

United States Department of the Interior  
National Park ServiceNational Register of Historic Places  
Inventory—Nomination Form

For NPS use only

received APR 4 B84

date entered

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

## 1. Name

historic Brandywine Powder Mills

and/or common Upper Yards/Hagley Yards

## 2. Location

NetR In ^? two ^mi and river  
Nominal two-mile strip of Brandywine Valley beginning at new  
bridge and extending upstream including parcels on both sides of  
street & number the river but excluding lower Louvers district. not for publication

city, town Greenville, Wilmington ^ ^ vicinity of

state Delaware

code 10

county New Castle

code 003

## 3. Classification

Category	Ownership	Status	Present Use
<input checked="" type="checkbox"/> district	<input type="checkbox"/> public	<input checked="" type="checkbox"/> occupied	<input type="checkbox"/> agriculture
<input type="checkbox"/> building(s)	<input checked="" type="checkbox"/> private	<input type="checkbox"/> unoccupied	<input type="checkbox"/> commercial
<input type="checkbox"/> structure	<input type="checkbox"/> both	<input checked="" type="checkbox"/> work in progress	<input checked="" type="checkbox"/> educational
<input type="checkbox"/> site	<b>Public Acquisition</b>	<b>Accessible admission</b>	<input type="checkbox"/> entertainment
<input type="checkbox"/> object	<input type="checkbox"/> in process	<input checked="" type="checkbox"/> yes: restricted	<input type="checkbox"/> government
	<input checked="" type="checkbox"/> NA being considered	<input type="checkbox"/> yes: unrestricted	<input type="checkbox"/> industrial
		<input type="checkbox"/> no	<input type="checkbox"/> military

<input checked="" type="checkbox"/> museum
<input type="checkbox"/> park
<input type="checkbox"/> private residence
<input type="checkbox"/> religious
<input type="checkbox"/> scientific
<input type="checkbox"/> transportation
<input type="checkbox"/> other:

## 4. Owner of Property

name Eleutherian Mills-Hagley Foundation Incorporated

street &amp; number P. O. Box 3630

city, town Greenville

vicinity of Wilmington

state Delaware

198077

## 5. Location of Legal Description

courthouse, registry of deeds, etc. New Castle County Recorder of Deeds

street &amp; number City/County Building, 800 French Street

city, town Wilmington

state Delaware

## 6. Representation in Existing Surveys

H.A.B.S. (partial) 1936 N-333 partially  
title National Register Historic places has this property been determined eligible? ☒ yes ☐ no

date 1966

☒ federal ☐ state ☐ county ☐ local

depository for survey records Library of Congress, National Park Service

city, town Washington

District of  
state Columbia

# 7. Description

## Condition

☒ excellent  
☒ good  
☒ fair

☐ deteriorated  
☒ ruins  
☒ unexposed

## Check one

☐ unaltered  
☐ altered

## Check one

☒ original site  
☐ moved date \_\_\_\_\_

## Describe the present and original (if known) physical appearance

The Brandywine Powder Mill district of 216 acres is located in the Brandywine River Valley extending about two miles upstream from the Tyler-McConnell Bridge on both sides of the river excluding the lower Louviers/Chicken Alley district. Evolving from scattered late 18th century mill sites and communities into the largest black powder plant in the North American continent, in operation from 1803 to 1921, the district is historically significant. In the approximate century and a half of industrial use, literally hundreds of structures appeared and disappeared from the landscape. Parts, as the Eleutherian Mills Mansion owned by Mrs. Crowninshield, were refurbished after yards closed. There are 46 contributing buildings, 22 recognizable above ground building ruins, many significant other related manmade features as three dams, over a mile of races, bridges, narrow gauge railway, etc. There are only seven non-contributing modern structures. The Museum is aware of over 100 underground building sites including factories, workers' housing, sheds, barns and a mansion.

This nomination includes much of the 185-acre Eleutherian Mills Landmark District of 1966, and the Brandywine Manufacturers' Sunday School Register building of 1970; it also reflects the Foundation's subsequent acquisition of approximately 45 acres containing significant structures and sites, which are an integral part of the historic context.

## Building Survey (with roofs)\*

contributing

### S-1: Centennial Gate House and Gates

Stone, one room gate house with peaked slate roof. Joined to pedestrian gate (iron) and large gates of iron reading "1802 du Pont de Nemours 1902." Gates supported by stone columns. Each topped with stack of four 11" cannonballs. Built in 1904, these gates controlled access to the explosives plant.

### S-2: Pickenhouse

Stone barrel-roofed "fireproof" building with interior arches supported by cast iron columns. Built ca. 1863 to house the highly flammable picking operation, the building had several subsequent functions including paint house. The original second story wood frame section is missing. Current use is museum store.

\*As an arbitrary distinction, complete buildings with roofs intact have been separated from ruins or shells without roofs.

United States Department of the Interior  
National Park ServiceNational Register of Historic Places  
Inventory—Nomination Form.....  
For NPS use only

received

date entered

Continuation sheet

Item number

7

Page

1

S-3: Henry Clay Factory

Three-story stone building with gable roof. Built 1814-1815, it was enlarged to its present size in ca. 1863. The roof configuration was originally clerestory, giving way to barrel and finally the present gable. At the rear of the building is a bell tower complete with the original mill bell. Current use is for museum exhibits and offices.

/ S-4: New Century Hydro

Two section reconstructed frame building with metal gable roof. Foundations are original 1900 hydroelectric plant. Building is a 1976 reproduction based on archaeology and original photographs. Current use is hydroelectric generation and museum exhibit.

S-5: Steam Plant

Stone walls, gable 20 year bond roof. In 1885 an old stone house was gutted and enlarged to house a Corliss steam engine and electric generators. A brick boiler house (now gone) was appended to the structure. A 90' steel smokestack (base only remaining) insured no sparks would get into the adjoining powder buildings.

S-6: Motor House/Blower House

Small stone shed-like building with #22 galvanized iron roof. Originally built as a blower house for a nearby late 19th century glaze mill, this building was rebuilt and enlarged in the first world war to accommodate a hoisting engine and drive for a nearby graining mill erected on the site of the previous glaze mill.

S-7: Old Eagle Roll Mills

Three heavy buttressed stone walls, with open front facing the river. Single slope iron roof. Originally built in 1839, these mills were altered to their current appearance in 1886. The lower mill contains its original 8-ton iron roll wheels and has been restored to operational status. The upper mill contains exhibits. This is one of two such exhibits known in the world. The other in England has much reconstructed machinery.



United States Department of the Interior  
National Park Service

**National Register of Historic Places  
Inventory—Nomination Form**

For NPS use only

received

date entered

Continuation sheet

Item number

7

Page

2

S-8. Old Machine Shop

Stone building of three sections each having a barrel roof. Built in 1858, this building housed the machinery used to manufacture and repair the machinery used in the powder process. The building now houses a restored operative machine shop and black powder related exhibits.

S-9. Wheelwright Shop/Carpenter Shop

Originally built as a two-story building, the top floor has disappeared leaving a one-story stone structure with a gable roof. The roof truss system appears to be original. The building currently houses restrooms, a boiler and room for school program activities. Plans for a restoration of the second floor have been done.

S-10. Blacksmith Shop

Converted from a one-story blacksmith shop to a two-story duplex dwelling after 1921, this building retains the original first floor stonework. Restoration plans are in the research stage. The adjoining iron gates controlled access to the powder yards.

S-11. Gibbons House

Of a bank of several workers' houses, this stuccoed three-story gable-roofed building with frame shed and porch is the only survivor. It has been restored to the late 19th century appearance including furnishings. The first reference to its existence is in the 1840s.

S-12. Barn-Carriage House

Frame structure with front doors for carriage storage and side door for two horse stalls. This is the best preserved frame building in the district. It was built by the Belins in 1837.

S-13. Spring House

Stone walled, shake gable roof, with two doors each leading to a room with a raised brick floor. Historic data regarding building unavailable; however, it is assumed to be mid-19th century.



United States Department of the Interior  
National Park ServiceNational Register of Historic Places  
Inventory—Nomination Form

For NPS use only

received

date entered

Continuation sheet

Item number

7

Page

3

S-14. ~~Brandywine Manufacturers' Sunday School~~

Stone building with columned porch and vestry addition. Already separately on the National Historic Register (1970), this 1817 structure served successively as a school for workers' children (taught by the du Pont daughters), a church, an office and a private residence. It has been partially restored and fully furnished as a school.

S-15. ~~Belin House (yellow house)~~

Built in 1818 for the manager of an unsuccessful tanning operation, this frame structure was later the home of a succession of du Pont bookkeepers including three generations of the Belins. The building underwent a Victorianization and changes during its lifetime. Most of the changes were poor quality and were so rotten that the foundation dismantled them in a recent upgrading.

S-16. ~~Chicken Coop~~

Wood frame building with shake gable roof. One wall has had garage doors added. Late 19th century photo shows it as chicken coop (with chickens) and surrounded by a picket fence.

S-17. ~~Oil Storage House~~

Stone building with single slope roof. Mid-19th century construction, it was originally used to store kerosene and lubricating oils. This building is located some distance from structures containing explosives.

S-18. ~~Sulphur Storage House~~

Stone multi-bay shed with single pitch roof, this building at one time had a wooden addition of equal size adjoining it. This site was in use in the 1830s; however, exposures leave some doubt what fabric dates from which period. Late 19th century photos show this building. Current use is partial sulphur storage exhibit and partial use for storage.

United States Department of the Interior  
National Park ServiceNational Register of Historic Places  
Inventory—Nomination Form

For NPS use only

received

date entered

Continuation sheet

Item number

7

Page

4

S-19: Press House

Three stone walls, wooden facade, gable roof. From before 1834 (earliest known Hagley yard survey) this structure was subject of several explosions, one of which killed Alexis T. du Pont in 1857. It has been restored to its late 19th century appearance including a 37,500 lb. powder press.

