

FRONTIER INDUSTRY: SPOTSWOOD'S IRON

The Mannahoaks were the last aboriginal culture in the Rappahannock valley. The Europeans who followed them represented the early rumblings of the Industrial Revolution in America. In 1728, when the Virginia House of Burgesses ordered the town of Fredericksburg built on land leased from the Buckner - Royston land patent, former Governor Alexander Spotswood had already spent several years developing an iron ore smelting operation nearby.

The iron industry in Virginia held great promise, but had initially foundered. In the early seventeenth century, English iron makers were using up the forests of that island nation at an alarming rate. Enormous quantities of wood were needed to provide the charcoal that fired blast furnaces. Shortly after the Jamestown settlement had been established, the investors of the London Company tried to establish an iron furnace in Virginia where mature hardwood trees were to be found in notable abundance. Company workers carefully built a furnace at what was to be the Falling Creek Iron Works, and anticipated beginning production in 1622. A Native American uprising in that year, however, changed everything.

Tribes of the Powhatan confederation, under the leadership of Opechancanough, massacred many of the Europeans living in Virginia in 1622, including all of the skilled iron workers at Falling Creek. The London Company never recovered from this catastrophe and was dissolved shortly thereafter. Agricultural enterprises flourished instead, encouraged by vast tracts of land granted by the Crown and by available unskilled labor (slaves had been introduced to the New World as early as 1619). In 1662, the English Parliament further encouraged agriculture (and protection of English iron industries from competition) by prohibiting iron production in their colonies, a policy it reaffirmed in 1682. To meet its growing demand for iron, England turned to Sweden to supplement its domestic production.

The eventual defeat of Opechancanough's confederacy, as well as the disappearance of the Mannahoaks, uncovered the mineral rich Piedmont to Europeans and renewed interest in Virginia iron production. In 1710, Spotswood sought permission from the London Board of Trade to establish an iron industry in Virginia. This request was flatly denied, but Spotswood pressed his case with the Crown and also proceeded to acquire considerable property that included timber, water, ore deposits, and access to a port - all the ingredients needed to support an iron-making enterprise.

At this time, other European investors were receiving permission to settle skilled workers in other parts of America. In 1714, a group of nine German iron workers and their families (42 persons altogether) arrived in England for one such enterprise in North Carolina. Upon learning that the settlement to which they were destined had been wiped out during a frontier war, a well meaning investor in London, who fancied himself one of Spotswood's partners, diverted this group of Germans to Virginia. When they arrived, Spotswood was probably aghast to learn he was responsible for their travel expenses, but quickly took advantage of these immigrants with the critical ironmaking skills he needed. He moved them upriver to a bend in the Rapidan River and had them construct a fort to help secure the frontier against raiding Iroquois (the Mannahoaks were long gone). This area became known as Germanna. Spotswood instructed the newly settled Germans to search for workable iron deposits while he awaited permission to produce iron. These trained iron workers probably also opened mines and prepared to build a furnace because when the Iron Mine Company was authorized to be formed in 1719, Spotswood's iron furnace was able to become operational as early as 1720.

Spotswood's iron is historically significant for several reasons. First, this enterprise reveals that slave labor was a critical component of early industries in Virginia. Spotswood's Germans, for example, departed as soon as any financial obligation to the former governor had been satisfied. While other skilled iron workers were probably recruited from Europe, the former governor turned increasingly to slave labor. Iron production is an extremely labor intensive industry requiring workers to mine ore, quarry limestone (used as flux to remove impurities in the molten iron), cart raw materials to the furnace, and cart the iron to market. Fully half of the work force engaged in charcoal production. This process entailed cutting trees, stacking the wood in piles 30-40 feet in diameter, smoldering it into nearly pure carbon, and then hauling the charcoal to the furnace. By the time Fredericksburg was founded in 1728, Spotswood had more than 160 workers engaged at what was called the Tubal Furnace. By 1739, the only hired employees at Tubal were a founder and a general overseer.

