

United States Department of the Interior  
Heritage Conservation and Recreation Service

WA-II-470

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# National Register of Historic Places Inventory—Nomination Form

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

## 1. Name

historic Antietam Furnace Complex Archeological Site (preferred)

and/or common Mt. Aetna Furnace, Black Rock Furnace

## 2. Location

street & number Mt. Aetna and Mt. Lena Roads N/A not for publication

city, town Hagerstown  vicinity of congressional district Sixth

state Maryland code 24 county Washington code 043

## 3. Classification

Category	Ownership	Status	Present Use	
<input type="checkbox"/> district	<input type="checkbox"/> public	<input checked="" type="checkbox"/> occupied	<input type="checkbox"/> agriculture	<input type="checkbox"/> museum
<input type="checkbox"/> building(s)	<input checked="" type="checkbox"/> private	<input checked="" type="checkbox"/> unoccupied	<input type="checkbox"/> commercial	<input checked="" type="checkbox"/> park
<input type="checkbox"/> structure	<input type="checkbox"/> both	<input type="checkbox"/> work in progress	<input type="checkbox"/> educational	<input checked="" type="checkbox"/> private residence
<input checked="" type="checkbox"/> site	<b>Public Acquisition</b>	<b>Accessible</b>	<input type="checkbox"/> entertainment	<input type="checkbox"/> religious
<input type="checkbox"/> object	<input type="checkbox"/> in process	<input checked="" type="checkbox"/> yes: restricted	<input type="checkbox"/> government	<input type="checkbox"/> scientific
	<input checked="" type="checkbox"/> being considered	<input checked="" type="checkbox"/> yes: unrestricted	<input type="checkbox"/> industrial	<input type="checkbox"/> transportation
		<input type="checkbox"/> no	<input type="checkbox"/> military	<input checked="" type="checkbox"/> other: V.F.D.

## 4. Owner of Property

name Mt. Aetna Volunteer Fire Department (see Continuation Sheet #1)

street & number Rt., #1, Box 281A, Mt. Lena Road

city, town Hagerstown  vicinity of state Maryland 21740

## 5. Location of Legal Description

courthouse, registry of deeds, etc. Washington County Courthouse

street & number 33 West Washington Street

city, town Hagerstown state Maryland 21740

## 6. Representation in Existing Surveys

18 WA 288 Mt. Aetna Furnace, Md.  
title Archeological Site Survey form has this property been determined eligible?  yes  no

date October 1981  federal  state  county  local

depository for survey records Division of Archeology/Maryland Geological Survey, The Rotunda,  
Suite 440, 711 West 40th Street (See Continuation Sheet #1)

city, town Baltimore state Maryland

& Maryland Historical Trust Historic Sites Inventory, Annapolis, Maryland

# 7. Description

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Condition		Check one	Check one
<input type="checkbox"/> excellent	<input type="checkbox"/> deteriorated	<input checked="" type="checkbox"/> unaltered	<input checked="" type="checkbox"/> original site
<input type="checkbox"/> good	<input checked="" type="checkbox"/> ruins	<input checked="" type="checkbox"/> altered	<input type="checkbox"/> moved date _____
<input type="checkbox"/> fair	<input checked="" type="checkbox"/> unexposed		

Describe the present and original (if known) physical appearance

## SUMMARY DESCRIPTION

The Antietam Furnace complex is an eighteenth century iron furnace located along South Mountain in Washington County, Maryland. It was owned and established by the Hughes family, operated circa 1768-1775, and was probably the earliest iron furnace in the present day Washington County. Antietam Furnace produced pig iron, stoves, domestic iron wares, and possibly cannon. Archeological excavations unearthed portions of the core furnace area which contains the structural remains connected with the actual smelting and production of iron: the furnace stack, water wheel pit, small forge, retaining walls, casting and machinery areas. Secondary furnace support areas consist of the locations for various associated furnace activities: ore mining and charcoal making areas, course of raceway from stream to wheel pit, slag/iron waste dumps, and unexposed remains of outbuildings and workers' community. Numerous recovered and unrecovered artifacts provide valuable information concerning furnace operations, activities, and products.

## GENERAL DESCRIPTION

The Antietam Furnace Complex is an eighteenth century iron smelting industrial center in Washington County, Maryland. It is located at the base of South Mountain along a tributary of Mt. Aetna Creek, at the junction of Mt. Lena and Mt. Aetna Roads, approximately six miles east of Hagerstown. The Antietam Furnace was probably the earliest furnace built in current Washington County. It was established and owned by the Hughes family, and operated for approximately 7-8 years, circa 1768-1775. During the mid 1770's the Hughes probably shifted operations from Antietam Furnace to their larger furnace, Mt. Aetna Furnace, located about one mile west of Antietam Furnace. The Hughes produced cannon for the Revolutionary War at Mt. Aetna Furnace.

The core area of the Antietam Furnace complex contains the structures connected with the actual smelting and production of iron. These structures include the remains of the furnace stack, tuyere hole for bellows, water wheel pit, small forge, retaining walls, machinery area, and areas for casting. Secondary furnace support areas consist of the places where associated furnace activities occurred. These support areas encompass: locations of charcoal making and iron ore mining activities, places where ore and charcoal were stored prior to usage, probable course of raceway from stream to wheel pit, slag and artifact dumps, unexposed remains of outbuildings, and possible workers' houses. The community of iron workers and their families would have been an important component of the furnace complex, but has not yet been positively identified or located.

Remains of the Antietam Furnace core area were discovered by members of the Mt. Aetna Volunteer Fire Department in 1974-1976 during earth moving operations for an extension to the fire department building. Bulldozers exposed the front corner of the furnace stack foundation, and numerous iron stove plates and pieces

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#4 OWNERS OF PROPERTY (Continued)

Richard and Joyce Tydings  
Rt. #1, Box 282, Mt. Lena Road  
Hagerstown, Maryland  
(301) 824-2213

Norwood K. Winders  
Rt. 9, Box 387  
Hagerstown, Maryland 21740

Chesapeake Conference Association  
Of Seventh Day Adventists  
6600 Martin Road  
Columbia, Maryland 21044

#6 REPRESENTATION IN EXISTING SURVEYS (Continued)

Maryland Historical Trust Historic Sites Survey - Black Rock Furnace-WA-II-470  
Shaw House State Survey, June 1978  
21 State Circle  
Annapolis, Maryland 21401

GENERAL DESCRIPTION (Continued)

of slag and iron waste were unearthed. At that time, members of the Division of Archeology of the Maryland Geological Survey confirmed the identity of the site as an iron smelting operation. Since further disruption of the remains was not imminent and research funding not available, it was decided not to excavate the site at that point.

Subsequently, in 1981, the Fire Department initiated planning for the construction of a shooting range that would provide a source of revenue. Since the proposed limits of the range might overlap the area of the furnace, two members of the Fire Department, Jim Adam and Jerry Cave, contacted Wayne E. Clark, State Administrator of Archeology for the Maryland Historical Trust, for an assessment of the potential disturbance to the site. Assisted by staff members of the Maryland Historical Trust, Mr. Clark visited the furnace in October 1981, and undertook a series of test excavations and trenches. A backhoe trench placed east-west at the base of South Mountain uncovered evidence of two stone walls, granulated red ore deposits, and numerous artifacts. The two walls were subsequently identified as part of the water wheel pit, after later excavations revealed greater portions of the walls. The investigations conducted by Clark revealed that although a large portion of the site had already been destroyed, nevertheless there were some undisturbed areas containing both structural remains and artifacts. Since these areas might yield important information about the furnace complex, a program was proposed to excavate, record, and interpret that portion of the site which would be impacted by the construction of the firing range. This proposal was submitted to the Bowman Board of Washington County, which, by its acceptance and funding, enabled archeological investigations to proceed in 1982.

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GENERAL DESCRIPTION (Continued)

The excavation goals, as detailed in the proposal, were for archeologists to expose, map, and analyze the remains of the blast furnace and associated features in the surrounding area. Information obtained by excavation would subsequently be correlated with data gathered from oral histories and historical research. Ultimately, this information would be utilized to assist the Fire Department in locating the proposed shooting range so as to minimize its impact on the site as well as to implement a preservation and interpretation plan for the site should its remains be of significance.

Fieldwork, under the direction of Mr. Thomas Higel, began on 19 May, 1982, with Maryland Governor Harry Hughes turning the first shovel. Excavation proceeded by placing control squares and backhoe trenches so as to obtain maximal information on the nature and extent of the furnace complex remains. During the two-month excavation period which concluded in July, 150 square meters were excavated and 90 meters of trenches opened.

The initial fieldwork revealed an 18th century site of greater extent and significance than expected (An interim report was submitted to the Maryland Historical Trust)<sup>1</sup> Portions of the furnace complex structures were uncovered along with artifacts associated with the furnace production, hardware and tools, and the workers' personal and domestic items. Analysis of the diagnostic artifacts revealed that they dated to the mid-eighteenth century. This analysis, combined with stratigraphic evidence, suggested that the furnace had been closed down, its machinery removed, its structures pushed over, and the area had been covered with fill soils. Fortuitously, this abandonment and covering maintained the site in an excellent state of preservation. Because the core portion of the furnace complex obviously remained intact, the Mt. Aetna Volunteer Fire Department decided not to locate a shooting range at the area. They passed a series of resolutions aimed at protecting and preserving the site from future development.