S-20: Bucket House

Stone shed building with single pitch roof. A building on the site first appears on the 1834 survey. Undoubtedly explosion modified, it retains its late 19th century appearance.

S-21: Composition House

Three heavy stone walls, barrel roof, open front. Composition houses hold the ingredients before they are taken to the wheel mills. Dating is uncertain but assumed to be mid-19th century. Oddly, no identified historic photographs have been found. Roof was restored by Hagley following original curve and using original pockets for the trusses. Facade may have existed.

S-22: Pump House - Sawmill

Stone foundations and some walls. Rest of walls wood frame, iron roof. Sites of Daves' sawmill. It was converted and modified in the late 19th century to pump water for domestic use and fill a pond which served as a reservoir for the fire lines.

S-23: Graining Mill

Three buttressed stone walls, 20 year bond roof, single slope, wood facade. This building contained several graining machines from before 1834 to 1921. It has been restored to its late 19th century appearance and houses a graining machine.

S-24: Birkenhead Roll Mills

Pair of buttressed wheel mill buildings with single pitch wood roof. A restored waterwheel revolves between these buildings. These buildings were drawn in 1936 by HABS. They were Du Pont's first attempt at incorporating by

United States Department of the Interior  
National Park Service

National Register of Historic Places  
Inventory—Nomination Form

For NPS use only

received **iiiiii**★  
date entered

Continuation sheet

Item number

7

Page

5

S-24: ~~Birkenhead Roll Mills cont'd~~

wheels rather than by mortar and pestle. Built in ca. 1822-1824, they were so successful that nine other pairs were built on the property and the stamp mills were phased out by 1834.

S-25: ~~Engine House~~

Stone walls, gable roof. Originally built with a barrel roof (which was lost in an explosion and rebuilt as a gable roof). This building houses a steam engine and boiler which powered a nearby pack house. Original erection date assumed to be ca. 1860, it has been restored with an operating steam engine.

S-26: ~~Press Pump~~

Square stone walled, barrel roofed building. It is assumed the current building dates from the mid-1890s on earlier foundation due to the fact of a major explosion which leveled the area.

S-27: ~~Rebel Shanty~~

Stone walls. Replaced incorrect roof badly deteriorated. Correct barrel roof known and will be replaced when time and funds permit. Legend has it that a Confederate sabotage team was caught and confined in this store house. Since the legend appears in print in the 19th century, it is likely.

S-28: ~~Motor House~~

Stone walls, single pitch slate roof. Current configuration shows up on ca. 1900 drawing. Building most probably dates after 1895 due to previously mentioned explosion.

S-29: ~~Eagle Dry House~~

Square peaked roof, stone building, with lean-to-shed. Shed has furnace remains. The 1826 Fairbank Survey indicates a building on the site. The existing external furnace, the early way of drying powder, would indicate that much of this building is of the early date.



United States Department of the Interior  
National Park Service

National Register of Historic Places  
Inventory—Nomination Form

For NPS use only

received

date entered

Continuation sheet

Item number

7

Page

6

S-30. ~~Worker's House~~

Stone house, two story, shake gable roof with cooking fireplace. Site use is very early; however, the 1818 explosion destroyed the structure. Subsequent explosions are also assumed to have caused repairs or modifications. Mrs. Crowninshield made building into a guest house of two large rooms. Appearance is correct for early 19th century period.

S-31. ~~Workers' Dormitory~~

Site use is known to be pre-1818 as the building on the site was destroyed in that explosion. This two-story stone house with a shed added to the back had a roof pitch steep enough to suggest the original structure was reconstructed.

S-32. ~~Bag Wash House~~

This was occupied by 1826; however, whether this simple stone gabled roof structure has most of the original components is subject to speculation. It was used for washing the bags in which potassium nitrate was shipped.

S-33. ~~Bag Store House~~

This one-story stone building with a slate gable roof added during the Crowninshield era retains two interesting features. It has iron shutters over the windows and is wood lined. The iron shutters indicate a high concern for fire and indeed bags laden with saltpeter were highly flammable.

S-34. ~~Worker's Duplex~~

Stucco, slate roofed late 19th century duplex house. No records exist of the building or this structure; however, it appears on early 20th century maps.

S-35. ~~Garage - Yard Office~~

Frame, German sided, gable roofed building modified and moved to house one modern automobile. Building materials and construction techniques indicate a late 19th century date.

United States Department of the Interior  
National Park ServiceNational Register of Historic Places  
Inventory—Nomination Form

For NPS use only

received

date entered

Continuation sheet

Item number

7

Page

7

S-36: ~~Old Coal House~~

V

Built ca. 1807, this stone building with its tunnels and cylinders for distilling charcoal was modified several times during the 19th century as the technology for making charcoal improved and because of explosion damage. Charcoal distilling houses are extremely rare industrial survivals of a technology invented in the late 18th century.

S-37: ~~Waiting Room~~

Originally a two story building, this is the survival of a three-building complex. This stone structure originally had a second story. The lower level was a carriage house; the upper level a dorm for stable hands.

S-38: ~~Barn~~

The barn was originally built in 1802 and expanded in 1844. This large stone barn with wood front and back walls and wood shake roof supported by queenpost trusses has two levels and a two-story appended addition facing the garden. A vehicle shed is also appended. This was one of several large barns connected with the farming operating and maintenance support for the draft animals.

S-39: ~~Lime House~~

Stone gable roofed building directly behind the barn. Erection date is unknown. The building appears on the 1904 survey map labeled as a "lime house" . . . presumably connected with sanitation and whitewashing.

S-40: ~~First Office~~

Stone building in two sections, one with peak slate roof, the other with gable slate roof. Built in 1837 as the first office building of the Du Pont Company, it served for over 50 years as the company's nerve center.

S-41: ~~Spring House~~

Stone building with cast concrete tile roof. No building records exist. However, an early 19th century date is highly likely with the current roof being replaced in the Crowninshield era.

United States Department of the Interior  
National Park ServiceNational Register of Historic Places  
Inventory—Nomination FormFor NPS use only  
received  
date entered

Continuation sheet

Item number

7

Page

8

S-42: ~~E. Luthorian Mills Mansion~~  
Eleutherian Mills Mansion

Stucco over stone, three-story mansion. This is the original mansion built for E. L. du Pont beginning in 1802. Five generations of the du Pont family have occupied it, each making some contributions. The building is documented in the book ~~E. Luthorian Mills~~ by Maureen Quinby.

S-43: ~~Lammot Exhibit Building~~  
Lammot Exhibit Building

Frame building, gable slate roof, moved to site from the adjoining Bean property. The Little Creek Revival structure with columns and fan light has been moved at least twice. Legend has it that Lammot du Pont used it as a shop. Other evidence would indicate it was probably his father's shop. The internal evidence indicates an 1830-1840 erection date.

S-44: ~~Soda House~~  
Soda House

Large stone building with three original gable-roofed sections. Erected in 1888. One of the most important structures on the property, this building stored and processed sodium nitrate for use in soda powder (a du Pont innovation of 1858). It has been adaptively reused as a historic record management center and auditorium.

S-45: ~~New Coal House~~  
New Coal House

This building was erected ca. 1888. While appearing to be a one-story gable roof type building, in actuality the lower level is honeycombed with the tunnels and cylinders used to make charcoal. This and the old coal houses are rare survivals of the charcoal distilling process.

S-46: ~~Barn~~  
Barn

This one-story clapboard building with one addition, decorative cupola and Dutch doors, is an enigma. It does not appear on the 1884 survey but was firmly in place in 1932 when Harvey Kennel went to work for the carpenter estate. The inside is lined with "beaded board facing." Later additions of a chimney and large cooking grill are in place.



United States Department of the Interior  
National Park Service

National Register of Historic Places  
Inventory—Nomination Form

For NPS use only

received

date entered

Continuation sheet

Item number 7

Page 9

~~Building Shells and Ruins~~

contributing

R-1: ~~Big Mary Glaze Mill~~

Stone walls, stone shed without roof. Built late in the 19th century, this was the site of the largest glaze mill on the property and possibly the largest in North America. It originally contained nine glaze barrels.

R-2: ~~Watsons Glaze~~

Three heavy stone walls set in the hillside. Originally built as a late 19th century glaze mill, the site suffered from an explosion during the first world war and was rebuilt as a graining mill.

R-3: ~~Rolls 17-18~~

Pair of roll mills consisting of three heavy walls and a light tin roof. Front is open. The rear is protected by a massive flash wall. Date stone indicates 1856 erection date with an 1885 rebuilding. After 1903 they were designated "Desmoke" mills as they were used in making a combination black and smokeless powder.

R-4: ~~Rolls 15-16~~

Like above without massive flash wall. Date stone indicates 1856 building - 1885 rebuilding.

R-5: ~~Rolls 13-14~~

These mills were built on an earlier site in 1882. Architecture similar to other 19 standing buildings;

R-6: ~~Rolls 9-10~~

Similar to above roll mills. Date stones indicate 1829 building and 1887 rebuilding. These mills retain the rear flash walls.

R-7: ~~Lady Mill~~

Single roll mill like above but smaller. No current record of construction date. Internal evidence indicates post-Civil War construction. Sources indicate its function was to produce experimental powders.

United States Department of the Interior  
National Park Service

**National Register of Historic Places  
Inventory—Nomination Form**

For NPS use only

interviewed

date entered

Continuation sheet

Item number

7

Page

10

**R-8. Coal Mill**

The site was used in the late 18th century by Dawes, ca. 1818-1823. It was used by Garton as a tannery. Later it was used as a dust mill. Only foundation outlines and turbine pit remain.

**R-9. Bank with Gibbons House**

Two stone room outlines with fireplace and stone stairway. Construction dates uncertain. These foundations will be the subject of an archaeology program beginning in 1984 and are highly important to the interpretation of the industrial community.

