in Existing Surveys** 6. Historic American Engineering Record has this property been determined eligible? title yes . no 1974-1975 date x____federal __ state county _ _ local depository for survey records Library of Congress

Washington, D.C.

city, town

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city, town

state

7. Description

Condition		Check one	Check one	
excellent good	<u>_x</u> deteriorated	unaltered	$x_{\rm original site}$ original site moved date17861802	; 1820s
fair	unexposed			· · · · · · · · · · · · · · · · · · ·

Describe the present and original (if known) physical appearance

SUMMARY

The Potomac Canal Historic District consists of the substantial remains of the Potomac Canal, built in 1786-1802, which functioned until 1830; the ruins of the small associated town of Matildaville, which was contemporary with the canal's construction and operation; and the remains of small industrial structures that utilized water power from the canal.¹

The canal is a skirting canal system approximately 5,400 feet in length. Surviving principal elements of the system, in varying degrees of preservation, include a large Wing Dam, Upper and Lower Guard Gates linking a relatively long channel that includes a large Holding Basin, and a series of five locks running from below the Lower Guard Gate to a point in the Potomac beneath the Great Falls, the formidable obstacle to navigation that the Potomac Canal was built to circumvent.

The principal segment of the canal was dug in 1786-87. Construction of the locks, however, for a variety of reasons, proceeded in fits and starts over the next 15 years. Periodic floods and shortages of funds, as well as an abortive route for the locks that was attempted and abandoned in 1795, delayed completion of the system until 1802. Later, in the 1820s, certain of the canal's elements were rebuilt.

The canal's route can be traced. Its 25-foot-wide bed, over much of its length, is filled, to varying depths, with debris and silt. It is possible, however, that the canal prism, for the major portion of its length, still survives. Although the lock gates were dismantled or removed after 1830, sufficient archeological and documentary evidence exists to interpret accurately their manner of construction.

The course of a road or towpath that apparently followed the land side of the canal has been almost entirely obscured. Tow animals do not appear to have been used on the Potomac Canal. The road, therefore, was probably built to facilitate construction and thereafter remained in use for convenience, e.g., in making repairs and to provide access to Matildaville. A stone jetty in the river below the Locks and the Waste Weir/Spillway in the Holding Basin have been obliterated.

The village of Matildaville, established on the land side of the canal, near the Locks, to serve as an accompanying trade center and headquarters for the Potomac Company, has largely disappeared, although the remnants of a few structures can be found at its forested site. In addition, archeological evidence of a mill and a forge/foundry remains on the river side of the canal.

Significance

1400-1499 1500-1599 1600-1699 1700-1799 1800-1899	Areas of Significance—C archeology-prehistoric archeology-historic agriculture architecture art commerce communications	community planning	law literature military music	e religion science sculpture social/ humanitarian theater transportation other (specify)
Specific dates	1786-1830	Builder/Architect	Various	

Statement of Significance (in one paragraph)

SUMMARY

Specific dates

The Potomac Canal¹ was the most impressive element of America's pioneer effort in the comprehensive development of a river system for navigation. Although it is one of the earliest canals in the United States and retains about as high a degree of integrity as the few of its era that survive, it does not derive its primary significance from its size or complexity, or from its success as a medium of transportation. In the last respect, especially, it failed disastrously. Perhaps for this reason, it has been overshadowed historically by the physically more impressive Chesapeake and Ohio Canal, its legal and spiritual successor.

On the other hand, the Potomac Canal was, in its day, an engineering accomplishment of no mean order, with relatively few peers in the nation. Perhaps just as importantly, the canal is an extraordinary physical manifestation of the continental vision of certain leaders of the early American republic, notably George Washington and James Madison.

Its history bears an astonishingly direct relationship to the unifying forces and formative events which, along with economic self-interest and other factors, led to the U.S. Constitution. In other words, it was intimately linked with important public questions of its day: the issue of Federal authority over matters pertaining to interstate commerce, the need for creation of internal improvements to link the parts of the Nation, especially the East with the West; and the role which government was to play in accomplishing such projects.

Historical Background

... the immediate object of the federal Constitution is to secure the union of the thirteen primitive States, which we know to be practicable; and to add to them such other States as may arise in their own bosoms, or in their neighborhoods, which we cannot doubt to be equally practicable. The arrangements that may be necessary for those angles and fractions of our territory which lie on our northwestern frontier must be left to those whom further discoveries and experience will render more equal to the task.

Let it be remarked ... that the intercourse throughout the Union will be facilitated by new improvements. Roads will everywhere be shortened and kept in better order; accommodations for travelers will be multiplied and meliorated; an interior navigation on our eastern side will be opened

9. Major Bibliographical References

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11. For	m Prepare	d By			
name/title	James H. Charlet	on			
organization	National Park Se	ervice - Hi	story Divisi	slate July 27	, 1982
street & number	1100 L Street, M	I.W.		telephone (202)	523-5165
city or town	Washington, D.C.	20240		state	
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National Register of Historic Places Inventory—Nomination Form

For NPS use only received date entered 2 Page

7

Continuation sheet

Item number

CANAL SYSTEM

The composition of the canal system and associated sites will be described proceeding from the north, or upriver end, above the Great Falls. The system begins about 1,600 feet above the present visitor center (a 1960s structure) and issues into the Potomac some 3,800 feet below it.

Wing Dam (Canal Inlet)

At the upper terminus of the canal, just below its inlet, a wing dam once extended from 1,000-1,200 feet into the river. Its purpose was to channel water into the canal, especially at the frequent times of low water. Shortfalls of water were such a persistent problem that the wing dam was raised and extended in the 1820s. Its original extent is not clear.

The remnants of the wing dam show that it was constructed of stone, possibly in wooden cribs. Its upper elevation was the operating level of the main canal channel that linked the inlet to the series of locks farther down. Excess water simply flowed over the top of the dam and into the main channel of the river.

Upper Spillway

Below the Wing Dam in the river side of the canal wall, a low masonry work dammed the bed of a small existing stream channel. This structure, once about 30 feet long, also assisted in maintaining the channel at working level. Excess water drained over it and returned to the river. This Upper Spillway, some 300 feet below the Wing Dam, is barely visible today. (Just upstream of the Spillway is Mine Run, which supplies the water that now keeps the upper portion of the canal watered.)