In conjunction with the excavations historical background research on the furnace was conducted by Susan Winter. Her research confirmed the eighteenth century dates for the furnace and narrowed them to circa 1768-1775. Also Winter determined that the furnace's historic name was Antietam Furnace and not Mt. Aetna Furnace as it is commonly called. The actual Mt. Aetna Furnace site is located about one mile west of Antietam Furnace. (Winter's report is on file at the Maryland Historical Trust.)<sup>2</sup>

In consideration of the unique nature of the site, and of the significant amount remaining to be excavated, a proposal for further excavation funding was submitted to the Bowman Board. The Bowman Board approved the additional funding for excavation, analysis, and completion of the final report. Excavations resumed in early September and continued for nine more weeks.

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GENERAL DESCRIPTION (Continued)

During the second session of excavations an additional 112 square meters of soil were excavated. The combined excavations uncovered numerous structural remains and features associated with the furnace complex. These included the following items: the base of the furnace itself with the tuyere hole, rock retaining walls, water wheel pit with access steps, stone lined corbeled archway tunnel for the tail race, machinery platform, bellows foundation, building supports, six casting pits, a possible drain, and a small forge. (See figure 1)

The excavated structural remains are constructed primarily of local limestone and quartzite stones. Most of the structures are dry laid; however, some areas have a tan clay tamping between the stones. Approximately three quarters of the furnace stack base remain intact including the crucible where the smelted iron was contained. Only the front or west side of the furnace was destroyed by bulldozer activities. The base of the furnace was approximately 3.5 meters or 11.5 feet square. It is situated in an area cut into the subsoil of the hill. The outer stone surface of the base was unfaced, and stones were set with tan clay tamping. The inner surface of the hearth still retains a slag and smelted iron coating. The south wall of the furnace crucible and base contains the tuyere hole, the entrance for the air blast from the bellows. (See Figure 2) The furnace stack above the crucible is totally absent. A thick layer, three to four feet, of rock rubble covered great portions of the site prior to excavation. The rock rubble probably originated from the furnace stack and lining since many rocks had slag coating on one or more sides.<sup>3</sup>

The water wheel pit is totally complete and in a relatively good state of preservation. It measures roughly 11 by 1.7 meters, and is constructed of dry laid stone. The eastern wall is slanted against the hill slope, and the western wall is vertical and contains the opening of a corbeled tail race tunnel. The tunnel is extant for about 15 feet; the remainder was obliterated during construction of the fire department and parking lot. In the south west corner of the wheel pit a series of stone steps are built into the wall. The steps allowed access to the tunnel and wheel pit for regular maintenance and repairs. The middle of the north and south walls have been slightly disrupted, probably from the removal of the water wheel. The wheel pit itself is filled with rock rubble and fill soils, which have only been partially excavated.<sup>4</sup>

A total of over 2360 artifacts were recovered from the combined 17 weeks of excavations. The artifacts fall into three broad categories:

1. items produced at the furnace, and the by-products of that production
2. the hardware, tools, machinery parts of the furnace complex
3. the personal and domestic debris of the workers.

In general the recovered artifacts exhibited excellent preservation and variety. Notable items include whole and fragments of decorated stoveplates, cannonball, decorated iron lintel, nearly whole iron kettle, iron pig dated 1762 (7 or 9), portions of high status English ceramics, and decorated

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GENERAL DESCRIPTION (Continued)

earthenwares of possible local origin. The artifacts themselves enhance the information obtained from the archeological excavations of the furnace structures. The final excavation report is in the process of being completed.

Although the combined four months of excavation unearthed substantial portions of the core furnace area and recovered numerous artifacts, ample sections of the core area remain intact. The area between the wheel pit and furnace stack still has 10-50+ centimeters of original working soil levels and features remaining in context. Partial excavation of these levels in test squares revealed several structural casting features and abundant artifactual materials. The water wheel pit and tail race tunnel still contain 3-4 feet of original fill deposits.

In addition, the secondary furnace support areas have not been excavated. A preliminary field investigation by Wayne E. Clark in October 1982 revealed furnace deposits still intact directly across Mt. Lena Road from the fire station on the Winder's property, in the north west corner of the Mt. Aetna park, on the adjacent Tydings' property, and directly behind the furnace on South Mountain. On the Winder's property there are several stone foundations, possible road beds, and slag/iron waste piles and deposits. A local collector on the property has recovered mid 18th/early 19th century ceramics, iron objects, and cannon fragments. In addition he identified several possible stone foundations, one of which shows as a substantial house on the 1854 and 1877 historic Washington County maps.<sup>5</sup> Because of the 18th century artifacts associated with this structure, it is possible the house was affiliated with the iron complex. The plentiful amount of domestic debris in this area leads one to postulate that it may have once encompassed part of the iron workers' community. This section of the Winder property does not appear to have been disturbed, aside from possible usage as a pasture.

The north west corner of the Mt. Aetna park shows evidence of secondary slag/waste deposits. The Tydings' property contains the probable course of the head race to the wheel pit. It also may have unexposed remains of associated furnace structures and artifacts. Behind the furnace on South Mountain there is a flattened area of land where the ore and charcoal were probably stored prior to usage. There is also the remains of a stone wall, old access road, large ore or stone pit, and evidence of the place where the stream was tapped for the head race to the water wheel pit. All the above-mentioned furnace support areas still clearly retain integrity and association with the original furnace complex.

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GENERAL DESCRIPTION (Continued)

A certain amount of twentieth century development has occurred in portions of the furnace complex areas. These intrusions include the following items: the Mt. Aetna Fire Department buildings and parking lot, the Tydings' private residence, Mt. Aetna camp picnic pavilion, utility shed and associated grading activities, and construction connected with paving Mt. Aetna and Mt. Lena Roads. Construction of the fire department buildings disturbed the casting shed remains which would have been located in front of the furnace stack. Some foundations and deposits may survive beneath the buildings. The parking lot obliterated the end of the tail race tunnel and possibly outbuildings. The fire department also graded and flattened the areas south east of the buildings. Backhoe trenches placed in these areas during archeological testing revealed several feet of fill with 20th century artifacts. This grading and filling destroyed the original deposits and any associated structures. The Tydings' residence, Mt. Aetna camp structures, and the improved Mt. Lena and Mt. Aetna roads disturbed related furnace soil deposits, artifacts, and possibly structures and features. As a whole, the above mentioned intrusions and grading activities do not contribute to the integrity or significance of the Antietam Furnace Complex.

The environmental and physical location of the Antietam Furnace Complex was ideally suited to meet the needs of iron production. Iron manufacture in eighteenth century North America necessitated four basic elements: iron ore, timber for charcoal to fuel the furnace, limestone for flux, and water power.<sup>6</sup> All of these ingredients were readily available in Washington County in good quantity and quality. Scharf describes the fertile land and excellent water sources in the county. He states that "quarries of excellent limestone," and "good iron ore exists in considerable quantities."<sup>7</sup> The Antietam Furnace, located at the base of South Mountain along a tributary of Mt. Aetna Creek, was accessible to all the essential ingredients for iron manufacture. In addition, the close proximity to Hagerstown, then Elizabeth Town, would have provided a place for sale or trade of the furnace products and transportation routes to other markets.

Iron manufacture in the eighteenth century incorporated certain procedures, based on the developed technology of the time. Tammis Kane Groft briefly describes the methods employed to operate an iron furnace in the eighteenth century.

During the eighteenth and early nineteenth centuries in America iron ore was smelted in air-blast furnaces. Carefully weighed proportions of iron ore, charcoal or coke

and limestone were stacked in alternating layers called a charge at the top of the furnace. To produce the molten mass, the burning charcoal or coke was heated by a continuous blast of air created by a large bellows run by waterpower at the base of the furnace. Iron ore melts between 1300 and 1500 degrees Celsius, and charcoal or coke not only provided the heat to melt the iron, but added to the iron a small percentage (three or four percent) of

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GENERAL DESCRIPTION (Continued)

carbon which resulted in the best quality cast iron. During the melting carbon monoxide gasses released by the combustion removed the oxides from the iron ore. These oxides adhered to the limestone which acted as a fluxing agent, and the resultant material called slag was drawn off. The remaining hot iron mass collected at the bottom of the furnace and when ready was poured into open-sand molds.<sup>8</sup>

The smelted iron was either poured into rectangular trenches and called pig-iron bars, which were refired and resmelted later, or the iron was ladled directly into sand casting moulds for a variety of items.<sup>9</sup>

Based on the archeological investigations and historical research Antietam Furnace probably produced both pig iron and cast items. According to Winter, "the Hughes would have cast pig iron and household wares such as pots, pans, skillets, sugar kettles, Dutch ovens, stoves, and firebacks, although no production records have been uncovered for the Hughes's operations in Washington County. Due to poor transportation conditions, such items would have been sold primarily to restricted local market; again, no records remain documenting such markets." (Winter 1982:3)<sup>10</sup>

The archeological investigations at Antietam lend support to Winter's supposition. Fragments of household iron hollow wares, stove plates, and pig iron were recovered during excavation. Speculation still exists concerning whether or not cannon were cast at Antietam prior to or in conjunction with the cannon manufacture at the Mt. Aetna Furnace nearby. Further research and archeological discoveries may clarify that question.