**R-10. Rolls 7-8**

Similar to above roll mills. Date stone indicates 1836 building. These mills and nos. 1 and 2 are not rebuilt to the later "undergearing" configuration.

**R-11. Rolls 5-6**

Similar to above roll mills. Date stones indicate 1826 building - 1890 rebuilding. These mills retain the rear flash wall.

**R-12. Rolls 3-4**

Similar to above. The upper mill was the site of an early stamp mill. The lower mill was built as a roll mill.

**R-13. Glaze Mill**

Pre-1834 site. Three heavy stone walls, roof and facade missing. This building always was a glaze mill in which barrels tumbled the powder. Original barrel is on hand for future restoration.

**R-14. Dry Table Site**

One restored drying table and foundation for nine others. Originally powder was dried in the sun or in the dryhouses. This site was used before 1834 (earliest survey) until the late 19th century.

United States Department of the Interior  
National Park ServiceNational Register of Historic Places  
Inventory—Nomination Form

For NPS use only

received

date entered

Continuation sheet

Item number 7

Page 11

R-15: ~~Pack House~~

Three heavy walls set into the hillside are all that remain of the pre-1834 pack house site. There is no known photograph of the building. By 1904 the site was abandoned.

R-16: ~~Sweepings Room~~

Built into the hillside three heavy retaining walls and foundations remain. The building was a storehouse for powder dust which was recycled throughout the process. Late 19th century photo shows frame building on foundation.

R-17: ~~Hagley Pack House~~

Foundations only survive of a large three building connected complex. It blew up in 1863, 1873, and in 1915 and was not rebuilt after the last explosion.

R-18: ~~Dust Mill~~

Although the upper race serviced five mills, the dust mill foundations are the only ones above ground. The site was in use from ca. 1803 until the yards closed.

~~Intact Manmade Features~~

## contributing

M-1: ~~Lower Hagley Dam and Race~~

Constructed during the War of 1812 to serve the textile mill later designated as Henry Clay Factory, the dam was rebuilt ca. 1900 and is an example of concave concrete construction of the turn of the century with gear-driven race control gates.

M-2: ~~Upper Hagley Dam and Race~~

The dam was built in the late 18th century and rebuilt and heightened in the 19th century. The race was lengthened and heightened until it powered over 20 mills, elevators and pumps. It currently provides power to full-scale exhibits and the hydroelectric plant.



United States Department of the Interior  
National Park ServiceNational Register of Historic Places  
Inventory—Nomination Form

For NPS use only

received

date entered

Continuation sheet

Item number

7

Page

12

M-3. ~~E. L. Lutherman Mills Dam and Race~~

The dam was erected by Du Pont in ca. 1803 and is of timber and stone construction. Although the wood work has been restored, the original configuration has been duplicated. The stone-lined raceway is about 2/3 open and contains three original 19th century water turbines.

M-4. ~~Iron Bridge~~

Built in 1874 on Civil War vintage piers, this according to HAER is the second oldest iron bridge in Delaware.

HAER description: "A narrow-gauge iron bridge, the Brandywine Railroad Bridge was built in two stages. The four stone piers were built in 1863 and the Pratt-type iron truss was completed in 1874. A seldom-used bridge, it has been converted for local vehicular use and it is in excellent condition."

M-5. ~~The Folly~~

Beginning in 1923, Frank Crowninshield erected his concept of a classical garden on the site of the powder mills and refinery. As part of a nationally famous garden tradition including Longwood, Winterthur, and Hagley's restored garden, this vestige makes an interesting cultural statement. The pools, columns, statues, kettles on pedestals, walkways and synthetic ruins seem to exemplify the taste and values of the era.

Underground Sites

Due to explosion, replacement, deterioration and dismantling a great many structures have disappeared. For example, the keg mill burned in 1896; the lower Hagley press blew up in 1917 and the site was filled in; Hagley house mansion was torn down in the early 1950s; a massive explosion destroyed a large part of the upper property in 1890 and rebuilding did not follow the original design.

As these sites are part of the district's history and contain valuable information recoverable by archaeology, they do contribute. Whether all these contributions are realized in this century or ever is doubtful. However, the owner (Hagley) has a policy of archaeology explorations and subsequent restorations (e.g., the early garden). To ignore the existence of these sites on this nomination would be an oversight. To list all the sites is impossible with the current level of knowledge, as we know of over 100 and this is only a partial accounting.

United States Department of the Interior  
National Park ServiceNational Register of Historic Places  
Inventory—Nomination Form

For NPS use only

received

date entered

||||||

Continuation sheet

Item number

7

Page

13

Buildingsnon-contributing  
non-contributingN-1: ~~Frizzell's Store~~

Small gabled roof frame structure with lean-to addition. Built ca. 1968 as a maintenance shed, it was redesigned as a vending operation for young museum visitors. It is stylistically sympathetic to area structures of the late 19th century. It has no historic nor architectural merit.

N-2: ~~Carriage Shed~~

Designed to emulate the carriage sheds on the property, this 1975 structure has exposed post and beam framing with shiplapped siding and shake roof. It was constructed to house food vending machines (an unsuccessful venture). It is a sympathetic intrusion.

N-3: ~~Race Shed~~

Shed structure constructed in 1978 to protect workers while cleaning out the trash racks. Loosely patterned after the carriage shed, it has no historical value. It is a sympathetic intrusion.

N-4: ~~Lutheran Mills Historical Library~~

Modern research library constructed 1959-1961. Stone and stucco with metal and gravel over tar roofs. Building has no historical significance. Architecture was designed to be tasteful and efficient, making it a sympathetic intrusion.

N-5: ~~Upper Gate House and Gates~~

Stucco building, iron gates, stucco wall and columns. Built in 1961 to be tasteful control point. It has no historic value.

N-6: ~~Greenhouse~~

Built in the Crowninshield era and extensively modified in the mid-1970s, this greenhouse serves the Foundation's needs for beginning plantings. It has no historical significance nor architectural merit.

United States Department of the Interior  
National Park Service

National Register of Historic Places  
Inventory—Nomination Form

For NPS use only

received

date entered

Continuation sheet

Item number

7

Page

14

N-7. Maintenance Building

Erection date between 1923-1938. Built as an overflow horse barn, it was later used in conjunction with some questionable activities. The Museum has extensively modified it to serve as a maintenance headquarters. Frame construction, clapboard sides, gable roof with one dormer. It has no historic value nor architectural merit.

N-8. Dog Kennel

Decidedly the worst building on the property, this box-like balloon frame structure was erected to house hunting dogs. The chainlink runs have been dismantled. Being in a semi-concealed location, it is used for storage. It has no redeeming historic or architectural value and is only nominally functional. Its demolition in the foreseeable future is highly likely.



## 8. Significance

Period	Areas of Significance—Check and justify below			
<input type="checkbox"/> prehistoric	<input type="checkbox"/> archaeology-prehistoric	<input type="checkbox"/> community planning	<input type="checkbox"/> landscape architecture	<input type="checkbox"/> religion
<input type="checkbox"/> 1400-1499	<input type="checkbox"/> archaeology-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 checked="" type="checkbox"/> architecture	<input type="checkbox"/> education	<input type="checkbox"/> military	<input type="checkbox"/> social/humanitarian
<input type="checkbox"/> 1700-1799	<input type="checkbox"/> art	<input type="checkbox"/> engineering	<input type="checkbox"/> music	<input type="checkbox"/> theater
<input checked="" type="checkbox"/> 1800-1899	<input type="checkbox"/> commerce	<input type="checkbox"/> exploration/settlement	<input type="checkbox"/> philosophy	<input type="checkbox"/> transportation
<input checked="" type="checkbox"/> 1900-	<input type="checkbox"/> communications	<input checked="" type="checkbox"/> industry	<input type="checkbox"/> politics/government	<input type="checkbox"/> other (specify)
		<input type="checkbox"/> invention		

Specific dates

Builder/Architect

Statement of Significance (in one paragraph)

The Brandywine Powder Mill District near Wilmington, Delaware, was the site of continuous industrial use from the late 18th century to 1921 and is significant to the industrial and technological history of both the state and the nation. Beginning as a series of self-contained mill communities, it evolved into the largest manufactory of black gun powder on the North American continent. Not only was black powder produced, but at various times, under various parcel owners, there were two gristmills, two sawmills, one iron rolling and slitting mill, a textile mill, farm operation to produce Merino sheep, grain, and maintain drayage animals, machine shops, a blacksmith shop, wheelwright shop, two electric power plants, wood and metal cooperages and a host of other industries both to support the powder industry and to experiment in product diversification. The unique powder mill architecture, designed to channel explosions, (criteria c) is combined with vernacular dwellings, contemporary construction fads (e.g., barrel roofs). From the district emerged inventive successes such as the improved powder press, and failures like Carden's speedy tanning process; coupled with the conventional horse and wagon transportation, by the mid-19th century a narrow gauge railroad was introduced. By 1904 several miles of track with hoisting engines and elevators existed on the steep river bank. From early commercial adventures of people like Jacob Broom (see Broom House Nat. Reg. Nom.) to the founding of the Du Pont Company, this district emerged from local importance to national significance. The explosives produced contributed to every American war effort from the War of 1812 through World War I and to peace time projects such as the building of the Erie Canal and opening of the coal fields.

The upper property was the site of an 18th century industrial venture by signer of the Constitution Jacob Broom. He erected a dam, race and both a cotton mill and a sawmill. In 1802 E. I. du Pont purchased 65 acres of Broom's holdings for \$6,740. Through an agent, as he was not at that time a citizen, du Pont continued to expand buying parcels along the creek and "inland." These served as sites for worker housing, farms to supply wool for his brother's adventure in textiles, and to support the company's large collection of draft animals, woods to supply willow for charcoal productions, land for testing powder and sites for family mansions. The initial manufactory was significant in two respects. As powder mills go, it was large.

