

STUDY OF ALTERNATIVES
MOUNT ETNA
IRON FURNACE COMPLEX



AMERICA'S INDUSTRIAL HERITAGE PROJECT
SOUTHWESTERN PENNSYLVANIA

SOUTHWEST PENNSYLVANIA HERITAGE PRESERVATION COMMISSION
MOUNT ETNA COALITION

UNITED STATES DEPARTMENT OF THE INTERIOR • NATIONAL PARK SERVICE

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STUDY TEAM RECOMMENDATION

The study includes the following alternatives for protection, management, and visitor use of the site:

Alternative A (Status quo) - Continue private ownership of the Mount Etna historic properties.

Alternative B - Develop the Mount Etna historic area as a commercial business enterprise.

Alternative C - Establish a locally owned and managed historical park.

Alternative D - Create a nonprofit foundation to manage and operate the Mount Etna historic area.

Alternative E - Establish Mount Etna Furnace National Historic Site

The study team, along with the Mount Etna Coalition, recommends that Alternative E should be implemented. This would establish Mount Etna Iron Furnace Complex as a unit of the Allegheny Portage Railroad National Historic Site, which is part of the National Park System. Legislation would be necessary for this to occur. The National Park Service, under this approach, would be responsible for the management and protection of the site and for insuring its use and appreciation by the national visitor.

This action is recommended because:

- 1) protection of the site would allow for the Allegheny Portage Railroad National Historic Site to commemorate the Pennsylvania Main Line Canal, and in particular the story of commerce on the canal, in accordance with the legislation establishing that park unit and the park's 1980 general management plan; and
- 2) the site is representative of early iron furnace complexes in Pennsylvania's Juniata River Valley.

The commemoration of the iron and steel industry is one of four principal themes of the America's Industrial Heritage Project. National Park Service management would insure the protection, management, and visitor use of this important resource.

In addition to a general recommendation regarding Alternative E, the study team further recommends that the Commission share the study of alternatives with area landowners, local governments, and organizations, and provide opportunities for public comment. Additionally, the Commission may want to encourage the participation of a land trust to provide protection of the site on an interim basis until Congressional legislation is passed.

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APRIL 1990

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UNITED STATES DEPARTMENT OF THE INTERIOR • NATIONAL PARK SERVICE

SUMMARY

The Mount Etna iron furnace complex in Blair County, Pennsylvania, was an important site in the early charcoal iron industry in the United States. From 1808 until about 1875 the technological innovations used at the ironworks contributed to the development of the nation's iron and steel industry. The company was also one of the first to take advantage of the Pennsylvania Main Line Canal to deliver iron to western markets, as well as pig iron to the company's rolling mill in Pittsburgh for the manufacture of finished products. The enterprise was largely self-contained, with company employees cutting timber, quarrying limestone, mining iron ore, making charcoal, forging iron, and farming – all on company-owned lands.

Mount Etna is an exceptional resource because of the integrity and variety of its architectural, archeological, and natural resources, which represent all of the important aspects of the site's operations. Furthermore, the company's history symbolizes the origins, technological development, and demise of the Juniata iron region. The site is listed on the National Register of Historic Places.

This *Study of Alternatives* is to be used to help determine what future steps, if any, are needed to ensure the protection of the resources, as well as to interpret for public benefit the importance of early iron-making technology and canal transportation. Five alternatives are presented:

- **Alternative A (Status quo) – Continue private ownership of the Mount Etna historic properties.** The Blair County Historical Society would continue efforts to restore the furnace. The other resources would likely continue under private ownership, and their protection could not be ensured.
- **Alternative B – Develop the Mount Etna historic area as a commercial business enterprise.** A private group would be encouraged to acquire and operate a commercial business at the site. Many historic structures would be usable for various commercial activities. The protection of resources and visitor use activities would be at the owner's discretion.
- **Alternative C – Establish a locally owned and managed historical park.** Either the township or a local group would be responsible for protecting, preserving, restoring, and interpreting the historic and rural area and for making it available to the visiting public.
- **Alternative D – Create a nonprofit foundation to manage and operate the Mount Etna historic area.** Resource-oriented activities at the site would potentially attract national, regional, and local visitors. Trails would be developed to link the various resources, interpretive programs would tell the story of iron making in the 1800s, and educational and recreational activities focusing on the natural environment would be provided. This alternative would ensure the long-term management, preservation, and interpretation of the historic area.
- **Alternative E – Establish Mount Etna Furnace National Historic Site.** The iron furnace complex would be designated a national historic site, and the National Park Service would administer it as a unit of the Allegheny Portage Railroad National Historic Site. Significant cultural resources, as well as the surrounding natural environment, would be protected, managed, and interpreted. Visitor opportunities would

be similar to those described under alternative D.

Two boundary options are also considered, based on the significant remains of the furnace complex, natural and recreational resources, and facility needs. One boundary option would include only the lands in the historic core area, while the other option would include the core area plus the surrounding lands to the north and south ridgelines. Lands could be protected through fee or less-than-fee ownership. Related sites outside the boundary could be protected through cooperative agreements and easements.

Development costs could range from \$3.1 million under alternative C to \$16.8 million under alternatives D and E (with maximum development). Because the alternatives are conceptual, land acquisition costs have not been calculated, but current land prices range between \$400 and \$600 an acre.

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INTRODUCTION

The Mount Etna iron furnace complex, which is north of Williamsburg, Pennsylvania, was a manufacturer and distributor of iron products during the early industrial development of the United States. From 1808 through 1875 the ironworks grew and incorporated new methods of iron and charcoal production, and its owners were among the first to use improved means of transportation to expedite iron shipments.

The Mount Etna furnace is listed on the National Register of Historic Places as a historic district, and the Pennsylvania Historical and Museum Commission is currently revising the nomination form to ensure that all significant aspects of the site are documented. It is thematically related to the America's Industrial Heritage Project (AIHP).

The objective of this study is to examine the feasibility of protecting this resource to allow for the interpretation of early iron manufacturing and canal transportation.

This *Study of Alternatives* has been prepared by the National Park Service for the Southwest Pennsylvania Heritage Preservation Commission and the Mount Etna Coalition. It examines five alternatives for protecting and managing this significant resource.

- **Alternative A (Status quo)** – Continue private ownership of the Mount Etna historic properties.
- **Alternative B** – Develop the Mount Etna historic area as a commercial business enterprise.
- **Alternative C** – Establish a locally owned and managed historical park.
- **Alternative D** – Create a nonprofit foundation to manage and operate the Mount Etna historic area.
- **Alternative E** – Establish Mount Etna Furnace National Historic Site.

This study will help determine what future steps, if any, are needed to ensure the protection of site resources, as well as to interpret for public benefit the importance of early iron-making technology and canal transportation. This document does not provide acquisition or operation cost estimates for any alternative, nor does it recommend a specific alternative.

PLANNING BACKGROUND

Local Issues and Concerns

A major concern expressed by local residents and local historical societies during the preparation of this study is the potential for the Mount Etna resources to be lost if additional protection measures are not taken.

- Two fires have destroyed one structure and caused interior damage to another. Several buildings are deteriorating because they are not being maintained.
- One private owner recently attempted to auction pieces of land and property, but was unsuccessful because of low bids. Tenants have been laying utility lines in lands that have not been disturbed since the operation of the furnace complex, probably destroying archeological evidence related to the site's history.
- The furnace has been stabilized by the Blair County Historical Society, but additional work is needed to restore it.
- Local road repairs on Catharine Township Route 463 may replace older, more historic looking bridges with modern ones.

As a result of these concerns and others, the Mount Etna Coalition was formed in January 1988 in order to seek measures to preserve the Mount Etna Furnace Historic District. Area organizations that have joined in this coalition are the Blair County Historical Society, the Williamsburg Heritage and Historical Society, Catharine Township, Woodbury Township, and the National Park Service AIHP office.

Current and Proposed Plans

The formation of the Mount Etna Coalition and the preparation of this *Study of Alternatives* is the third effort by local

residents to ensure the permanent protection of the Mount Etna site. In 1961 the furnace was repaired. In 1965 the Etna Furnace Plantation was designated as one of Blair County's major future developments under Pennsylvania's Project 70 program; however, it did not receive any attention as part of that program.

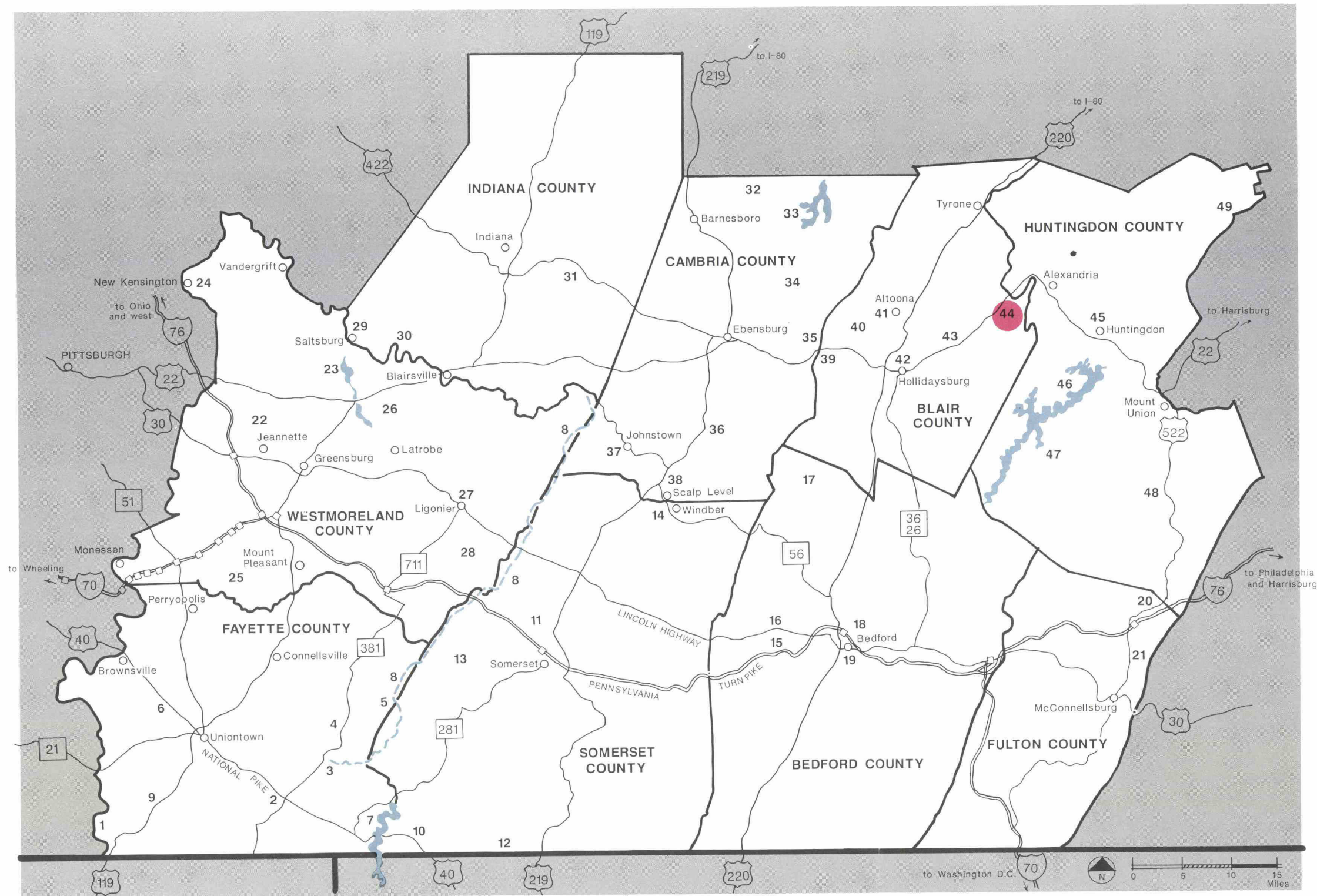
Coalition members have supported efforts to preserve the furnace complex by having the Williamsburg Heritage and Historical Society extensively document the site's history. The Blair County Historical Society has obtained state grants for \$48,000 during the past three years to stabilize the furnace itself. The NPS Historic American Engineering Record (HAER) has prepared architectural drawings (see appendix A) and a resource report on some of the structures and their history.

Archeological evaluations of some parts of the complex are planned. The coalition is working toward protecting the furnace complex by working with the National Park Service to prepare this study.

Relationship to America's Industrial Heritage Project

America's Industrial Heritage Project has four principal themes – coal mining, transportation, iron and steel, and labor and social history. The transportation and iron industry themes are represented by resources at the Mount Etna iron furnace complex.

The *Reconnaissance Survey of Western Pennsylvania Roads and Sites* stated that the Mount Etna site was an early blast furnace and one of the longer-lasting enterprises. Local businesses shipped iron to Pittsburgh by horseback. With the development of the Pennsylvania Main Line Canal in the 1830s, shipping costs fell, and products could be delivered to markets more quickly. Local iron was also used for agricultural needs and later for wagons, bridges, and railroad equipment, such as rolling stock and rails.



REGION MOUNT ETNA IRON FURNACE COMPLEX



AMERICA'S INDUSTRIAL HERITAGE PROJECT

SOUTHWESTERN PENNSYLVANIA
UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

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FAYETTE COUNTY

- 1 FRIENDSHIP HILL NATIONAL HISTORIC SITE
- 2 FORT NECESSITY NATIONAL BATTLEFIELD
- 3 OHIOPILE STATE PARK
- 4 FALLINGWATER NATIONAL HISTORIC LANDMARK
- 5 LAUREL RIDGE STATE PARK
- 6 SEARIGHTS TOLLHOUSE
- 7 YOUGHIOGHENY LAKE NATIONAL RECREATION AREA
- 8 LAUREL HIGHLANDS HIKING TRAIL
- 9 SHOAF COAL AND COKE COMPLEX

SOMERSET COUNTY

- 10 ADDISON TOLLHOUSE
- 11 SOMERSET HISTORICAL CENTER
- 12 SPRINGS MUSEUM
- 13 LAUREL HILL STATE PARK
- 14 WINDBER COAL HERITAGE CENTER

BEDFORD COUNTY

- 15 SHAWNEE STATE PARK
- 16 SCHELLSBURG NATIONAL HISTORIC DISTRICT
- 17 BLUE KNOB STATE PARK
- 18 BEDFORD NATIONAL HISTORIC DISTRICT
- 19 OLD BEDFORD VILLAGE
- 20 FORT BEDFORD

FULTON COUNTY

- 20 BURNT CABINS GRIST MILL
- 21 COWANS GAP STATE PARK

WESTMORELAND COUNTY

- 22 BUSHY RUN BATTLEFIELD
- 23 LOYALHANNA LAKE NATIONAL RECREATION AREA
- 24 ALCOA ALUMINUM LABORATORY
- 25 WEST OVERTON MUSEUMS
- 26 KEYSTONE STATE PARK
- 27 FORT LIGONIER
- 28 LINN RUN STATE PARK

INDIANA COUNTY

- 29 SALTSBURG CANAL PARK
- 30 CONEMAUGH LAKE NATIONAL RECREATION AREA
- 31 YELLOW CREEK STATE PARK

CAMBRIA COUNTY

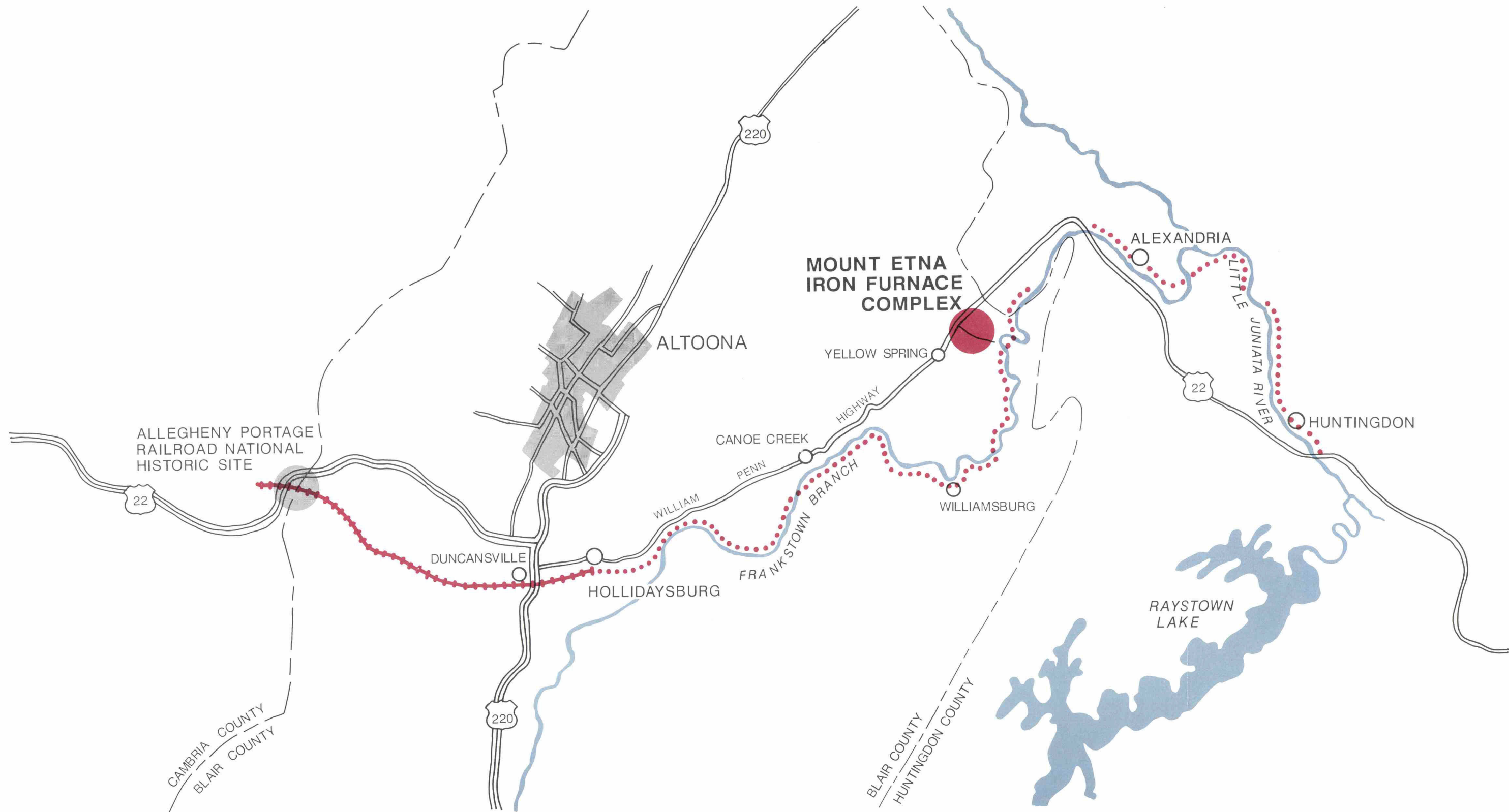
- 32 SELDOM SEEN VALLEY COAL MINE
- 33 PRINCE GALLITZIN STATE PARK
- 34 CHARLES SCHWAB ESTATE AND GARDENS
- 35 GALLITZIN RAILROAD TUNNELS
- 36 JOHNSTOWN FLOOD NATIONAL MEMORIAL
- 37 JOHNSTOWN FLOOD MUSEUM
- 38 MINE 40 SITE