Spotswood also engaged in a plantation type of organization that typifies the somewhat isolated iron production enterprises in the South. The features of this system included slave labor (as described above), a self sufficient operation (providing food and shelter to the workers), and export to an overseas market. This isolation, however, eventually led to the demise of Chesapeake iron production. Timber supplies diminished and the inadequate overland transportation system proved unable to compete with western furnaces able to obtain anthracite coal and linked to ports via canal and eventually rail.

The iron industry in Spotsylvania County is also important because the volume of iron production was instrumental in bringing Fredericksburg to prominence during the American Revolution. Statistics for Colonial iron production in 1750 show that Virginia and Maryland exported 2,460 tons of pig iron to England that year. Spotswood's Tubal Furnace produced 410 tons of that figure, or nearly 17 percent. The availability of local industries became critical as the American Colonies sought to arm themselves to stand against the British Empire.

James Hunter had established an iron works in Falmouth, circa 1750. When the revolutionary government authorized gun manufacturing to occur in Fredericksburg, in 1775, he expanded his operation, while Charles Dick and Fielding Lewis established another gun manufactory just south of Fredericksburg. During the American Revolution, Hunter's complex included mills for making iron; producing arms and tools; slitting and plating iron; and making wire. The diverse products of these industries included small arms, machinery for grinding and boring weapons, bridle bits, swords (based on a British sword captured at Guilford Court House), stove pipes, camp kettles, traveling forges, and anchors.

In 1781, Governor Thomas Jefferson ordered General George Weedon (of the Fredericksburg militia) to protect these important facilities from the far-ranging Lieutenant Colonel Banastre Tarleton and his Loyalist cavalry. Tarleton disrupted the Virginia General Assembly, then in session in Charlottesville, but did not venture through Fredericksburg when he rejoined the British Army on its way to Yorktown. He did, however, destroy several thousand weapons enroute from the American field forces to where they could be repaired and made serviceable. The militia had come together at Falmouth as a contingency force, but went home without seeing action. One of many post-war claims made to the new government came from an Anthony McKettrick for payment for 114 gallons of rum provided this militia when it had been "on duty at Hunter's Forge."

Instead of succumbing to an enemy raid, the Fredericksburg iron industries were severely hurt by a misguided change in government policy that made previously exempt iron workers subject to service in the army. The industries were further crippled after independence had been achieved when the newly established federal government did not designate the town of Fredericksburg as a port-of-entry. Further, the available forests had become exhausted and production waned for lack of wood. The furnace that Alexander Spotswood had built in the Rappahannock valley wilderness had ceased production by 1792. Hunter's works continued to operate with iron from the Accokeek Furnace in Stafford County, but even this long established enterprise was eventually put up for sale in 1798. Richmond soon

became the Commonwealth's leading industrial center because it was able to combine the availability of coal and iron ore (by way of the James River Navigation) with the all-critical maritime access to world markets.

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Maps

- ▶ Herndon, John M. Map of Fredericksburg and Falmouth Canals and Mills. Fredericksburg District Court Law Order Book, 1806-1807.
- ▶ Jackson, W.A. "Map of the Mining District of Virginia," 1836.
- ▶ Woods, John. "Stafford County." 1820.

Charcoalmaking site near Hunting Run - Iron furnace operations were an involved and intricate evolution, requiring enormous amounts of fuel and generating great quantities of by-products. Approximately 5 cords of wood were needed to provide enough charcoal to produce 1 ton of iron. The charcoal making process resulted in large areas of Spotsylvania County becoming absolutely denuded of trees. In 1732, William Byrd described the area around Spotswood's Furnace as consisting of "poisoned fields, with nothing but saplings growing on them." The secondary growth that grew up on this sterile landscape became a battleground in 1863 and 1864. The tangled vegetation contributed to the horror of combat by limiting visibility and communications as well as by sometimes catching fire and burning wounded men unable to crawl clear of the flames.