Operation of an iron smelting furnace required large stands of timber for the production of charcoal to fuel the furnace and a large work force. Thompson estimates that iron furnaces consumed an acre of timber a day while in blast.<sup>11</sup> Workers were needed to keep the furnace in continuous operation for several months at a time. In addition, laborers made the charcoal for fuel, mined the iron ore, quarried the limestone for flux, and cast the iron products. Winter's research documents that the Hughes owned adequate acres of land to support their iron industry.

By 1774 the Hughes owned at least 12,373 acres in the vicinity of Mt. Aetna. Most of this acreage was woodland that provided the large quantities of charcoal the blast furnace consumed. Food for the workers also would have been raised on the Hughes's property, as the furnace provided not only a factory center but a focal point for a somewhat isolated community as well. The acreage of Daniel and Samuel compared favorably to eighteenth century furnace holdings in neighboring Pennsylvania: Elizabeth 10,124 acres, Durham 8,511 acres, and Boiling Springs 7,000 acres, to note only a few larger operations.<sup>12</sup>

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GENERAL DESCRIPTION (Continued)

The Antietam Furnace is an excellent example of the technological developments of its time. As capital investment focused on the machine works: the water wheel, bearings, bellows, and power transmission devices. The structures which supported and sheltered these mechanisms, and the furnace itself, were solidly constructed of local stone. It is these structures which were abandoned at Antietam Furnace and remain today, whereas the mechanisms were probably removed and reused at the Hughes' expansion to their larger furnace nearby, Mt. Aetna Furnace.

(The location of Mt. Aetna Furnace is identified and recorded in the Maryland Archeological Site Survey files, 18 WA 28. Cannon have been uncovered by local residents in the vicinity. Further investigations of this associated iron furnace should be conducted to determine its extent and integrity. The Mt. Aetna Furnace is clearly an important site and potentially National Register eligible.)

The archeological excavations uncovered the important structural remains of the Antietam Furnace Complex, and numerous associated artifacts. Due to the excellent preservation and importance of this frontier industrial site, the Maryland Historical Trust submitted a proposal to the Washington County Commissioners for the establishment of the first historic park in the county at Antietam Furnace.<sup>13</sup> The proposal details provisions for the acquisition, preservation, and interpretation of the furnace complex. Possible relocation of the Mt. Aetna Volunteer Fire Department would allow space for a museum/interpretive center at the site. At this time, the County Commissioners are reviewing the various options and exploring community support for the proposed park. The Commissioners will probably make a final determination on funding the park later this spring or summer.

The artifact collection from the site is currently being stored at the Miller House in Hagerstown under the care of the Washington County Historical Society. An agreement was written by the Mt. Aetna Volunteer Fire Department for indefinite loan of the artifacts to the Historical Society. These groups have expressed their committment to the secure curation of the collection within the community from which it was excavated. The Society has the facilities and staff to insure the long term curation and accessibility of the collection for research and public interpretation. Funding will be sought for artifact displays.

# 8. Significance

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Period	Areas of Significance—Check and justify below			
<input type="checkbox"/> prehistoric	<input type="checkbox"/> archeology-prehistoric	<input type="checkbox"/> community planning	<input type="checkbox"/> landscape architecture	<input type="checkbox"/> religion
<input type="checkbox"/> 1400-1499	<input checked="" type="checkbox"/> archeology-historic	<input type="checkbox"/> conservation	<input type="checkbox"/> law	<input type="checkbox"/> science
<input type="checkbox"/> 1500-1599	<input type="checkbox"/> agriculture	<input type="checkbox"/> economics	<input type="checkbox"/> literature	<input type="checkbox"/> sculpture
<input type="checkbox"/> 1600-1699	<input type="checkbox"/> architecture	<input type="checkbox"/> education	<input type="checkbox"/> military	<input type="checkbox"/> social/
<input checked="" type="checkbox"/> 1700-1799	<input type="checkbox"/> art	<input type="checkbox"/> engineering	<input type="checkbox"/> music	<input type="checkbox"/> humanitarian
<input type="checkbox"/> 1800-1899	<input type="checkbox"/> commerce	<input checked="" type="checkbox"/> exploration/settlement	<input type="checkbox"/> philosophy	<input type="checkbox"/> theater
<input type="checkbox"/> 1900-	<input type="checkbox"/> communications	<input checked="" type="checkbox"/> industry	<input type="checkbox"/> politics/government	<input type="checkbox"/> transportation
		<input type="checkbox"/> invention		<input type="checkbox"/> other (specify)

Specific dates ca. 1768-1775      Builder/Architect      unknown

Statement of Significance (in one paragraph)      Applicable Criteria: A, B, C, and D

### SIGNIFICANCE SUMMARY

The Antietam Furnace Complex is significant for four major reasons. First, it coincides with the initial settlement of present day Washington County following the end of the French and Indian War. It was among the earliest industrial enterprises in that area and certainly attracted new settlers. It also is clearly associated with the early development of the iron industry in Western Maryland. Secondly, Antietam Furnace is closely related to the Hughes family and their accomplishments in Washington County in the eighteenth century. The Hughes played a formative part in the County's creation, development, politics, and iron industry, and they contributed substantially to the Revolutionary War efforts through their production of cannon. Thirdly, the furnace complex is an excellent representation of iron furnace industry and technology in the eighteenth century. It operated for a short period of time and was not subsequently modified and reused. Finally, the Antietam Furnace Complex is significant for the information it has yielded and is likely to yield in the area of eighteenth century historical archeology in North America. It is the earliest scientifically excavated iron furnace in Maryland. It can contribute considerably to the knowledge of the iron industry, settlement, development, and history of Washington County in the eighteenth century.

### HISTORY AND SUPPORT

The Antietam Furnace was owned and established by the Hughes family around 1768, and was probably the earliest iron furnace in current Washington County. The establishment of the furnace was an endeavor into a relatively unsettled, frontier area, and coincided with the early settlement and development of present-day Washington County. During the French and Indian War most sections of Western Maryland remained comparatively unpopulated. According to Winter, "The county was only sparsely settled before 1765 due to fear of Indian attacks, border disputes and land speculation."<sup>14</sup>

Following the end of the French and Indian War, Western Maryland was opened for occupation. Numerous settlements soon arose in various locations west of South Mountain.<sup>15</sup> The Hughes' iron enterprise at Antietam Furnace in the mid-late 1760's clearly corresponds and is associated with the influx of settlement into Western Maryland at that time. The furnace would have provided a work center and community to draw settlers to the area.

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HISTORY AND SUPPORT (Continued)

The Hughes family, who owned and organized the Antietam Furnace, were leading citizens and manufacturers within Washington County. The Hughes were well known for their achievements and contributions to the iron industry in the County. According to Williams, "The most conspicuous iron manufacturers in the County were the Hughes."<sup>16</sup> In addition, their political activities were instrumental in the founding and early history of Washington County. Winter describes the early enterprises of the Hughes in Washington and their establishment of Antietam Furnace;<sup>17</sup>

Many who ventured into iron production during the eighteenth century were merchants who invested their excess capital in the fledgling iron industry. Barnabas Hughes and two of his sons, Daniel and Samuel - merchants in the city of Baltimore - expanded their interests into Western Maryland as early as 1764 with the acquisition of 2,533½ acres on or near the Antietam Creek in present-day Washington County. Although Barnabas died in early 1765, Daniel and Samuel continued extending their investments in the area. Their careers as ironmasters began with the purchase of 4,550 acres from James Kennedy in 1766, for included in the transaction were 250 acres on the Antietam Creek with forge building and a one-fifth interest in the Hampton Furnace.

The Hampton Furnace, commenced by Thomas Johnson, Lancelot Jacques, and Benedict Calvert circa 1765, apparently lay on Toms Creek one and one-half mile west of Emmitsburg in Frederick County. It proved an unprofitable and short-lived venture for the Hughes, apparently due to a lack of quality ore nearby.

Most likely the brothers shifted their attention from the Hampton Furnace to the Mt. Aetna area in 1767 or very early 1768 and constructed another furnace. That the furnace was built at this time is inferred from two pieces of evidence. First, the Hughes purchased the Antietam Forge and their interest in the Hampton Furnace in December 1766, making it highly unlikely that they built the furnace at Mt. Aetna before 1767. Second, Daniel and Samuel sent a petition to the Frederick County Circuit Court in August 1768 which stated that they Labour under great inconveniences for want of direct roads from their forge on Antieatam to their coaling ground and furnace the want of which lays it in the power of any ill disposed person living between to twin them round and Obstruct their Business when they please. Your petitioners therefore hope your worships will grant them a direct road from their forge aforesaid to their coaling ground belonging to the same and from their said forge to their furnace known by the name of Antieatam.

