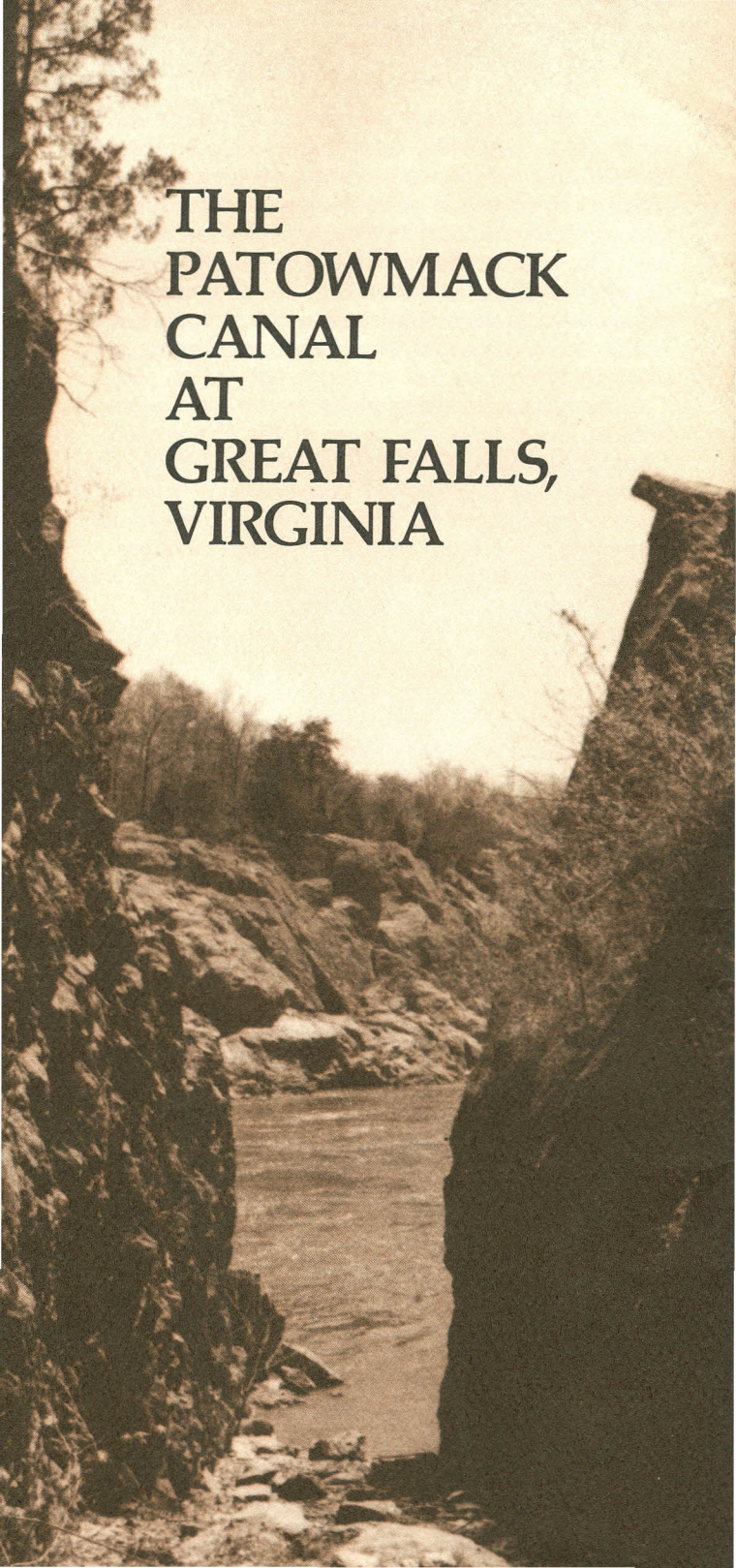
THE PATOWMACK CANAL AT GREAT FALLS, VIRGINIA



George Washington's Patowmack Canal

Few ventures were dearer to George Washington after the Revolutionary War than his plan to make the Potomac River navigable as far as the Ohio River valley. In the uncertain period when the colonies were loosely joined in confederation, Washington believed fervently that better transportation and trade would bind the nation together and help it grow. He wrote,

> *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 . . . .open a wide door, and make a smooth way for the produce of that country to pass to our Markets. . . .*

In 1784 Washington convinced the Virginia and Maryland Assemblies to pass bills establishing a company to improve the Potomac for shipping. The Patowmack Company, organized May 17, 1785, drew directors and subscribers from both states. The office of president, Washington wrote in his diary, "fell upon me."