## 9. Major Bibliographical References

See continuation sheet

## 10. Geographical Data

Acreage of nominated property 216

Quadrangle name Wilmington North Quad.

Quadrangle scale 1:24000

UTM References

A 1 8 4 5 1 2 3 0 4 4 0 3 4 1 0  
Zone Easting Northing

B 1 8 4 5 0 5 4 0 4 4 0 2 5 5 0  
Zone Easting Northing

C 1 8 4 5 0 4 1 0 4 4 0 2 5 5 0

D 1 8 4 5 0 4 4 0 4 4 0 2 6 7 0

E 1 8 4 5 0 4 4 0 4 4 0 3 0 0 0

F 1 8 4 5 0 6 9 0 4 4 0 3 2 4 0

G 1 8 4 5 0 8 4 0 4 4 0 3 2 3 0

H 1 8 4 5 1 0 4 0 4 4 0 3 4 8 0 see  
continuation sheet

Verbal boundary description and justification

See continuation sheet

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

state Delaware code 10 county New Castle code 003

state \_\_\_\_\_ code \_\_\_\_\_ county \_\_\_\_\_ code \_\_\_\_\_

## 11. Form Prepared By

name/title Robert A. Howard

organization Hagley Museum

date 12/9/83

street & number Box 3630

telephone (302) 658-2400

city or town Greenville

state Delaware

## 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 National Park Service.

State Historic Preservation Officer signature

*David R. Shiffith*

title

date

March 30, 1984

For NPS use only

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

Entered in the  
National Register

date

5/3/84

*for* *Andrew Byrne*  
Keeper of the National Register

Attest:

date

Chief of Registration

United States Department of the Interior  
National Park ServiceNational Register of Historic Places  
Inventory—Nomination Form

For NPS use only

received

date entered

Continuation sheet

Item number

8

Page

1

and it boasted the latest in French powder technology. It was therefore capable of producing a significant quantity of powder that was of excellent quality. When the War of 1812 put demands in excess of the capabilities, du Pont bought the next mill site downstream, the Hagley property, from Rumford Dawes. Dawes ran a gristmill, sawmill, and iron rolling and slitting mill. (Some records and the 1797 insurance map are at the Hagley Museum.) The lower Hagley area, site of the Henry Clay Mill, was the site of various textile mill operations from the War of 1812 until the 1880s when the Du Pont Company converted it into a metal keg mill. Du Pont had had varying financial ownership/lessor associations with the mill until it was converted to company use. The powder mills continued in operation until 1921, when the Du Pont Company closed the powder yards on the Brandywine. Two years later the company offered residences on the property to family members for purchase. In 1923 Francis B. and Louise (du Pont) Crowninshield (a great-granddaughter of E. I. du Pont) began a major renovation of E. I. du Pont's mill. After her death in 1958, the house became part of the Hagley Museum.

While the site is historically important as the location of the first Du Pont Company mill, which produced half the powder used by the Union during the Civil War, it is of greater significance as documentation of an almost obsolete technology. The Museum has restored in situ, or has in storage awaiting installation in the original buildings, one of three sets of surviving powder mill machinery on the North American continent, from an industry consisting of dozens of plants, it has dwindled to one post-1900 operating plant, one set of machinery mothballed by the Government and the non-rated resource. Powder mills by their unique design are suitable only for powder machinery. For safety reasons they are usually dismantled on closing. These buildings unrestored are rare; restored, they are not only nationally significant, but of importance in a worldwide sense. There are three blackpowder museums known in the world of which Hagley is the most complete. It should be noted that the last known operating black powder plant in Europe (Norway) blew up several years ago and was not rebuilt. This is the usual fate of black powder plants, reducing substantially the material survivors. Of vast importance globally only a century ago, the non-rated district stands virtually alone in the ability to interpret accurately and realistically, with original buildings on their original locations and with original artifacts. More than this, the district has samplings of workers' and owners' housing to put the technology in a social/cultural context.



United States Department of the Interior  
National Park Service

National Register of Historic Places  
Inventory-Nomination Form

For NPS use only

received

date entered

Continuation sheet

Item number

8

Page

2

The grounds of the district, while beautifully maintained (more so than is historically accurate), do not belie the past as the copious numbers of trees were an integral part of the historic safety campaign. They were deliberately planted to stop flying debris in case of explosion. Hence, discounting the mowed grass, the landscape, virtually void of intrusions, contributes to the site.

United States Department of the Interior  
National Park Service

National Register of Historic Places  
Inventory—Nomination Form

For NPS USE ONLY

received

date entered

Continuation sheet

Item number

9

Page

1

~~Primary Documentation~~  
Primary Documentation

~~Eleutherian Mills Historical Library, papers, photos, oral interviews, drawings in various accessions (best existing source)~~  
Eleutherian Mills Historical Library, papers, photos, oral interviews, drawings in various accessions (best existing source)

~~Site Specific Secondary Sources~~  
Site Specific Secondary Sources

~~Hagley Staff. The Hagley Museum Guide (Wilmington, DE, Hagley Museum, 1976).~~  
Hagley Staff. The Hagley Museum Guide (Wilmington, DE, Hagley Museum, 1976).

~~Quimby, Maureen O. Eleutherian Mills (Wilmington, DE, Hagley Museum, 1977).~~  
Quimby, Maureen O. Eleutherian Mills (Wilmington, DE, Hagley Museum, 1977).

~~Other Secondary Sources (Sampling - not necessarily total site specific)~~  
Other Secondary Sources (Sampling - not necessarily total site specific)

~~Carr, William. The du Ponts of Delaware (New York, 1964).~~  
Carr, William. The du Ponts of Delaware (New York, 1964).

~~Chamberlain, John. The Enterprising Americans: A Business History of the United States (New York, 1963).~~  
Chamberlain, John. The Enterprising Americans: A Business History of the United States (New York, 1963).

~~E. I. du Pont de Nemours & Co., Du Pont. The Autobiography of An American Enterprise (New York, 1952).~~  
E. I. du Pont de Nemours & Co., Du Pont. The Autobiography of An American Enterprise (New York, 1952).

~~Dutton, William S. Du Pont, One Hundred and Forty Years (New York: Charles Scribners Sons, 1942).~~  
Dutton, William S. Du Pont, One Hundred and Forty Years (New York: Charles Scribners Sons, 1942).

~~van Gelder, Arthur Pine and Hugo Schlatter. History of Explosives Industry in America (New York: Columbia University Press, 1927).~~  
van Gelder, Arthur Pine and Hugo Schlatter. History of Explosives Industry in America (New York: Columbia University Press, 1927).

~~Wallace, Anthony Francis Clark. Rockdale (New York: Alfred A. Knopf, Inc., 1978).~~  
Wallace, Anthony Francis Clark. Rockdale (New York: Alfred A. Knopf, Inc., 1978).

United States Department of the Interior  
National Park Service

National Register of Historic Places  
Inventory—Nomination Form

For NPS use only

received

date entered

Continuation sheet

Item number

10

Page

1

UTM Numbers (cont'd)

Zone	Easting	Northing	Zone	Easting	Northing
I 18	450580	4403690	J 18	450240	4403530
K 18	450110	4403590	L 18	450010	4404290
M 18	450400	4404390	N 18	450600	4404040
O 18	450570	4404040	P 18	450570	4403810
Q 18	451100	4403590	R 18	451150	4403420

Boundary synonymous with Eleutherian Mills-Hagley Foundation  
lands northwest of the Tyler-McConnell Bridge corresponding to  
the various deeds owned by same and as shown on included large  
map. All parcels were originally part of the Du Pont Company  
owned lands comprising the powder yard and adjacent communities  
and farms.



UNITED STATES DEPARTMENT OF THE INTERIOR  
NATIONAL PARK SERVICE

NATIONAL REGISTER OF HISTORIC PLACES  
EVALUATION/RETURN SHEET

Brandywine Powder Mills District  
New Castle County  
DELAWARE

Working No. APR 4 1984  
Fed. Reg. Date: 2/10/85  
Date Due: 5-3-84 / 5-1-84  
Action: ACCEPT 5/3/84  
RETURN  
REJECT  
Federal Agency: \_\_\_\_\_

- ☐ resubmission  
☐ nomination by person or local government  
☐ owner objection  
☒ appeal

Entered In this  
National Register

Substantive Review: ☐ sample ☐ request ☐ appeal ☐ NR decision

Reviewer's comments:

Recomm./Criteria \_\_\_\_\_  
Reviewer \_\_\_\_\_  
Discipline \_\_\_\_\_  
Date \_\_\_\_\_  
\_\_\_\_\_ see continuation sheet

Nomination returned for: \_\_\_\_\_ technical corrections cited below  
\_\_\_\_\_ substantive reasons discussed below

1. Name

2. Location

3. Classification

Category	Ownership Public Acquisition	Status Accessible	Present Use
----------	---------------------------------	----------------------	-------------

4. Owner of Property

5. Location of Legal Description

6. Representation in Existing Surveys

Has this property been determined eligible? ☒ yes ☐ no

7. Description

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

Describe the present and original (if known) physical appearance

- ☒ summary paragraph  
☒ completeness  
☒ clarity  
☒ alterations/integrity  
☒ dates  
☐ boundary selection

## 8. Significance

Period \_\_\_\_\_ Areas of Significance—Check and justify below

Specific dates \_\_\_\_\_

Builder/Architect \_\_\_\_\_

Statement of Significance (in one paragraph)

- ☐ summary paragraph
- ☐ completeness
- ☐ clarity
- ☐ applicable criteria
- ☐ justification of areas checked
- ☐ relating significance to the resource
- ☐ context
- ☐ relationship of integrity to significance
- ☐ justification of exception
- ☐ other

## 9. Major Bibliographical References

## 10. Geographical Data

Acreage of nominated property \_\_\_\_\_

Quadrangle name \_\_\_\_\_

UTM References \_\_\_\_\_

Verbal boundary description and justification

## 11. Form Prepared By

## 12. State Historic Preservation Officer Certification

The evaluated significance of this property within the state is:

\_\_\_\_\_ national \_\_\_\_\_ state \_\_\_\_\_ local

State Historic Preservation Officer signature

title \_\_\_\_\_ date \_\_\_\_\_

## 13. Other

- ☐ Maps
- ☐ Photographs
- ☐ Other

Questions concerning this nomination may be directed to. \_\_\_\_\_

Signed \_\_\_\_\_ Date \_\_\_\_\_ Phone: \_\_\_\_\_

Comments for any item may be continued on an attached sheet



M-2. Upper Hagley Race (N-3 at end) - This race powers both the restorations S-7 and S-24 and hydroplant S-4.