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HISTORY AND SUPPORT (Continued)

The furnace probably had operated for at least a few months before the Hughes filed their petition, as it may be assumed that the Hughes discovered the problem during the course of their operations.

The "Antietam Furnace" named in the petition should not be confused with the Antietam Iron Works. The latter lay at the mouth of the Antietam Creek, whereas the "Antietam Furnace" was located in the Mt. Aetna area against the South Mountain. Evidence for this supposition was found in a land transaction dated March 21, 1769, which described the tract involved - part of a Resurvey on Frenches Vineyard "situated near the South Mountain on head branches of Beaver Creek" - as adjoining the Antietam Furnace. Also, the Antietam Iron Works, known originally as the Frederick Forge, did not have a furnace before the Revolutionary War.

The "Antietam Furnace" was probably the earliest furnace built in present-day Washington County.

The Hughes purchased additional land, at least 5000 acres, in the Mt. Aetna area during the years 1767-1771.<sup>18</sup> This acquisition of more land points to the growth of the Hughes' iron works in this area. According to Winter, documentary sources show that the Hughes established another furnace in the Mt. Aetna vicinity sometime in the 1770's.

Secondary sources dating from the turn of the nineteenth century reveal the presence of two Hughes's furnaces near Mt. Aetna. Thomas Scharf, in his History of Western Maryland, claims that Barnabas Hughes built Mt. Aetna and other furnaces near the Black Rocks above Beaver Creek. Thomas Williams in A History of Washington County, Maryland states that "the Hughes brothers built a furnace at Black Rock, South Mountain, before the Revolution. Afterwards, another known as Mt. Aetna was built a mile further down the mountain. It is probable that the Antietam Furnace and the Black Rock Furnace are one and the same and the second furnace, the Mt. Aetna Furnace, was constructed nearby at a later time. The date operations ceased at the Antietam Furnace and commenced at the Mt. Aetna Furnace remains unclear from the documentary evidence."<sup>19</sup>

During this time period, events in the colonies were leading toward the Revolutionary War. The Hughes saw the potential for profitable military contracts from the war effort. Daniel and Samuel Hughes sought and obtained contracts to cast cannon from Maryland and the Continental Congress in Philadelphia. Cannon production commenced in 1775 and continued until 1781.<sup>20</sup>

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HISTORY AND SUPPORT (Continued)

From the documentary and archeological evidence it is unclear whether the Hughes produced cannon at Antietam Furnace before or in conjunction with production at Mt. Aetna Furnace. It is possibly at this time that operations ceased at Antietam Furnace and shifted to Mt. Aetna Furnace. Regardless of whether cannon were actually manufactured at Antietam Furnace, the Hughes' enterprises at Antietam Furnace proved the feasibility of iron production and established their involvement in the iron industry in that area. Antietam Furnace was the forerunner to their later, expanded iron endeavors.<sup>21</sup>

The Hughes' cannon production made a significant contribution to the Revolutionary War effort. The Hughes brothers were well known for their dedicated efforts for the patriotic cause.<sup>22</sup> They produced cannon of good quality and quantity. Thompson describes the importance of the Hughes' cannon production in the Mt. Aetna area: "it still must be viewed as a prodigious industrial achievement and an immense contribution to the war effort, unmatched by any other furnace establishment in any other North American colony at that time."<sup>23</sup> Clearly the Antietam Furnace contributed indirectly and possibly directly to the important cannon production.

Their involvement in the Revolutionary War brought the Hughes financial profits. They acquired additional lands nearby the Mt. Aetna area in 1779. The Washington County tax assessment in 1783 shows the combined assets of Daniel and Samuel Hughes as the greatest in Washington County at that time.<sup>24</sup> The Hughes involvement in iron industry included additional iron works besides their furnaces in Mt. Aetna vicinity. The Hughes operated two forges, Antietam Forge and Great Rock Forge, and a furnace at Mt. Alto, Pennsylvania.<sup>25</sup>

In addition to the Hughes' contributions to the early settlement and iron industry in Washington County, and to the Revolutionary War efforts they were also active in local and state politics. Their involvements in local affairs directly contributed to the organization of Washington County, created in 1776 from Frederick County. Daniel Hughes served on the first board of County Commissioners. Samuel Hughes was placed on the first Washington County delegation to the Maryland House of Delegates, was a justice of the county court in 1777, was appointed State Senator in 1781, and was a member of the Washington County Committee of Safety. Both Daniel and Samuel served in the state militia.<sup>26</sup>

Winter summarizes the accomplishments made by the Hughes family in Washington County:

Without a doubt the Hughes family played a leading role in forming the iron industry of Western Maryland. The Antietam Furnace, most likely the earliest such built in Washington County, laid the foundation for Daniel and Samuel's achievements at the Mt. Aetna Furnace

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HISTORY AND SUPPORT (Continued)

during the Revolutionary War. Influential in local and state politics, the brothers played an instrumental role in founding Washington County and were among its wealthiest residents in the county's early years. As with many other iron manufacturers of the eighteenth and early nineteenth centuries, the Hughes prospered for a relatively short period at Mt. Aetna. This does not, however, negate what Daniel and Samuel Hughes accomplished for their country and for the nation.<sup>27</sup>

The Antietam Furnace is an excellent example and representation of eighteenth century North American iron furnaces, and the iron technology of that time period. These early iron furnaces laid the foundation for the subsequent growth and development of the iron industry in America. Eighteenth century iron furnaces all shared similar structural elements. These included the furnace stack, bellows, water wheel, and casting areas.<sup>28</sup> Furnaces which operated into the nineteenth century were frequently modified to adapt to new technologies.

The Antietam Furnace retains its original structural components utilized during its operation in the eighteenth century. Remains of the furnace stack, tuyere hole for bellows, and water wheel pit are clearly identifiable today as uncovered through the archeological excavations. Portions of the casting shed area were probably destroyed during construction of the initial fire department building. Considerable sections of the secondary furnace support areas have remained relatively undisturbed through the years.

The furnace operated for a relatively short period of time, probably 7-10 years. Based on the documentary research, archeological evidence, and on the preponderance of mid-eighteenth century artifacts recovered, it does not appear that the furnace was later altered or reused. Upon closing it was abandoned and subsequently covered. This served to protect it from later disturbance and modification. Antietam Furnace clearly maintains the majority of its original components, character, and integrity.

Finally, the Antietam Furnace Complex is significant for the information it has yielded and is likely to yield in the area of eighteenth century historical archeology in North America. It is the earliest scientifically excavated iron furnace in Maryland. And, Antietam Furnace is the earliest known iron furnace in Washington County. Since it operated for a relatively short time period and was then abandoned and covered, most of its original components are well preserved. The Antietam Furnace contains an important record of the early iron industry in Western Maryland. The archeological excavations conducted thus far have uncovered portions of the core furnace structures, features, and numerous associated artifacts. Both the structures and artifacts have survived in a relatively good state of preservation. Examination and study of these structures, features, and artifacts will contribute to the knowledge and understanding of the eighteenth century iron industry and technology in Maryland. Sections of the core furnace area remain unexcavated, and the secondary furnace support areas have not yet been thoroughly investigated. Further examination of these areas will contribute to the information and comprehension of related furnace activities.

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HISTORY AND SUPPORT (Continued)

The Antietam Furnace complex supplied the immediate area with an industrial work center and an associated community, composed of the workers and their families. No visible evidence of this historic furnace community remains in the Mt. Aetna area today. However, preliminary investigations point to the possibility of a furnace settlement situated on the current Winders property. Further documentary research and archeological testing may confirm or reveal the exact location of the community. It is reasonable to suppose that the Antietam Furnace community played an important role in the early settlement and development of Washington County. Further study of this furnace community will contribute to the knowledge of Washington County's early history, development, and iron industry.

The artifacts recovered from Antietam Furnace enhance the information obtained from the archeological excavations. The excavated artifacts exhibit excellent preservation, variety, and quantity. They include furnace products, by-products, tools, machinery, hardware, and the workers' personal and domestic debris. The artifact collection from Antietam Furnace represents an important record of the earliest known iron furnace in Washington County, and of the early iron industry in Maryland's expanding frontier.

Overall, the information already obtained from the Antietam Furnace Complex and the information it potentially may yield will contribute substantially to the archeological record of eighteenth century North America. In particular, it will enhance the knowledge of the iron industry in this time period: its technology, operations, and associated communities. And it will augment the information and understanding of Washington County's history and iron industry. Although comparable sites may be located and investigated in the future, sites with such a good state of preservation, dating to a narrow occupation period, and containing such a range of artifacts will be unusual.