Upper Guard Gate

Immediately below and adjacent to the Upper Spillway is the Upper Guard Gate, which controlled the entrance of water into the canal system below this point. The river side of its abutments has been destroyed by flood and the upper portion of the land side has also been damaged. It would appear that the gates were of the swing or mitre type.

Upper Canal Channel Walls and Bed

Below the Upper Guard Gate, the canal walls extend for some distance on both banks. They are about 20 feet thick and are constructed of large stones, dry laid with a slight batter. The walls, 10 feet in height above the canal bed, rise from bedrock in places.

United States Department of the Interior National Park Service

National Register of Historic Places Inventory—Nomination Form

For NPS use only received date entered 7 3 Page

The canal bed itself was, in some parts of this section, cut from 1 to 3 feet into bedrock. This was accomplished by the same blasting methods used elsewhere in the project. Workmen wielding sledgehammers forced hand-held stone drills into the rock. Black powder was placed in the resulting small holes and then exploded.

Item number

Lower Spillway (Waste Weir)

About 300 feet above the visitor center, another spillway, about 60 feet in width, made use of a former small stream channel. The upper elevation of the spillway was the normal operating level of the canal. At present, the remains of the spillway permit water to exit from the upper portion of the canal; from this point on the canal bed is kept dry.

Lower Canal Bed

From the Lower Spillway past the visitor center, the canal bed continues to be visible, although for much of the distance only as a continuous depression in the ground. The bed continues past the ruins of the Mill and Forge/Foundry (described below), although it is dry and shallow and progressively less visible until it disappears in the edge of the presently wooded area some 900 feet beyond the visitor center.

Holding (Collecting) Basin

About 1,500 feet below the visitor center, in the forest below the cleared picnic area is where a large Holding Basin, covering about 2 acres, was constructed. It was roughly triangular in shape, with its long axis parallel to the canal channel. The basin provided room for the turning and docking of canal boats, especially at times of heavy traffic. Its large impound area served, in addition, to hold water that was provided to the locks below it.

The river side wall of this basin, about 730 feet in length, is constructed of stone and is of a size and design similar to that of the river side wall below the Upper Guard Gate. This wall has been largely cleared of vegetation, although the area of the basin itself is much overgrown. The berm-side wall no longer exists, but was probably of similar construction. Water from the Holding Basin flowed into the locks of the canal through the Lower Guard Gate, and the excess was returned to the river via a Waste Weir/Spillway.

Waste Weir/Spillway

The position of the Waste Weir for the Holding Basin, marked by a break in the masonry on the river side of the basin wall, may still be viewed, but the structure, which was probably of wood, is no longer in evidence, and its exact configuration cannot be determined. Any overflow water from this weir drained through a steep gorge to the river.

United States Department of the Interior National Park Service

National Register of Historic Places Inventory—Nomination Form



The gorge through which this Waste Weir emptied is an abandoned canal route showing evidence of blasting. This route was attempted in 1794-95, but was abandoned on the advice of English canal expert William Weston.

Item number

Lower Guard Gate (Head Gate)

The lower guard gate, 14 feet in width, at the southwest end of the Holding Basin, regulated the flow of water to the locks below. This structure has been largely excavated and most of the vegetation has been removed from it. The use of swing-type mitre gates is indicated by hollow quoin stones of well dressed Seneca sandstone visible in the walls on either side. An extra 4-inch recess in the quoins accommodated two sliding wicket gates in each of the swing gates. Flat strap iron cramps in the coping and stones beneath them in the channel walls were used extensively. The Lower Guard Gate was probably built in 1797.

Lower (Secondary) Holding Basin

Southeast of the Lower Guard Gate, between it and the Waste Weir for the Large Holding Basin, a feeder gate was situated in the Basin's wall. This gate fed water to a channel running past Locks I and II to a Lower Holding Basin that supplemented the flow of water to the lower locks (Locks III-V). The route of this channel may be traced. It used the canal walls on that side and a special cut-stone wall on the river side to contain its flow. The Lower Holding Basin, about 230 feet in length, ran from the upper part of Lock II to a point in the middle of Lock III, where it discharged, through a gate, into the latter lock.

LOCKS

The locks begin about 300 feet below the Lower Guard Gate, the intervening 300 feet consisting of a canal segment walled in hand-hewn native stone. The locks are all rectangular in plan, with their walls raised perpendicular to the canal bed. They have traditionally been numbered in descending order, with Lock I closest to the Lower Guard Gate and Lock V at the discharge into the river. Each of the five was about 100 feet long, 12 feet wide, and 2 feet deep, except Lock I, which was 14 feet wide. Their lifts varied, but collectively they overcame the 76-foot drop in the river at the Great Falls.

Locks I-III were faced with hand-hewn stone. The walls of Locks IV and V, blasted through the bedrock, were not faced, but worked reasonably smooth, although cut stone was added in places to build the walls up to the desired height. From about 1797, until the locks were completed and the canal as a whole opened to traffic in 1802, an inclined plane, of wood construction, was

United States Department of the Interior National Park Service

National Register of Historic Places Inventory—Nomination Form

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Exp. 10-31-84

OMB No. 1024-0018

5

Page

received

7

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used to lower and lift cargoes through the gorge where Locks III-V were being built. The exact placement and character of this structure are speculative.

Item number

Lock I

Lock I seems to have been 14 feet wide and 100 feet long, pocket to pocket. Its lift was about 10 feet. The walls were probably a composite of ashlardressed red Seneca sandstone face over a rubble interior.

The two pairs of gates were of swing-type with sliding wicket gates. The upper lock gates and quoin stone coping were a little more than 2 feet above the level of the coping of the lower lock gates. The upper course is the only one currently in view and it consists of four stones with a recess of 8-1/2 inches to receive the mitre sill. Iron cramps were little used in the lock walls, except in the gate pockets. Currently a few bulges appear in the lock walls. In modern times, some repairs, with brick, rubble, and cement, have been made.

Lock I was probably completed in 1797-98, although likely rebuilt at least once in the 1820s.

Lock II

Lock II, separated from Lock I by a 500-foot canal segment constructed of hewn stone, was narrower than Lock I, being 12 rather than 14 feet at its point of least width. It is about 88 feet long between gate pockets. Its lift capacity, as built, was 16 feet. Several types of stone were used in the construction of this lock, with free stone employed in all of the gate pockets. Ashlar red sandstone was used on the river side wall, except for a small section of rough-cut natural stone. Much of the land side wall was cut from solid rock and faced with native stone.