Meanwhile, Washington had been meeting with fellow Virginians and Marylanders to work out how to share the waters between the two states. With the able assistance of James Madison, the Mount Vernon Compact achieved broad agreement for joint use of the Potomac and Chesapeake Bay. It also led to the call for more states to attend the

next conference "to consider how far a uniform system in their commercial regulations may be necessary to their common interest." In this way the founding of the Patowmack Company became a precipitating factor for the calling of the Constitutional Convention of 1787.

By far the most demanding and complex task in making the Potomac navigable was the building of a canal to skirt the Great Falls of the Potomac. Roaring over the rocks, the river here dropped nearly 80 feet in less than a mile. Swift currents in the gorge defied oarsmen. In spring the river level rose to sweep away trees and boulders and in late summer fell to a trickle.

Washington was no mere figurehead as chief of the company. Often he rode out to inspect work in progress; he invested his own money and presided at directors' meetings. Only when he became chief executive of the nation was he obliged to resign as company president.

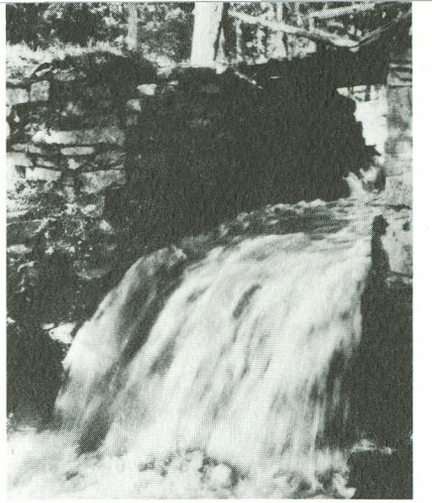
After construction began at Great Falls in 1786, setbacks defeated one superintendent after another. When Leonard Harbaugh was appointed in 1797, not a lock there had been finished. But Harbaugh's workmen pressed forward and opened the skirting canal to river traffic in 1802.

The first construction crews were composed of unskilled laborers; next came skilled indentured servants. Both groups proved hard to recruit, even harder to manage. The company finally resorted to renting slaves from local plantations for 120 Virginia dollars a year plus clothes and rations. These men became the builders of the Great Falls canal. Each workman received per day "1 pound of salt pork, or 1¼ pounds of salt beef, fresh beef or mutton" together with 1¼ pounds of bread or flour. To wash this down, free men received a hearty three gills (¾ pint) of rum per day; slaves were handed a "reasonable supply of spirits when necessary."

Work began at 7 A.M. and continued, rain or shine, until 6 P.M. Always difficult, often dangerous, excavation proceeded slowly. Engineers faced constant challenges. The section above the river gorge presented a solid rock face. Adapting techniques for black-powder blasting, workers cut a sheer channel. Deep stair-step locks were devised for boats to reach the calm waters below. Masons shaped and set stones to contain the rush of water. Carpenters built miter gates with ingenious valves that permitted upstream and downstream use. The pick-and-shovel crew dug holding basins to regulate the water supply. One of the earliest canals with locks in the nation, the Patowmack Canal was designated a national engineering landmark in 1969.

Although engineering skills were tried to the limit at Great Falls, the work of the Patowmack Company extended far beyond. From 1785 to the 1820s workmen improved 218 miles of Potomac River channels and built five skirting canals and eight locks. Another 260 miles of the tributary Shenandoah River were made navigable. The total cost of the project was reckoned at $729,380.

Engineers designed the project for the small, shallow-draft vessels of the late 1700s. These boats ranged from rafts, gondolas, and dugout canoes to the long narrow "sharper", a keelboat that carried up to 20 tons of cargo. The trip downstream from Cumberland, Maryland, a farm and lumbering community, to Georgetown, first port of the tidewater Potomac, took three to five days but the round trip required 12 to 18 days as boats had to be poled upstream against the current. Downstream cargoes included grain or flour, whiskey, timber, coal, and pig iron. Upstream went finished goods: cloth, hardware, firearms. Only sharpers made the return trip; rafts and gondolas were broken up and sold for lumber in Georgetown. Between 1799 and 1822, nearly 14,000 vessels carried 163,798 tons of cargo along the Potomac.



Spillway of Old Grist Mill

At the head of the canal locks at Great Falls grew the town of Matildaville that General "Lighthorse Harry" Lee, proprietor, named after his first wife. At first a rough construction camp, the settlement at its height boasted the company superintendent's house, a market, gristmill, sawmill, foundry, inn, and a sprinkling of small homes. Huts and barracks sheltered canal laborers.