M-3. Eleutherian Mills Dam - Originally erected 1802 and restored/repared in the early form several times. Hurricanes have a tendency to uproot very large trees which tear out the wooden members of the dam.



N-4. Eleutherian Mills Historical Library contains much primary material relating to the property. An internationally famous collection of mid-Atlantic business manuscripts, the best technical collection of early explosive-related books in the world, a very important trade catalog collection, and a significant imprint collection on business and technological history. The building also houses staff offices.



R-12, R-14, S-20. Restored drytable (one of 10 on site). Wheel mills #3 and 4 in background. Bucket house at right. Race (part of M-2) runs through the center.





R-13. Glaze Mill - Building shell only. Walls capped in original fashion to prevent deterioration.



R-18. Dust Mill foundations and original 1860 vintage Tyler scroll case turbine.  
Race (M-3) in foreground.



S-1. Gates and Gate House - The access gates moved as the yard expanded. This is the final location. The stone work is original; the gates have been restored twice, but retain some of the original fabric. Original construction drawings in Hagley Museum files.





S-2. Picker House - Originally built with wood second floor and iron doors and iron window shutters.



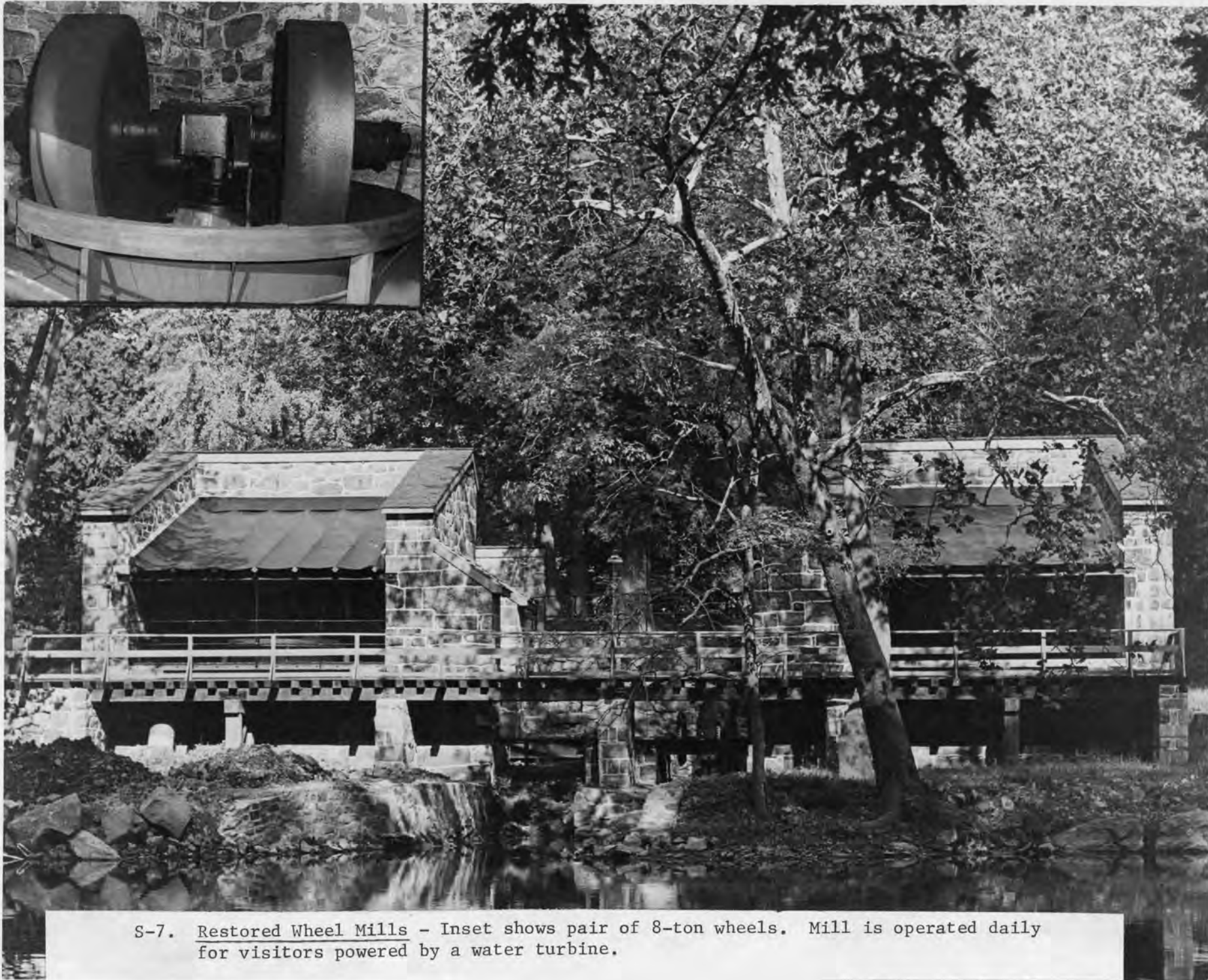


S-3. Henry Clay Factory - Now Museum's Main Exhibit Building.



S-4. New Century Hydro Plant - Foundations original, building 1976 replica scaled from original photographs. This hydroplant produces power for the Foundation property. Depending on the season and time of day, additional power is bought from Delmarva Power and Light or surplus power is sold to them.





S-7. Restored Wheel Mills - Inset shows pair of 8-ton wheels. Mill is operated daily for visitors powered by a water turbine.





S-8. Machine Shop inset shows late 19th century photo. Major part shows 1983 recreation of original with award-winning volunteer staff.



S-8. Interior. Restored machine shop with operating 19th century machinery powered by shafts and belts. Award-winning volunteers demonstrate daily for visitors.



S-11. Gibbons House - Photo taken 1982 before non-original light was removed and fences and arbors were restored.

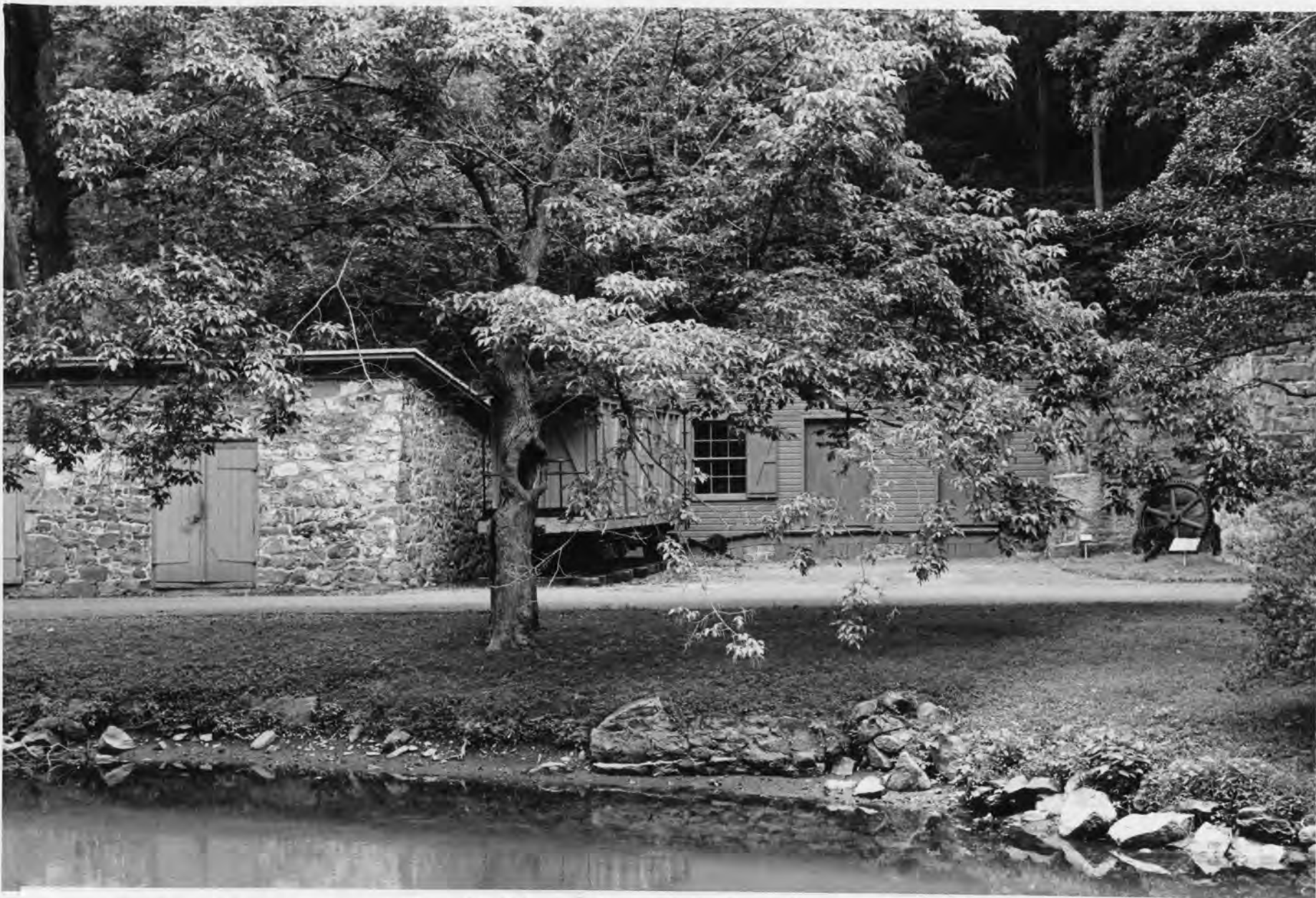




S-15. Belin House - Photo taken in 1974 during renovations. House now has shutters and is painted yellow to conform to the original color.