BLAIR COUNTY

- 39 ALLEGHENY PORTAGE RAILROAD NATIONAL HISTORIC SITE
- 40 HORSESHOE CURVE NATIONAL HISTORIC LANDMARK
- 41 ALTOONA RAILROAD SHOPS
- 42 RAILROADERS MEMORIAL MUSEUM
- 43 BAKER MANSION
- 44 MOUNT ETNA IRON FURNACE COMPLEX

HUNTINGDON COUNTY

- 45 HUNTINGDON NATIONAL HISTORIC DISTRICT
- 46 RAYSTOWN LAKE NATIONAL RECREATION AREA
- 47 TROUGH CREEK STATE PARK
- 48 EAST BROAD TOP RAILROAD NATIONAL HISTORIC LANDMARK
- 49 GREENWOOD FURNACE STATE PARK



.....
ROUTE OF THE PENNSYLVANIA MAIN LINE CANAL

.....
ROUTE OF THE ALLEGHENY PORTAGE RAILROAD



NORTH

0 1 2 3 MILES (APPROX.)

VICINITY

MOUNT ETNA IRON FURNACE COMPLEX

BLAIR COUNTY, PENNSYLVANIA
AMERICA'S INDUSTRIAL HERITAGE PROJECT
UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

ON MICROFILM

MEIC-20001-DSC-DEC 89

The August 1987 *Action Plan* for America's Industrial Heritage Project calls for the Pennsylvania Historical and Museum Commission to take a leadership role in exploring options for protecting and using the significant industrial resource at Mount Etna. During the development of this study, the commission and other state departments have determined that other ongoing state projects, including iron furnace sites now being managed by several state offices, preclude them from taking on additional projects. The commission has pledged technical assistance and coordination in developing strategies to protect the Mount Etna complex.

A portion of the Pennsylvania Main Line Canal is within the Mount Etna site, and the *Action Plan* refers to the canal in terms of future projects related to the transportation theme for the America's Industrial Heritage Project. The plan states that restoration and interpretation of the canal would foster visitor understanding of the significance of the canal story, and it would directly complement the Allegheny Portage Railroad story.

The *Juniata River Corridor Reconnaissance Survey* (NPS in press), which examines natural, cultural, and recreational resources along the river and their level of significance, also identifies the Mount Etna site, the Pennsylvania Main Line Canal remnants, and the Pennsylvania Railroad as significant cultural resources that should be studied for further protection. The legislation that established Allegheny Portage Railroad National Historic Site identifies canal era resources as significant for protecting and interpreting the history of the region (see appendix B).

SIGNIFICANCE OF THE RESOURCES

The Mount Etna iron furnace complex is significant because it is representative of the widespread Juniata Valley iron industry. In 1620 a furnace in Virginia made the first iron produced in the colonies, and by the early 1800s several hundred iron furnaces had been built in Pennsylvania alone. During the first three quarters of the 19th century technological changes accelerated iron production, and from 1808 to 1875 the Mount Etna complex contributed to the development of the industry.

Because Mount Etna was one of the first furnaces built in what later became Blair County and one of the last furnaces to go out of blast, the company's history symbolizes the origins, technological development, and demise of the Juniata iron region.

Originally the site of a sawmill and gristmill, Mount Etna was chosen as the site of an ironworks by David Stewart in 1808 because rich iron ore outcrops were interspersed with steep timber tracts, fast-flowing creeks, limestone deposits, and agricultural lands. The original cold blast furnace prospered until after the War of 1812, when a nationwide economic depression caused the ironworks to fail.

The furnace was bought in 1823 by Henry S. Spang, a third-generation member of an affluent Pennsylvania family. Under his management Mount Etna expanded and became an important regional ironworks. Spang served as Mount Etna's innovative ironmaster from the 1820s until his death in 1849. He converted the furnace to hot blast, installed a railroad tram system on the site, and experimented with steam machinery.

The coming of the Pennsylvania Main Line Canal, which was routed near Mount Etna, ensured the future prosperity of the ironworks complex. In 1831, while canal construction along the Juniata River near Mount Etna was underway, Spang built himself a mansion

and other buildings on property that would overlook the canal. When the canal was completed the following year, pig iron produced at Mount Etna could be economically and rapidly shipped to the company's rolling mill in Pittsburgh for the manufacture of finished products.

Company employees at Mount Etna cut timber, quarried limestone, mined iron ore, made charcoal, forged iron, and farmed – all on site. Tenant farmers and ore miners lived side by side on the valley tracts where iron ore outcropped adjacent to plowed fields and orchards. When the furnace went out of blast in 1875, activities supporting the operation of the adjacent gristmill continued into the early 1900s. The site's isolation helped guarantee that it would remain relatively free from the effects of later industrial and agricultural activities.

Mount Etna is an exceptional resource because of the integrity and variety of its architectural, archeological, and natural resources, which represent all of the important components of the site. There are many architecturally distinguished and well-preserved structures, ranging from the ironmaster's mansion to worker's log cabins, from the furnace to a coursed-stone bank barn. In addition the site contains many undisturbed archeological resources, including the charcoal forge, waterpower features, tram railway, sawmills and gristmills, canal prism, aqueduct, and quarries. Once these resources have been evaluated, they will be able to illuminate the rapid technological changes, the importance of transportation and agriculture as a part of the enterprise, and the community life of managers and workers.

Just as an unusual number of well-preserved buildings associated with the Mount Etna furnace survived because of the site's isolation, so did several canal structures on the ironworks property and across the Juniata River. Three well-preserved canal locks are visible, and a fourth is buried under tailings from a late 1800s limestone

quarry. Also present are a waste weir and the foundation of the lockkeeper's house.

The site's handsome landscape is also important. A vigorous second-growth forest sets off attractive historic structures along a quiet wagon road that winds through the steep-walled Roaring Run valley. Structures beside the canal and the Juniata River enjoy the same rural informality as those found along the wagon road. Wildflowers and flowers that are remnants of vanished gardens from the 1800s are massed along the roadsides and the forest edge, creating a pleasant rural setting. Absent are the urban grids straitjacketing later developments. Such pleasant circumstances enhance the significance of the site.

Theme Representation

Major themes represented by the Mount Etna iron furnace complex fill several gaps in the thematic framework that has been established for the national park system. This site is also a key resource to the AIHP themes because it is an example of the early iron-making process and transportation developments.

The preliminary evaluation of the Mount Etna iron furnace complex against significance criteria was accomplished as part of the *Reconnaissance Survey of Western Pennsylvania Roads and Sites* (NPS 1985). The complex represents a variety of cultural resource themes and subthemes, as defined in *History and Prehistory in the National Park System and the National Historic Landmarks Program* (NPS 1987). The themes and subthemes, along with existing national park system sites that represent them, are listed in table 1.

The Mount Etna iron furnace complex relates to the first part of the iron and steel theme, while the Cambria Iron Company National Historic Landmark in Johnstown completes the story.

Interpretive Concept

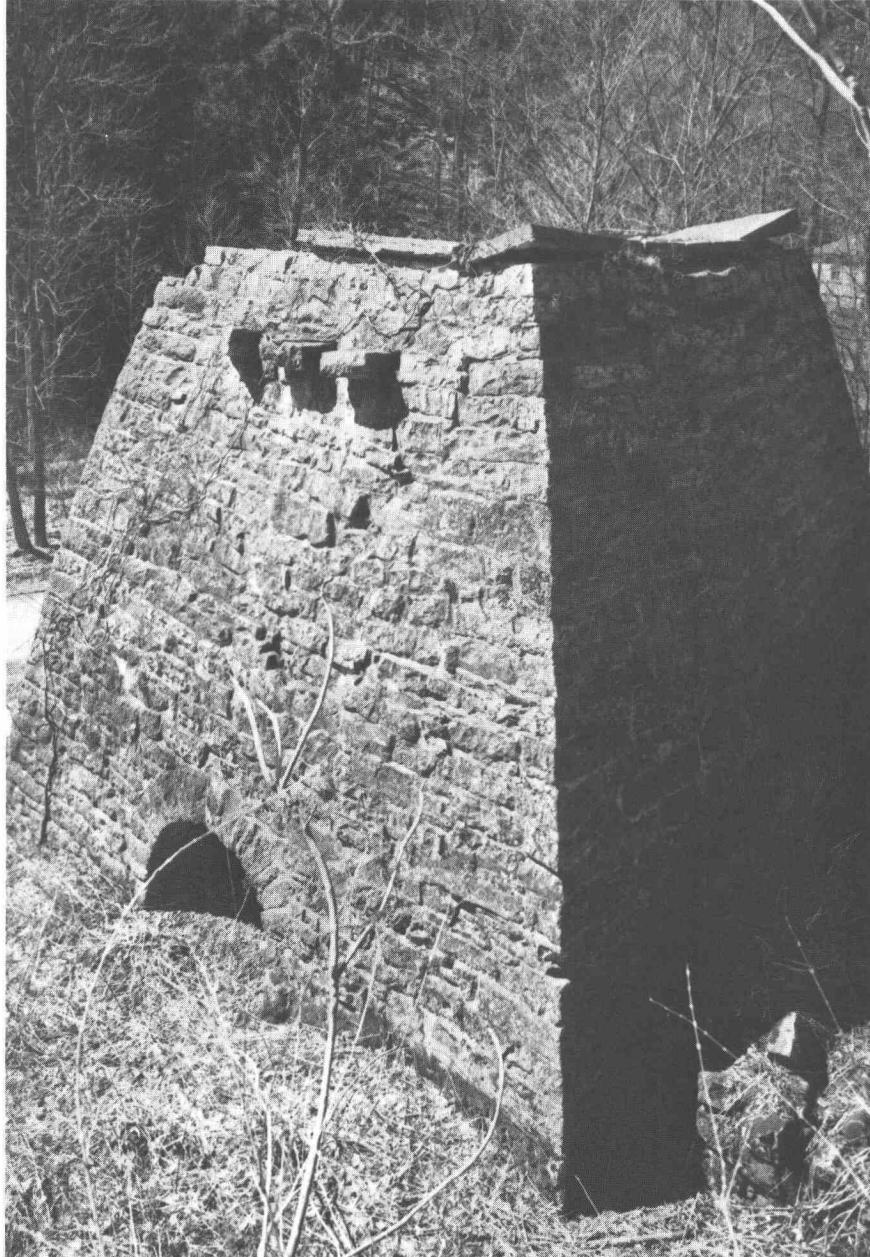
The interpretive concept would be to demonstrate the technology of iron making at a well-preserved ironworks complex, along with canal transportation and the way of life of the local community. This would include canal era activities and the relationship to regional areas, including Allegheny Portage Railroad National Historic Site.

TABLE 1: INTERPRETIVE THEMES REPRESENTED AT MOUNT ETNA

THEMES AND SUBTHEMES	EXISTING NATIONAL PARK SYSTEM SITES
Theme XII. Business	
A. Extractive or Mining Industries	
1. Iron and Ferro Alloys	Saugus Iron Works National Historic Site – early ironworks
B. Manufacturing Organizations	
4. Fabricated Metal and Glass Products	Hopewell Furnace National Historic Site – 18th-19th century ironworks
Theme XIV. Transportation	
A. Early Turnpikes, Roads, and Taverns East of the Mississippi	None
C. Canals	Chesapeake and Ohio Canal National Historical Park Cuyahoga Valley National Recreation Area – Ohio and Erie Canal Lowell National Historical Park Upper Delaware Scenic and Recreational River – Delaware and Hudson Canal
E. Railroads	Allegheny Portage Railroad National Historic Site Golden Spike National Historic Site Steamtown National Historic Site
Theme XVIII. Technology (Engineering and Invention)	
B. Transportation	Allegheny Portage Railroad National Historic Site Upper Delaware Scenic and Recreational River – Delaware Aqueduct Wright Brothers National Monument
F. Extraction and Conversion of Industrial Raw Materials	None
Theme XXX. American Ways of Life	
C. Industrial Towns	Lowell National Historical Park
E. Ethnic Communities	Boston African American National Historic Site Castle Clinton National Monument Lowell National Historical Park Maggie Walker National Historic Site Martin Luther King Jr. National Historic Site Statue of Liberty National Monument – Ellis Island Touro Synagogue National Historic Site Tuskegee Institute National Historic Site

MOUNT ETNA IRON FURNACE COMPLEX

BLAIR COUNTY, PENNSYLVANIA



IRON FURNACE

PHOTOGRAPHS BY
JET LOWE, HISTORIC AMERICAN ENGINEERING RECORD
1988



IRONMASTER'S HOUSE



MANAGER'S HOUSE



FORGEMEN'S HOUSING



COMPANY STORE



BANK BARN



TENANT HOUSE



TENANT HOUSE, BLACKSMITH SHOP RUINS

RESOURCE DESCRIPTION

REGIONAL CONTEXT

The Mount Etna study area lies in the northeast corner of Blair County, Pennsylvania, in the Valley and Ridge province of the Allegheny Mountains. Steep mountainside and agricultural landscapes surround the area. Small hamlets and farmsteads are dispersed along rural highways. The towns of Williamsburg and Alexandria, early settlements along the Pennsylvania Main Line Canal, are connected to the site by existing highways and roads.

The county seat of Hollidaysburg is 12 miles southwest and adjacent to Altoona, the main population center in Blair County. The 1980 population of the county was 132,000, with over half the residents living in Altoona and adjacent towns.

Existing Land Uses

All parcels of land in the study area, except for the furnace, are privately owned and are being used for residential or agricultural purposes. Private parcels range in size from more than 217 acres to less than 1 acre. The furnace, which is owned by the Blair County Historical Society, is on a 0.4-acre parcel adjacent to Catharine Township Route 463.

Most private lands containing significant cultural resources are currently for sale. Plans to subdivide one parcel have been submitted to local government offices. Adjacent property previously owned by one of the existing study area property owners was subdivided and sold within the past few years. No local zoning exists within Catharine Township. Local land prices range from \$400 to \$600 per acre, plus the cost of structures.

Access and Utilities

Public access to the study area is by private vehicle on US 22 (the William Penn Highway), which runs east-west from Harrisburg to Pittsburgh. Historically this route has been the major transportation link through the region. State and township roads surround and enter the study area. Public transportation to the site does not exist.

There are no local water or sewer systems in the rural and unincorporated areas of Blair County or at Mount Etna. Wells and individual septic systems are used by local residents. Soil conditions do not support large on-site systems. Electricity and telephone service are both available.

CULTURAL RESOURCES

History of the Mount Etna Iron Furnace Complex

Sites associated with the Mount Etna complex lie within two parallel upland valleys created by Canoe Creek and the Frankstown Branch of the Juniata River. The core area of the plantation surrounds two parallel roads that connect US 22 with the Juniata River.

Founding of the Company. The forerunner of the Mount Etna complex was a saw mill and grist mill erected on Roaring Run in 1793 by David Stewart to serve the needs of Juniata Valley farmers. The mill site had access to both river transportation and to pack horse and wagon travel on the Frankstown Path. In 1806 Stewart purchased 4,230 acres with rich natural resources, including iron ore, limestone, and timber – all the necessary raw materials for iron production.

Several months after this transaction, Stewart went into partnership with William Moore and Colonel John Canan, deputy surveyor of Huntingdon County, to construct a cold blast charcoal iron furnace. Stewart selected an ideal furnace site adjacent to the swift-flowing Roaring Run. A narrow terrace bordering the stream provided space for the casting shed, while the adjacent cliff was faced with stone to support the charging bridge. Mount Etna went into blast in 1808. The following year Stewart erected a forge to refine pig iron from the blast furnace into the standard wrought-iron bars used to manufacture finished iron products.

Before the War of 1812 Mount Etna and six other regional iron furnaces prospered as the Juniata iron industry became internationally recognized. Following the war, however, a decade of national economic crisis depressed the industry and the ironworks failed.