The community had high hopes of becoming an industrial center. But the Patowmack Company failed to prosper. Because of low water in the river, the canal could operate only a few months a year. Trade dwindled and the tolls collected could not even pay the interest on the company debt. When the Patowmack Company went out of business in 1828 and sold its rights to the Chesapeake and Ohio Canal Company, Matildaville began to fade. Almost nothing remains today.

Though a commercial failure, the Patowmack Company builders pioneered techniques for locks and initiated a wave of canal construction. The project was one of the first major works that involved an entire river.

In the long run, George Washington's vision of a strong nation linked by trade came true. His often repeated toast recorded by visitors at Mount Vernon: "Success to the navigation of the Potomac!" became a footnote of American history.

Canal facts:

Length: 1820 yards
Width: 25 feet at water level, 20 feet at bottom
Operating depth: 2 to 4 feet
Total lift: 77 feet

Trail Guide

This trail guide leads the way along the Great Falls Patowmack Canal, begun in 1785, a mile-long project with locks that pioneered canal travel in the United States. The trail begins near the upper parking lot and heads downstream. You can return to the Visitor Center by following the River Trail along Mather Gorge or continue hiking downstream along the River/Ridge Trail.

1.

To divert Potomac water into the canal, the **Wing Dam** was built of wood cribs filled with rocks 1200 feet into the river. The top of the dam was even with the water level for the canal so that excess water flowed across the top and through Great Falls. When the river is low in late summer, the outline of the Wing Dam can be seen.

2.

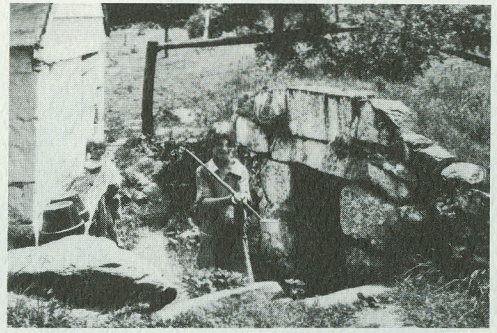
Mine Run, one-tenth of a mile downstream, brought water to the canal in dry times while, at full flow, the **Mine Run Spillway** allowed excess water to run off to the falls. Downstream the **Upper Guard Gate,** normally open, could be shut to protect the canal during flood or to allow maintenance. Notice a rock drill embedded near the bottom of the river-side wall. Men using iron drills pounded holes in rock to be filled with black powder, then touched off to blast through the ledges. Below the Upper Guard Gate the dry-laid stone wall is 10 feet high and 20 feet thick to withstand the river's force.

3.

At the end of the wall is a small reservoir probably used to store water to power the mill and ironworks downstream. In the 1930s the Civilian Conservation Corps rebuilt the spillway visible on the river side of the reservoir. The **Visitor Center** here borrows patterns from canal construction: lower walls resemble locks while the roof is shaped like an inverted boat hull.

4.

Downstream on the river side of the canal, **Briggs Grist Mill** ground corn and wheat for Matildaville and Georgetown in the 1790s. The square depression along the trail marks the **Potts-Wilson Forge-Foundry.** This complex in a large wooden building open to the river was unique for its time because under one roof raw ore was reduced to pig iron and then made into utensils and hardware.



Spring House at Dickey's Inn

5.

In the woods beyond the picnic area the canal trough widens into a broad walled bowl, the **Holding Basin**. Boaters trading or visiting **Matildaville** moored their boats along the walls of the basin. Boosters expected the village, headquarters for the Canal Company, to become a center of industry. Through the trees on the hillside you can see the tumbled ruins of the superintendent's house, the spring house, and **Dickey's Inn**. At the basin's lower corner a waste weir regulated the water level. When it was opened, the entire canal as far as the Upper Guard Gate could be drained for repairs.

6.

Like a set of giant steps the five canal locks, beginning at the **Lower Guard Gate,** accomplished the descent for boats to the gorge almost 80 feet below Great Falls. **Lock I,** largest and best preserved, is 14 feet wide and 101 feet long, with a lift of 10 feet. Workers faced it with red Seneca sandstone, completing it in 1798. This lock may have served as the model for the locks of the Chesapeake and Ohio Canal. Remains of the downstream gates and miter sill, excavated in 1982, are on display at the Visitor Center.

7.

Made of Seneca sandstone and local rock, **Lock II** reflects a concern for economy. It is 12 feet wide, 89 feet long, but had a lift of 15 feet. Look for stone slabs bearing stonecutters' marks. Like signatures, the marks may have served to identify sections of work done. Along the river side of the canal a small **Holding Basin** fed water to the lowest locks.

8.

Locks III, IV, and V formed a combination, with the downstream gate of one lock serving as the upstream gate of the next. Lock III, of rough-cut native stone, contained a bend that allowed boats to turn 18 degrees.

