

FOR NPS USE ONLY

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DATE ENTERED

NATIONAL REGISTER OF HISTORIC PLACES INVENTORY - NOMINATION FORM

SEE INSTRUCTIONS IN HOWTO COMPLETE NATIONAL REGISTER FORMS
 TYPE ALL ENTRIES - COMPLETE APPLICABLE SECTIONS

1 NAME

HISTORIC **Eleutherian Mills**

AND/OR COMMON **Eleutherian Mills - Hagley Museum**

2 LOCATION

STREETS & NUMBER **on Delaware 141 at Brandywine Creek Bridge, north of Wilmington**
 CITY, TOWN **Greenville** VICINITY OF **Wilmington** CONGRESSIONAL DISTRICT
 STATE **Delaware** CODE **10** COUNTY **New Castle** CODE **3**

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 checked="" type="checkbox"/> MUSEUM
<input type="checkbox"/> BUILDING(S)	<input checked="" type="checkbox"/> PRIVATE	<input type="checkbox"/> UNOCCUPIED	<input type="checkbox"/> COMMERCIAL <input type="checkbox"/> PARK
<input type="checkbox"/> STRUCTURE	<input type="checkbox"/> BOTH	<input type="checkbox"/> WORK IN PROGRESS	<input type="checkbox"/> EDUCATIONAL <input type="checkbox"/> PRIVATE RESIDENCE
<input type="checkbox"/> SITE	<input checked="" type="checkbox"/> PUBLIC ACQUISITION	<input checked="" type="checkbox"/> ACCESSIBLE	<input type="checkbox"/> ENTERTAINMENT <input type="checkbox"/> RELIGIOUS
<input type="checkbox"/> OBJECT	<input type="checkbox"/> IN PROCESS	<input type="checkbox"/> YES: RESTRICTED	<input type="checkbox"/> GOVERNMENT <input type="checkbox"/> SCIENTIFIC
	<input type="checkbox"/> BEING CONSIDERED	<input type="checkbox"/> YES: UNRESTRICTED	<input type="checkbox"/> INDUSTRIAL <input type="checkbox"/> TRANSPORTATION
		<input type="checkbox"/> NO	<input type="checkbox"/> MILITARY <input type="checkbox"/> OTHER

4 OWNER OF PROPERTY

NAME **Eleutherian Mills - Hagley Foundation**
 STREETS & NUMBER **on Delaware 141 at Brandywine Creek Bridge**
 CITY, TOWN **Greenville** STATE **Delaware**
 VICINITY OF **Wilmington**

5 LOCATION OF LEGAL DESCRIPTION

COURTHOUSE, REGISTRY OF DEEDS, ETC. **New Castle County Courthouse**
 STREETS & NUMBER **1100 King Street**
 CITY, TOWN **Wilmington** STATE **Delaware**

6 REPRESENTATION IN EXISTING SURVEYS

TITLE **Historic American Buildings Survey**
 DATE **1936** FEDERAL STATE COUNTY LOCAL

DEPOSITORY FOR SURVEY RECORDS **Library of Congress Annex, Division of Prints & Photographs**
 CITY, TOWN **Washington** STATE **D.C.**

7 DESCRIPTION

CONDITION		CHECK ONE	CHECK ONE
<input checked="" type="checkbox"/> EXCELLENT	<input type="checkbox"/> DETERIORATED	<input type="checkbox"/> UNALTERED	<input checked="" type="checkbox"/> ORIGINAL SITE
<input type="checkbox"/> GOOD	<input type="checkbox"/> RUINS	<input checked="" type="checkbox"/> ALTERED	<input type="checkbox"/> MOVED DATE _____
<input type="checkbox"/> FAIR	<input type="checkbox"/> UNEXPOSED		

DESCRIBE THE PRESENT AND ORIGINAL (IF KNOWN) PHYSICAL APPEARANCE

The Euthorian Mills were first established on a 95 acre tract on the west bank of Brandywine Creek, just north of Wilmington, Delaware. Within this parcel of land Jacob Broom had erected one of the many mills which utilized the strong waterpower of the Brandywine. The mill had burned in 1797, but the dam remained, as did an earlier, small, two-story stone house which housed the du Ponts while they were engaged in the initial constructions, during the winter of 1802-03. Within the first year, Renee du Pont constructed the greater part of his powder refinery, as well as his barn and "Euthorian Mills," the family house, which was situated on a hill overlooking the saltpetre refinery, and still lower, the mills themselves on the river bank.