Five years later, as feasibility studies were underway for constructing a canal through the Juniata Valley, Henry S. Spang of Berks

County acquired the works. Under Spang's management Mount Etna expanded and became an important regional ironworks.

Industrial Growth and Development. The evolution and success of the Mount Etna ironworks was in part due to the construction of the Pennsylvania Main Line Canal in 1832. Prior to this, products were shipped by two methods – either overland by road or by "arks" which floated only during flood seasons. Because both methods required the storage of goods for long periods, the ironmaster experienced considerable delays before receiving cash for his products.

The canal provided an improved link to western markets, a connection strengthened when a rolling mill was constructed near the Pittsburgh end of the canal. Spang operated both the Pittsburgh rolling mill and the Mount Etna furnace from 1826 to 1847. The Blair County furnace provided the iron necessary for manufacturing nails, brads, spikes, and other products at the rolling mill. The mill was near Pittsburgh in the town of Etna, named by Spang after the volcano Mount Etna.

The construction of the canal proved to be the catalyst for a major expansion at Mount Etna. To provide wood for charcoal, the company owned over 7,000 acres of Canoe Mountain pine, hemlock, and mixed-oak forests. With the security of canal transportation in his backyard, Spang had the ability and the capital to initiate significant changes and to increase the furnace's production. In 1832 Spang estimated his investment in land, buildings, machinery, and water power at \$70,000.

As laborers cut the stone and crafted woodwork for the new ironmaster's house, Irish workers dug the canal across the road. The new mansion was oriented to the canal, and a newly constructed warehouse was used to store products. Three lockkeepers' houses, an aqueduct, waste weir, and a bridge over the forge's race were situated on Mount Etna's lands.

During this period Spang established a new company store, a stone tenant house, and a bank barn. The company's stone 3-1/2 story gristmill with overshot wheel stood at the mouth of Roaring Run on the Juniata River. The original sawmill, near the mouth of Roaring Run, was supplemented by a new mill on Canoe Creek in the center of the Canoe Mountain timber tracts. Stables and barns for 50 horses used for the ironworks and farming were another important component of the Mount Etna operation.

Transportation between the furnace and the forge was significantly improved when Spang constructed a tram railroad along Roaring Run.

As the ironworks prospered, Spang constructed the Canoe furnace to increase production and efficiency. This furnace operated with steam machinery and was one of a handful of conical furnaces. A satellite plantation with a charcoal house, a blacksmith shop, an office, and workers' houses completed the new Canoe furnace site. Shortly afterwards, the Gaysport furnace in Hollidaysburg became the first regional furnace to convert to the new hot blast system, and Spang soon installed hot blast machinery at Mount Etna.

During the mid-19th century decline of the charcoal iron industry, Henry Spang died. The Mount Etna works were eventually sold to an experienced Blair County ironmaster, Samuel Isett, the business partner of Spang's son in Pittsburgh.

In 1857 the Pennsylvania Main Line Canal was bought by the Pennsylvania Railroad. The railroad maintained portions of the old canal for the iron companies, even though rail service bypassed the area.

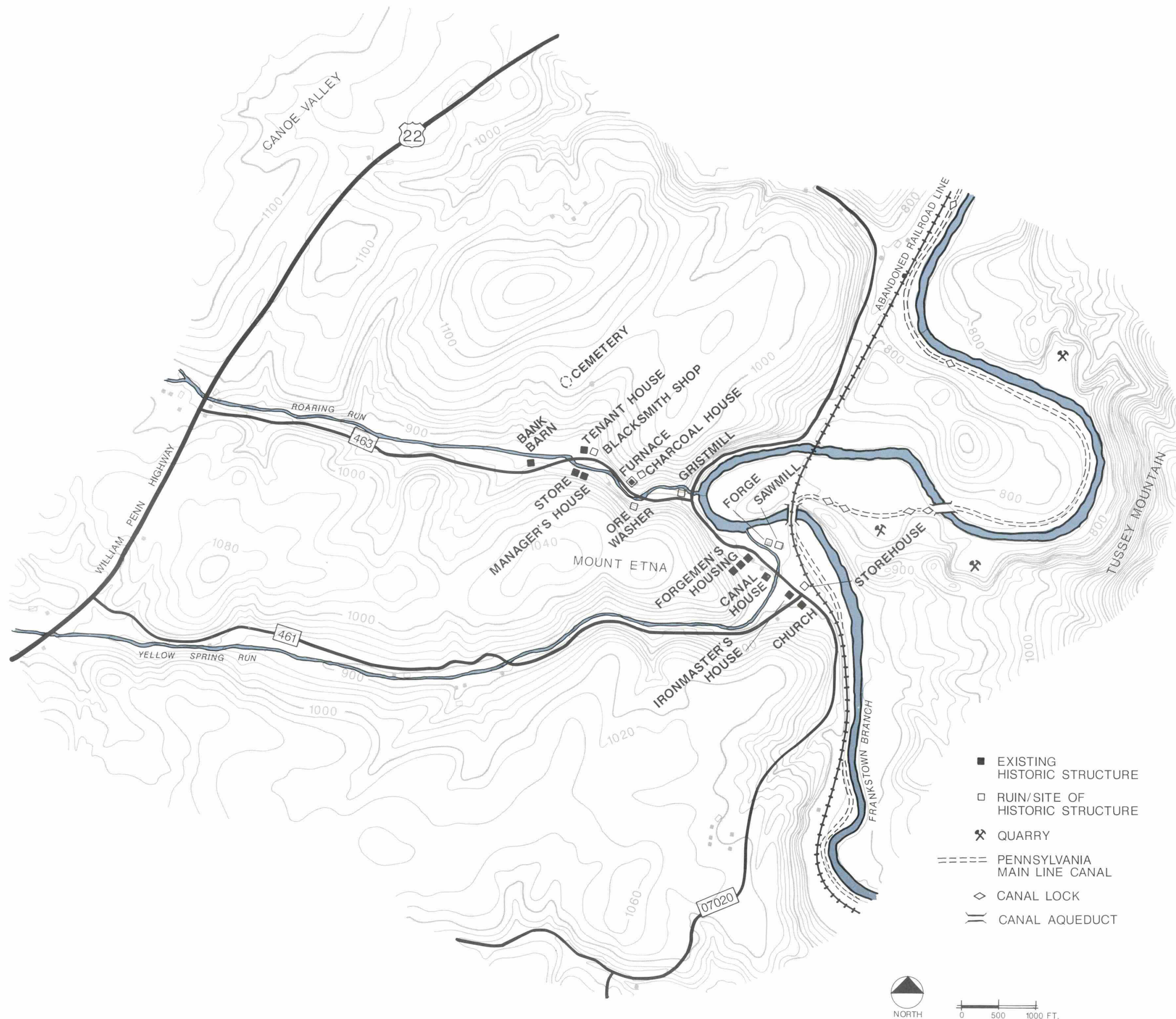
Just before the Civil War, Mount Etna experienced another period of prosperity that was soon augmented by the tremendous need for iron products during the war. The rejuvenated works produced iron not only for ordnance and munitions but for the rails

used in hundreds of miles of new railroad lines.

After the Civil War the works continued to prosper as long as the post-war reconstruction and railroad building boom prolonged the high demand for iron products. But by 1872 demand had declined; and only four Blair County charcoal iron furnaces, including Mount Etna, were manufacturing pig iron. When the canal was finally abandoned by the railroad in 1874, Mount Etna produced iron for the last time. It could no longer compete with the large integrated ironworks, such as the Cambria Iron Company.

Table 2: Chronology of the Mount Etna Iron Furnace Complex

1807	Authorization of the Harrisburg, Lewis-town, Huntingdon, and Pittsburgh turnpike (US 22), which signaled development of interstate transportation systems.
1808-09	Mount Etna furnace constructed and put into operation.
1823	Feasibility studies conducted for the Pennsylvania Main Line Canal; Henry Spang purchased the Mount Etna iron furnace.
1832	Canal constructed adjacent to Mount Etna; an ironmaster's house, tenant house, and other buildings constructed by Spang; 150 workers employed.
1846	Start of Pennsylvania Railroad (not in vicinity of Mount Etna), resulting in the decline of the canal.
1849	Beginning of the decline for charcoal iron industry; death of Spang at Mount Etna.
1851	Mount Etna bought by Samuel Isett.
1857	Canal bought by railroad and closed, except for segment along the Juniata River adjacent to Mount Etna.
1860	Economic boom for the ironworks as the nation prepares for the Civil War.
1874-75	Decline of Mount Etna as technological advancements at larger ironworks increase production and lower costs; canal operation at Mount Etna abandoned by railroad; Mount Etna furnace out of blast.



SIGNIFICANT RESOURCES
**MOUNT ETNA
IRON FURNACE COMPLEX**

BLAIR COUNTY, PENNSYLVANIA
AMERICA'S INDUSTRIAL HERITAGE PROJECT
UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

Description of Resources

The extant buildings at Mount Etna represent the industrial, agricultural, and residential components of the site. Structural investigations of these buildings will be necessary to determine specific conditions.

The furnace is a truncated pyramid of dolomite with rounded corners and three stilted arches. Refractory brick, impressed with the name "Anderson," lines the interior bosh. During preservation work in 1961 the furnace was capped with concrete, but subsequent freeze-thaw action collapsed the main arch. The other two arches and walls are intact and in good condition. During stabilization of the furnace in 1989 the main arch and upper walls were stabilized, and a temporary protective roof was erected over the furnace.

The remains of a large charcoal house sit on the hill above the furnace and consist of two parallel stone walls. Three stone buttresses support the southern wall, and the northern wall is built into the hill.

A one-story stone blacksmith shop was supposedly remodeled as a residence sometime in the early 1800s. The door is on the gable end of the structure, facing the tenant house. A stone corner fireplace has been modified with brick, and a large opening has been cut into the southern stone wall. The roof recently collapsed, but photographs indicate that gables had been added to the roof. Fire-reddened foundation stones and charred window jambs indicate a fire.

Associated with the blacksmith shop is an open spring surrounded by rectangular ashlar walls, with steps leading down into the water. The existence of a blacksmith shop at this site is based on information in an 1873 atlas; however, no physical evidence supports this use. Archeological and architectural studies would be necessary to confirm the structure's original purpose.

On the opposite side of Roaring Run are two stone buildings – the company store and the

manager's house. The vernacular Greek Revival company store, constructed about 1831, has double entry doors with transoms and a front porch bracketed by staircases. A central brick chimney pierces the hipped roof. This 2-1/2 story structure is vacant but in excellent condition, with no major alterations.

Adjacent to the company store is the earliest stone structure at Mount Etna. This three-bay, 2-1/2 story residence once had a full-length front porch. A massive interior stone chimney opens into a fireplace on the first floor, and on the same wall a winding staircase leads to the second floor. Other early elements, including random-width floor boards, beaded moldings, and hand-hewn roof rafters and floor joists, suggest the building is contemporary with the furnace construction and may have been the first ironmaster's house. A stone wall with steps leading to the stream has been constructed in front of the building. The structure is vacant but in good condition and has many original features.

An integral part of Mount Etna was one of the earliest and largest barns in the region, a 19th century Germanic bank barn, with a cantilevered forebay. This exceptional coursed-stone structure is composed of five bays and six trusses, and it measures 100 feet by 50 feet. Remnants of the 6-foot-high stone wall that once enclosed the barnyard exist northeast of the stable doors. Such features are more closely identified with eastern bank barns and may well reflect the origins of Henry Spang, who immigrated to the region from Chester County. Original grain storage bins, animal stalls, and wrought-iron hardware reflect the barn's function during the ironworks era. Despite a new roof and an alteration to the first floor when the building was converted to a dairy barn, the structure retains its historic appearance. The building is used to store farm equipment and is in good condition.

The largest and finest of the workers' houses was a 12-bay tenant house. Many of the skilled furnace and forge men were provided

with tenant housing in addition to a monthly stipend paid either as a fixed salary or as a rate per ton of product. Typically, housing was frame or log, but this large two-story stone house survives as a unique representative of a more sophisticated tenant housing form in the Juniata iron region. The building measures 70 feet by 18 feet and is of pegged mortise and tenon construction. Each of the three two-story apartments is composed of three rooms, an individual front door, and a staircase to connect the two stories. Minor floor plan alterations, the addition of a facade door, and the removal of one staircase have modified the original structure. The building is still used as a residence and is in good condition.

A small cemetery on the ridge behind the tenant house has over a dozen burials, principally children, with inscribed tombstones.

The Mount Etna ironmaster's house, constructed in 1832 by Henry S. Spang, is oriented to and contemporary with the Juniata Division of the Pennsylvania Main Line Canal. This five-bay, 2-1/2 story residence with a rear ell has an ashlar facade and coursed fieldstone on the remaining three sides. Fine wood paneling and mantel pieces adorn the interior. The structure continued to be used as the ironmaster's house under Samuel Isett. A Victorian porch was added to the original Greek Revival facade by the Isett family, and a frame addition to the ell was subsequently completed. A fire in 1980 destroyed the roof and much of the second floor of the house. A new roof has since been constructed, but is now partially missing. The residence has not been restored and remains unoccupied.

Adjacent to the ironmaster's house is the white clapboard Methodist/Episcopal church, which was constructed in 1860. When the structure was recently modified for residential use, the windows were infilled and the interior modified.

A row of three log houses, once occupied by Mount Etna's forgesmen, have retained their

original folk design and are in good condition. Two of the hand-hewn log houses measure 24 feet by 20 feet and were heated by stoves. Based on irregularities in the log construction as well as ground disturbances around the foundation, the last house in the row may have been moved or separated from a larger double-pen house. The stone foundation of a double-log house that recently burned completes the row of forgesmen's houses. Across the road is the site of another worker's house, now occupied by a trailer.

West of the log houses and oriented to the canal is a two-story boardinghouse (canal house) constructed about 1830. Unpainted clapboards cover an original structure and a 19th century addition. The house is currently occupied and in good condition.

In July 1988 a pedestrian survey of the east side of the Juniata River indicated the presence of four canal locks. The locations of three locks, a waste weir, and the foundation for the lockkeeper's house were recorded by the survey team. The fourth lock, a guard lock at the Juniata River, is now covered by tailings from a late-19th century limestone quarry. Stone piers for the aqueduct across the Juniata now support an abandoned railroad bridge. In addition a stone bridge over the forge's race was identified and found to be in excellent condition. This bridge was constructed as part of the canal system.

In the early 1890s the Petersburg branch of the railroad was constructed along the old canal right-of-way at Mount Etna, but the series of locks on the east side of the Juniata River were bypassed. Railroad construction promoted regional industry, and soon afterwards the Juniata Limestone Company opened a series of quarry sites near Mount Etna. During this period Samuel Isett served as the postmaster, and a new post office was constructed on an existing stone foundation. Two additional two-story frame dwellings from this period are near the old railroad bed.

NATURAL RESOURCES

The Mount Etna study area is within the Canoe Valley, an area rich in natural features. Canoe Mountain and Tussey Mountain are major landscape features that can be seen from the site. The Frankstown Branch of the Juniata River winds through the eastern portion of the study area. West of the branch steep walls rise to an upland area of gently sloping hills. Elevations range from 760 to over 1,000 feet.

The area is underlain by limestone and dolomite. Soils are derived from limestone, calcareous shale, and sandstone.

Mild temperatures and abundant precipitation characterize the climate. Average daily temperatures range from 22° in winter to 80° in summer. The relative humidity in mid-afternoon averages about 60 percent. Mean annual precipitation is 36 inches, average seasonal snowfall 36 inches.

Water Resources

The Frankstown Branch is the major stream in the study area. Water quality has been affected by various sources of pollution. Treated effluent from upstream sewage treatment plants and factories is discharged into the river. Nonpoint sources of pollution include acid precipitation and urban and agricultural runoff.

Roaring Run, a small tributary of the Frankstown Branch, flows through the middle of the study area. Upstream farming has increased stream sediment loads, nutrient input, and the risk of exposure to hazardous materials. Resulting poor water quality has reduced fishery and aesthetic values.

Floodplains include lands adjacent to the Juniata River and Roaring Run. Most of the standing structures are not in the 100-year or 500-year floodplain. Buildings on Legislative Route 07020 are on the fringes of the

floodplain, and canal remains and bridges along the river are within the floodplain.

Groundwater quality is not known, and farming activities in the area could affect quality.

Wetland areas have been delineated adjacent to the river, Roaring Run, and in other low-lying places.

Vegetation

Deciduous hardwood forests are the dominant cover on nonagricultural lands. Most of the forests are second- and third-growth. Common riparian species grow within the floodplains and in the area surrounding the furnace and the canal.

The area along Roaring Run near the office/store, manager's house, blacksmith shop, and tenant house is relatively open. Here, large weeping willows line the stream, and grasses and low shrubs form the ground cover. Farther up the valley cattle graze adjacent to Roaring Run.

Throughout the study area are nonnative ornamental plant species originally brought in by furnace workers and other early residents.

Fish and Wildlife

The mix of forest and farmland within and near the study area provides habitat for 50 species of mammals, 200 species of birds, and 24 species of reptiles. Wetlands and open water provide habitat for amphibians and fish. Birds are the most conspicuous animal life in the area.

Threatened or Endangered Species

Nineteen species of threatened or endangered plants and animals could occur in the study area. Because the study area has not been thoroughly surveyed, it is not known if any of these species actually occur on site.

RECREATIONAL RESOURCES AND OPPORTUNITIES

Outdoor recreational activities enjoyed by local residents and visitors include hunting, fishing, camping, sight-seeing, boating, hiking, bicycling, cross-country skiing, horseback riding, and nature study. Abundant open space in state parks, forests, and game lands in the region offers recreational opportunities. Lake Raystown in southern Huntingdon County provides water-based recreation and camping. As a result of these amenities, recreation plays a major role in the local economy.