Footnotes:

<sup>1</sup>Thomas E. Higel, "Mt. Aetna Furnace: Summary of Excavations, 1982"  
(Unpublished report, Maryland Historical Trust, 1982).

<sup>2</sup>Susan E. Winter, "Historical Background Report: Iron Furnaces in the Mt. Aetna Area". (Unpublished report, Maryland Historical Trust, 1982).

<sup>3</sup>Higel., pp. 3-5

<sup>4</sup>Ibid., pp 6-7

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Footnotes (Continued)

- <sup>5</sup>Mark Bikle, Personal Communication, March 24, 1983.
- <sup>6</sup>Michael D. Thompson, The Iron Industry in Western Maryland (Morgantown, West Virginia: Michael D. Thompson, 1976), p. 1.
- <sup>7</sup>Thomas J. Scharf, History of Western Maryland (Philadelphia: Louis Everts, 1882), p. 981.
- <sup>8</sup>Tammis Kane Graft, Cast With Style (Albany, New York: Albany Institute of History and Art, 1981), pp 17, 19.
- <sup>9</sup>Thompson, p. 9.
- <sup>10</sup>Winter, p. 3.
- <sup>11</sup>Thompson, p. 7.
- <sup>12</sup>Winter, p. 3.
- <sup>13</sup>Wayne E. Clark, and Beth Cole Brown, "Mt. Aetna Historic Park: A Proposal to the Washington County Commissioners for the Establishment of the Mt. Aetna Historic Park" (Unpublished proposal, Maryland Historical Trust, 1983).
- <sup>14</sup>Winter, pp. 2-3.
- <sup>15</sup>Scharf, pp. 981-982.
- <sup>16</sup>Thomas J. C. Williams, A History of Washington County, Maryland (Hagerstown: John M. Runk and L. R. Titsworth, 1906), p. 247.
- <sup>17</sup>Winter, pp. 1-2.
- <sup>18</sup>Ibid., p. 4.
- <sup>19</sup>Ibid., p. 4.
- <sup>20</sup>Ibid., pp. 4-7.
- <sup>21</sup>Higel, pp. 13-14.
- <sup>22</sup>Scharf, p. 1101.

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Footnotes (continued)

- <sup>23</sup>Thompson, p. 46.  
<sup>24</sup>Winter, p. 7.  
<sup>25</sup>Ibid., pp. 3-4  
<sup>26</sup>Ibid., pp. 3-4.  
<sup>27</sup>Ibid., pp. 14-15.  
<sup>28</sup>Thompson, pp. 3-6., and Groft, pp. 17, 19.

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- Bikle, Mark. Personal communication, March 24, 1983.
- Clark, Wayne E. and Beth Cole Brown. Mt. Aetna Historic Park: A Proposal to the Washington County Commissioners for the Establishment of the Mt. Aetna Historic Park. March, 1983. Unpublished manuscript on file at MHT.
- Groft, Tammis Kane. Cast With Style. Albany, New York: Albany Institute of History and Art, 1981.
- Higel, Thomas E. Mt. Aetna Furnace: Summary of Excavations, 1982. July, 1982. Unpublished manuscript on file at MHT.
- Scharf, J. Thomas. History of Western Maryland. Philadelphia: Louis H. Everts, 1882.
- Thompson, Michael D. The Iron Industry in Western Maryland. Morgantown, West Virginia: Michael D. Thompson, 1976.
- Williams, Thomas J. C. A History of Washington County, Maryland. Hagerstown: John M Runk and L. R. Titsworth, 1906.
- Winter, Susan E. Historical Background Report: Iron Furnaces in the Mt. Aetna Area. December, 1982. Unpublished manuscript on file at MHT.

# 9. Major Bibliographical Reference

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SEE CONTINUATION SHEET #14

## 10. Geographical Data

Acreage of nominated property approx. 9 acres

Quadrangle name Myersville, Md.

Quadrangle scale 1:24,000

UMT References

A            
 Zone Easting Northing

B            
 Zone Easting Northing

C

D

E

F

G

H

**Verbal boundary description and justification** The Antietam Furnace Complex boundary is shown as the thick black line on the accompanying maps, Figures 3 and 4. The boundary encompasses the identified furnace complex core and support areas.

List all states and counties for properties overlapping state or county boundaries

state	N/A	code	county	code

## 11. Form Prepared By

name/title Elizabeth Cole Brown, Assistant Archeologist

organization Maryland Historical Trust

date April 1983

street & number 21 State Circle

telephone 301-269-2438

city or town Annapolis

state Maryland 21401

## 12. State Historic Preservation Officer Certification

The evaluated significance of this property within the state is:

national  state  local

As the designated State Historic Preservation Officer for the National Historic Preservation Act of 1966 (Public Law 89-665), I hereby nominate this property for inclusion in the National Register and certify that it has been evaluated according to the criteria and procedures set forth by the Heritage Conservation and Recreation Service.

State Historic Preservation Officer signature

7-20-85

title STATE HISTORIC PRESERVATION OFFICER

date

For HCRS use only

I hereby certify that this property is included in the National Register

date

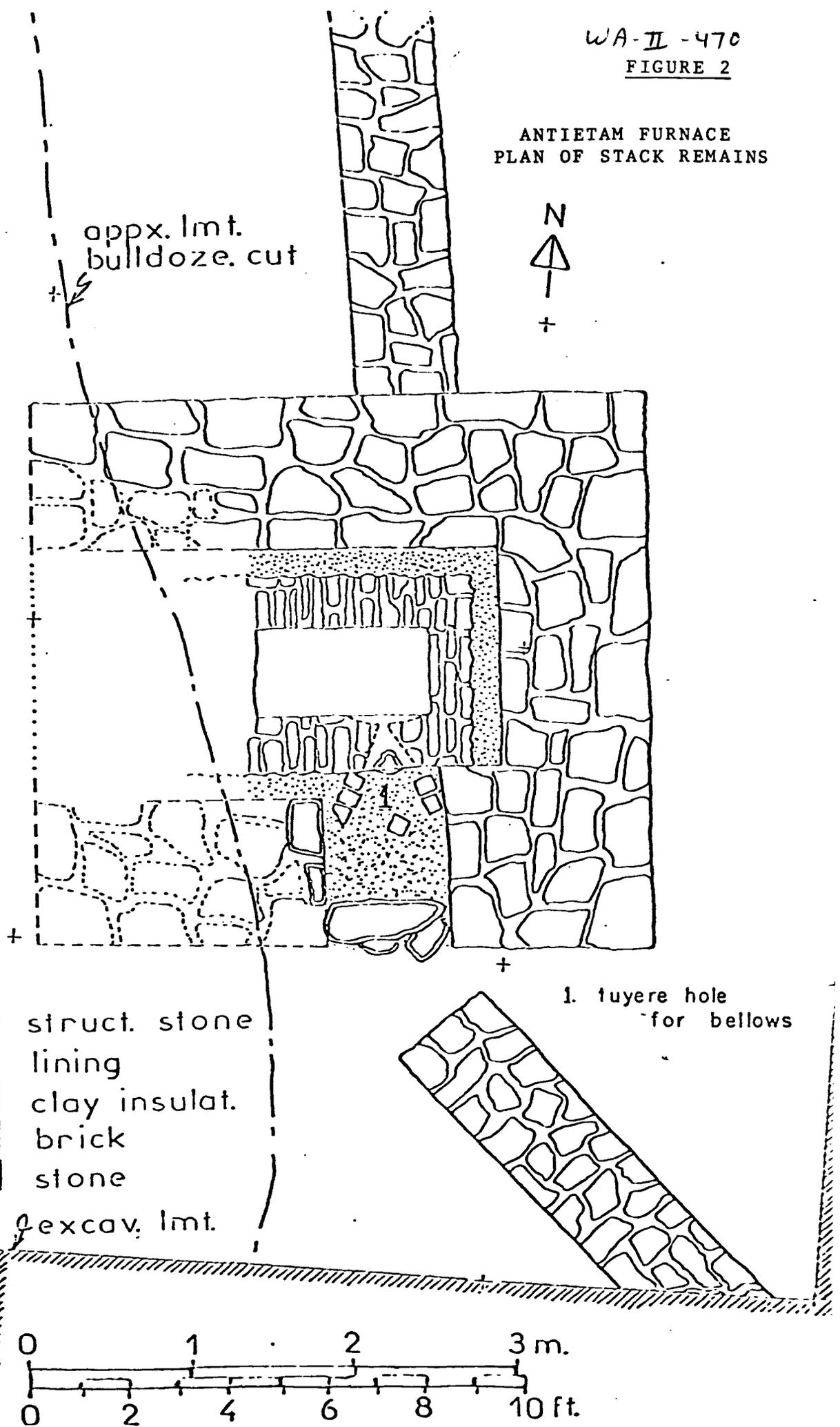
Keeper of the National Register

Attest:

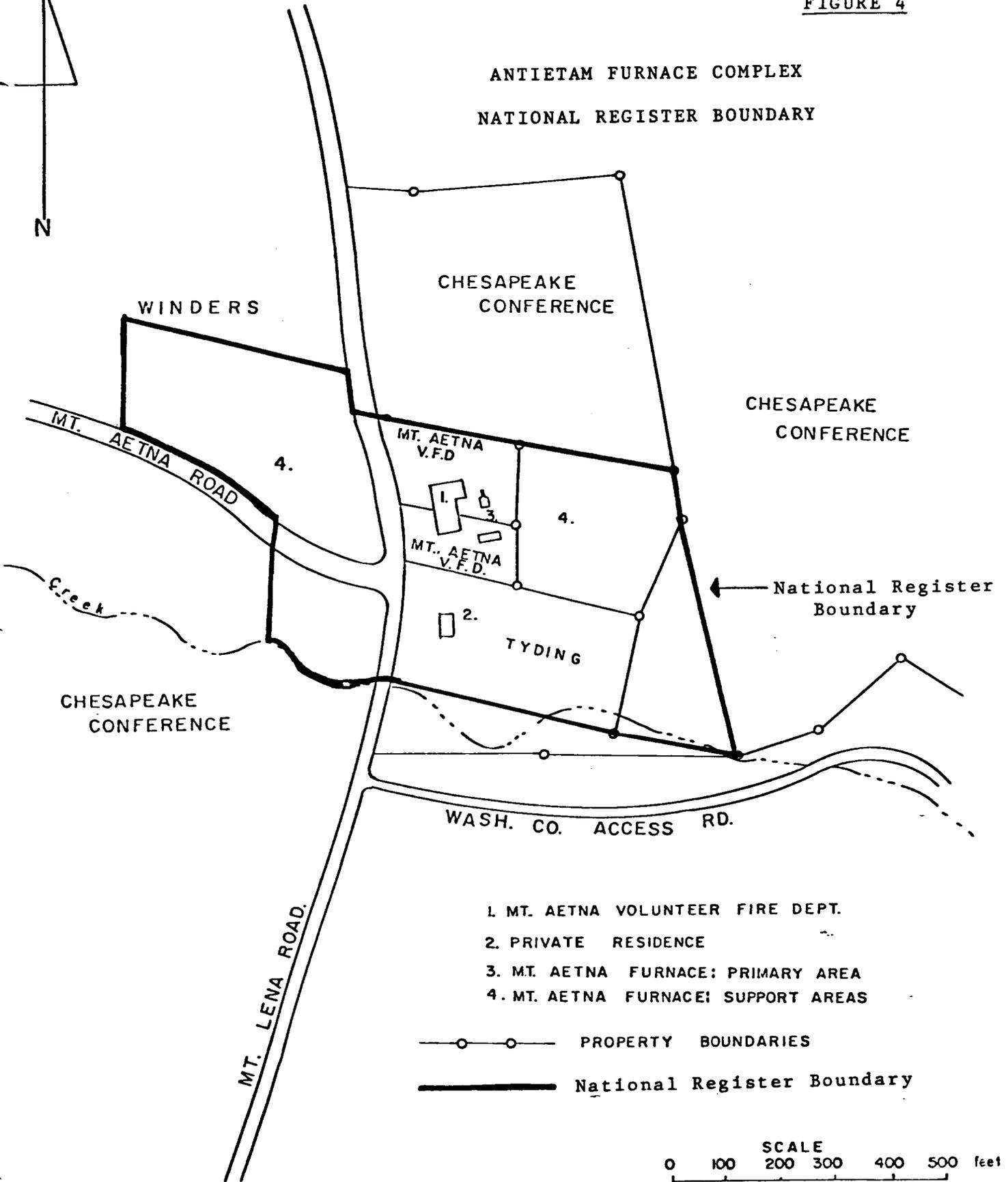
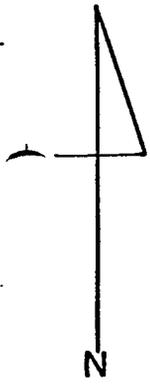
date

Chief of Registration

ANTIETAM FURNACE  
PLAN OF STACK REMAINS



ANTIETAM FURNACE COMPLEX  
NATIONAL REGISTER BOUNDARY

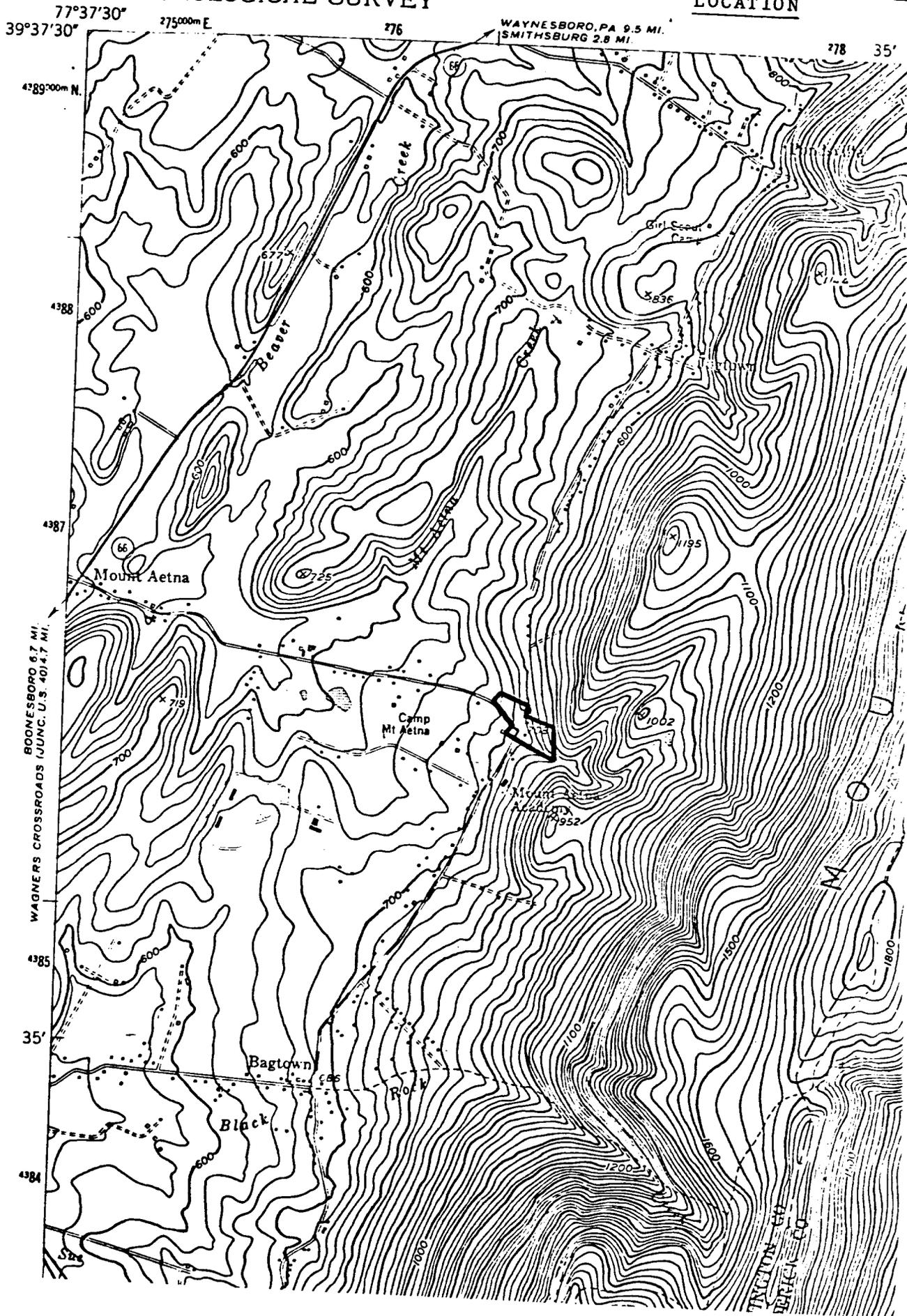


5463 II NW  
(WAGERSTOWN)

MYEYILLE QUADRANGLE  
UNITED STATES  
DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEY

WA-II-470  
FIGURE 3

ANTIETAM FURNACE COMPLEX  
LOCATION



543 (1 NW)  
(HAGERSTOWN)

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEY

77°37'30" 275000m E 276 WAYNESBORO, PA 9.5 MI.  
39°37'30" SMITHSBURG 2.8 MI.