S-18. Store House - S-20. Bucket House at right. Large stone object at left is original road roller minus its wood box frame.

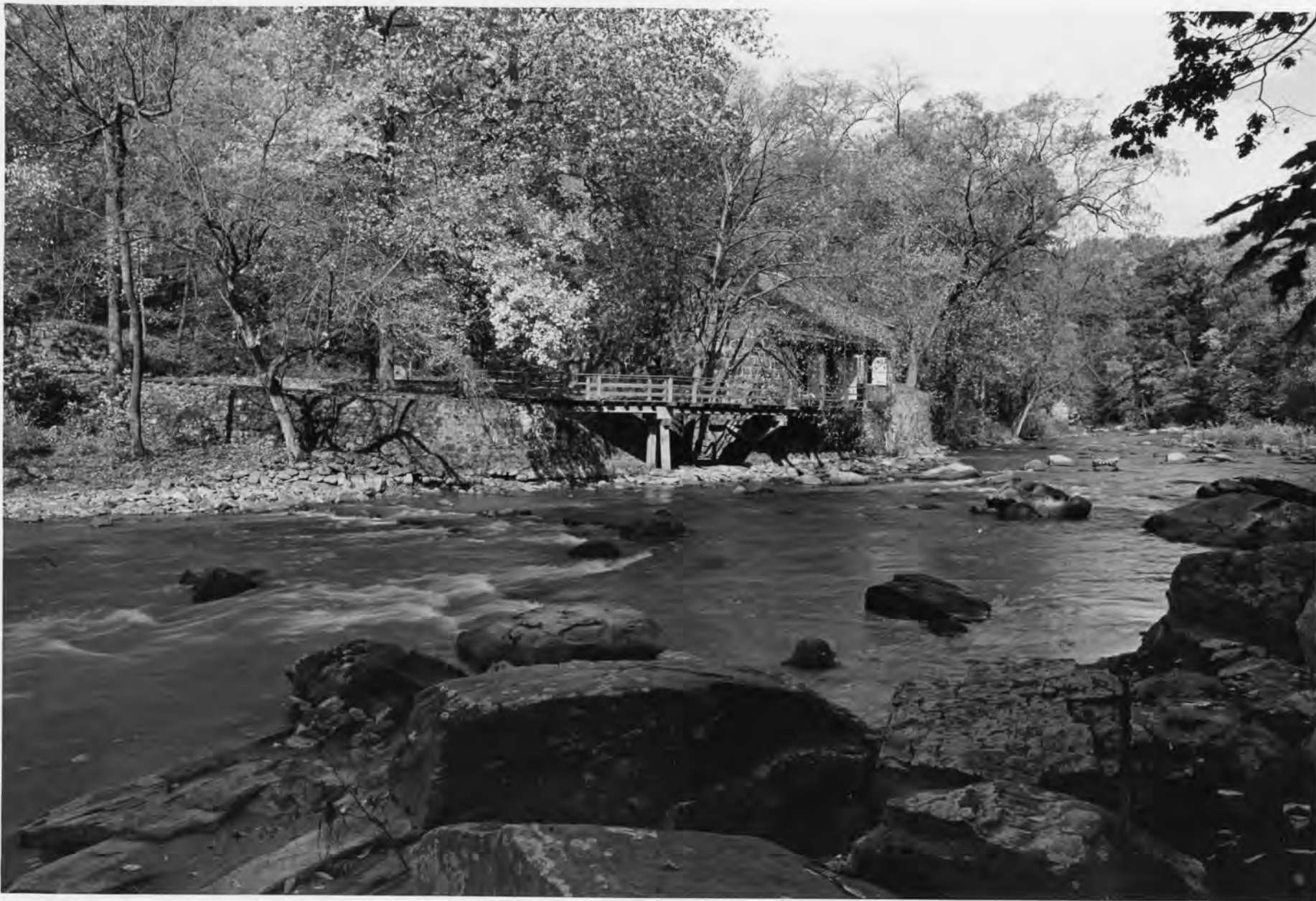


S-18,S-19,S- 20. Press House (S-19) contains original powder press. Railroad car slated for moving in 1984. It was built by American Car & Foundry in Wilmington and is like magazine cars pictured on the property. This particular car came from Carney's Point.





S-22. Sawmill-Pump House - Parts of this building could be the earliest structure standing on the property (reference 1797 map). Wooden superstructure late replacement.

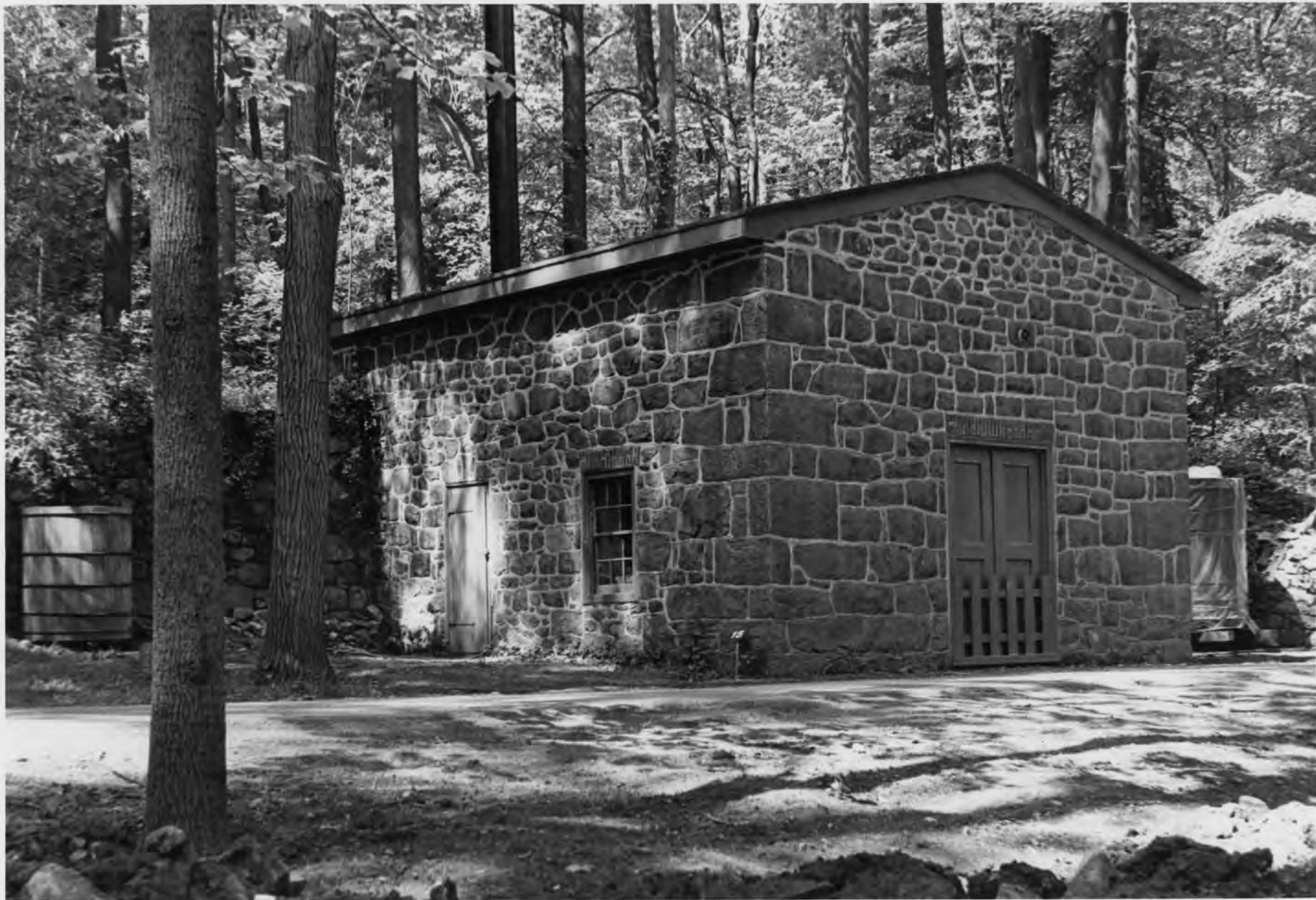


S-23 Graining Mill restored including original graining machines. Open to the public.