The Frankstown Branch is an important local waterway for fishing and, to a lesser extent, canoeing. The portion within the study area has been classified as a warm-water fishery stream. Fishing quality in the river is considered good, although upstream pollution has degraded some habitat. During high-water periods the Frankstown Branch provides good canoeing, with fast runs and rapids of medium difficulty. The Frankstown Branch from just east of Hollidaysburg to the confluence with the Little Juniata has been categorized under the Pennsylvania Scenic Rivers Act as having statewide significance.

State game lands, which are managed by the Pennsylvania Game Commission, are used primarily for hunting, hiking, and fishing. Three state game lands are within a short distance of the Mount Etna study area and contain over 19,590 acres of wildlife habitat.

State parks offer various recreational opportunities, such as canoeing, camping, fishing, swimming, picnicking, cross-country skiing, nature studies, and hiking, as well as cabins and lodges. Canoe Creek State Park (975 acres) is the closest park to the study area, southwest of US 22. A 155-acre lake within the park offers swimming, fishing, and small-boating opportunities. Modern rental cabins in the park are available through the Bureau of State Parks.

State forests, which are managed by the Pennsylvania Bureau of Forestry for timber production and watershed protection, offer hunting, fishing, and hiking. Rothrock State Forest, a large tract of over 33,000 acres, is northeast of the Mount Etna area.

Many miles of hiking and equestrian trails are available to visitors of the state parks, forests, and game lands. Of note is the Mid-State Trail in Rothrock Forest and Standing Stone Experimental Forest. It is a 50-mile ridge trail that is managed by the state (and by Pennsylvania State University within the experimental forest). Extensive hiking and equestrian trails have been developed within Canoe Creek State Park.

Current recreational opportunities within the study area are limited because public access to or across private lands is restricted. Some individuals are granted permission to hunt on private lands. Visitors can enjoy sight-seeing from the public roads. There are a few trails and roads within the study area for casual walking, bicycling, and horseback riding.

Potential recreational activities within the study area include hiking, bicycling, horseback riding, hunting, fishing, sight-seeing, bird-watching, canoeing, picnicking, and nature study. The development of roads, trails, parking areas, and canoe launches on the Frankstown Branch, along with other visitor facilities, would substantially increase recreational opportunities in the Mount Etna area.

MANAGEMENT ALTERNATIVES AND LAND PROTECTION

ALTERNATIVE A (STATUS QUO) – CONTINUE PRIVATE OWNERSHIP OF THE MOUNT ETNA HISTORIC PROPERTIES

Description

Under alternative A current ownership and use patterns would continue. Private landowners could sell their properties to any interested party. The Blair County Historical Society would continue efforts to restore the furnace. Under this alternative only protection of the furnace could be guaranteed.

Operation and Management. Private landowners would continue to live on, lease, or use their properties as they chose. The Blair County Historical Society would restore the furnace. Catharine Township would maintain Route 463 through the site and would replace two bridges on that road across Roaring Run.

Visitor Use. Visitor access to the site would be limited to driving past the furnace and through the site on public roads. An interpretive wayside could be placed on Blair County Historical Society property at the furnace site.

Resource Protection. Except for efforts by the Blair County Historical Society to restore the furnace, all other actions would be at the discretion of private owners. Owners could request technical assistance for restoration efforts from the Pennsylvania Historical and Museum Commission or the National Park Service. Historical and archeological research could continue. The Pennsylvania Historical and Museum Commission would update the form for the National Register of Historic Places.

Site Maintenance. Except for maintenance and protection of the furnace by the Blair County Historical Society, private landowners

would continue to be responsible for on-site maintenance.

Impacts

No visitor use of the historic properties or surrounding natural areas would be allowed. Because only a few acres around the furnace would be publicly owned, opportunities for access and recreation would be limited.

Historic structures would be allowed to continue to deteriorate, possibly resulting in their eventual loss. Private owners could remove structures, change the landscape setting (which remains similar to historical conditions), or construct new buildings within the historic area. Any of these actions would adversely affect the historical setting.

Archeological resources could be adversely affected by any ground-disturbing activities taken by owners or tenants. Archeological research could continue if landowners granted permission. Artifacts collected during excavations on private land would remain the property of the landowner; consequently, the integrity of the collection could not be guaranteed. Current residents do not allow trespassers, which now effectively protects archeological resources from outside pothunters.

Additional research could reveal more information about significant resources, but unless private landowners wished, no additional protection efforts could be undertaken.

ALTERNATIVE B – DEVELOP THE MOUNT ETNA HISTORIC AREA AS A COMMERCIAL BUSINESS ENTERPRISE

Description

A private group would be encouraged to acquire and operate a commercial business at the Mount Etna furnace site. The primary motivation behind this enterprise would be the economic promotion of the historic (and possibly the archeological) resources. A private owner or owners could acquire all or part of the historic core area, and parts of the study area/site could be owned by other entities. Some portions of the site could be leased or used by business operators other than the primary site owner.

Operation and Management. The site would be managed as a commercial venture, so the protection of significant historic resources might be of secondary importance. Many historic structures could be adaptively used for various economic activities, and the presence of such activities could make the area more attractive to local and regional visitors. New construction might be allowed, depending on funding and tax credits.

Visitor Use. Visitor activities would be at the owner's discretion and could range from tours and retail shopping to camping and resort activities. To participate in most activities, and to support the commercial enterprise, users would probably have to pay a fee. The owner would decide the extent of interpretive opportunities and the content of programs.

Resource Protection. The protection of resources would be at the owner's discretion, depending on the purpose of the group and guidance offered by the Pennsylvania Historical and Museum Commission. Tax credits for rehabilitating historic properties could be obtained by the owner if appropriate historic preservation laws and procedures were followed. Efforts to protect the site would be monitored if tax credits were

received. If only private money was used to operate and maintain the site, specific maintenance or protection efforts would not be required.

Site Maintenance. Maintenance would be the responsibility of the owner. Local law enforcement as well as a private security service would be needed to protect private property all year and to ensure visitor safety when the site was open to the public.

Impacts

Unless private business owners used tax credits and followed standards for restoring and using the historic structures and sites, commercial development would likely change the character and integrity of the site.

Modifying existing buildings and constructing new buildings, parking areas, or other intrusions would affect the site's historical qualities. Even if efforts were made to protect significant cultural resources, new construction would introduce nonhistoric elements in the historic district. Privately funded new construction and site rehabilitation could adversely affect archeological resources. Public agencies could not control resource protection if private funds were used for management and operations.

Public access to the site could be limited and fees charged for entry as well as all activities promoted at the site.

Profits would not necessarily be spent for onsite resource protection or in the local community. Additional local employment opportunities could be provided. Additional staff and funding could be required for local law enforcement agencies.

A commercial venture might be profitable only during the summer, and the site might be closed throughout the remainder of the year. This would preclude any off-season recreational activities, except where access could be gained from public roads.

ALTERNATIVE C – ESTABLISH A LOCALLY OWNED AND MANAGED HISTORICAL PARK

Description

Either Catharine Township, Blair County, or a local group would own and operate the Mount Etna historic area as a local park. This alternative would require a long-term commitment by local government. Technical assistance from the state (the Pennsylvania Historical and Museum Commission or other departments) or the National Park Service could be available to the governing group.

Visitor use would focus on the viewing of historic structures and passive recreation rather than on an in-depth look at the history and significance of the site.

Operation and Management. The local governmental entity would be responsible for protecting, preserving, restoring, and interpreting the historic area and for making it available to the public. A management plan would be prepared to determine specific uses and protection needs. Entrance fees and local fund-raising efforts could be the only option to finance site management. Local governmental law enforcement actions would be required. A commission could also be established to guide site management.

Visitor Use. Visitor activities would include picnicking, fishing, and school visits. Some interpretation would be through wayside interpretive panels and programs.

Resource Protection. Historic structures and ruins would be stabilized and protected from the weather. Unless funding was received for restoration, adaptive uses would be limited. Site protection activities would depend on funding sources.

Site Maintenance. The local governmental entity or group that owned the property would be responsible for maintaining and protecting the site.

Impacts

The creation of a local historical park would provide a site for local residents to enjoy the natural surroundings and to learn about the history of their community. Significant historic resources would have limited exterior protection, compared to the probable loss of resources under alternative A. If local funds were limited for site restoration and protection, some of the less important resources, or those in very bad condition, could be irretrievably lost.

Site acquisition would probably take additional time if financial assistance was received from other sources. Greater recreational use of the area would increase the possibility of vandalism to the resources. Archeological resources could be minimally protected because local controls would somewhat limit access.

Technical assistance from the Pennsylvania Historical and Museum Commission or the National Park Service would ensure that historical and archeological research adhered to professional standards and that artifact collections were properly curated.

ALTERNATIVE D – CREATE A NON-PROFIT FOUNDATION TO MANAGE AND OPERATE THE HISTORIC AREA

Description

A nonprofit foundation would be established to manage and operate the Mount Etna historic area. This group could be created under Pennsylvania laws as a nonprofit corporation. A commitment from interested parties and private donations would be necessary to form this foundation. The specific purpose, significance, and objectives for the site would be determined in the legal documents establishing the foundation.

The primary motivation for managing the site would be resource oriented. Ownership of the property could be by the foundation, the state or federal government, or another public entity.

Operation and Management. The foundation would manage the Mount Etna iron furnace complex as a historic site. The private sector would be encouraged to assist in the operation of the site because donations would be tax deductible. The site would derive its income from the foundation and private donations, as well as from public money and entrance fees.

Technical assistance from the National Park Service or the Pennsylvania Historical and Museum Commission could be provided to restore the historic structures and related scene.

Interpretive programs could be developed with input from the National Park Service, the commission, local historical groups, and others. Local school groups could be taken through the site by Mount Etna staff or volunteers. Various other programs and activities could occur under the guidance and direction of the foundation.

A management plan would be prepared to determine specific uses and site protection needs.

Visitor Use. The level and types of activities at the site would potentially attract national, regional, and local visitors, as well as providing the greatest opportunities for diverse visitor use.

Interpretive programs would focus on the significant cultural resources and would tell the story of iron making in the 1800s, the relationship of the Mount Etna iron furnace complex to other ironworks, the decline and end of operations, and the relevance to the modern steel industry. Interpretation could be accomplished through museum exhibits, audiovisual presentations, sales of publications in a visitor center, and guided and self-guided hikes. Interpretive themes would also relate to themes at America's Industrial Heritage Project that emphasize transportation and the iron and steel industry.

Trails would be integral to overall visitor use. Visitors would park at designated areas on the edges of the historic core, and trails would lead to nearby historic structures that would be adaptively used as visitor contact points. Here visitors would be oriented to the site and begin their visits. Pedestrian access would be provided to several prominent structures, such as the barn, tenant house, furnace, and ironmaster's house. Visitors could choose to visit as many sites as they liked.

Educational and recreational activities focusing on the natural environment, which would be protected to help maintain the historical scene, would also be an important part of the visitor experience. Nature walks, bird-watching, hiking, fishing, and canoeing would be offered.

Resource Protection. The exteriors of most historic structures would be preserved or restored, and the interiors would be adaptively used. Resource studies would be conducted to determine the specific level of

treatment for each structure. Ruins and physical features, such as road traces, creeks, and stone fences, would be protected. The surrounding landscape would be preserved, and where necessary, it would be restored to resemble the historical scene in order to enhance site interpretation.

The Pennsylvania Historical and Museum Commission or the National Park Service could provide technical assistance to preserve/restore the site and to help guide interpretive programs and activities.

Natural resources would be protected, especially those found to be important to wildlife habitat, the river environment, and other values (such as threatened or endangered species).

Site Maintenance. The site owner would be responsible for maintenance. If the property was owned by any entity other than a foundation, agreements with the foundation would be needed to determine how the buildings and surrounding lands should be maintained.

Impacts

Alternative D would provide for the long-term management, preservation, and interpretation of the Mount Etna historic area. Because the site operations would be directed by a foundation, opportunities for input by local groups and individuals could be limited.

Visitor access would be available to most of the site. Adjacent natural resources would be protected, and diverse recreational opportunities would be provided. Permanent public access to the Juniata River corridor would be provided for recreational activities, such as fishing and canoeing.

Through cooperative activities and programs a wide range of information could be made available to local, regional, and national visitors. On-site interpretation of an iron-making community would help explain the area's history.

Historic structures would be preserved or restored, along with the adjacent landscape. Archeological resources would be protected, and research could continue. Artifacts would be properly protected.

This alternative assumes that a foundation could be established to provide financial support; it is not known if this is feasible.

ALTERNATIVE E - ESTABLISH MOUNT ETNA FURNACE NATIONAL HISTORIC SITE

Description

The Mount Etna iron furnace complex would be established as a national historic site, and it would be administered as a unit of the national park system, under the jurisdiction of Allegheny Portage Railroad National Historic Site. The National Park Service would acquire in fee title portions or all of the site from private landowners. Significant cultural resources, as well as the surrounding natural environment, would be protected, managed, and interpreted, and recreational opportunities would be provided. Easements might be acquired on adjacent lands within the park boundary to protect the viewshed or to provide access to the site.

Operation and Management. A management plan would be prepared to determine specific uses and site protection requirements. The National Park Service would provide all site development and necessary amenities for the protection and use of the historic site. Access, circulation, parking, and utility systems would be developed.

Visitor Use. The level and types of activities offered at the site would attract national, regional, and local visitors. Activities would be similar to those described for alternative D. Visitor access to the majority of the historic site would be provided by trails.

A new or different aspect of visitor activities under this alternative would emphasize the site's historical values and its connection to the Pennsylvania Main Line Canal and the Allegheny Portage Railroad National Historic Site. Mount Etna's relationship with sites that are part of the America's Industrial Heritage Project would be explained.

Interpretive programs would be similar to those described for alternative D and would be accomplished through museum exhibits, audiovisual presentations, sales of publi-

cations in a visitor center, and guided and self-guided hikes. Visitors would park at designated areas on the edges of the historic core and would follow trails to visitor contact points (historic structures would be adaptively used for this purpose). Here visitors would be oriented to the site and begin their visits. Trails would lead to the primary structures, such as the barn, tenant house, furnace, and ironmaster's house. Visitors could go to as many sites as they wished.

The natural environment would be protected, and educational and recreational activities would be offered. Activities such as nature walks, bird-watching, hiking, fishing, and canoeing would broaden the visitor experience.

Resource Protection. All significant historic resources would be protected, as described under alternative D. Resource studies would be conducted to determine the level of treatment for each structure. Most exteriors would be preserved or restored, while the interiors would be adaptively used. Ruins and physical features, such as road traces, creeks, and stone fences, would be protected. The surrounding landscape would be preserved, and where necessary the historic conditions would be restored to allow more effective site interpretation.

Natural resources would also be protected, especially those important to wildlife habitat, the river environment, and other values, such as threatened or endangered species.

Site Maintenance. The National Park Service would be responsible for maintaining all properties it owned in fee title. Maintenance responsibilities for properties where the Park Service obtained easements from private landowners would be stipulated in the easement document.

Impacts

This alternative would have impacts similar to those described for alternative D, including

long-term protection, management, and interpretation of significant cultural resources. This alternative would provide the most diverse opportunities for visitor use.

Archeological resources would be protected, and research could continue. Artifacts would be properly protected. With NPS management of the site, adequate funds to protect and enhance the site would be more likely than under alternative D.

Visitation at Hopewell Furnace National Historic Site, a national park system area that is similar to Mount Etna, has recorded an average of about 130,000 annual visits over the past few years. Because Mount Etna would be related to America's Industrial Heritage Project, visitation could be slightly higher than this level once the area was fully operational.

BOUNDARY OPTIONS

Two boundary options are considered in this *Study of Alternatives*. The options are based on the significant remains of the Mount Etna iron furnace complex, as well as natural and recreational resources. Also considered were provisions for access to the site, parking, utility needs, and pedestrian trails through the site. Table 3 shows which boundary options would be most appropriate with each alternative.

Most of the lands under either boundary option could be held in fee ownership by the principal party managing the site. Additional land protection options could include easements to protect the viewshed outside the core area, access rights-of-way through private lands, agricultural easements or leases, or cooperative agreements for the use of private lands. Related sites outside the boundary could be protected through cooperative agreements or easements.

Historic Core Area

Under this option most significant cultural resources along Catharine Township Route 463 from the barn to the Juniata River would be within the boundary. This would include the forge site along the river, a small portion of the railroad grade and river frontage, the houses along Legislative Route 07020, the ironmaster's house, and the church on Catharine Township Route 461. The boundary would not cross the river and would not include the quarry or canal locks, thereby affecting the potential for interpreting and protecting the entire site. Only a relatively small natural area along the river would be included in the core area.