The lock gates were of the swing-mitre type with butterfly wicket gates. There are indications that the cut stone in the gate pockets were cramped, but all the pockets have collapsed. About 30 feet of the upper end of the berm wall has also collapsed below the breast wall, as has about 16 feet below the lower gate pocket on the river side.

Lock II was probably constructed while the massive cut for Locks III-V was being blasted out of the solid rock farther down. Like Lock I, Lock II may have been partially rebuilt during the 1820s.

Locks III, IV, and V

Beginning about 100 feet below Lock II are these three locks, which together constitute a riser, or stairstep of locks, each being immediately adjacent to the other, and thus sharing gates in common. Lock III is 12 feet wide

National Register of Historic Places Inventory—Nomination Form

	Page	6	
date ente	ered		
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7

OMB No. 1024-0018

Exp. 10-31-84

at the narrowest, 111 feet long, and has a lift of 14 feet; it is unusual in that it bends 18 within itself to permit traffic to enter the cut through which Locks IV and V run. Lock III was apparently rebuilt in the 1820s.

Item number

For Locks IV and V, the workmen enlarged and vastly deepened a natural fissure that occurred in the rock. The two locks, each with a lift of about 18 feet and a length of roughly 94 feet, were blasted from the bedrock using black powder inserted in hand-drilled holes.

The three lower locks have suffered severely from flood and overgrowth of vegetation. Debris has obscured most of their remains. Nevertheless, the dramatic 200-foot cut in the river wall that accommodates them is the most striking evidence of the engineering achievement involved in the construction of the Potomac Canal.

Jetty

At the lower end of the gorge through which Locks IV and V issue, the canal joins the Potomac River. A stone jetty, erected at this spot to facilitate the entry and exit of boats into the main channel, appears to have entirely disappeared.

ASSOCIATED SITES

Samuel Briggs Grist Mill Site

Adjacent to the river side canal wall, below the visitor center, are the foundations of a mill, probably constructed about 1797. Maps of the period during which the canal was in operation refer to the existence of a grist mill at this location, while later maps show a sawmill at the site. Ruins of masonry walls, measuring 53 by 27 feet and spanning a raceway leading from the canal to the river, indicate that the water wheel pit used by the mill was adjacent and parallel to the canal wall and that it was fed from the canal by a wooden flume from some distance above. The masonry weir at the mill site is probably not contemporary with the construction of the mill.

The mill's activities were, in all likelihood, hampered by the periodic lack of water in the canal and its other inefficiencies. By 1828, operations at the mill had probably ceased.

Potts-Wilson Forge/Foundry Site

Just below the mill site, some 500 feet beyond the visitor center, are the remains of the footings and foundations of a forge/foundry, which operated from about 1793 until an indefinite time in the 19th century. This operation supplied the Potomac Company with some of the iron goods needed for construction and operation of the Canal.



Artifacts and slag at the site, on the river side of the canal, have revealed the dual function of this 48-by-32-foot building. Remains of a cast iron pipe below the foundation seem to lead from the canal bank to the river bed. Presumably this pipe enabled the use of a waterwheel to provide the power necessary for certain forge equipment.

MATILDAVILLE

Some 1,200 feet southeast of the forge and mill ruins, opposite the site of the Large Holding Basin, are the remains of Matildaville. This small town, chartered in 1790, was platted to serve as a trade center and headquarters for the canal company. Its 40-acre site, today almost completely overgrown, was laid out on the west, or land, bank of the canal, parallel to it, and on a north-south axis that permitted a maximum number of waterfront lots. "Lighthorse" Harry Lee, later the father of Robert E. Lee, was its founderowner and named the community for his first wife and cousin.

Despite the optimistic prospects of the town, the vicissitudes of the canal kept Matildaville from developing into anything more than a hamlet. Probably no more than a half-dozen permanent structures were ever erected in the community.

All that can be clearly identified at the town's site, through archeological and historical study, are the ruins of the few structures described below, although there were once additional buildings, including temporary wooden warehouses and workmen's quarters. The area of the town is now heavily forested.

William Dickey's Inn Site

A square log structure of 2 stories, this building, about 17 by 54 feet in ground dimensions, was built in the last years of the 18th century or during the first years of the 19th, and may later have been modified. It stood opposite the canal about 200 feet above the Lower Guard Gate. Its use during the Matildaville period has not been conclusively determined, although it certainly later served as an inn.

Dickey's Inn survived until 1950, when it burned; its chimney still partially stands, surrounded by the rubble of the rest of the building.

Spring House Site

A spring house, near Dickey's Inn, was probably built early in the 19th century. It served to keep perishables cool. All that remains are the foundation walls, approximately 30 inches below grade, the spring inlet (still sustaining a small flow of water), and a small set of stairs.

National Register of Historic Places Inventory—Nomination Form

For NPS use only received date entered

OMB No. 1024-0018

Exp. 10-31-84

Continuation sheet	Item number 7	Page 8	
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Superintendent's House Site

At least portions of the Superintendent's house, also known as the Company House or Old Jail, apparently because of varying uses to which it was put, were constructed in the 1790s. The structure may have been built in sections, which would account for the various dates advanced for its time of construction. It stood near the Lower Guard Gate, about 200 feet below Dickey's Tavern. Built of stone and brick, it was two stories with a front elevation measuring 150 feet in length and from 18 to 29 feet in depth. It was largely in disrepair by the 1840s, although part of it may have remained in use until later in the 19th century. Only the foundation and some of the cornerstones survive.

Samuel Anderson House Site

This structure stood between the Superintendent's House and Dickey's Inn and was alined along the same axis fronting the canal. Its foundations, which measure 17 by 32 feet, have been excavated, but no information is available on the structure's use or its occupants.

National Register of Historic Places Inventory—Nomination Form



Continuation sheet

Item number

Page

DESCRIPTION: FOOTNOTES

¹The physical description of the Potomac Canal as it appears here is adapted from Thomas F. Hahn, <u>George Washington's Canal at Great Falls</u>, <u>Virginia</u> (Shepherdstown, West Virginia: American Canal and Transportation Center, 1976) and Gary Scott and Nick Veloz's nomination of the canal to the National Register of Historic Places. A modest amount of additional data has been added on individual sites and structures in the district that have been the subjects of a series of detailed reports for the National Park Service. These studies may be found in the bibliography under the following authors: Barka and Troup, Barnes, Powell, Troup, Troup and Barnes, Troup et al., and Ziek.