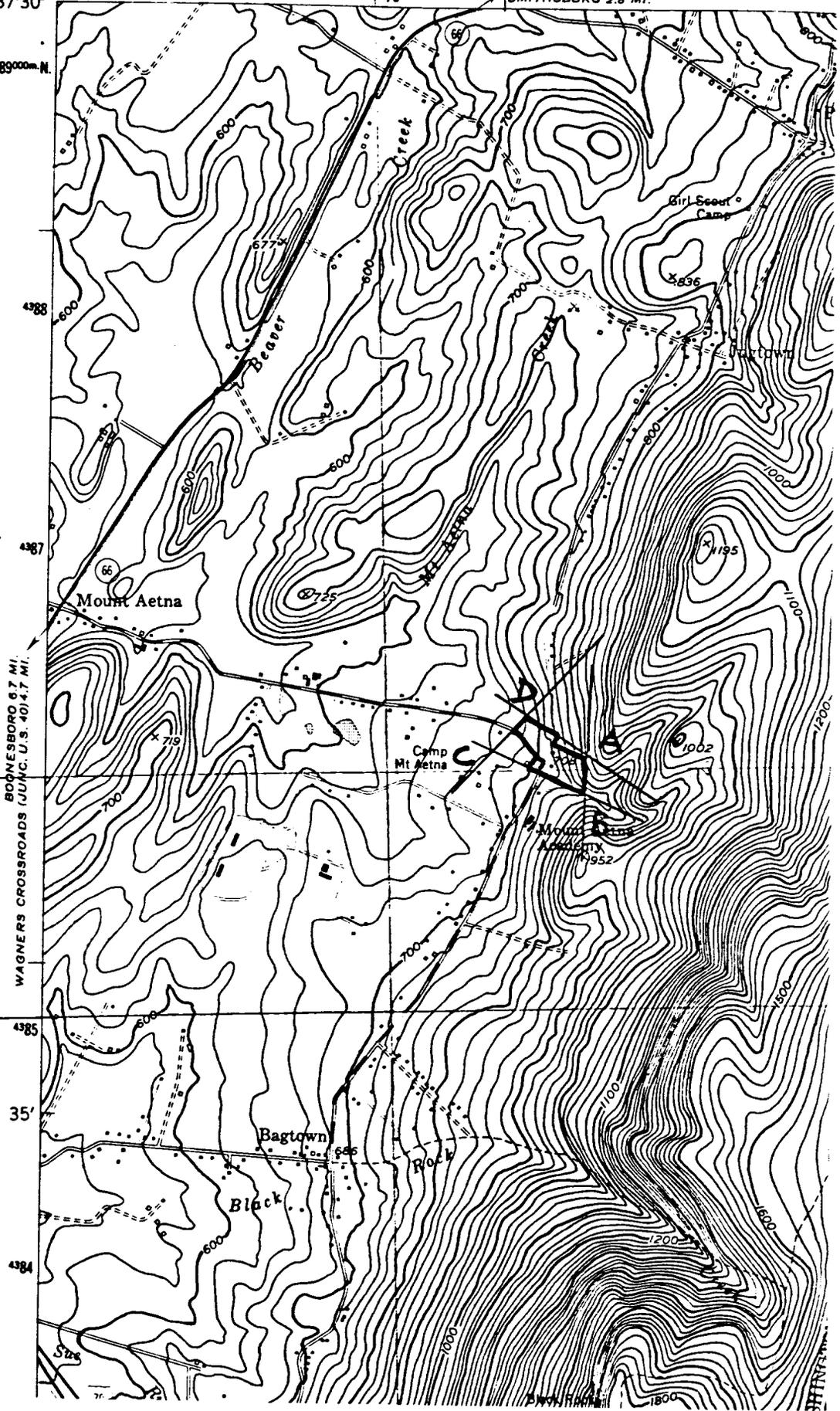
WA-II-470  
ANTIETAM  
FURNACE  
COMPLEX  
ARCHEOLOGICAL  
SITE  
WASHINGTON  
COUNTY, MD.

A: 18-276830-  
4386050

B: 18-276820-  
4385900

C: 18-276440-  
4386080

D: 18-276590-  
4386230



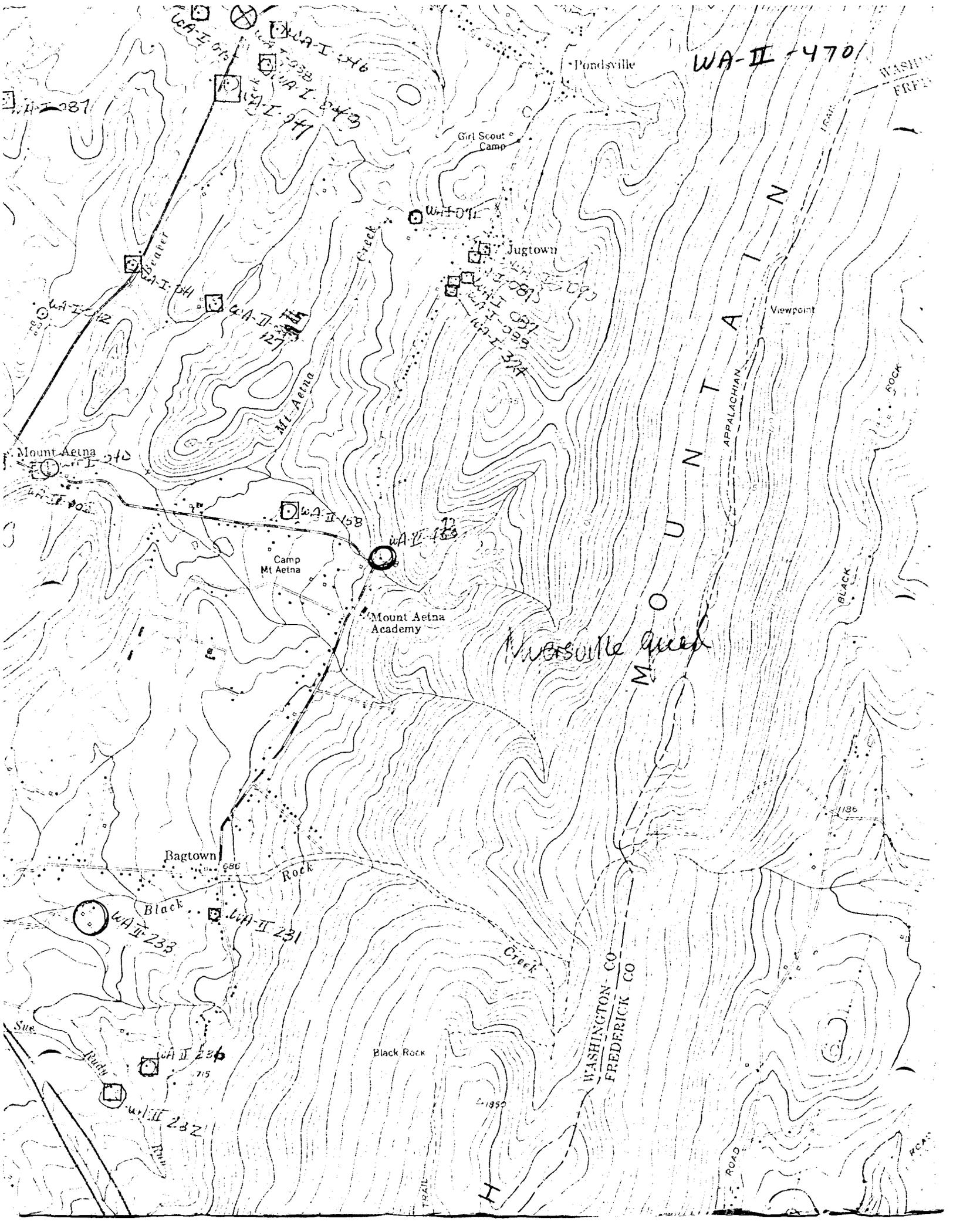
BOONESBORO 6.7 MI.  
WAGNERS CROSSROADS (JUNC. U.S. 40) 4.7 MI.

35'

4384

4385

4386



WA-II-470

Pondsville

WASHINGTON  
FREDERICK

Girl Scout  
Camp

Jugtown

Viewpoint

Mount Aetna

Mount Aetna

Mount Aetna  
Academy

Wassville Creek

MOUNTAIN  
APPALACHIAN

BLACK  
ROCK

Bagtown

Rock

Black  
WA-II-233

WA-II-231

WA-II-236

WA-II-232

Black Rock

WASHINGTON CO  
FREDERICK CO

ROAD

TRAIL

TRAIL



WA-II-970

ruins of furnace stack  
E

Sept. 1916

Black Rock Furnace

Mt. Aetna & Mt. Lena Rds.  
Hagerstown Vicinity

STONER DICKEY  
CONSULTANT, WASHINGTON CO.  
HISTORICAL SITES SURVEY



Black Rock Furnace

Mt. Aetna & Mt. Lena Rds.  
Hagerstown Vicinity

WA-II-470

furnace area

E. view

Sept. 1976

PAULA STONER DICKEY  
CONSULTANT, WASHINGTON CO.  
HISTORICAL SITES SURVEY



WA-II-470

Stove plate

Sept. 1976

Black Rock Furnace

Mt. Aetna & Mt. Lena Rds.,  
Hagerstown Vicinity

PAULA STONER DICKEY  
CONSULTANT, WASHINGTON CO.  
HISTORICAL SITES SURVEY.