Blasted through solid rock, Locks IV and V are outstanding engineering achievements. The 18-foot lift of one and the 20-foot lift of the other together accomplished half the vertical span required to bypass Great Falls. A dressed stone platform juts out at the site of the land-side gate. Iron bolts and stakes on the sheer walls held ropes used by boatmen to maneuver through the locks.

Although the Patowmack Company was never a financial success and Matildaville faded after the company ceased operations, the skirting canal site was chosen as a National Historic Landmark in 1982. In recognition of one of the earliest projects to develop an entire river basin, the canal was designated a National Civil Engineering Landmark in 1969 and in 1980 a Virginia Historic Landmark.

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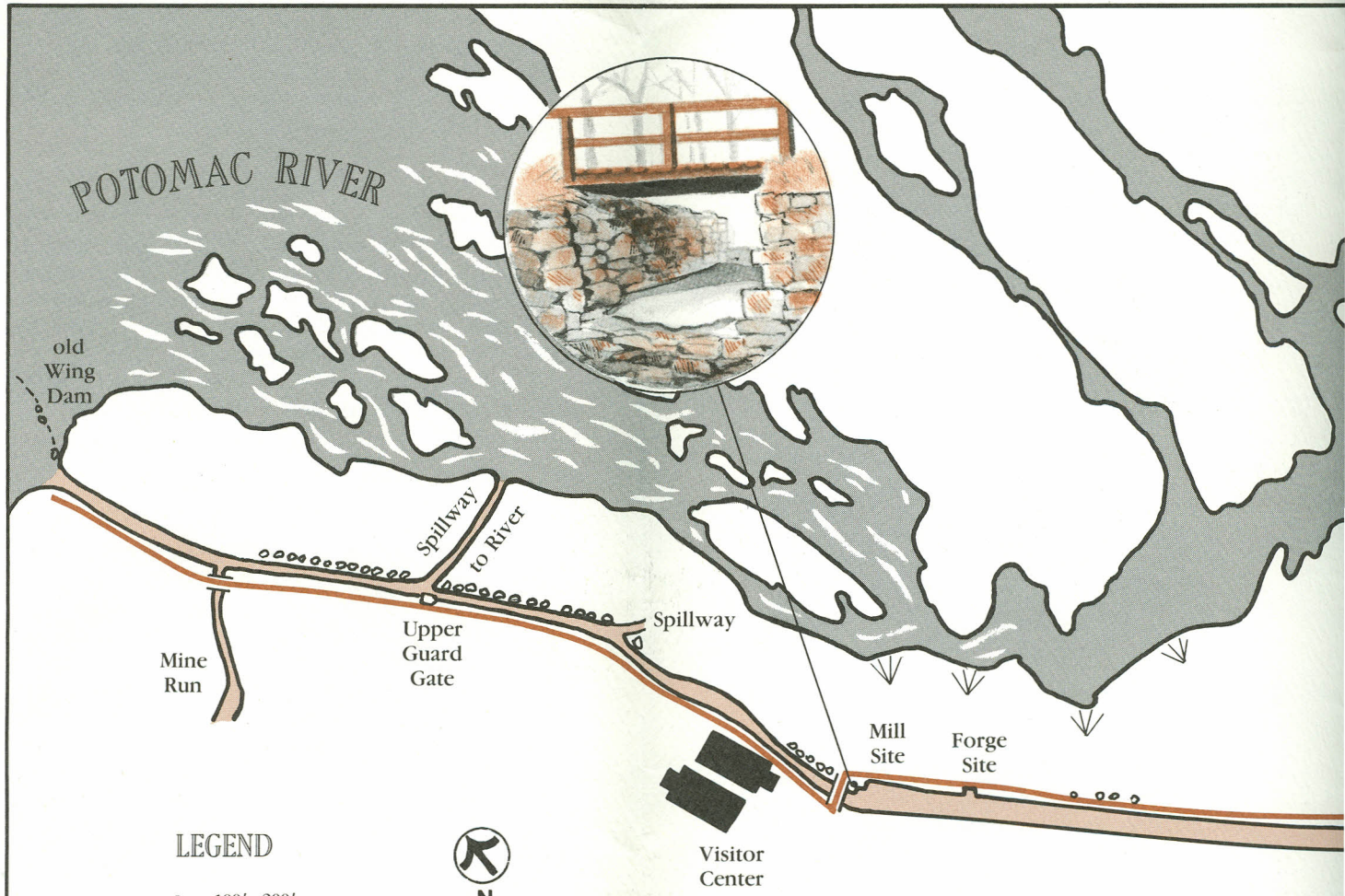
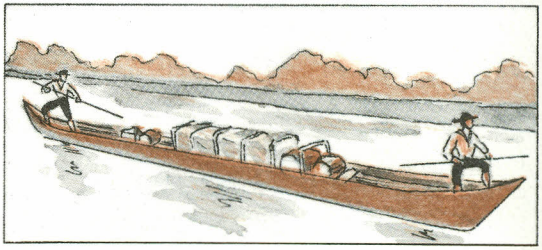
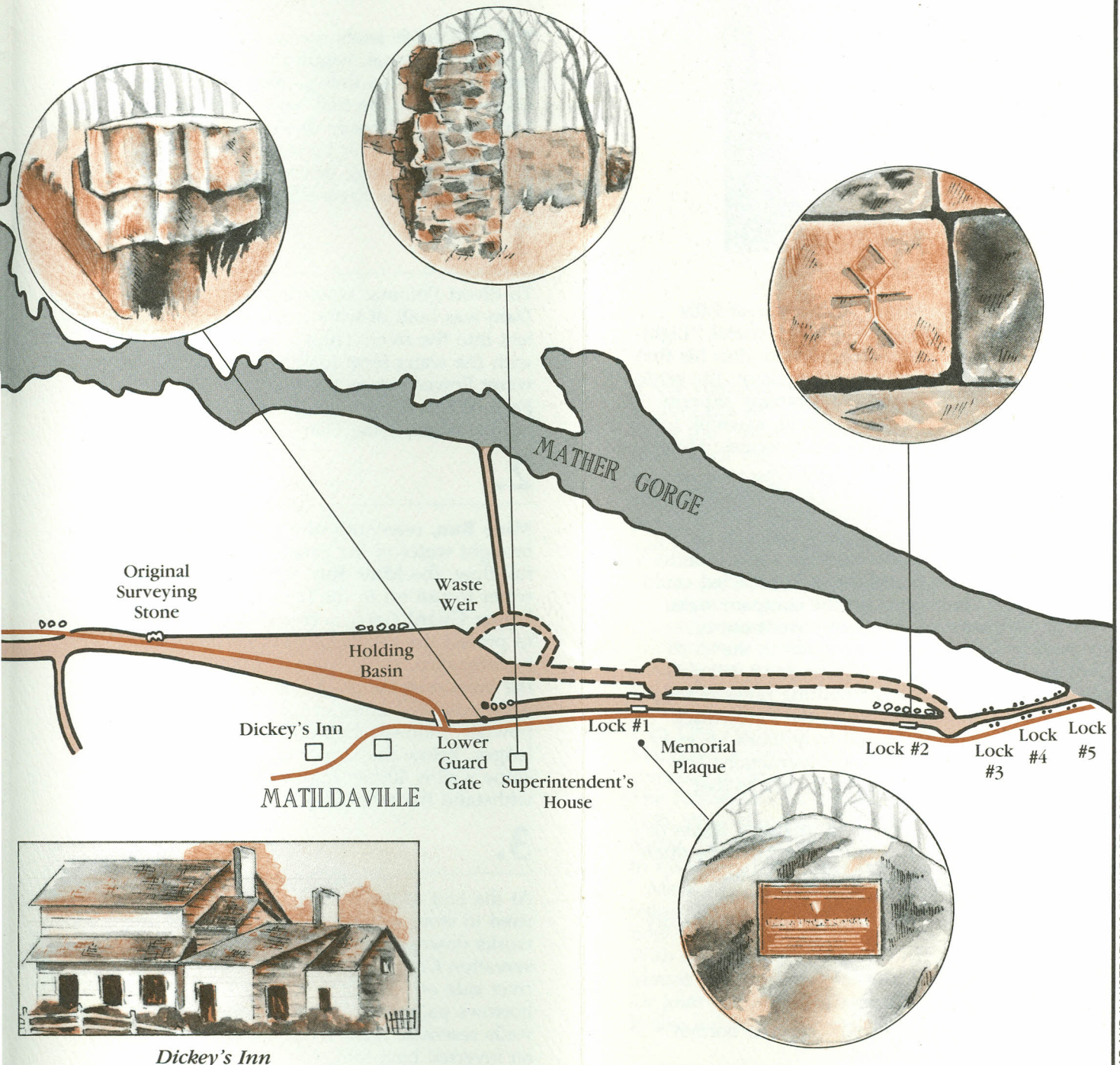




The "Sharper"

AT GREAT FALLS, VIRGINIA



Dickey's Inn

MAP AND ILLUSTRATIONS BY MARGOT BOOTH