The main house (#1, refer to attached plot map), completed by August, 1803, originally consisted of a large rectangular, central section, two-and-a-half stories tall with a gable roof pierced by three domers on a side, built of stuccoed stone. The symmetrical wings were added by Renee's son, Henry in 1803. They are slightly shorter than the original section, but are of similar construction with gable roofs, each pierced by one dormer on a side. A central hallway runs the width of the house from the front entrance past a handsome winding staircase to a porch with delicate iron grillwork, which was moved from the front of the house to where it now commands a fine view of the creek below. The many rooms of the mansion are currently furnished, each with the pieces of a different period or style. Below the house, an ornamental garden has been planted over the ruins of the refinery. Nothing remains of the original mills which were situated just beneath the house on the river bank. In front of the mansion, the original barn (#2), and the first company office (#3), used from 1837 to 1892, have been restored to their 19th century appearance and are open to the public. Just north of the mansion is the Euthorian Mills Historical Library (A), a new building which houses du Pont archives and works on industrial and technological history.

Southeast of the original mill location, further downstream, is the old Upper Hagley Yard, acquired by the du Ponts in 1812, where the majority of the industrial remains are located. Here, situated on the river bank, between the Brandywine and the millrace, are twenty-one mills, in varying states of repair, which for over one hundred years performed the operations of powder manufacturing, which included the purification of charcoal, sulphur, and saltpetre, and then the crushing and mixing of the ingredients. With heavy stone walls on three sides combined with light roofs and streamside facades, the design of the mills was intended to vent the blast force of an accidental explosion harmlessly across the water. All of the powder mills were at one time powered by water wheels or turbines which received their flow through individual flumes from the raceway. The water wheel was the traditional means by which the latent force of the millstream was converted into power to move machinery. Many of these mills were constructed in pairs; their equipment driven by a centrally placed water wheel. The Birkenhead Mills (#4) are one such pair of rollmills, constructed 1822-24, which have had the water wheel reconstructed to power the 10 ton cast-iron wheels. The Eagle Roll Mills (#5), circa 1886, are similarly operable, but by means of a water

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INVENTORY - NOMINATION FORM

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CONTINUATION SHEET Ellettsville Mills ITEM NUMBER #7 PAGE 2

turbine, a method which began to be practiced on the Brandywine in the 1840's. Aside from these two sets of mills, the other mills, which included glaze and coming mills as well, are unrestored. Between the millrace and the mills, is a section of the narrow gauge railroad track which was used to transport powder to and from the mills.

Across the raceway, on the main Hagley road is the machine shop (#6), built in 1856, which has been converted to house a display on the manufacturing processes which took place at Ellettsville Mills. Additional structures, including the pump house (#7), the press house (#8), the stable (#9), and the more recent steam powerhouse (#10), are all situated along this section of the complex, and all but the powerhouse have been restored or altered, as in the case of the stable, which now houses restrooms. Below the last powder mill is the Hagley dam, and beyond this is the former Henry Clay Mill (#11), now known as the Hagley Museum. This three-story stone building was built in 1810-15 as a cotton spinning mill and then was converted to manufacture metal powder kegs. It has since been gutted inside and converted into the present industrial museum. The adjoining pickershouse (#12) has been converted into a book store. Below the museum are the ornamental iron gates with the legend, "1802 -- DePont de Nemours -- 1902," and beyond these is the former Lower Hagley Yard. Approximately 200 yards down the road from the gates are two former mills, on either side of the creek. On the western side is Breck's Mill (#13), acquired early in the 19th century by Alfred Victor du Pont, and operated as a wooden mill. It is presently used as an exhibit building. Across the creek is Walker's Mill (#14), a large two story building with a square tower and cupola, which once manufactured woollens but is now used as a workshop and storeroom.