National Register of Historic Places Inventory—Nomination Form

For NPS use only received date entered

Continuation sheet	Item number	8	Page ²

throughout or nearly throughout, the whole extent of the thirteen States. The communication between the Western and Atlantic districts, and between different parts of each, will be rendered more and more easy by those numerous canals with which the beneficence of nature has intersected our country, and which art finds it so little difficult to connect and complete.

--James Madison, Number 14, The Federalist²

Genesis of the Potomac Company

Efforts to take advantage of the prospects offered by transmountain trade had begun in the 1740s, even before the French were forced out of the trans-Appalachian area in the Seven Years War (French and Indian War). The Ohio Company was organized near the end of the 1740s to engage in the fur trade and speculate in western lands.

George Washington served as a surveyor for the company shortly after its formation and then played a well-known part in the war. Later, over a period of time, he acquired substantial landholdings in the "West," especially in the Monongahela River Valley. While he afterward maintained a lifelong financial stake in the West, he also came to favor developmental projects, such as a Potomac canal, for reasons in addition to self-interest. The geopolitical reasoning behind his enthusiasm was fully elaborated later in his career.

In the pre-Revolutionary period, furthermore, not only Washington, but also other colonial leaders, saw compelling need for roads, canals, and other improvements to open the West. The ever-progressive Benjamin Franklin was among them. Perhaps the canal fever sweeping Britain after James Brindley's successful canal of 1761 was a principal factor inspiring this interest. Among other colonial leaders who were involved in this effort was one who would prove to be a long and reliable ally of Washington in the Potomac Canal venture. This was Thomas Johnson, later governor of Maryland and a successor to Washington as president of the Potomac Company.³

Washington and Johnson, among others, took various actions in support of their interest. For example, both backed bills in their respective colonial legislatures that called for navigational improvements on the Potomac. These legislative initiatives, however, did not result in anything concrete.

Washington, Johnson, and likeminded individuals also supported the plans of John Ballandine, a Virginian, who nurtured a plan for Potomac improvement in the early 1770s. Ballandine surveyed the upper Potomac in 1772 and then visited Europe, in 1772-74, to study the canals of Britain and

3

United States Department of the Interior National Park Service

National Register of Historic Places Inventory—Nomination Form

Continuation sheet

Item number

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Page

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8

France. In the latter year, Washington, Johnson, and others subscribed funds to Ballandine's plan, but his scheme, on the eve of the Revolution, came to nothing, partly because of insufficient funds and lack of cooperation from the Maryland legislature. Ballandine may have done some experimental canal work at Little Falls, but accomplished little else.

The chaos of the Revolutionary years prevented any further action on the canal building notions already conceived before that event. Once the struggle had concluded, however, among the objects to which Washington turned his attention, following his resignation as commander-in-chief of the Continental Army in December 1783, was the situation in the West and the status of his landholdings there. He had even expressed his interest in this subject before his leavetaking from the Army.⁴ To evaluate the situation, in September-October 1784, he journeyed northwest through western Maryland and southwestern Pennsylvania. An extract from a letter, one of a number written on the topic shortly after his return to Mount Vernon, summarizes his conclusions:

Extend the inland navigation of the eastern waters, communicate them as near as possible (by excellent roads) with those which run to the westward. Open these to the Ohio and such others as extend from Ohio towards Lake Erie, and we shall not only draw the produce of the western settlers, but the fur and peltry trades of the lakes also, to our ports (being the nearest and easiest of transportation) to the amazing increase of our exports, while we bond these people to a chain which can never be broken.⁵

Commenting on Washington's state of mind and extent of involvement at this point, Douglas Southall Freeman wrote that he "had a reward of enthusiastic interest he had not displayed in years. Peace had brought to Washington a challenge to peaceful effort as absorbing as that of war."⁶

Washington plunged into the effort needed to accomplish the project with a sharp understanding of the interstate and intrastate rivalries involved. He was willing to accede, for example, to the advocates of a James River route their own canal, a move that became necessary to assuage sectional rivalries in Virginia. Likewise, he saw that the project mandated interstate cooperation, from the outset between Maryland and Virginia, and with Pennsylvania as well. He was also prepared to lobby personally.

It was then at least in major part in furtherance of the river improvements that, in mid-November 1784, barely a month after his return from his western trip, Washington journeyed to Richmond and met with the General Assembly,

National Register of Historic Places Inventory—Nomination Form

4	
Page	

Continuation sheet

Item number

8

where he discussed the issue and found sentiment favored canals on both the Potomac and the James Rivers. Following this visit, his lobbying efforts continued. In December, he suggested, to Madison, among others, that Maryland and Virginia confer to draft identical bills for Potomac improvements. He sent along to Madison a draft bill he had forwarded to Maryland. He also renewed an earlier proposal for a stock company, which, with the States' participation, would undertake the work.

Complications in securing simultaneous passage by the legislatures of identical bills on this pattern led Washington to travel to Annapolis, over Christmas 1784, as a representative of Virginia, to secure agreement on the wording that was to be used. His efforts were successful, for by mid-January 1785 both Maryland and Virginia had passed the requested legislation.' Freeman feels that Washington's

> popularity undoubtedly facilitated action. Some lawmakers voted for the bills not because they had great faith in the plan but because they wished to show their appreciaof him by doing what he desired. His energy and his experience were almost as influential as his prestige.⁸

Relation of the Potomac Improvement Plan to Efforts for National Unity

While the legal groundwork for the Potomac Company was thus well laid, a matter fundamentally related to the long-term success of the project was soon also successfully negotiated, again with Washington's participation. This was a broad agreement for the joint use of the Potomac and Chesapeake Bay, successfully concluded by representatives of Maryland and Virginia, who sat first at Alexandria and then at Mount Vernon in March 1785. The report of the meeting, dubbed the Mount Vernon Conference, because Washington had entertained the delegates in his home, not only declared that the Potomac would be a common "highway" for all, but included a proposition for an annual conference between the two States on commercial matters.