During their investigation of a Native American site at Hunting Run, archaeologists from Mary Washington College encountered a dense layer of charcoal. This feature occurred in the upper portion of the site and because there were no other modern disturbances or materials, may correspond to an eighteenth- or nineteenth-century charcoal hearth. Thousands of acres of trees were timbered in Spotsylvania County and charcoal hearths burned in hundreds of locations. This particular site, however, is apparently the first one recorded in the Rappahannock valley. Past archaeological work has concentrated on the furnace complexes themselves rather than these more common features of the eighteenth-century iron plantations. This site is situated on land the City of Fredericksburg transferred to Spotsylvania County for that jurisdiction's Hunting Run Reservoir.

Hunter's Iron Works Site - Hunter's Iron Works (also called the Rappahannock Forge) was built on the north bank of the Rappahannock River, above the town of Falmouth. An advertisement in the 18 May 1798 "Fredericksburg Herald" gives a description of this complex at that time.

The Iron Works and Mills ... consisting of a Forge 128 feet by 51 feet, eight fires and 4 hammers, a coal house 80 feet by 40 feet, a merchant mill 70 feet by 36 feet with two pairs of French burnstones (burstones)... a grist mill 20 feet by 18 feet... a saw mill 55 feet by 27 feet... a nailery, a tanyard, coopers, carpenters, and wheelwright shops... and houses for the managers and workmen.

No walls remain above ground at this site, but there are several intact stone foundations (16'x20', 20'x27', 20'x40', and 40'x84'). Further, the walls of the larger foundation (which correspond to the dimensions of the coal house described in the newspaper) are 27 inches thick. The Fredericksburg District Court Law Order Book from 1806-1807 contains a map showing the Stafford canals. This document

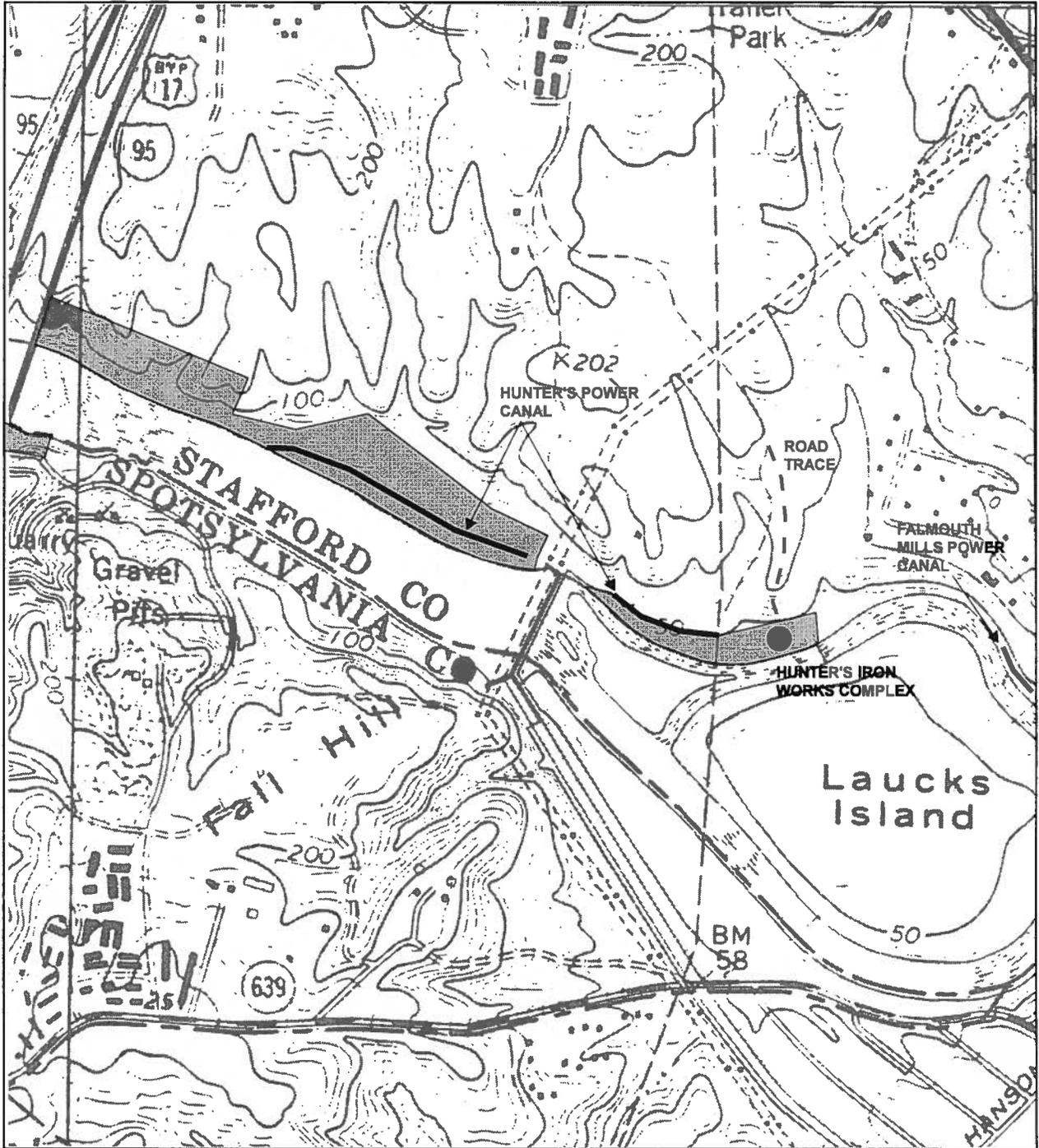
shows the "Canal to the Old Forge Mills" as well as "a small grist mill", a "saw mill,"and "the Forge Mill" along the above-referenced power canal. A site labeled as "Forge Mill" is also shown in this location on an 1820 map of Stafford County.