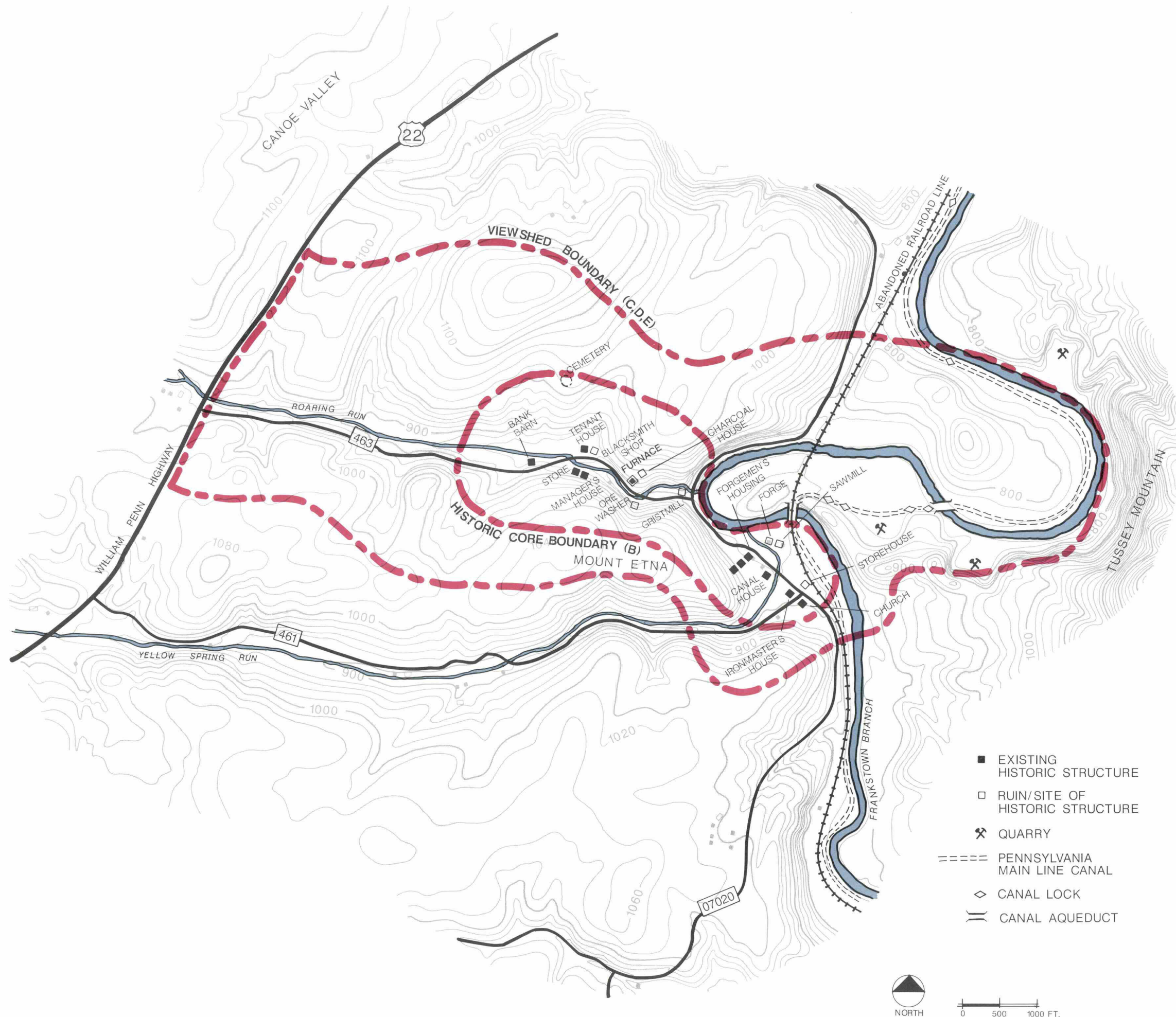
Viewshed

This option would include the core area plus the surrounding lands to the north and south ridgelines, thus providing for a greater level of site protection. Most of the significant resources – existing structures as well as foundations and archeological sites – would be within this boundary. Additional land between US 22 and the barn north of Roaring Run would be included to allow for an alternative access into the site instead of routing all access through the Bigelow farm off Catharine Township 463.

The quarry site and Juniata River shoreline area from near Catharine Township 461 to the vicinity of the quarry, including the river, would be included in the boundary, plus the remains of the Pennsylvania Main Line Canal, the railroad, and furnace complex operations to allow for a more fully developed interpretive program and resource protection.

TABLE 3: MANAGEMENT ALTERNATIVES
AND BOUNDARY OPTIONS

ALTERNATIVE	BOUNDARY OPTION	
	HISTORIC CORE	VIEWSHED
A--No Action		none
B--Commercial Enterprise	X	
C--Local Management		X
D--Nonprofit Foundation		X
E--National Historic Site		X



BOUNDARY OPTIONS
**MOUNT ETNA
IRON FURNACE COMPLEX**

BLAIR COUNTY, PENNSYLVANIA
AMERICA'S INDUSTRIAL HERITAGE PROJECT
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NATIONAL PARK SERVICE

ON MICROFILM

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LAND PROTECTION STRATEGIES

Of the possible landownership strategies that may be available to protect the significant Mount Etna resources, the following are recommended:

- **Alternative A** – The furnace would continue to be protected by the Blair County Historical Society. No other protection tools would be available.
- **Alternative B** – The historic core area would be acquired in fee title.
- **Alternative C** – The historic core area would be acquired in fee title, and the remaining viewshed area would be protected by means of scenic easements and other techniques.
- **Alternative D** – The historic core area would be acquired in fee title, and the viewshed area would be protected through a scenic easement or fee title, depending on available funds.
- **Alternative E** – The historic core area would be acquired in fee title, with the viewshed being acquired in fee title or easement, based on a management plan for the site and depending on available funding.

DEVELOPMENT COST ESTIMATES

The costs for the described alternatives are estimates and are included for comparison purposes. Land acquisition costs have not been determined, but local land prices range from \$400 to \$600 per acre, plus building costs. The following assumptions were made as to how the site would be developed if any of the alternatives considered was implemented:

- Access under alternative B or C would be the existing gravel road (Catharine Township 463), while under alternative D or E a new road would be required from US 22.
- A small visitor facility would be provided under alternative B or C, while a large facility that would offer more comprehensive services would be provided under D or E.
- All alternatives except A would require utility upgrades to meet local requirements.
- Maintenance needs would be less under alternative B than under alternative C, D, or E.

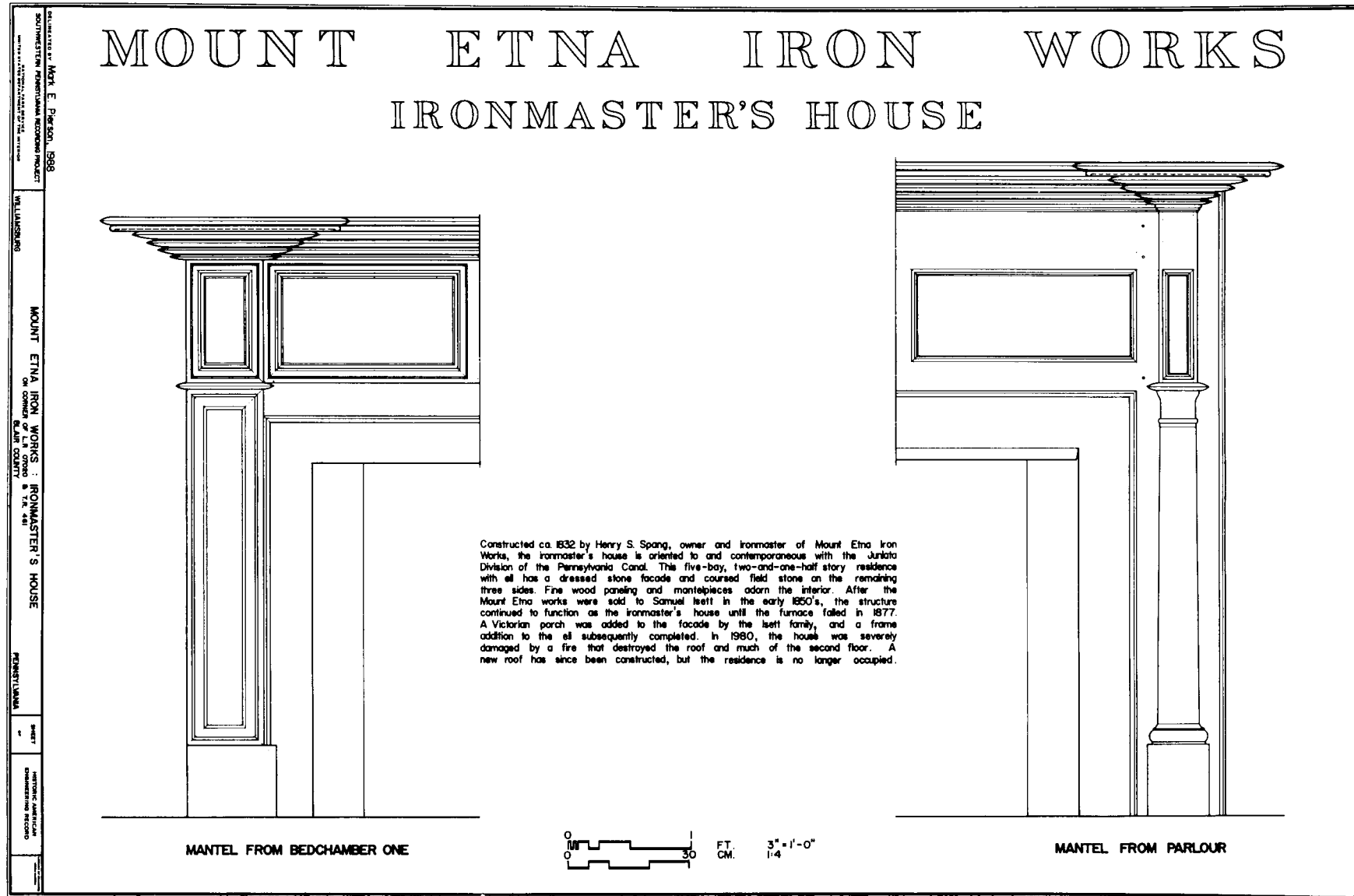
- Food service would be provided under alternative B, D, or E.
- Under alternative D or E a small section of the Pennsylvania Main Line Canal would be restored for resource protection and interpretive purposes.
- Development levels under alternatives D and E would be similar.

TABLE 4: PRELIMINARY COST ESTIMATES

<u>ALTERNATIVE</u>	<u>DEVELOPMENT COST</u>
A-No Action	0
B-Commercial Enterprise	\$ 4,325,000
C-Local Management	\$ 3,100,000
D-Nonprofit Foundation	\$16,825,000
E-National Historic Site	\$16,825,000

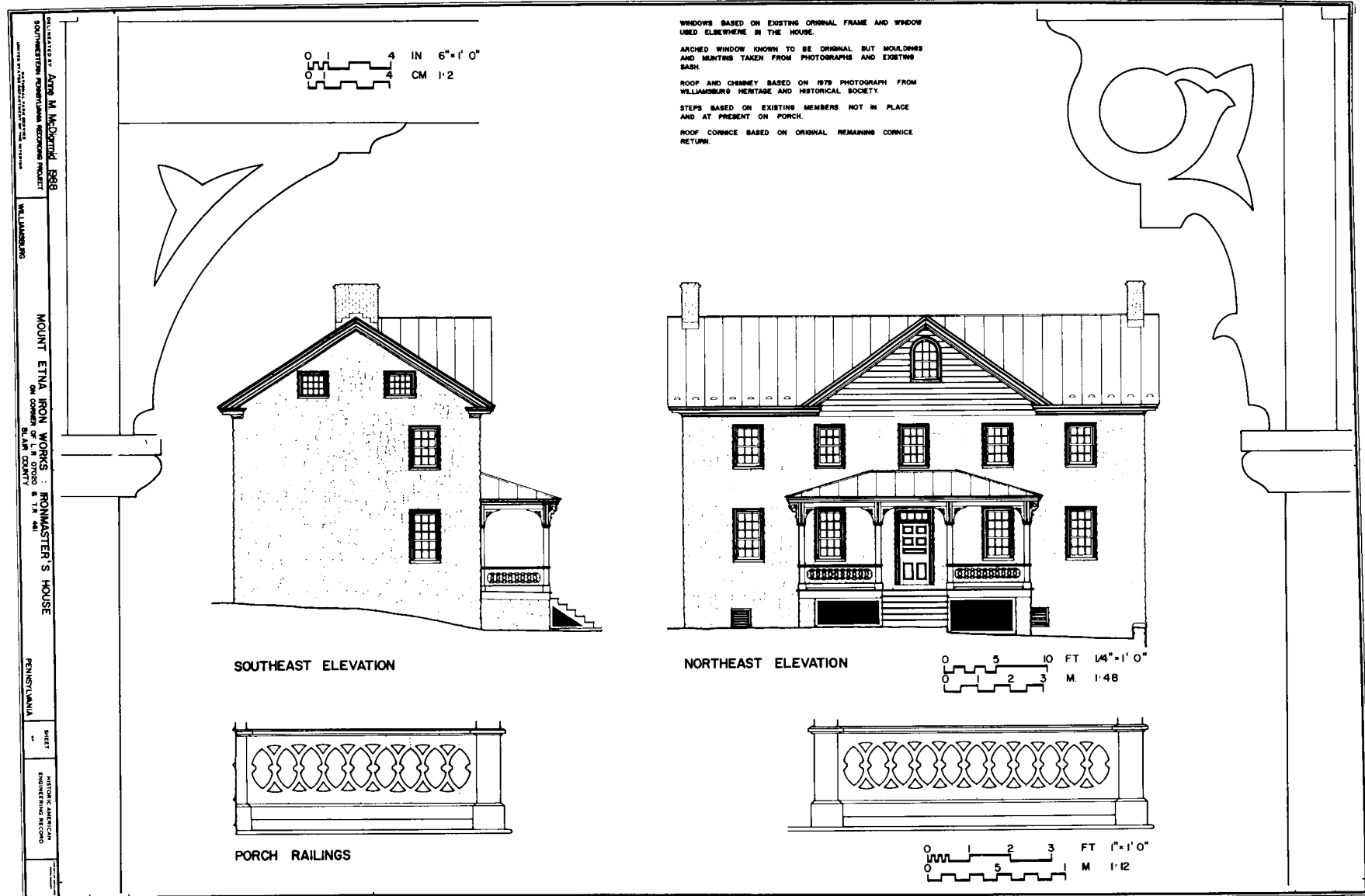
Note: Costs are based on NPS estimating procedures and may vary considerably from the final cost, depending on the managing entity. This does not include land acquisition costs.