When ratification of the Mount Vernon agreement came up in the respective State legislatures, proposals were made to broaden the next annual conference to include other States. The necessity of ultimately dealing with Pennsylvania on the Potomac question, for example, was readily recognized. Maryland wanted to invite Delaware. In Virginia, in particular, these proposals led to a resolution for a meeting where representatives of all the States could:

> take into consideration the trade of the United States; to examine the relative situations and trade of the said States; to consider how far a uniform system in their commercial regulations may be necessary to their

National Register of Historic Places Inventory—Nomination Form



common interest and their permanent harmony; and to report to the several States, such as an act relative to this great object as, when unanimously ratified by them, will enable the United States in Congress effectually to provide for the same.⁹

Item number

This measure, which has been called "the precipitating step toward the drafting of the new Constitution," was the call for the Annapolis Convention. 10

To trace further the evolution of this proposal would be to recapitulate the key episode in the historical background of the Constitutional Convention, which is, to some extent, a study of the career of James Madison. Madison was Washington's indispensable partner in the plan to improve the Potomac and in efforts toward a stronger national government. It would seem that they had seen eye-to-eye on these issues for some time.¹¹ Irving Brant, a leading biographer of Madison, has characterized Madison's collaborative role with Washington, as follows:

> It was during this rising ferment over river navigation, for the dual purpose of consolidating the American empire and channeling Western commerce through Virginia and Maryland, that Madison took charge of the program in the 1784 General Assembly.¹²

The element of State interest may not have been erased, but it was to be sublimated. Madison, in any case, had managed the Potomac-James Rivers bill on the floor of the Virginia assembly and then, in turn, the legislative initiatives leading to the Mount Vernon Conference, the Annapolis Convention, and, ultimately, the Constitutional Convention.

The Potomac improvements issue thus helped crystallize sentiment for national unity. Both initiatives proceeded under the aegis of George Washington and under the stewardship of James Madison.

Organization of the Potomac Company and Description of its Projects

In May 1785, a few weeks after the Mount Vernon Conference, Washington was elected first president of the Potomac Company, at a stockholders' meeting in Alexandria, Virginia. Thomas Johnson and Thomas Sim Lee, former governors of Maryland, were among the directors chosen. Even with the endorsement and investments of such notables, the Potomac Company was setting out on a formidable array of undertakings that would tax the capabilities of both contemporary business organization and engineering talent.

United States Department of the Interior National Park Service

National Register of Historic Places Inventory—Nomination Form

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The Potomac Company's plan was to reduce hazards to navigation in the river and its tributaries, for example, by clearing out sandbars and rubble and by blasting channels in shallow places, and by constructing canals at those places where obstacles were too large to be easily removed or where channels could not be cleared by dredging. It became clear that canals would need to be constructed at five locations on the principal course of the Potomac.

Item number

The five canals undertaken by the company were:

- -- the Little Falls Skirting Canal, completed in 1795, above Georgetown. More than 2 miles in length, this canal included three wooden locks that overcame falls of slightly more than 37 feet.
- -- the Great Falls, or Potomac, Canal.
- -- the Seneca Falls Canal, 8 miles above the Great Falls. Here a 3,960-foot channel, without locks, was constructed around the 7-foot falls. Begun in 1785, this project was quickly completed.
- -- the Shenandoah (or Paynes) Falls Canal, just below Harpers Ferry. A mile long, this canal overcame a 15-foot drop in the river without the use of locks.
- -- the Houses Falls (Government or Arsenal) Canal, above Harpers Ferry. This small work, only 150 feet in length, and without locks, overcame a 3-foot drop in the river.

(Some canals and locks were also built on the Shenandoah River and lesser works were completed on other tributaries.)¹³

Building of the Potomac Canal at Great Falls

Washington was not a figurehead president. He made repeated visits to the various facilities under construction, including many trips to Great Falls. He assisted in siting the canal route there and in surveying its course, on visits in September and October 1785 and in February and March 1786. He called in an expert adviser, James Brindley, a British engineer, whom he met and entertained. (Brindley was the son of the engineer of the same name who had built the Worsley-Manchester Canal in England in 1761, setting off the era of major British canal construction.) Washington also took a role in recruiting James Rumsey, the steamboat inventor, with whom he was acquainted from his trip west the previous year, as the first superintendent of construction. Rumsey began work on the main canal channel in March 1786.¹⁴

National Register of Historic Places Inventory—Nomination Form

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OMB No 1024-0018

Exp. 10-31-84

Seemingly remarkable progress was made in the first two seasons of work. In the 1787 annual report of the Potomac Company, Washington was able to inform its readers' that the entire channel was nearly complete to the point at which the locks had to begin.¹⁵

Item number

The course of events after 1787 was, on the contrary, very discouraging. Little work was accomplished in the next few years. Recurring shortages of funds, an inability to attract and retain skilled workmen, and difficulties with Rumsey and his successors were among the significant problems. For example, primarily white indentured servants and slaves labored on the canal; efforts to recruit free whites had met with little success, and even the involuntary labor was difficult to obtain. In addition, a fundamental reason work seems to have been dragging on was that "the builders had reached a construction stage which required the technical skill of an engineer."¹⁶ In the United States, very few individuals were qualified to assist.

Although Washington resigned the presidency of the Potomac Company when he became President of the United States in 1789, he continued to interest himself in its affairs. Notably, he corresponded extensively regarding schemes to resolve the problem of lock construction. Finally, in 1795, he was able to intercede with William Weston, an English canal expert who was assisting a canal project in Pennsylvania. Weston urged the revision of the lock route to the one that was ultimately used in the final comstruction. Much effort had meantime been wasted on an abortive cut in the gorge wall.¹⁷

After the final route was selected, other problems, sometimes in concert, continued to plague the progress of lock building at Great Falls and delayed the opening of the canal for additional years. Floods, accidents, and more poor selections of construction supervisors were among these long-term difficulties.

In 1798, an inclined plane, of wood, was completed that finally permitted the relatively easy transport of goods around the falls. This expedient continued in use until the canal was opened in 1802. Major credit for completion of the system should be accorded to Leonard Harbaugh, who had finished the Little Falls Canal before taking over as superintendent at Great Falls in 1797. He put the inclined plane in place and finished the difficult construction of Locks IV and V.¹⁸ Washington did not survive to see the system in operation, having died in December 1799.

Failure of the Potomac Canal

The Potomac Canal system, when finally in operation, frustrated the Promethean visions of the Company's founders. Various factors were responsible. Some were financial and political; others were due to nature and geography.