DANK  
GEBET

WA-II-470

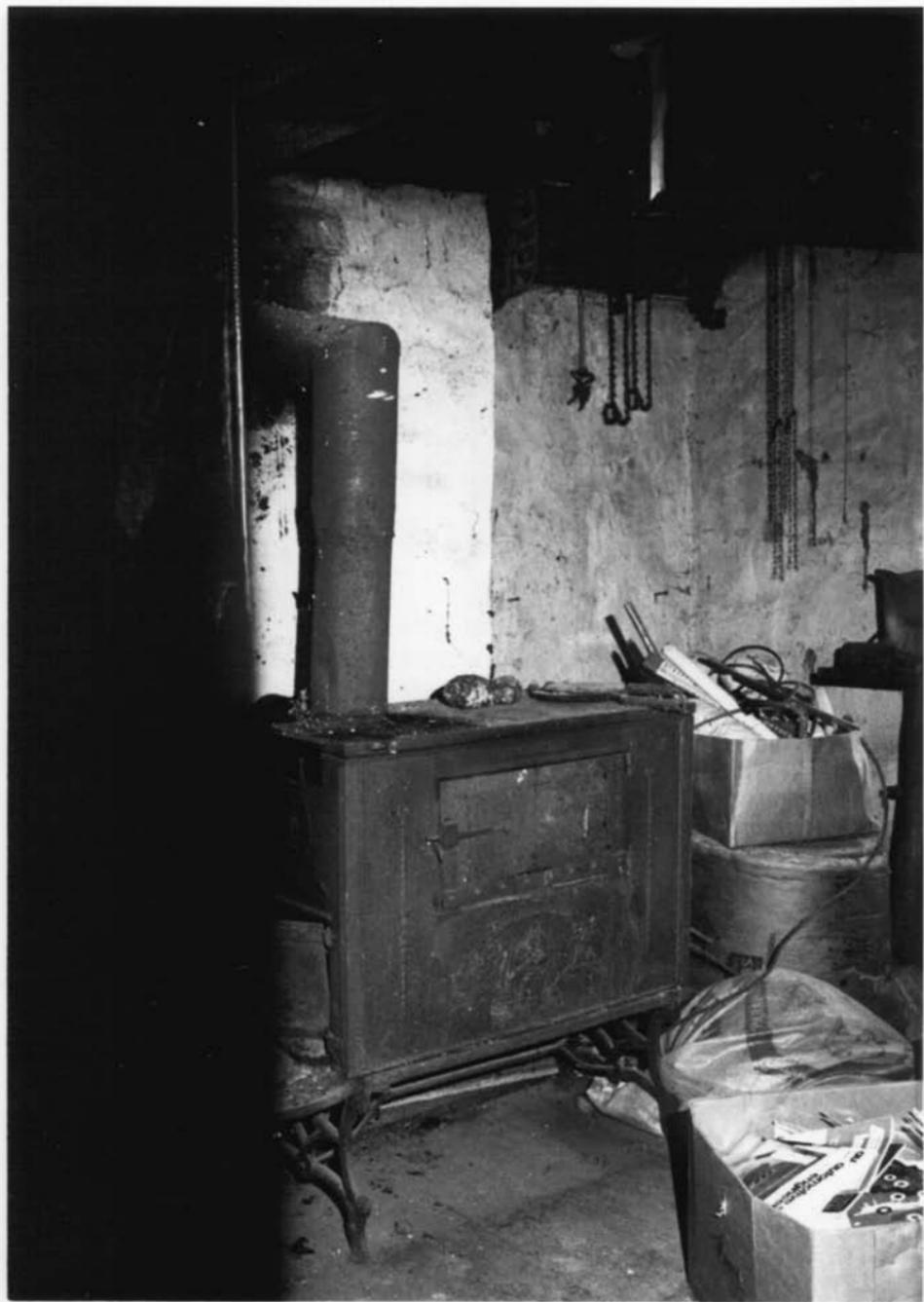
Stove plate

Sept. 1976

Black Rock Furnace

Mt. Aetna & Mt. Lena Rds.  
Hagerstown Vicinity

PAUL S. STUBBS, DIRECTOR  
CONSULTANT, WASHINGTON CO.  
HISTORICAL SITES SURVEY



WA-111-470  
(plate stone)

Nov. 1976

Black Rock Furnace

Mt. Aetna & Mt. Lena Rds..  
Hagerstown Vicinity

PAULA STONER BICKEY  
CONSULTANT, WASHINGTON CO.  
HISTORICAL SITES SURVEY



WA-II-470

Black Rock Furnace

Mt. Aetna & Mt. Lena Rds.  
Hagerstown Vicinity

PAULA STONER DICKEY  
CONSULTANT, WASHINGTON CO.  
HISTORICAL SITES SURVEY



WA-II-470

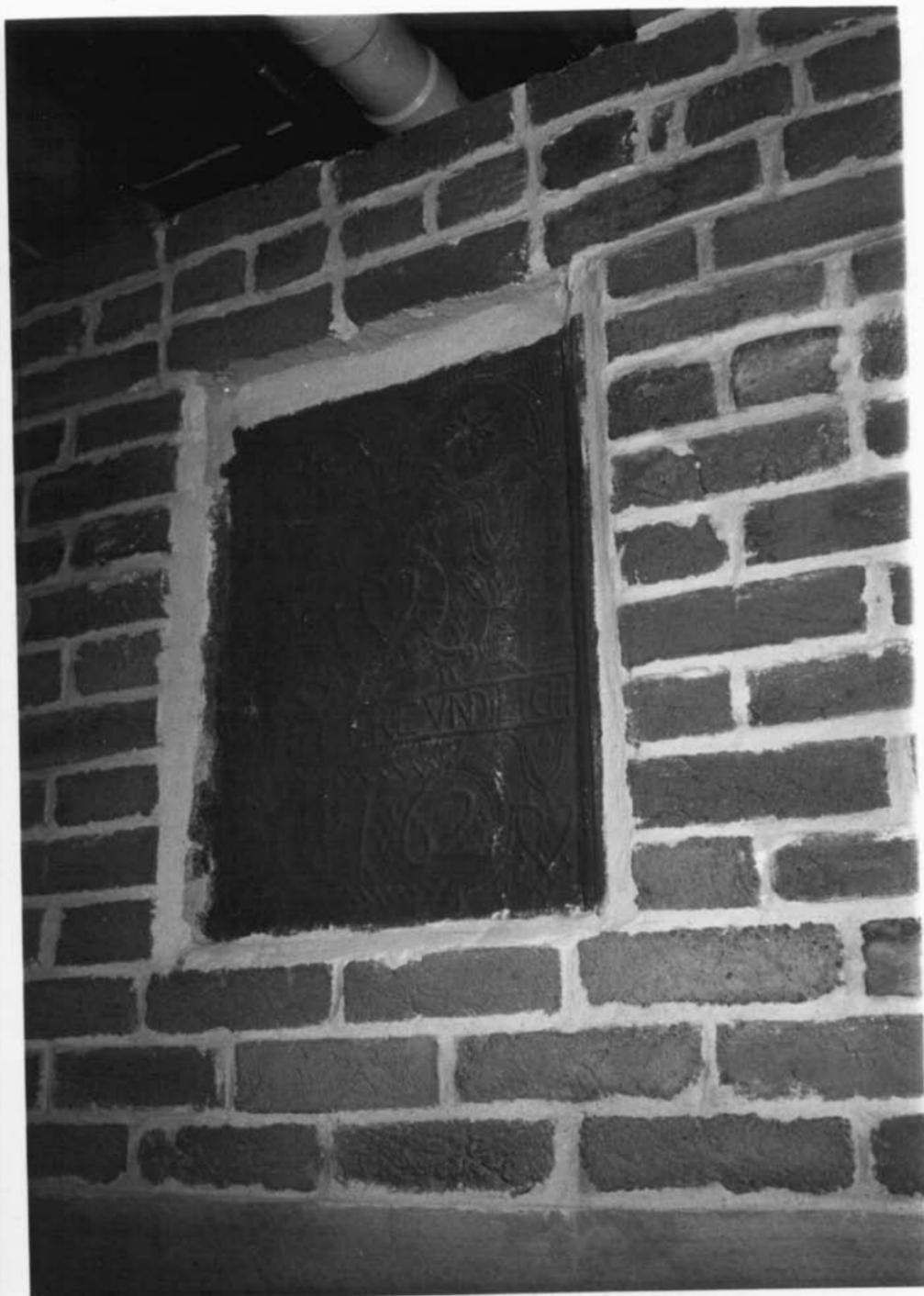
18<sup>th</sup> Century Stone Plate

Dec. 1976

Black Rock Furnace

Mt. Aetna & Mt. Lena Rds.  
Hagerstown Vicintiy

PAULA STONER DICKEY  
CONSULTANT, WASHINGTON CO.  
HISTORICAL SITES SURVEY



WA-II-47D

18th c. stone plate

Dec. 1976

Black Rock Furnace

Mt. Aetna & Mt. Lena Rds.  
Hagerstown Vicinity

PAULA STONER DICKEY  
CONSULTANT, WASHINGTON CO.  
HISTORICAL SITES SURVEY