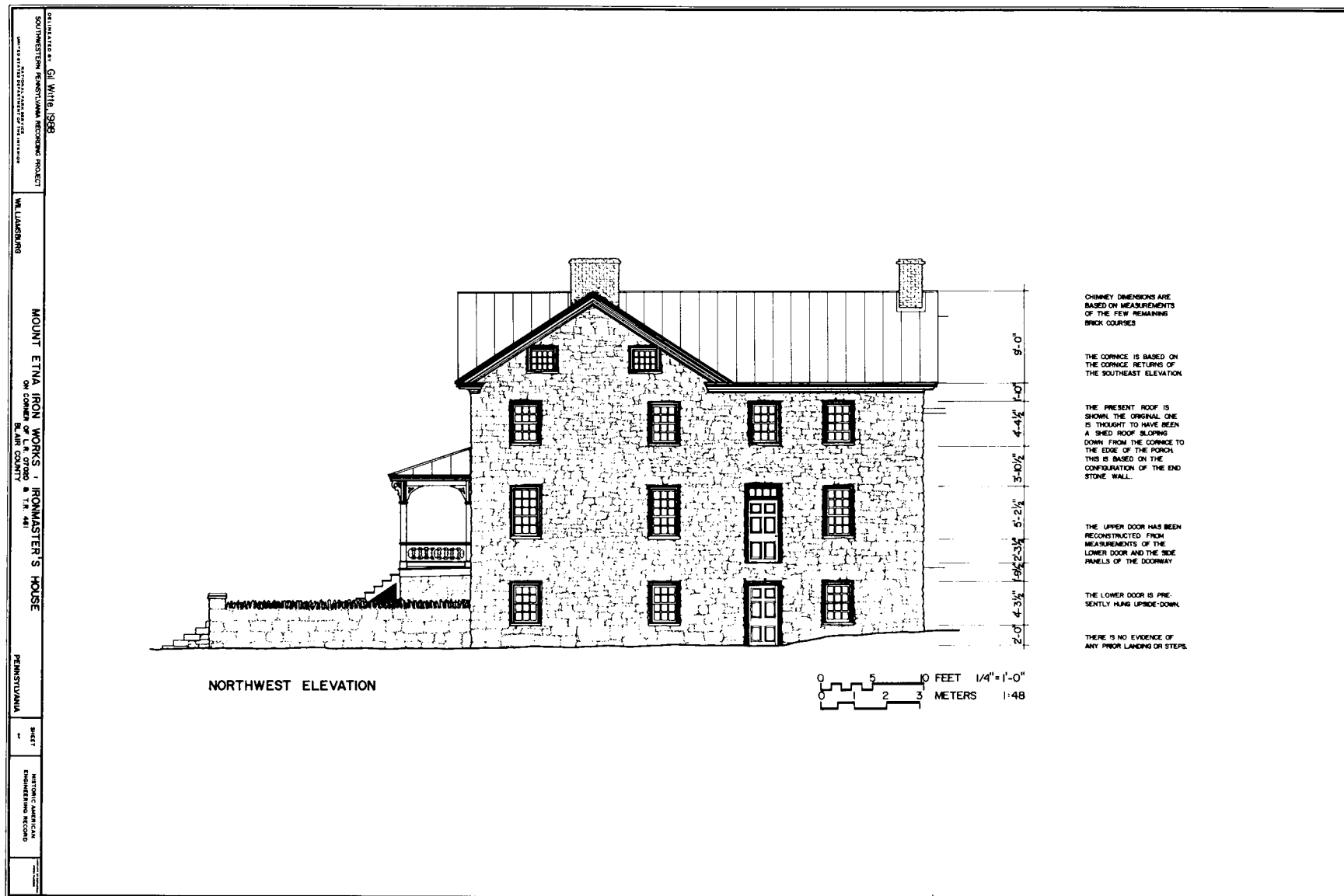
APPENDIX A: HISTORIC AMERICAN ENGINEERING RECORD DRAWINGS

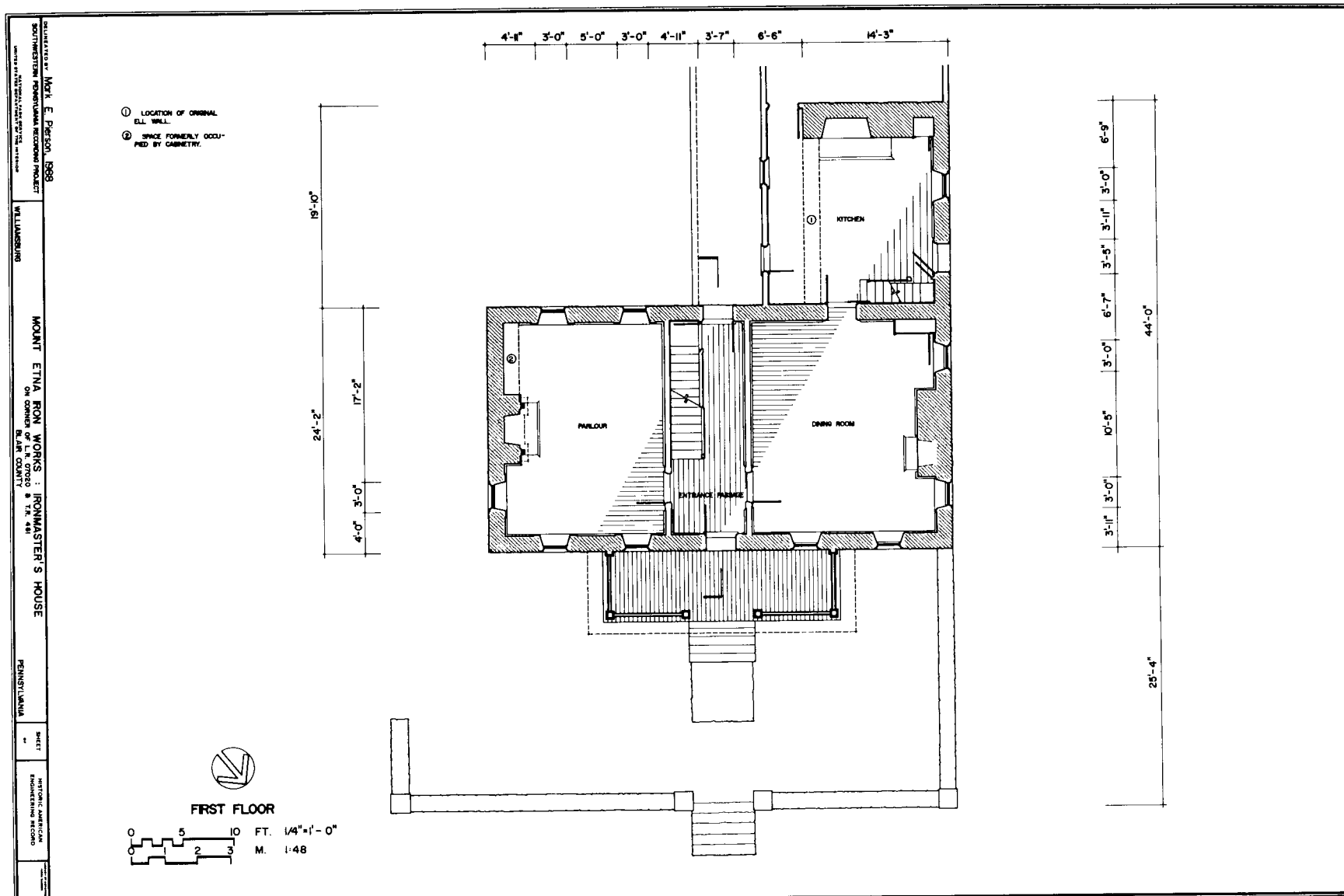


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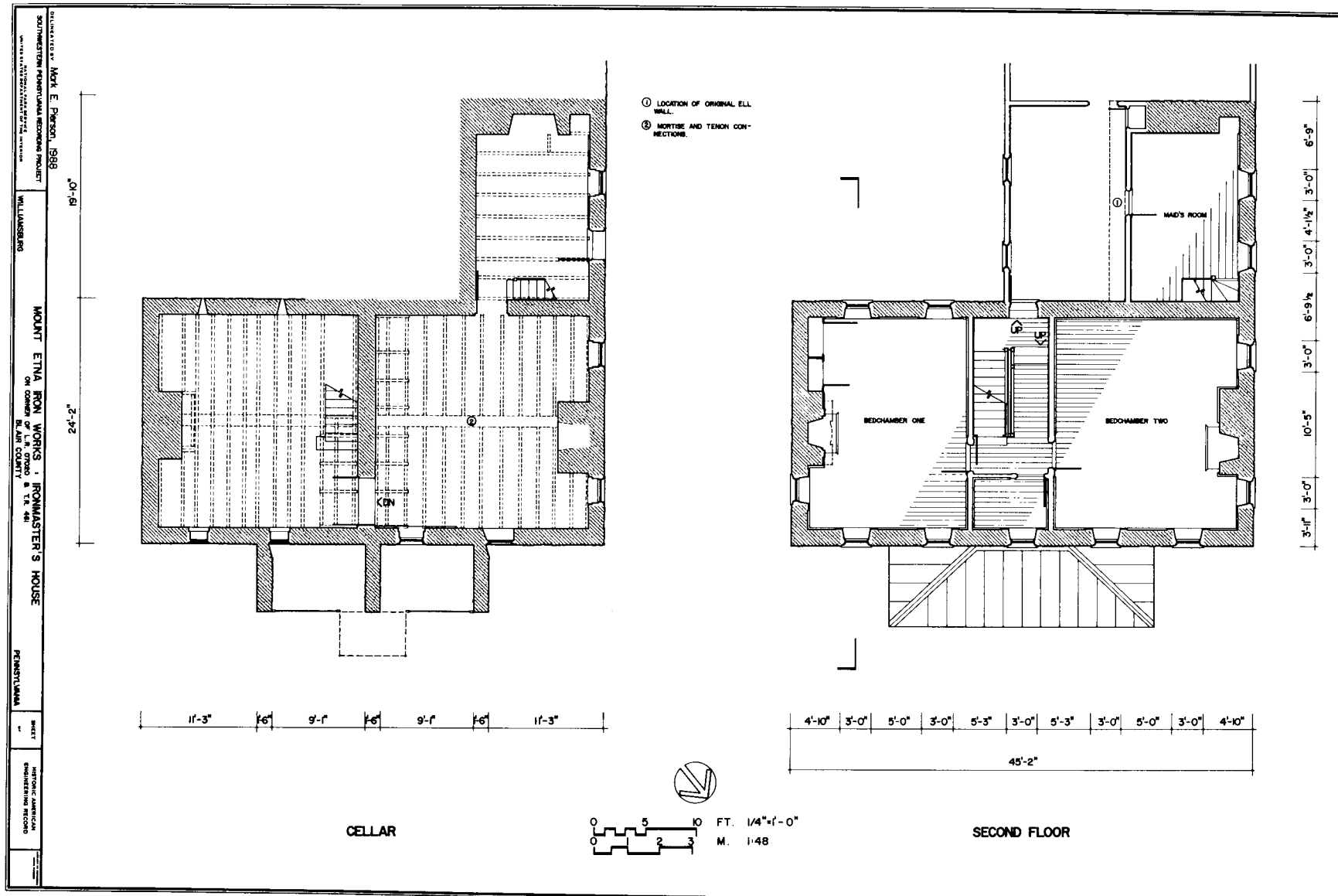




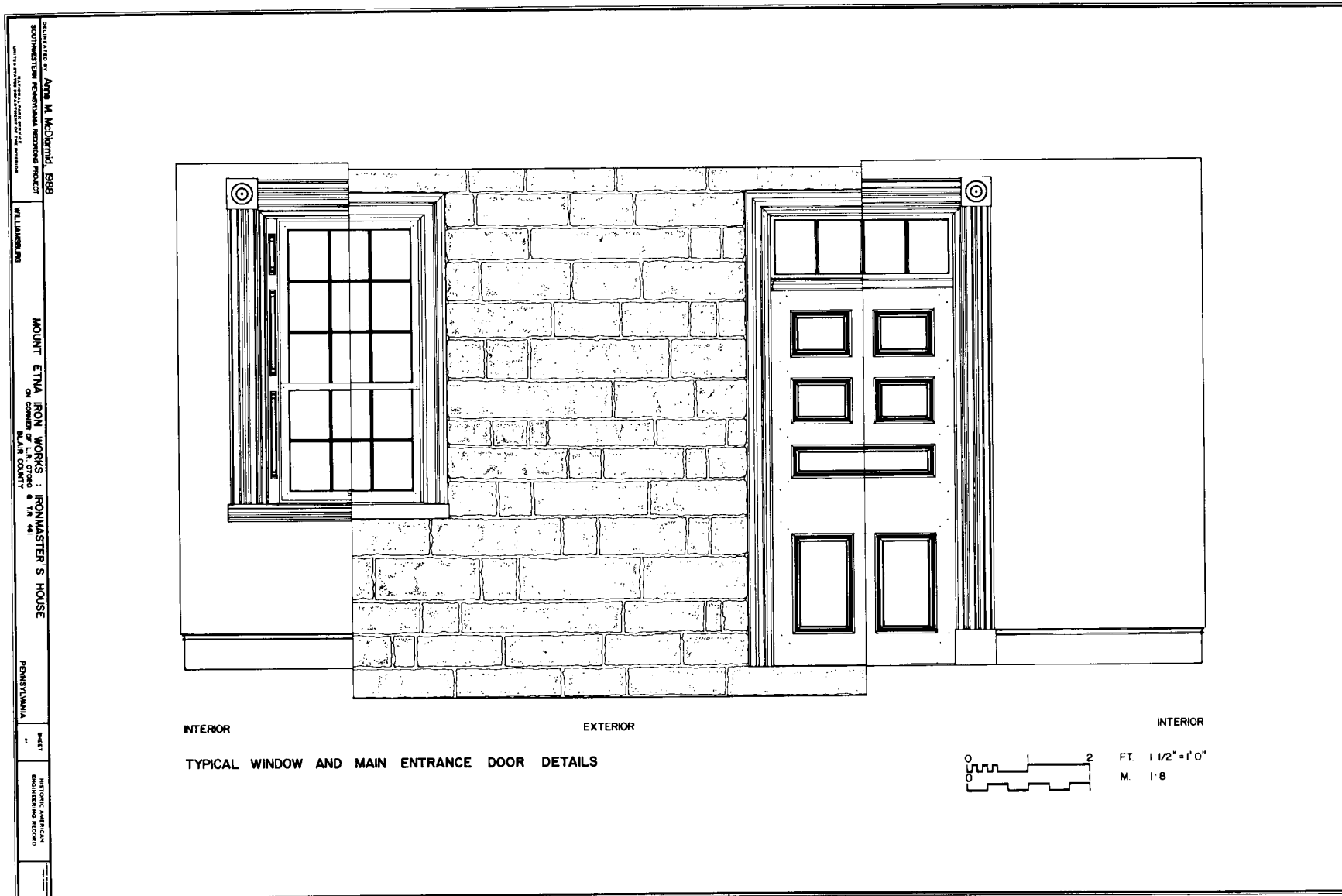


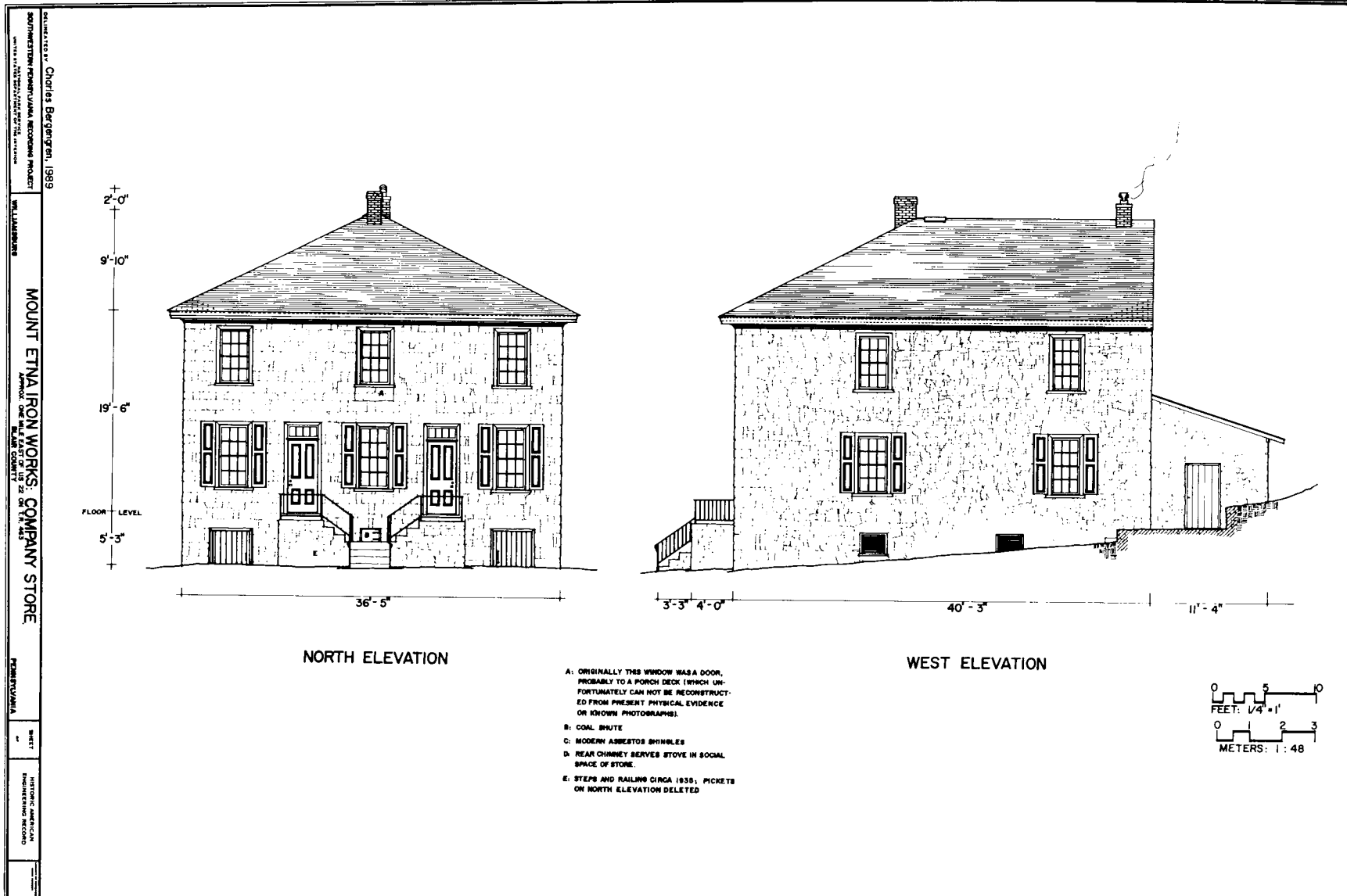
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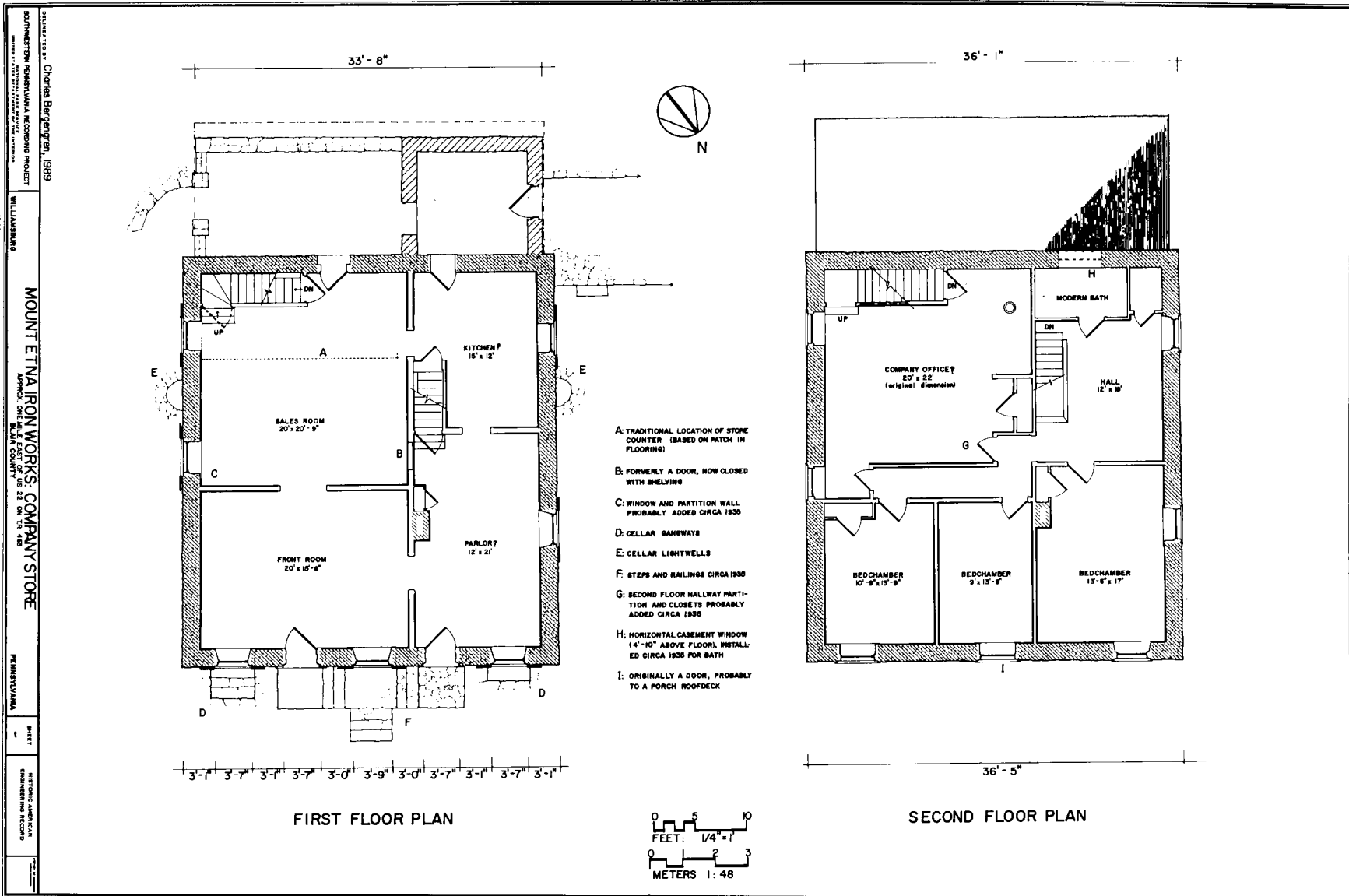
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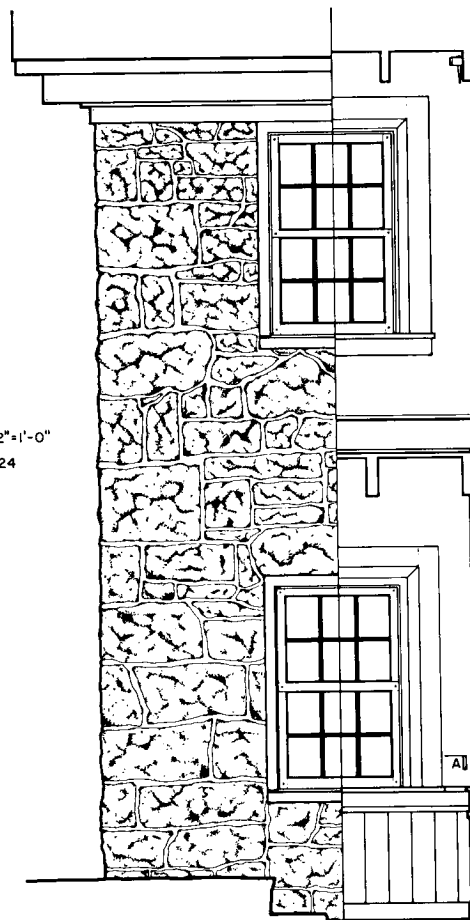