Between the gates to the Upper Hagley Yard, and Breck's Mill there is the former residence of Charles H. du Pont (#15), who built the two-and-a-half story stone house in 1823. A marble slab over the doorway reads, "C.H.D. 1823." This house is privately owned.

The du Pont Company, in 1952, on the 150th anniversary of the establishment of the concern, created the Ellettsville Mills-Hagley Foundation and donated 185 acres, which included all the property mentioned above, with the exception of the C.H. du Pont residence. The property is presently maintained as a museum complex devoted to industrial history, in which most of the above features are utilized. There are a number of buildings which have not been opened to the public, such as workers' residences. These are incorporated within the landmark boundary.

B SIGNIFICANCE

PERIOD	AREAS OF SIGNIFICANCE - CHECK AND JUSTIFY BELOW			
—PREHISTORIC	—ARCHEOLOGY-PREHISTORIC	—COMMUNITY PLANNING	—LANDSCAPE ARCHITECTURE	—RELIGION
—1400-1499	—ARCHEOLOGY-HISTORIC	—CONSERVATION	—LAW	—SCIENCE
—1500-1599	—AGRICULTURE	—ECONOMICS	—LITERATURE	—SCULPTURE
—1600-1699	—ARCHITECTURE	—EDUCATION	—MILITARY	—SOCIAL/HUMANITARIAN
—1700-1799	—ART	—ENGINEERING	—MUSIC	—THEATER
JPI 800-1899	X-COMMERCE	—EXPLORATION/SETTLEMENT	—PHILOSOPHY	—TRANSPORTATION
X-1900-	—COMMUNICATIONS,...	X-INDUSTRY	—POLITICS/GOVERNMENT	—OTHER (SPECIFY)
		—INVENTION		

SPECIFIC DATES 1803-1921

BUILDER/ARCHITECT

STATEMENT OF SIGNIFICANCE

The E. I. du Pont de Nemours & Company Mills were erected on the west bank of Brandywine Creek, just north of Wilmington, Delaware by E. I. du Pont de Nemours & Company from 1802-1803*. For 120 years they served as the original blackpowder works and industrial center of E. I. du Pont de Nemours & Company. Today the several mills, residences and associated structures of the industrial community are maintained by the E. I. du Pont de Nemours & Company Foundation as a museum complex devoted to American technological and industrial history.

HISTORY

E. I. du Pont de Nemours & Company founder and namesake of the Mills, was born in France on June 24, 1771. He was the son of Samuel du Pont, an economist and a senior administrator under Louis Seize. At the age of 16, Renee was apprenticed to Antoine Lavoisier, the great French chemist. He was also the director of the French gunpowder industry. By the time he completed his training at the arsenal at Essonne, he was familiar with every stage of the manufacture of blackpowder. Young du Pont did not embark upon a manufacturing career, but joined his father in a publishing venture. However, the moderate conservatism that marked the du Pont publications found no favor with extremist revolutionaries, and in 1795 Pierre and his family sailed for the United States. There, in western Virginia, the elder du Pont hoped to establish a colony based on his idealistic economic concepts.

Arriving in the New World on January 1, 1800, Pierre du Pont soon abandoned his plan for colonization, and after settling with his family in New Jersey, he attempted a series of fruitless schemes, while the family capital dwindled.

Renee however, had learned of the poor quality of American powder, reportedly during a hunting trip. After he visited the nation's largest powder factory at Frankford, Pennsylvania, he began to consider entering into the industry himself. One year after his arrival in America, Renee and his brother Victor returned to France where they hoped to obtain financial backing. While in France Renee also acquired powder-making machinery and information on new techniques. The French officials favorably regarded the proposed venture as a political enterprise against British interests and so gave their sanction.

Upon his return to America, Renee quickly implemented his plans. He surveyed many sites for a powder factory and finally chose a site on the Brandywine Creek in Delaware, where one of the first cotton mills in the country had been located in 1795*. Already the location of a great flour milling industry, the Brandywine offered an excellent source

9 MAJOR BIBLIOGRAPHICAL REFERENCES

William Carr, The du Ponts of Delaware (New York, 1961).
 John Chamberlain, 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).