The mill race that powered this complex is evident on the Stafford shore, although the area where it branched off from the river (approximately 2,000 feet above the Embrey Dam) appears to have been inundated by the backed up reservoir. Still, this power canal becomes visible as it extends downriver. It is interrupted where the 1854 crib dam and the 1907 Embrey Dam obliterated its path, but becomes visible again below these dams where it runs into what remains of Hunter's industrial complex. The power canal is within the City of Fredericksburg's riparian holdings as are some of the above foundations. Other sites just outside the city's property include additional foundations as well as at least two road traces, one of which rises out of the bottom to eventually tie in with a gravel road which extends to the modern Old Forge Drive.

A letter from James Mercer to Governor Thomas Jefferson (14 April 1781) indicates the type of activity that occurred in Fredericksburg during the Revolution, due to its location as well as its industries:

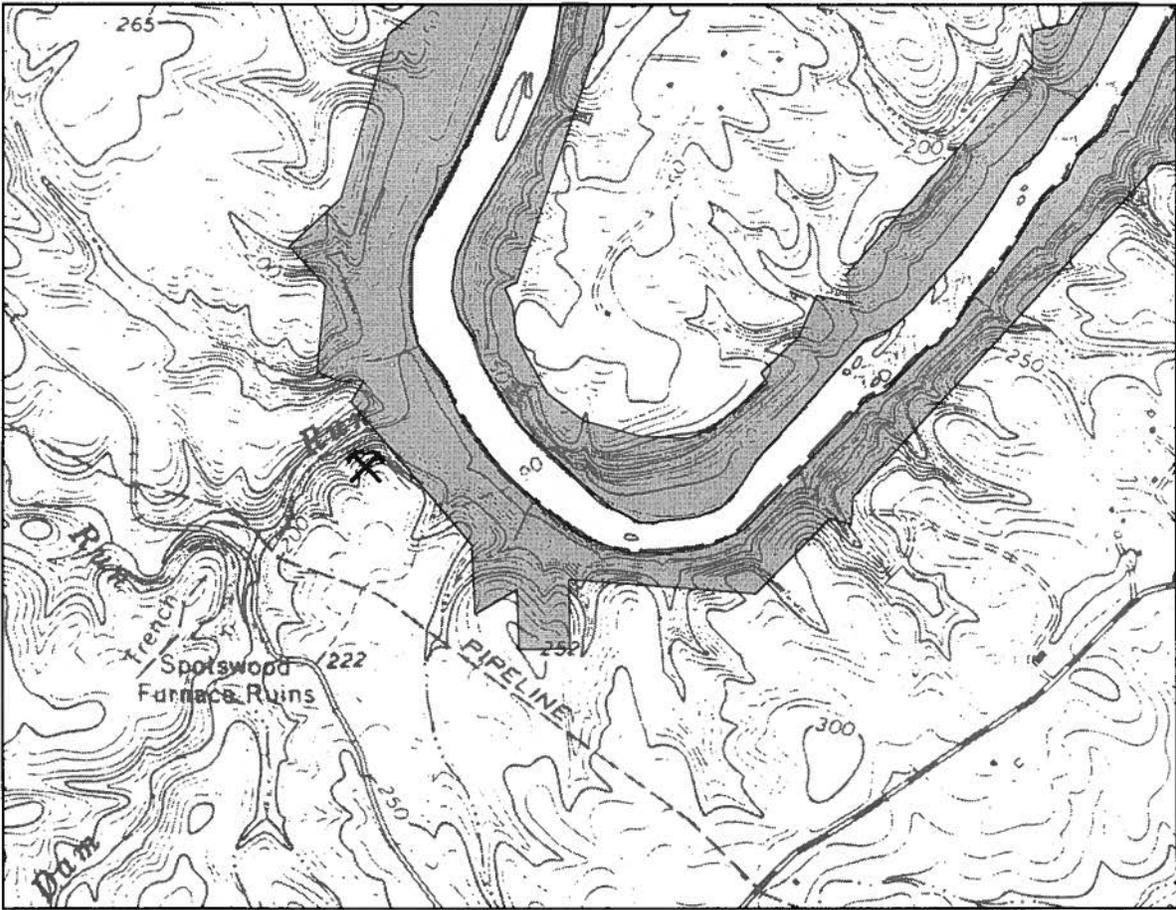
there is not in this State a place more deserving of public attention than this Town and its appendage Mr. Hunter's Iron Works - I am sure I need not tell you that it is from Mr. Hunter's Works that every Camp Kettle has been supplied for the continental and all other Troops employed in this State & to the Southward this year past - that all the anchors for this State & Maryland & some for continent have been procured from the same works; and that without these works we have no other resource for these articles, and that without the assistance of the Bar Iron made there, even the planters hereabouts & to the Southward of this place wou'd not be able to make Bread to eat - As to the Town itself I need not inform you that the public manufactory of Arms is here - that without it, all our Arms, however so little injured wou'd be useless to us; besides the number of new muskets & bayonets made there.... To this however, I may add that there is not one spot in the State so generally useful in our military operations...; all the Troops from North to South & South to North must pass through this Town where wagons are repaired, horses shoed and many other &cas which they cou'd not proceed on without....

William and Mary Quarterly
27 (Oct 1918) p. 82.



Map 7. Hunter's Iron Works (site).

Iron Furnace Site on Pipe Dam Run - Spotswood's blast furnace is not located within the City of Fredericksburg's riparian property. There is evidence of mining activity, however, on city-owned property further downstream, on the east side of Pipe Dam Run. There is also evidence of numerous road traces. Both the mining cuts and the roads are consistent with iron mines, shown in this area on the 1836 Map of the Mining District of Virginia, by W.A. Jackson.



Map 8. Possible Iron Mine Near Spotswood's Furnace.

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