National Register of Historic Places Inventory—Nomination Form

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The undercapitalization of the company caused difficulties in financing even normal maintenance and repair. Further, as an enterprise of essentially developmental character, the company could look to possible prosperity only when the areas it proposed to serve had been thoroughly developed. Related to and aggravating this aspect of the financial problem was the diffuseness of the company's efforts, which, after 1802, were concentrated to a considerable extent on improving the Potomac's tributaries, draining the limited capital from the maintenance and improvement of the mainstream works.¹⁹

The Potomac Company was an early example of mixed capitalism, with the States of Maryland and Virginia holding substantial numbers of shares. The legislatures of both States, however, also had important competitive commercial interests that lessened the wholeheartedness of their commitment to the Potomac route. In Maryland, the commercial interests of Baltimore were at loggerheads with those of Georgetown, the prime Maryland beneficiary of the Potomac Company's works. In Virginia, the James River Canal, chartered in the same legislation as the Potomac Company, continued to compete for the attention of the State government.

A basic geographic factor made the dream of linking the drainages of the Ohio and Potomac extremely difficult of realization. Although the river was the shortest route between tidewater in the east and navigable rivers in the Ohio drainage, the minimum height above sea level required to join the two systems was more than 2,000 feet, more than three times the lift later required to construct the Erie Canal.²⁰

Nature, which had helped hamper construction, continued to contribute its share of impediments after the canal's completion. Fluctuations in weather and water level drastically affected operations. Periodic floods and ice flows damaged the works. Silt and debris built up in the canal bed. At other times, dry weather rendered the system inoperative. The canal was, in fact, active only about 2 months each year. Rather than providing free access to the entire river system and convenient trans-shipment to the Ohio Valley, the company's improvements had made the river navigable for only very shallow draft boats at high water and then only for a brief part of the year.

The canal's erratic and limited operating schedule discouraged traffic, limiting income from tolls, the prime source of revenue. The depressed condition of the company's finances and the inadequacy of its system frightened away potential investors.

By the 1820s, with the amount of tolls received averaging only \$10,000 per year--less than the interest on the debts incurred during the construction of the system--it was evident that although

United States Department of the Interior National Park Service

National Register of Historic Places Inventory—Nomination Form



OMB No. 1024-0018

Exp. 10-31-84

the locks at Great Falls were a major contribution to American engineering, a water transportation system dependent on the vicissitudes of nature could not be efficient.²¹

Ultimately, moves in the Virginia and Maryland legislatures, during the decade of the 1820s, led to the charter of the Chesapeake and Ohio Canal. The new canal was to be a total canal system, where the supply of water would be controlled throughout the system's distance, rather than only in isolated segments. The dream of a canal to the Ohio persisted in the new canal company, but it took on a new technological incarnation.

Item number

The Potomac Company passed out of existence in 1828, when its charter and papers were transferred to the Chesapeake and Ohio Canal, begun in 1826 on the Maryland side of the Potomac River. Temporarily, until 1830, when the first part of its new canal was opened, the Chesapeake and Ohio Company continued to operate the Potomac Canal. In that year, the company dismantled the working parts of the locks.

Later History of the Potomac Canal

Over time, nature tooks its course with the derelict canal, although major elements of it survived. Vegetation flourished in and near its bed. The associated hamlet of Matildaville likewise declined, although certain of its structures continued to be used on a sporadic basis.

At two times later in the 19th century, proposals were made to construct industrial facilities taking advantage of the water power present at the Great Falls. The first of these, in the late 1830s, projected a "South Lowell" manufacturing complex similar to that in the namesake town in Massachusetts. Other than assembling the parcel of land presently constituting the Park, the company achieved little. Much later, the property passed into the hands of the Potomac Electric Power Company.

Meantime, travelers to the area continued to visit the falls and be impressed by their fierce natural beauty. Except for efforts by a local historian, however, who succeeded in getting the Daughters of the American Revolution to mark the canal, little attention was paid to its ruins. Finally, in the 1950s, the Fairfax County Park Authority purchased a small tract in the vicinity of the canal. About the same time, professional civil engineering groups also began to take an interest in its historic remains, and supported its being acquired for public use.

In the late 1960s, the National Park Service obtained the bulk of the Potomac Electric Power Company property, under long-term lease, and later acquired fee title. The county's small park has been added to the unit. The National Park Service administers Great Falls Park as a part of the George Washington

National Register of Historic Places Inventory—Nomination Form



Continuation sheet

item number

8

Page 10

Memorial Parkway. In addition to the historic remains of the Potomac Canal and the ruins of Matildaville, the Great Falls reservation contains scenic and recreational attractions, most notably the Great Falls of the Potomac and the Mather Gorge beneath them.

POLITICAL SIGNIFICANCE

Beyond the optimistic prospects of settlement and trade, the transformed political environment of an independent United States offered another, radically different, motivation for the construction of better links across the Appalachians. By the Treaty of Paris of 1783, the new United States extended to the Mississippi. A rising tide of settlement was pouring into the western lands from the Eastern States. The year 1784 marked the beginning of a new surge in this movement.²² The major streams of the western territories, however, drained into larger river systems controlled by foreign powers, namely, Great Britain and Spain.

Washington analyzed the circumstances in the West accurately and viewed their possible consequences with grave concern. He also conceived a course of action to remedy the situation:

> The Western Inhabitants would, I am persuaded meet us half way rather than be driven into the arms of, or be in any wise dependent upon, foreigners; the consequence of which would be, a seperation, or a War. The way to avoid both, happily for us, is easy, and dictated by our clearest interest. It is to open a wide door, and make a smooth way for the produce of that Country to pass to our Markets before the trade may get into another channel ... No well informed Mind need be told, that the flanks and rear of the United territory are possessed by other powers, and formidable ones, too--nor how necessary it is to apply the cement of interest to bind all parts of it together, by one indissoluble band-particularly the middle States with the Country immediately back of them-for what ties let me ask, should we have upon those people; and how entirely unconnected shod. we be with them if the Spaniard on their right or great Britain on their left, instead of throwing stumbling blocks in their way as they now do; should invite their trade and seek alliances with them? What, when they get strength, which will be sooner than is generally imagined (from the emigration of Foreigners who can have no predeliction for us, as well as the removal [west] of our own citizens) may be the consequence of their having formed such connections and alliances; requires no uncommon foresight to predict. The Western Settlers--from my own observation--stand as it were on a pivot--the touch of a feather would turn them away.²

National Register of Historic Places Inventory—Nomination Form

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Continuation sheet

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An extended discussion of the geopolitical situation of the Western United States in the aftermath of the Treaty of Paris of 1783 will assist in making Washington's urgent tone more comprehensible. Aside from minor outposts of French and Spanish traders and the newly established settlements from the Eastern States (primarily in present Kentucky and Tennesse), the West was inhabited by Indians, who had shown a pronounced tendency to side with the British during the Revolution. Further, the natural river routes of access greatly favored trade and settlement from the Mississippi and St. Lawrence-Great Lakes drainages, the navigational entrances to which were controlled by significant Spanish and British settlements.