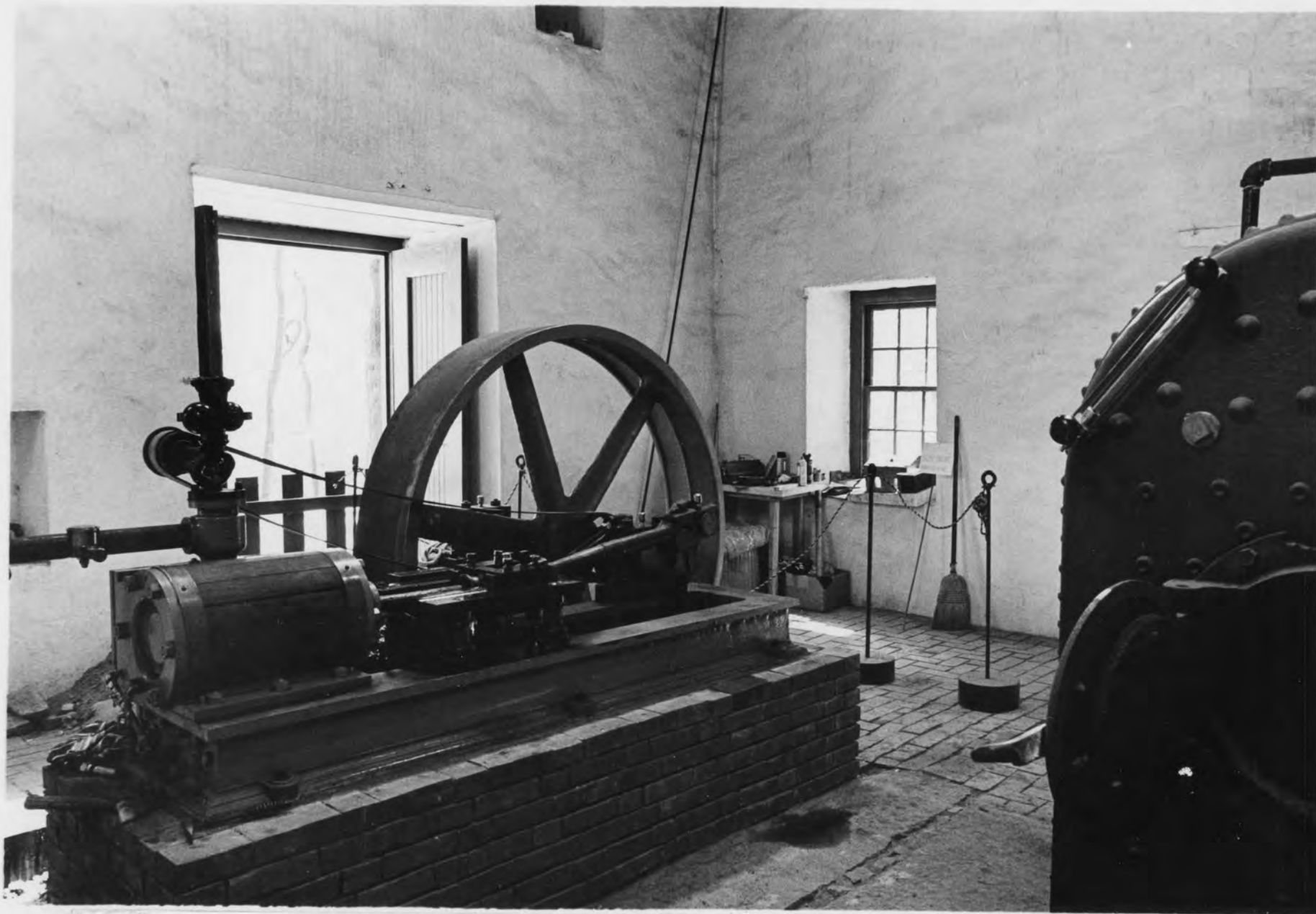


S-24. Birkenhead Mills - Drawn and photographed by HABS during the Depression. Waterwheel restored 1966 and rebuilt 1983. Race M-2 in foreground. The bridge is an insignificant modern addition near the site of an original lattice truss bridge.





S-25 Engine House exterior

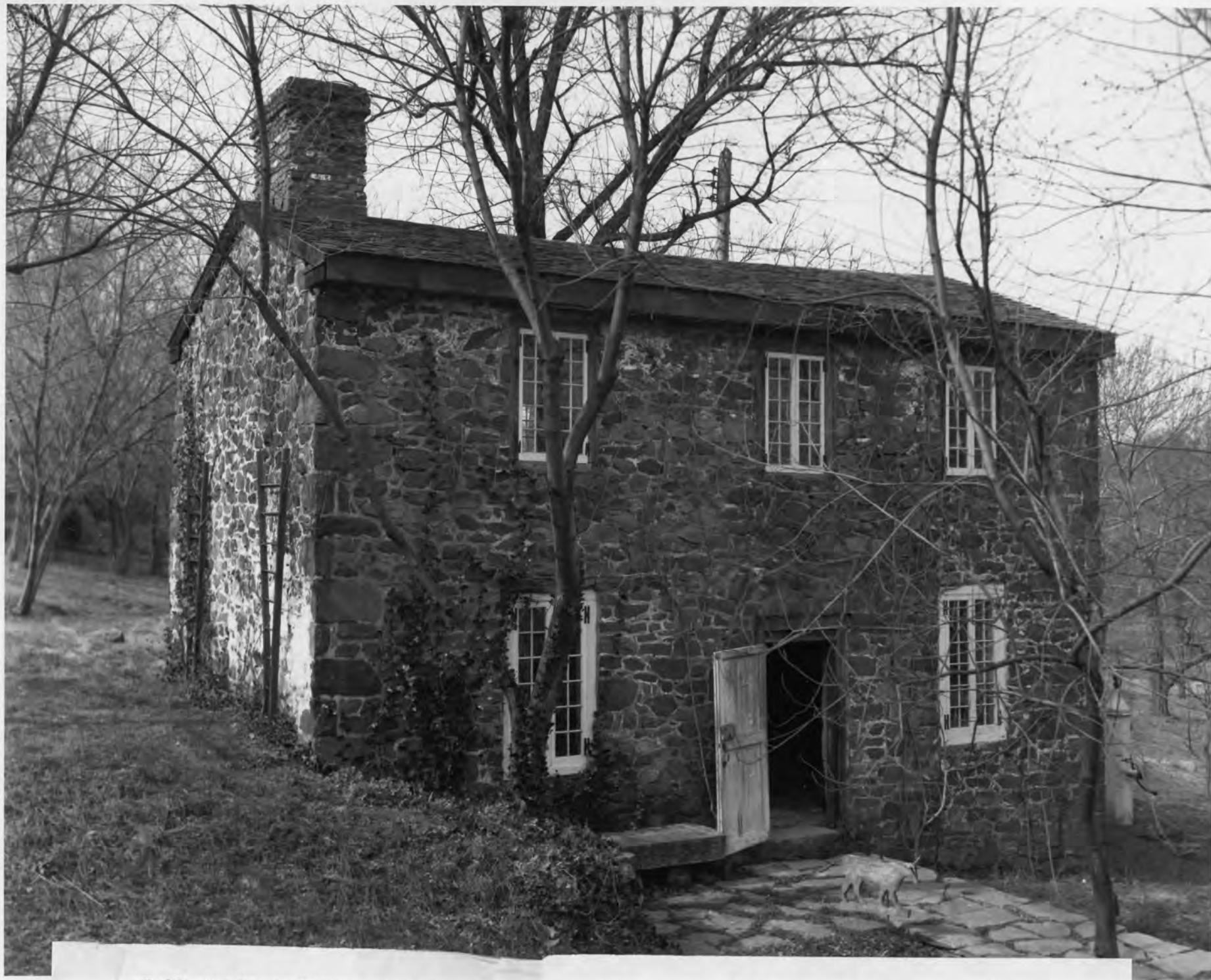


S-25 Engine House interior restoration with antique boxbed slide value engine.  
Engine is run daily for visitors.



S-27. Rebel Shanty - Original walls dating from before the Civil War. The roof is an old (20th century) improper replacement. Gates to right are post-yard closing.





S-30. Worker's House - Cooking fireplace and use of small "man size" stones in the construction suggest much early 19th century fabric remains.



S-31. Workers' Dormitory foreground. Worker's house (S-30) at right. Two survivors of a village called "Upper Banks." Internal evidence indicates likelihood of early 19th century fabric.





S-36. Charcoal House - Very rare industrial survival. The cylinders and charging holes still exist.





S-37. & S-38. Barn and Carriage House - The barn is virtually identical to its appearance in the sketches and late 19th century photographs. The carriage house was part of a three-building complex and originally had a second story which burned about 50 years ago.



S-40. First Office Building - The structure had several later additions which were removed by Mrs. Crowninshield.





S-42. Eleutherian Mills Mansion - Construction began 1802 and the building was occupied in 1803. The present form reflects the additions and modifications of five generations of the du Pont family.





S-43. Lamot Exhibit Building - Fine Greek revival building moved from the adjoining property. It is indigenous to the compapany property but not on its original foundation.



S-44. Soda House - Adaptively reused structure. It has a sympathetic addition in the rear to house and process manuscripts.



S-46. Barn - There is little known about the history of this building. It was in place 53 years ago when Mr. Kellan went to work for the Carpenters.





Across the creek, view of row of roll mills. There were originally 21 of these of which 17 survive as shells and two have been restored.

ROLL MILLS, HAGLEY PROPERTY

74.300.41.1

Po# 76-194M

Brandywine Creek

Brandywine Powder Mills District

New Castle Co.