10 GEOGRAPHICAL DATA

ACREAGE OF NOMINATED PROPERTY: 191.2
 UTM REFERENCES

<u>A 11, 8</u>	<u>4119, 0 4 10</u>	<u>4, 4 0, 1, 8 0</u>	<u>11, 8</u>	<u>4 15 1 3, 0, 0</u>	<u>U, 110, 4 14, 4, 0</u>
ZONE	EASTING	NORTHING	ZONE	EASTING	NORTHING
<u>C 11 B</u>	<u>4119, 0 4 10</u>	<u>4, 4 0, 1, 8 0</u>	<u>11, 8</u>	<u>4 15 1 3, 0, 0</u>	<u>U, 110, 4 14, 4, 0</u>

VERBAL BOUNDARY DESCRIPTION

The landmark boundaries for Eleutherian Mills are indicated in red on the enclosed plat map provided by the Eleutherian Mills Hagley Foundation. The landmark boundaries are coterminous with the Foundation boundaries, except in the southeast corner of the property, where the landmark boundaries include the separately owned C. I. Dupont residence. It must be noted as well that the plat map, dated 1968, does not indicate the Foundation's acquisition of Breck's Mill. These boundaries enclose the significant features of the Eleutherian Mills complex, while excluding the post-historic intrusions. LIST ALL STATES AND COUNTIES FOR PROPERTIES OVERLAPPING STATE OR COUNTY BOUNDARIES

STATE	CODE	COUNTY	CODE
STATE	CODE	COUNTY	CODE

11 FORM PREPARED BY

NAME/TITLE: Richard Greenwood, Historian, Landmark Review Task Force
 ORGANIZATION: Historic Sites Survey
 STREETS & NUMBER: 1100 L Street
 CITY OR TOWN: Washington, D.C.



12 STATE HISTORIC PRESERVATION OFFICER CERTIFICATION

THE EVALUATED SIGNIFICANCE OF THIS PROPERTY WITHIN THE STATE IS Landmark WJ 31966
 NATIONAL _____ STATE _____ LOCAL Designated: _____ date _____

As the designated State Historic Preservation Officer for the National Historic Preservation Act of 1966 (Public Law 89-665) 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.

FEDERAL REPRESENTATIVE SIGNATURE

TITLE

DATE May 19, 1978

FOR NPS USE ONLY

I HEREBY CERTIFY THAT THIS PROPERTY IS INCLUDED IN THE NATIONAL REGISTER

DIRECTOR, OFFICE OF ARCHEOLOGY AND HISTORIC PRESERVATION

ATTEST: Wiztan DATE 1/26/79

KEEPER OF THE NATIONAL REGISTER DATE 1-4-79

UNITED STATES DEPARTMENT OF THE INTERIOR
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CONTINUATION SHEET Eleutherian Mills ITEM NUMBER #8 PAGE 2

of waterpower, and the willows which covered its banks were valuable for making charcoal. Furthermore, the site was in proximity to Philadelphia: Du Pont paid \$6,700 for 95 acres bordering the Brandywine, and on July 19, 1802, he began the construction of his factory. By the winter of 1803 he had built a house, a barn, and had completed by the summer of 1803 to enable Irenée to begin preparation of saltpetre.

Irenée's assumption that America would welcome excellent powder was soon verified. He sent his first shipment of 25-pound sacks of powder to New York in the spring of 1804. The powder won instant approval, and by the end of 1804 he had sold a total of 39,000 pounds. In 1805 he sold triple that amount. John Jacob Astor's American Fur Company bought 25,000 pounds a year, and the Federal government became a regular customer. With the War of 1812 came the first of many expansions, when in 1813, du Pont bought the tract south of his property, known as the Hagley property, and there erected a new mill which doubled his output.

Following the Treaty of Ghent, December 24, 1814, the du Pont works expanded and sometimes exploded. Irenée du Pont's death on October 31, 1834 did not impede subsequent expansion which resulted from demands in time of the Mexican, Crimean and Civil Wars. During the Civil War alone, the du Pont works supplied the Federal government with 4,000,000 barrels of powder. The railroad building era provided further profits as did the Spanish-American War. The company continued to be run by the du Pont family and it was incorporated in 1899. Although powder continued to be made on the Brandywine until 1921, the company began to diversify and expand in the field of chemicals. Today the concern is one of the nation's major companies, and it maintains its early record for excellence and innovation.