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MOUNT ETNA IRON WORKS TENANT HOUSE

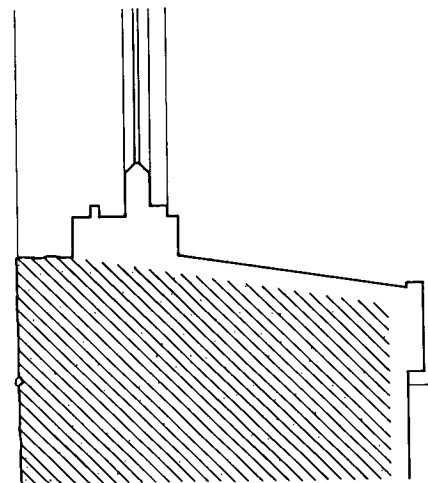


FT. 1/2"=1'-0"
M. 1:24



EXTERIOR INTERIOR

TYPICAL WINDOW DETAILS



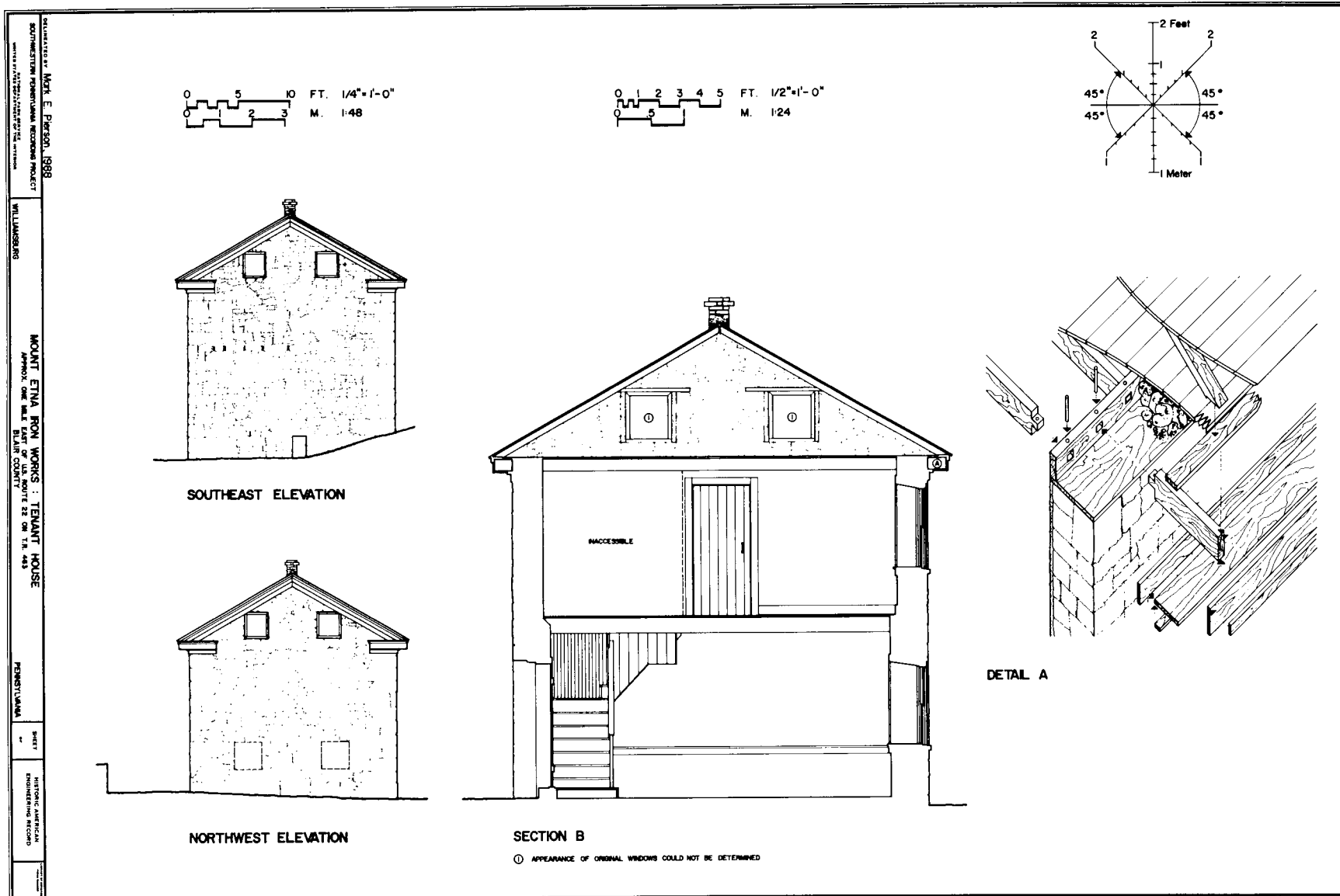
SECTION A

The largest and finest of the workers' housing maintained by the Mount Etna Iron Works was this twelve bay tenant house. As a perquisite, many of the skilled furnace and forge men were provided with tenant housing in addition to a monthly stipend paid either as a fixed salary or a rate per ton of product. Typically, such housing was constructed of frame or log. This large two-story stone house survives as a unique representative of a more sophisticated tenant housing form in the Juniata Iron region. The building measures approximately 70' x 18' and contains pegged mortise and tenon construction. Each of the three two-story apartments is composed of three rooms, an individual front door and a staircase to connect the two stories. Minor floor plan alterations, the addition of a facade, and the removal of one staircase have modified the original structure. The building continues to function as a residence and endures in good condition.

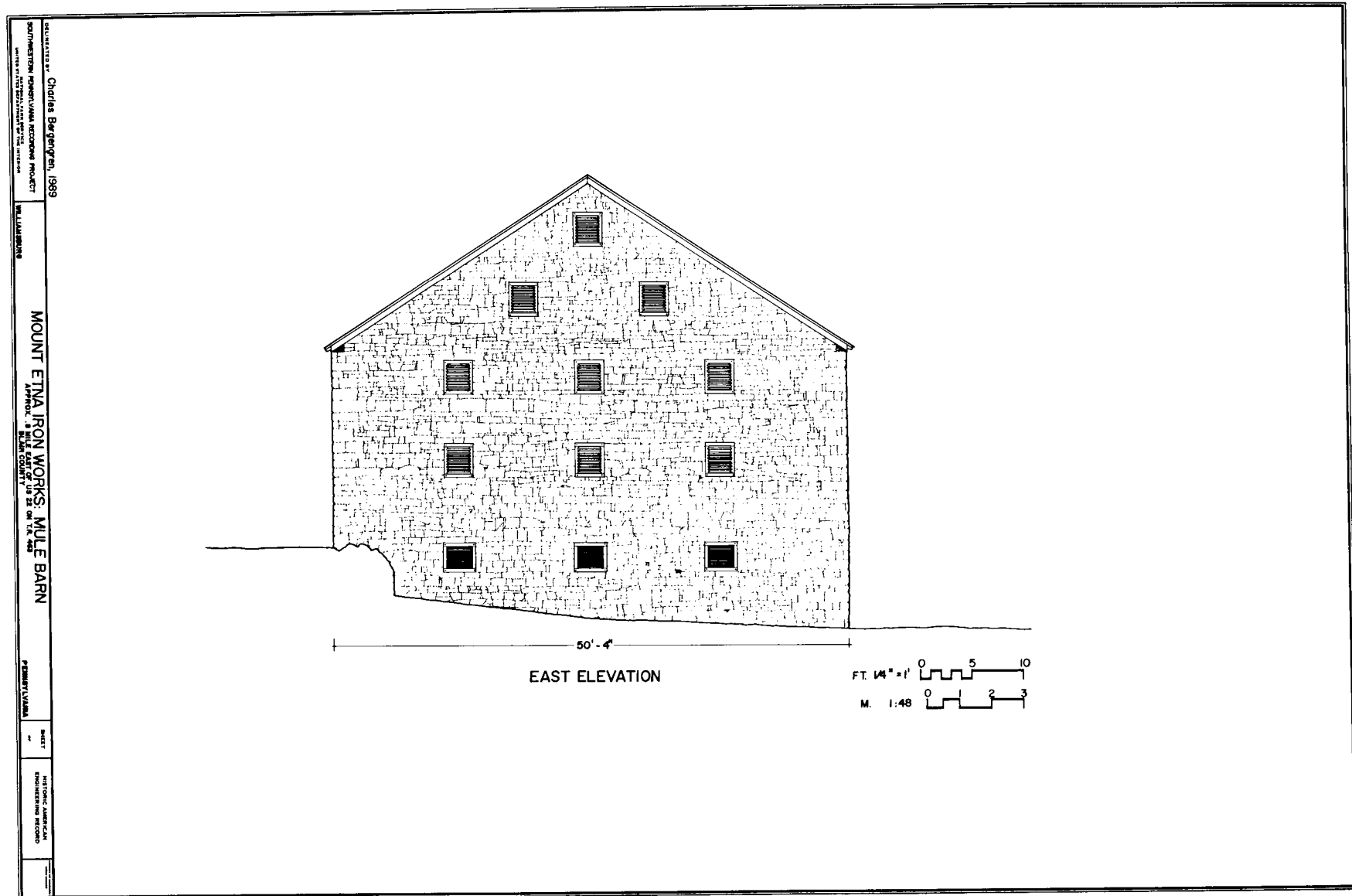
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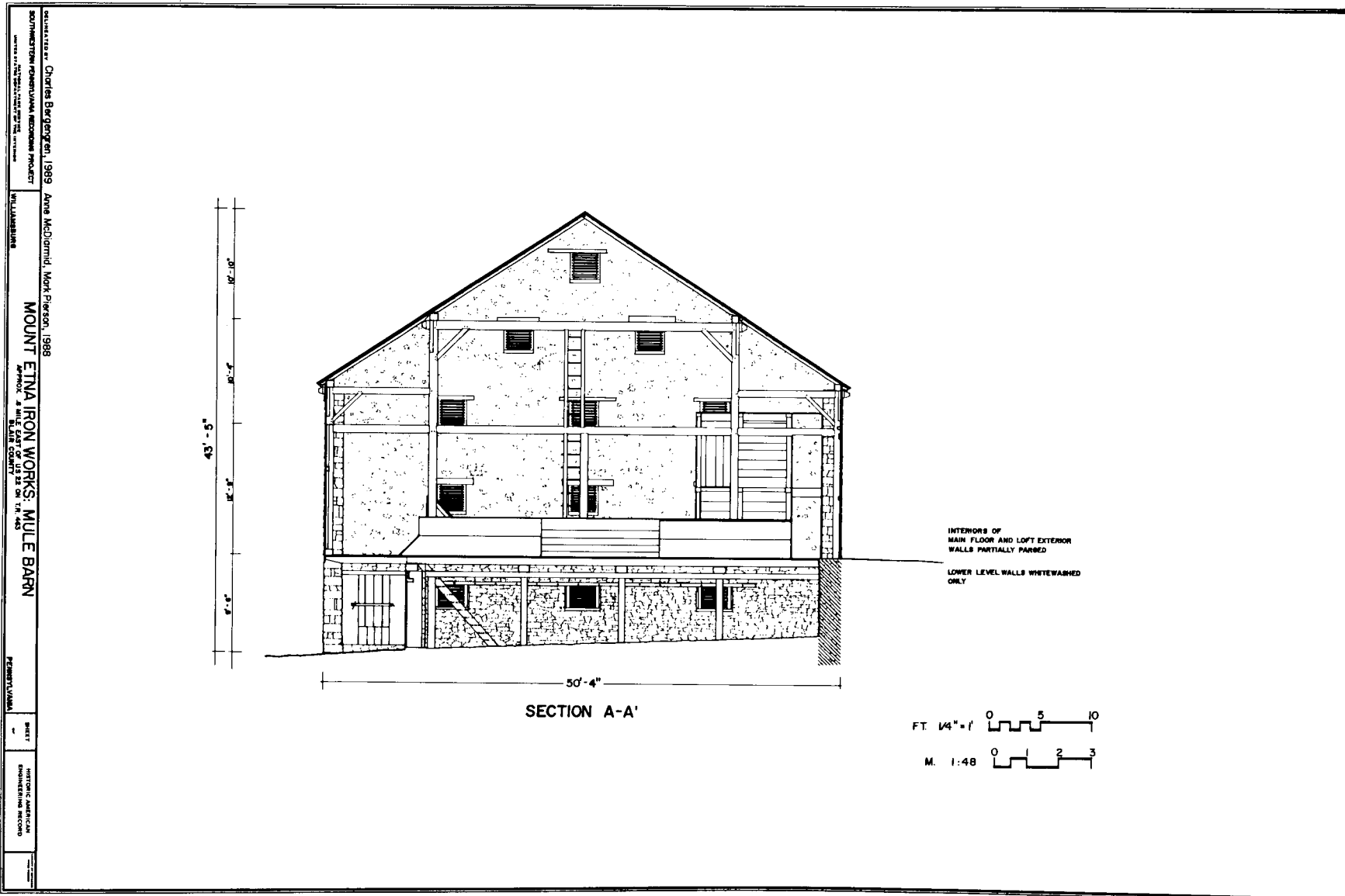
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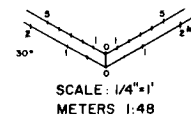
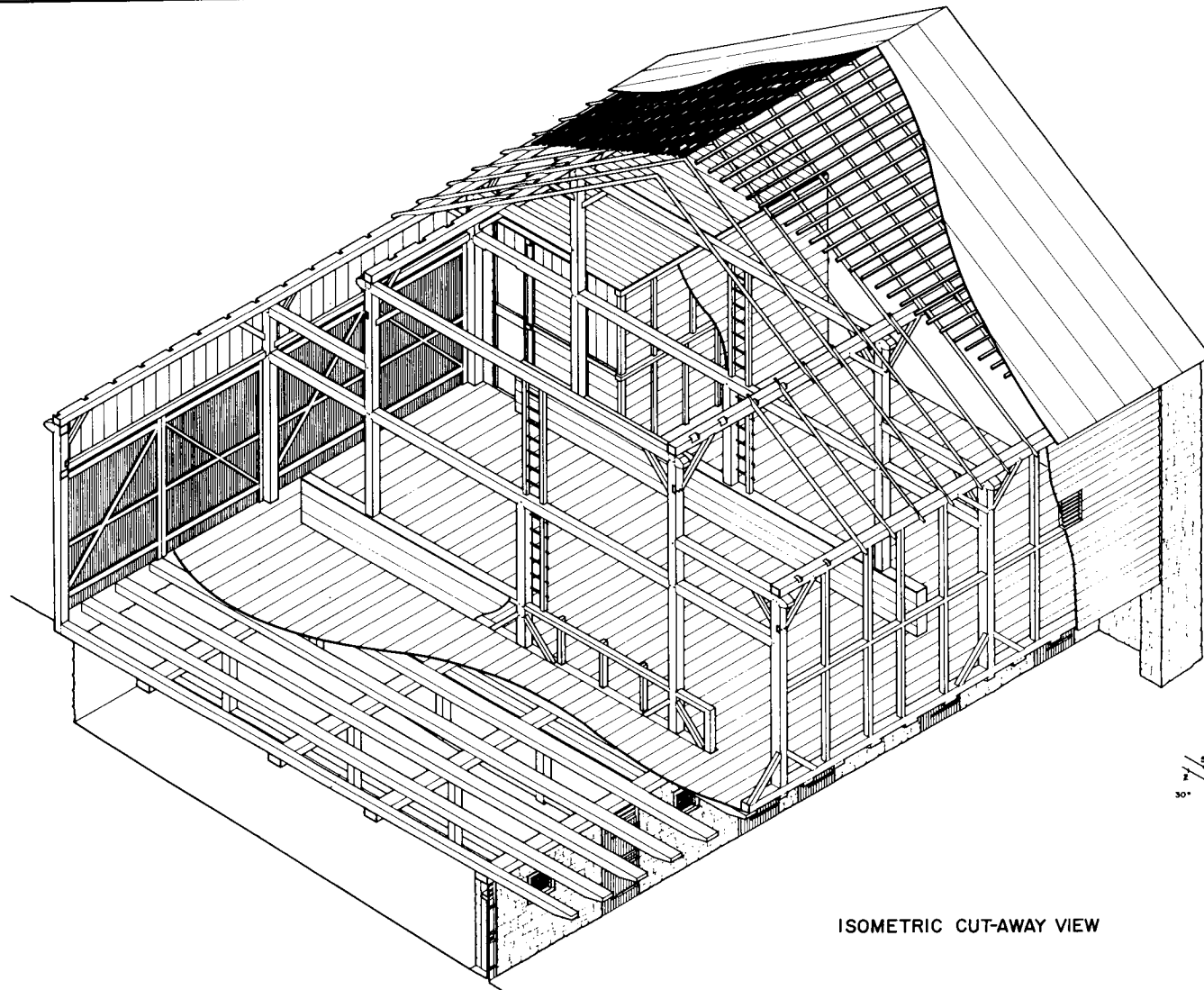