DE





Fire Insurance Survey of E. I. A. Jones Survey  
Records from 1912 to 1914

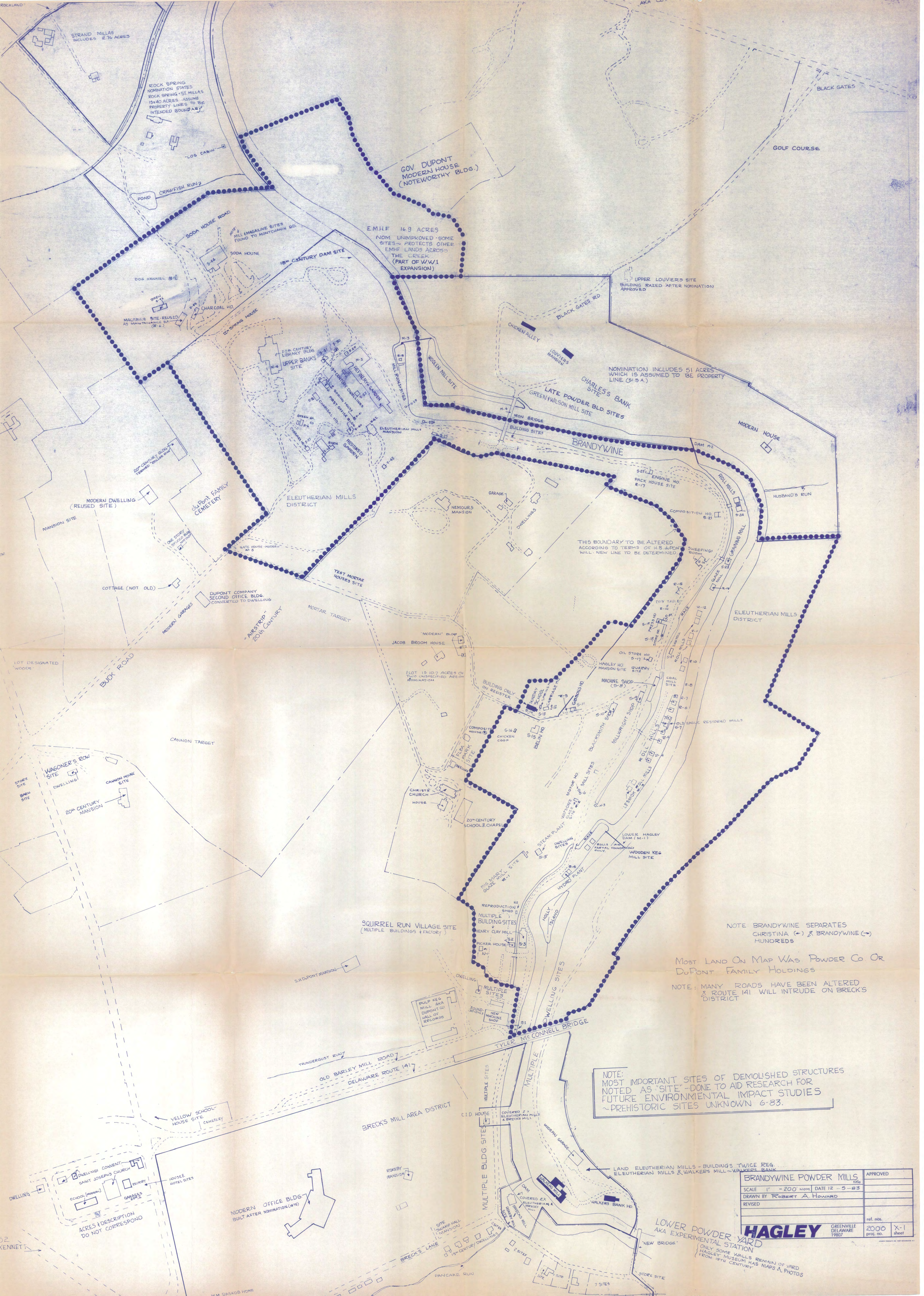
11411/1  
10-10-1914  
(10) 10-14

E. J. Leuthnerian Mills

Brandywine Powder Mills District

New Castle Co.  
DE

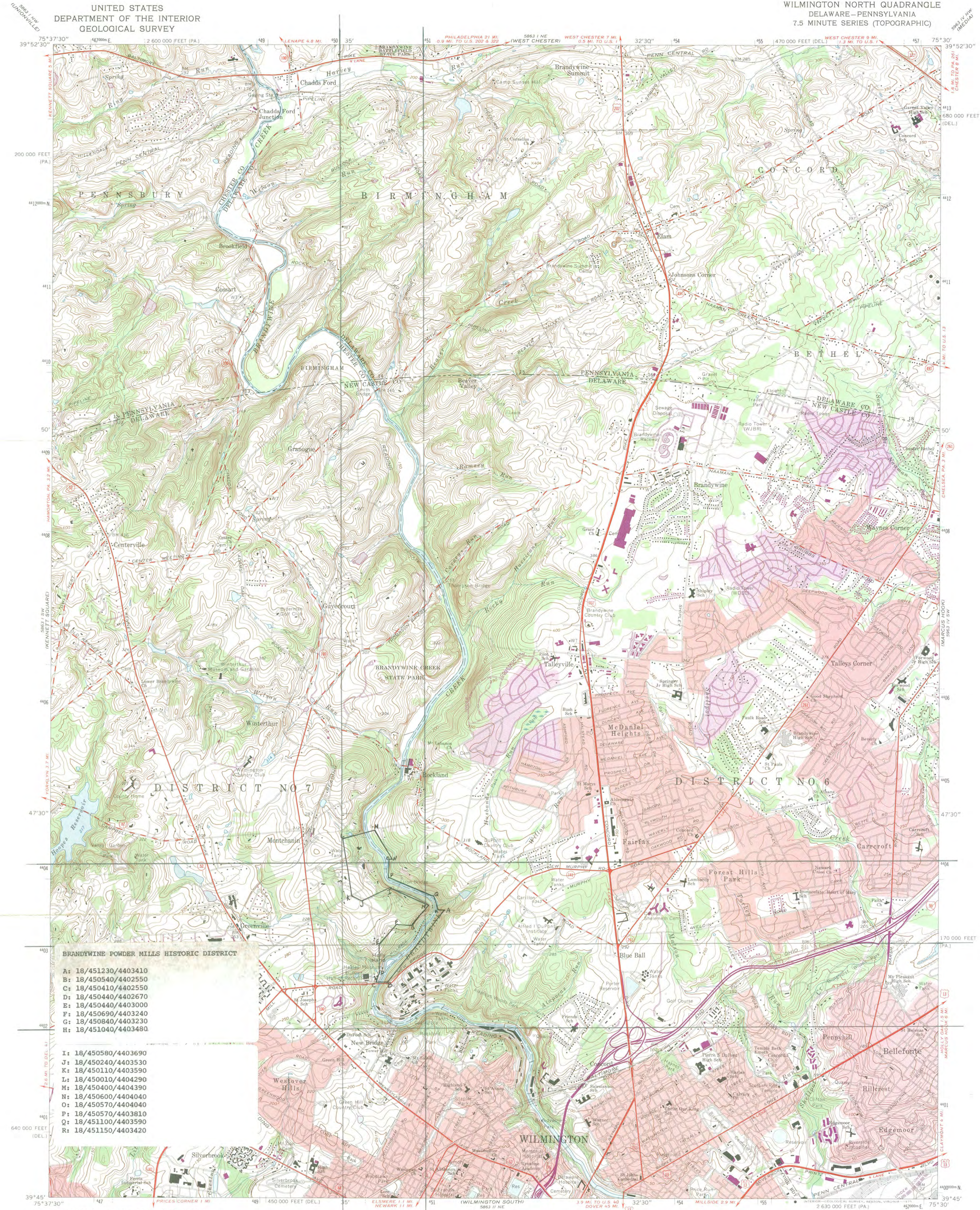






UNITED STATES  
DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEY

WILMINGTON NORTH QUADRANGLE  
DELAWARE-PENNSYLVANIA  
7.5 MINUTE SERIES (TOPOGRAPHIC)



BRANDYWINE POWDER MILLS HISTORIC DISTRICT

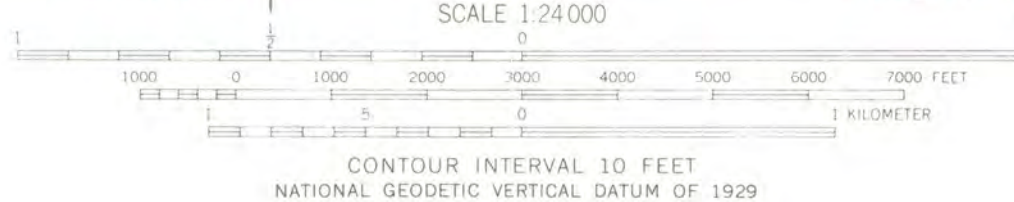
A: 18/451230/4403410  
B: 18/450540/4402550  
C: 18/450410/4402550  
D: 18/450440/4402670  
E: 18/450440/4403000  
F: 18/450690/4403240  
G: 18/450840/4403230  
H: 18/451040/4403480  
  
I: 18/450580/4403690  
J: 18/450240/4403530  
K: 18/450110/4403590  
L: 18/450010/4404290  
M: 18/450400/4404390  
N: 18/450600/4404040  
O: 18/450570/4404040  
P: 18/450570/4403810  
Q: 18/451100/4403590  
R: 18/451150/4403420

Mapped, edited, and published by the Geological Survey  
Control by USGS and USC&GS

Topography in Delaware by planetary surveys 1935-1936  
Topography in Pennsylvania by photogrammetric methods  
from aerial photographs taken 1950. Field checked 1954  
Revised from aerial photographs taken 1965. Field checked 1967

Polyconic projection. 1927 North American datum  
10,000-foot grids based on Delaware coordinate system,  
and Pennsylvania coordinate system, south zone  
1000-meter Universal Transverse Mercator grid ticks,  
zone 18, shown in blue

Fine red dashed lines indicate selected fence and field lines where  
generally visible on aerial photographs. This information is unchecked  
Red tint indicates areas in which only landmark buildings are shown



THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS  
FOR SALE BY U. S. GEOLOGICAL SURVEY, RESTON, VIRGINIA 22092  
A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

Revisions shown in purple compiled in cooperation with  
State of Pennsylvania agencies from aerial photographs  
taken 1973. This information not field checked  
Purple tint indicates extension of urban areas

ROAD CLASSIFICATION  
Heavy-duty ——— Light-duty ———  
Medium-duty ——— Unimproved dirt ———  
Interstate Route U. S. Route State Route

WILMINGTON NORTH, DEL.-PA.

N3945-W7530/7.5

1967  
PHOTOREVISED 1973  
AMS 5863 I SE-SERIES V832