To complicate matters, in the mid-1780s, Spain had not conceded title to "East Louisiana," that is, a southwestern quadrant embracing much of present Mississippi and Alabama. Also, the British, despite the Treaty of Paris, continued to hold vital posts on the Great Lakes. Lengthy diplomacy, taking advantage of the two nations' preoccupation in Europe, would be required to dislodge them from U. S. territory.

Although the weight of population in the Eastern States and its noticeable shift to the west favored American dominance there, the settlers could be held hostage or might be prone to influence by the British and Spanish. In any course the westerners chose to take, there would be no central authority powerful enough either to aid or deter them.

This alignment of factors would tax the skill of the Government severely in the 1790s. The Confederation, lacking meaningful central authority for defense, taxation, and trade, was totally incapable of dealing with such a state of affairs.

Thus certain leaders of the new Nation, especially George Washington and his able surrogate James Madison, conceived the canal as one element of an overall strategy to link its vast and undeveloped western territories to the settlements of the eastern seaboard. They clearly saw that a link through this short central route had the potential to facilitate the settlement of the West, redirect trade east-west rather than north-south, and help mold a political climate favorable to national unity. Canals and improved streams were especially appropriate devices for this purpose because they took advantage of existing routes that ran considerable distances.

National Register of Historic Places Inventory—Nomination Form

For NPS use only received date entered 8 12 Page

Continuation sheet

Item number

ENGINEERING SIGNIFICANCE

In a modern sense, the construction of the Potomac Canal at the Great Falls seems a relatively modest and protracted proposition. It is, however, among the most significant remains from the first generation of canal construction in the United States, and is the principal surviving element of one of the first major hydraulic projects in the country that addressed an entire river basin. In addition, it incorporated engineering features of an innovative and impressive character.

One assessment of its importance refers to it as one of "three ambitious projects reflecting belief in a technology and science which would transform America in the first half of the nineteenth century from an agrarian to an industrial society."²⁴ A National Park Service scholar of the canal dubbed it a technical venture for which there was no precedent in the country.²⁵

The canal's specific construction elements have helped bring it recognition as a National Historic Civil Engineering Landmark, under the program conducted by the American Society of Civil Engineers. The citation by the society, in addition to certain points made already in this discussion in slightly different form, ranks the Potomac's lock system especially highly, terming it "particularly unique."²⁶

Details of the design, including the contiguous or stairstep character of the lower locks and the use of a separate supply basin, were also distinguishing elements, favorably regarded by the Society, as were the butterfly valves in the mitre gates, which permitted both upstream and downstream use of the system. The quality of the "hand hewn masonry, the durability of its placement, and the feat of blasting a channel through the high river gorge wall" were also cited.²⁷ The cut in the river gorge especially has won praise from various quarters; for example, one writer has termed it an "unexcelled engineering feat."²⁸

In assessing the relative engineering significance of the Potomac Canal, it is useful to survey major canal construction in the country that was contemporary with it. Only a few projects of similar scale were under way as early. Some, however, begun later, were completed sooner.

The Potomac Company's other major canal, with a less complex series of locks, the Little Falls Canal, was completed first. (The Little Falls Canal was obliterated by construction of the Chesapeake and Ohio, which built over its bed.) Other major early canals included: the South Hadley Canal, in Massachusetts (1793-94), which was about 2 miles in length and used inclined planes and locks; the Dismal Swamp Canal, near Norfolk, Virginia, (partly completed in 1794 and essentially extant), which had a nearly level channel, nevertheless using locks; the Lowell Locks and Canals, in Massachusetts, principal elements

United States Department of the Interior National Park Service

National Register of Historic Places Inventory—Nomination Form

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OMB No. 1024-0018

Exp. 10-31-84

of which opened in 1796; the Middlesex Canal (1803), also in Massachusetts, an impressive surviving 27-mile canal, utilizing an impressive array of construction techniques and technical innovations and featuring 20 locks, 8 aqueducts, and 48 bridges; the Santee Canal, in South Carolina, a 22-mile system opened in 1800; and the James River Canal, the Potomac's Virginia contemporary, which featured many locks but overcame less treacherous terrain than the Potomac.²⁹

Item number

Of all the early canals, the Potomac, though not in every respect the most technically sophisticated, was certainly the one with the boldest mission, an east-west proposal on a grand scale of conception.

CONCLUSION

The prospects of the Potomac Canal raised economic expectations to unreasonable heights, but its conception did help focus attention on the need for interstate cooperation. In an oblique manner, at least through the minds of two of the stellar figures involved, the scheme assisted in bringing about the U.S. Constitution. Further, by its nature, it reflects or symbolizes two issues that vexed its contemporaries and even now continue to trouble their heirs: the metes and bounds of State vs. Federal authority over trade, and the issue of public improvements.

The Potomac Canal was, by the standards of its time, a major accomplishment in engineering that made significant early use of certain elements and completed a notably difficult task.

Finally, as Madison's legislation, presenting Washington with unsolicited shares of Potomac and James Company stock, stated in its preamble, the canal is one of the "durable monuments of his glory" that can serve as a "monument also of the gratitude of his country."³⁰

National Register of Historic Places Inventory—Nomination Form



Continuation sheet

Item number

8

Page¹⁴

SIGNIFICANCE: FOOTNOTES

¹The spelling "Potomac" has been adopted solely for convenience. "Patowmack" and "Potowmack," as well as other variants, were used by the Company. On this point, see Ricardo Torres-Reyes, <u>Potowmack Company Canal</u> <u>and Locks: Historic Structures Report</u> (Division of History, Office of Archeology and Historic Preservation, National Park Service, 1970), pp. ii-iii.