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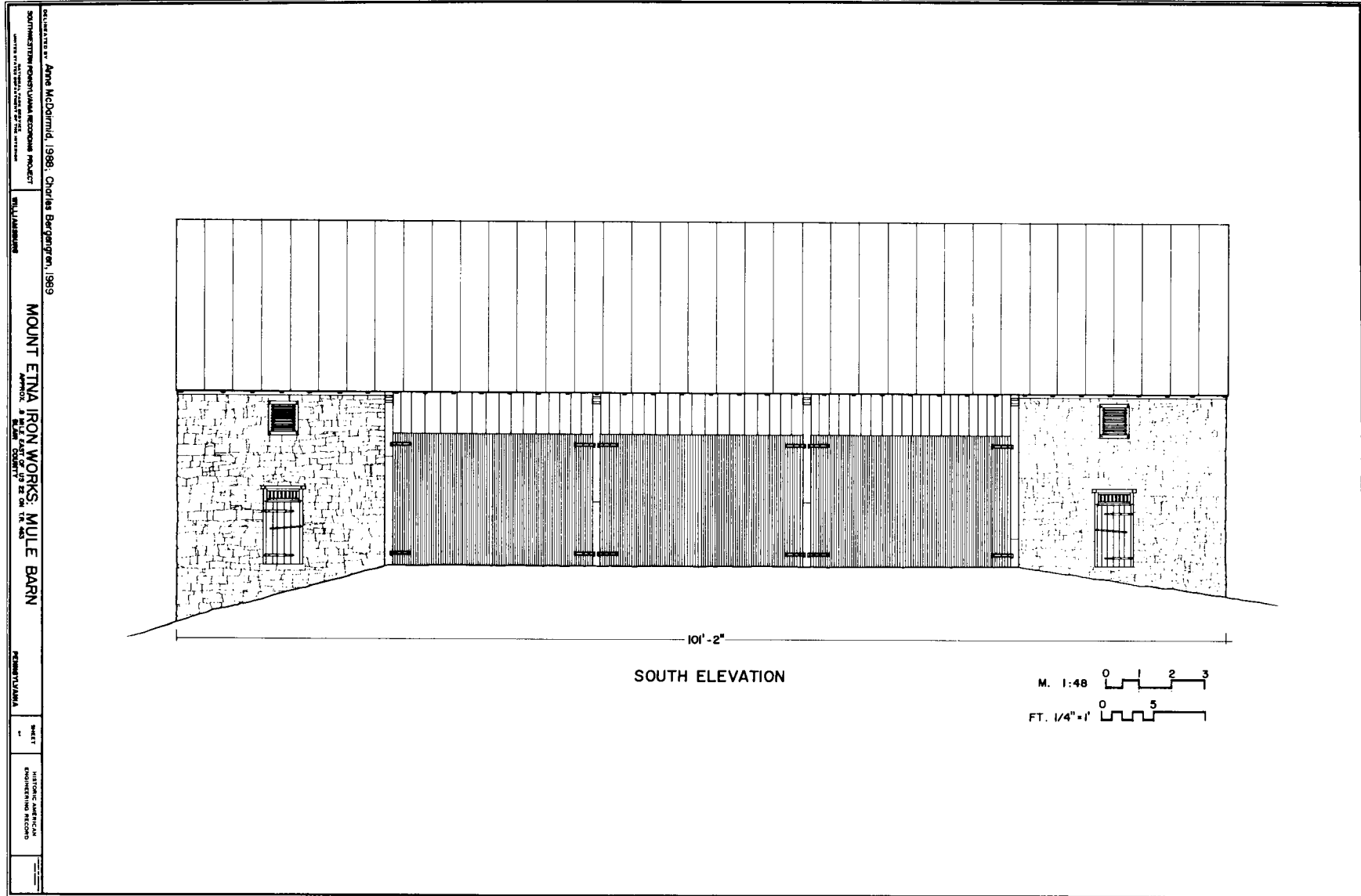
DRAWING BY: **Arne Medema**
 SOUTHWESTERN PENNSYLVANIA ECONOMIC PROJECT
 OFFICE OF THE GOVERNMENT ENGINEER
 PENNSYLVANIA
 MOUNT ETNA IRON WORKS, MULE BARN
 APPROX. 1880
 ELM COUNTY, PA
 SHEET NO. 1
 HISTORIC AMERICAN
 ENGINEERING RECORD

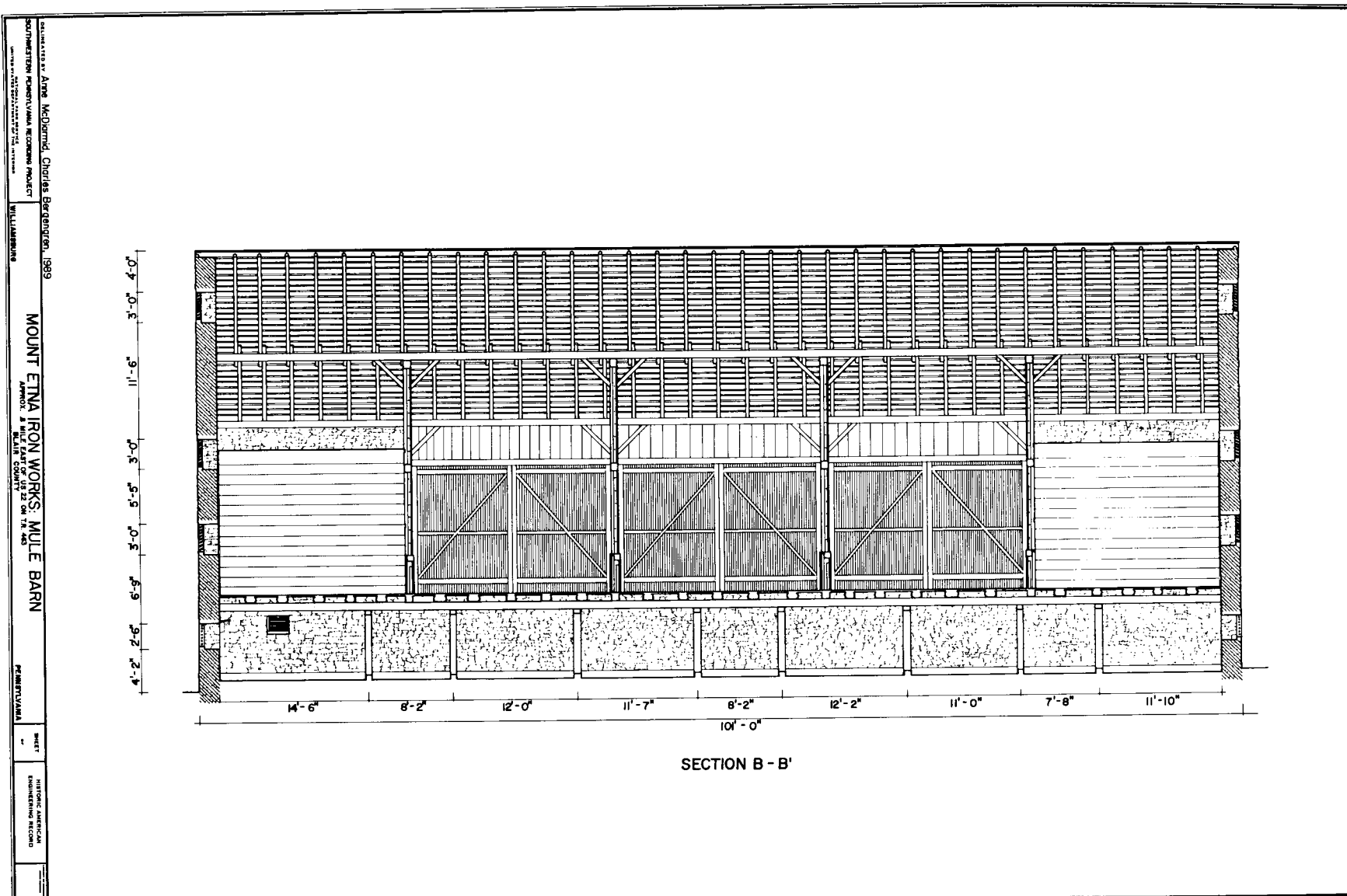


ISOMETRIC CUT-AWAY VIEW

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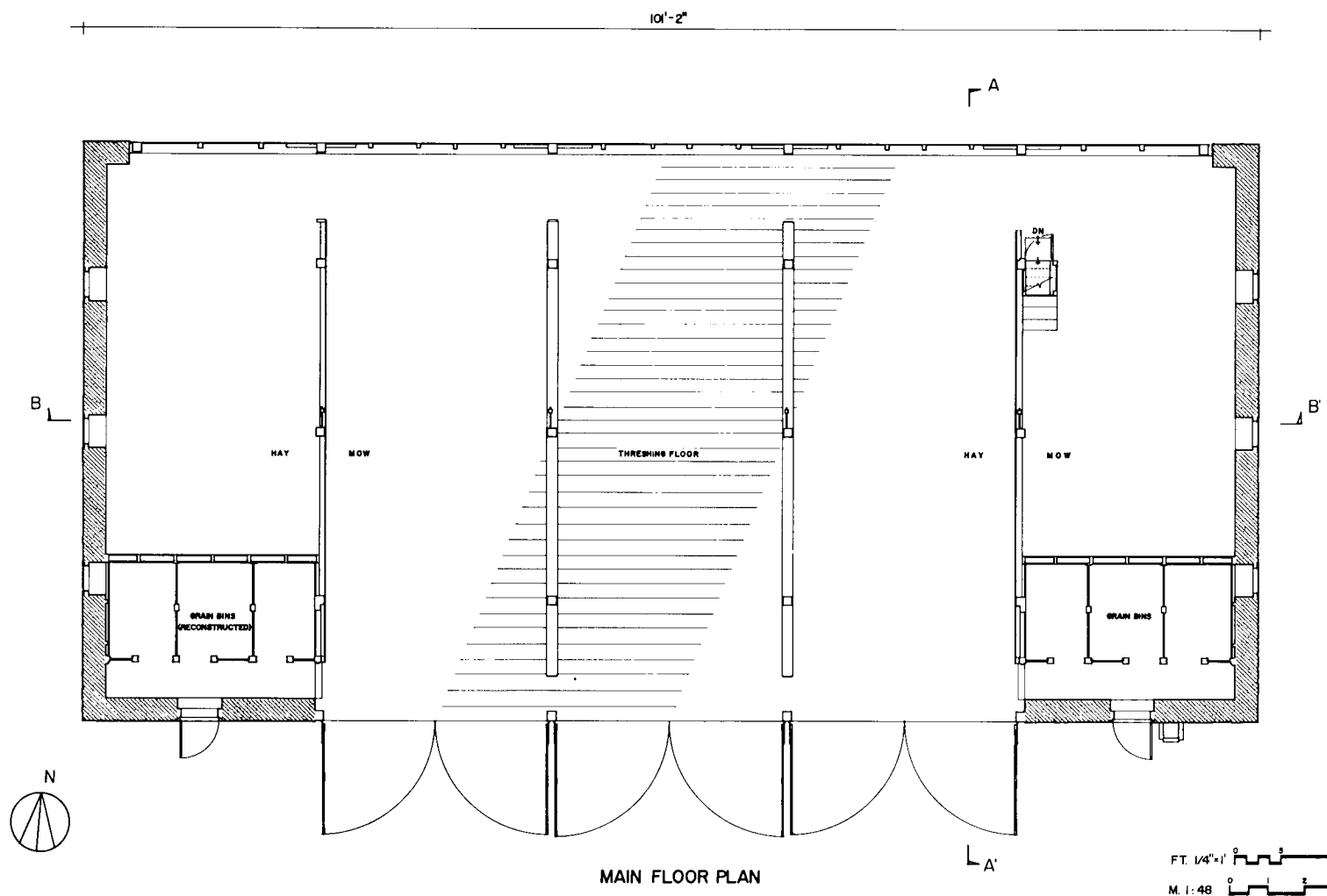




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APPENDIX B: LEGISLATION
FOR ALLEGHENY PORTAGE RAILROAD NATIONAL HISTORIC SITE

An Act to provide for the establishment of the Allegheny Portage Railroad National Historic Site and the Johnstown Flood National Memorial in the State of Pennsylvania, and for other purposes. (78 Stat. 752)

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the Secretary of the Interior is authorized to establish, as herein provided, the Allegheny Portage Railroad National Historic Site and the Johnstown Flood National Memorial in the State of Pennsylvania. For this purpose the Secretary may designate up to nine hundred and fifty acres of land that may, in his discretion, include portions of the Pennsylvania Canal, the Lemon House, the summit of the Allegheny Portage Railroad, the Skew Arch Bridge, incline planes numbered 6, 7, 8, 9, and 10 and the levels between them, the Portage Railroad tunnel, and such other land and historic features as may be necessary to illustrate the significant role of the Allegheny Portage Railroad and the Pennsylvania Canal in the Nation's history; and he may designate up to fifty-five acres in Cambria County, Pennsylvania, for use in commemorating the tragic Johnstown flood of May 31, 1889.

SEC. 2. Within the areas designated pursuant to section 1, the Secretary is authorized to acquire lands and interests in lands by purchase, donation, purchase with donated funds, or otherwise.

SEC. 3. When the Secretary of the Interior has acquired sufficient lands to form administrable park units, he shall publish notice of that fact in the Federal Register and the areas designated pursuant to section 1 shall thereafter be known as the Allegheny Portage Railroad National Historic Site and the Johnstown Flood National Memorial and shall be administered by the Secretary of the Interior pursuant to the provisions of the Act entitled "An Act to establish the National Park Service, and for other purposes," approved August 25, 1916 (39 Stat. 535), as amended and supplemented.

SEC. 4. To provide for the preservation and interpretation of the remaining portions of the Allegheny Portage Railroad route not included within the national historic site, and to further commemorate the Johnstown flood, the Secretary is authorized to enter into cooperative agreements with the State of Pennsylvania, political subdivisions thereof, corporations, associations, or individuals, and to erect and maintain tablets or markers in accordance with the provisions contained in the Act approved August 21, 1935, entitled "An Act to provide for the preservation of historic American sites, buildings, objects, and antiquities of national significance, and for other purposes" (49 Stat. 666).

SEC. 5. There are authorized to be appropriated such sums, but not more than \$2,000,000, for land acquisition and development, as may be necessary to carry out the purposes of this Act.

Approved August 31, 1964.

Legislative History

House Report No. 970 (Committee on Interior and Insular Affairs).
Senate Report No. 1465 (Committee on Interior and Insular Affairs).
Congressional Record, Vol. 110 (1964):
Aug. 3: Considered and passed House.
Aug. 19: Considered and passed Senate.

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Hopewell Furnace National Historic Site staff



As the nation's principal conservation agency, the Department of the Interior has responsibility for most of our nationally owned public lands and natural and cultural resources. This includes fostering wise use of our land and water resources, protecting our fish and wildlife, preserving the environmental and cultural values of our national parks and historical places, and providing for the enjoyment of life through outdoor recreation. The department assesses our energy and mineral resources and works to ensure that their development is in the best interests of all our people. The department also promotes the goals of the Take Pride in America campaign by encouraging stewardship and citizen responsibility for the public lands and promoting citizen participation in their care. The department also has a major responsibility for American Indian reservation communities and for people who live in island territories under U.S. administration.

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