²Clinton Rossiter, ed., <u>The Federalist Papers</u> (New York: The New American Library, 1961), pp. 102-103.

³This paragraph and the next two follow closely the summary given in Thomas F. Hahn, <u>George Washington's Canal at Great Falls</u>, <u>Virginia</u> (Shepherdstown, W. Va.: American Canal and Transportation Center, 1976), pp. 5-8.

⁴Harlan Unrau, <u>Historic Resources Study: Chesapeake and Ohio Canal</u> (National Capital Team, Denver Service Center, National Park Service, unpublished), p. 13, citing a letter from Washington to the Marquis de Chastellux.

⁵Letter, George Washington to Jacob Read, November 3, 1784, in John C. Fitzpatrick, ed., <u>The Writings of George Washington</u>, vol. 27 (Washington: U.S. Government Printing Office, 1939), p. 489.

⁶Douglas Southall Freeman, <u>George Washington, A Biography</u>, vol. 6: <u>Patriot and President</u> (New York: Scribners, 1954), p. 22.

⁷The account of Washington's lobbying efforts is based on Freeman, pp. 22-26, and Irving Brant, <u>James Madison</u>, <u>The Nationalist</u>, <u>1780-1787</u> (Indianapolis: Bobbs-Merrill, 1948), pp. 364-370.

⁸Freeman, p. 27

⁹Brant, pp. 375-381, has been followed in this account of the legislative maneuverings preparatory to the Annapolis Convention. The text of the resolution is taken from Brant, p. 381, citing the <u>Journal of the Virginia House of</u> <u>Delegates</u>, January 21, 1786.

¹⁰Brant, p. 376.

¹¹Brant, pp. 363-364, gives evidence to support Washington's and Madison's apparent earlier discussions on the inland waterway issue.

¹²Brant, p. 365.

United States Department of the Interior National Park Service

National Register of Historic Places Inventory—Nomination Form



Page 15

¹³ Hahn,	pp.	8-9,	has	been	condensed	to	provide	this	summary	of	the	
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¹⁴Torres-Reyes, pp. 8-24, contains a description of Washington's early activities as president of the Potomac Company, including copious extracts from Washington's correspondence relating to the Potomac Canal.

Item number

8

¹⁵Torres-Reyes, p. 24, citing Annual Meeting Records, August 1787.
¹⁶Torres-Reyes, p. 30.
¹⁷Torres-Reyes, pp. 30-34.
¹⁸Torres-Reyes, pp. 48-56.

¹⁹Arthur G. Barnes, <u>History of Patowmack Canal: Matildaville</u> (Williamsburg, Virginia: Southside Historical Sites, Inc., 1978), pp. 6-15, gives an outline of the economic failings of the Potomac Canal. His views have been summarized here.

²⁰Hahn, p. 5.

²¹Paul H. Douglas and William K. Jones, "Sandstone, Canals, and the Smithsonian," <u>Smithsonian Journal of History</u>, vol. 3 (1968), p. 44.

²²Dale Van Every, <u>Ark of Empire, the American Frontier, 1784-1803</u> (New York: William Morrow, 1963), p. 31.

²³Van Every, pp. 7-8, citing Washington.

²⁴Douglas and Jones, p. 41.

²⁵Torres-Reyes, p. 5.

²⁶Hahn, facing title page, gives the text of the American Society of Civil Engineering's Landmark citation of the Potomac Canal. Copies of the original are available in the files of the Historic American Engineering Record.

27_{Ibid}.

²⁸Alexander Crosby Brown, "America's Greatest 18th Century Engineering Achievement," Virginia Cavalcade (Spring 1963), p. 45.

²⁹This summary of early canal construction uses discussions appearing in U.S. Department of Transportation, Office of Consumer Affairs, <u>Bicentennial</u> <u>Catalog of Transportation Progress, Draft</u> (Washington, D.C., 1975), pp. I-2 et seq., and in Unrau, pp. 13-17.

³⁰Brant, p. 368.

National Register of Historic Places Inventory—Nomination Form



Continuation sheet

Item number

9

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Item number

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VERBAL BOUNDARY DESCRIPTION

The recommended boundary for the Potomac Canal is drawn, first, with reference to the historic right of way of the canal, that is, those lands condemned for the Potomac Company once major portions of the canal had already been constructed. The general outline of this right of way has been reconstructed and is shown on Sketch Map A accompanying this description. Copies of the legal documents on which this reconstruction is based, along with the sketch map, appear in Arthur G. Barnes, <u>History of the Patowmack Canal: Matildaville</u> (Williamsburg, Va.: Southside Historical Sites, Inc., 1978), ff. p. 32 and p. 100 et seq.

Because of changes in the landmarks specified in the deeds of transfer, it is not possible to retrace precisely on the ground the boundary of the 140-foot strip condemned for the canal. On the assumption that, since condemnation followed construction by a number of years, the condemned strip was undoubtedly drawn in relation to the path of the canal, it is assumed that a strip of land 70 feet to either side of the midpoint of the canal and the midpoint of the abortive cut for the locks would encompass the extent of the historic right of way.

Such a boundary would not, however, encompass the full extent of the sites of the Grist Mill, Forge/Foundry, Holding Basin, and Matildaville.

In their vicinity, the following lines defining rectangles should encompass the historic and archeological remains:

Grist Mill--Refer to Sketch Map B. From the intersection of an imaginary line drawn through the center of the raceway at the millsite, proceed 100 feet toward the river. The boundary is defined to include the land within 75 feet to the northwest of this line and within 50 feet to its south.

Forge/Foundry--Refer to Sketch Map C. Project a line perpendicular to the centerline of the canal through the center of the present footbridge spanning the canal. Proceed along that line northeast 160 feet, then 160 feet along a line drawn parallel with the centerline of the canal, then at a right angle proceed to centerline of the canal.

Holding Basins--Matildaville--Refer to Sketch Map D. Using the existing river side wall of the Large Holding Basin as the baseline, project this line southeast until it intersects the river. Projecting the same river side wall of the Large Holding Basin northward, proceed 1,500 feet northwest from the point on the wall opposite the northern edge of the Lower Guard Gate. Then proceed southwest at a right angle 700 feet, then along a line parallel with the river side wall of the Large Holding Basin 2,500 feet, then follow northwest a line drawn at a right angle to intersect the canal right-of-way.