After being closed in 1921, the mills along the Brandywine were abandoned, and the land was parceled out among members of the family. In 1952, however, through the donation of the land by Mrs. Frank Crowninshield and a \$6,000,000 endowment from the Du Pont Company, the Eleutherian Mills-Hagley Foundation was established to create and manage an industrial museum, employing the original residence and the remaining mills. It is presently open to the public.

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CONTINUATION SHEET

ITEM NUMBER 10 PAGE 2

F 18.450560.4402120

F 18.450300.4402160

G 18.450000.4404010

Verbal Boundary Description (See Property Map)

Parcel #1 12.5 Acres

Beginning at a point which is 25' north of New Bridge Road and in the center of Brandywine Creek, proceed northwest approximately 200' to a point; thence west approximately 350' to a point; thence north approximately 150' to a point; thence southwest approximately 225' to a point; thence in a northerly direction approximately 725' to a point; thence west approximately 175' to a point; thence northerly approximately 200'; thence easterly approximately 250' to a point; thence north-easterly 450' to a point; thence east 300' to a point; thence southeast approximately 25' to a point; thence southwesterly approximately 300' to a point; thence east 50' to a point; thence 1100' in a southerly direction to the point of origin.

Parcel #2 178.7 Acres

Beginning in the center of Buck Road, proceed southeast approximately 550' along the west curb of Christ Road to a point; thence east approximately 1250' to a point; thence approximately 1200' southeast to a point; thence west approximately 100'; thence southerly approximately 600'; thence southwesterly approximately 700'; thence north-west approximately 85'; thence southwesterly 550' to a point; thence northwest 85'; thence southwest approximately 150'; thence northwest 50'; thence southwest 550'; thence south 400'; thence southwest approximately 700'; thence south approximately 75'; thence 350' southwest; thence southerly approximately 400' to a point; thence southwest 300'; thence east approximately 400' to a point; thence northeasterly approximately 600' to a point; thence north approximately 50'; thence northeast approximately 950' to a point; thence approximately 50' south; thence northeasterly 1050' to a point; thence northwesterly approximately 400' to a point; thence north-easterly 1150' to a point; thence west approximately 550' to a point; thence 2250' in a north-northwesterly direction to a point; thence north 1200' to a point; thence west approximately 1400' to a point; thence south approximately 1200' to the north curb of Buck Road; thence 300' along the northern curb of Buck Road to a point; thence south 25' to the center line of Buck Road; thence west along the center line to the point of origin.)

Property
Property

Eleutherian Mills

frsSS

BOUNDARY DEFINITION
RECEIVED 4/12/76

state ^jixALLAHXX-^

Working Number ^J NK^

TECHNICAL

Photos _____
Maps _____

boundary too large -
points not labelled
CONTROL
4/2/76

I have reviewed boundary right of NB 6k, which
are on the NNL map, 4USGS
are on the map of AJ partition of property.

HISTORIAN

5A-c-Turner
11-1-JB

There is no center boundary...

ARCHITECTURAL HISTORIAN

...for the past includes it. ...
...the highway overpass.

NO
FACIOUS
K 1-7

ARCHEOLOGIST

ELEUTHERIAN MILLS
ELEUTHERIAN MILLS
Verbal boundary description added.
Utm points added and labeled.
The boundary as drawn corresponds with the grant of land donated specifically for the creation of the Eleutherian Mills Hagley Foundation. The grant did not include the highway overpass.
Post historic structures include rest rooms and bus stops and exhibition building.
OK
JFS/mjg 3/19/78

OTHER I
JAMES H. GILMOUR
12/20/75
»sPr"

HAER

Inventory _____
Review _____

REVIEW UNIT CHIEF

BRANCH CHIEF

Plat maps
1-9-79

KEEPER

1/26/79

ck _____
Entered _____
omit _____

Property *Clutterman Mills*

BOUNDARY DEFINITION RECEIVED 4/12/76

State *Delaware* Working Number *fj 156*

TECHNICAL

Photos _____
Maps _____

boundaries too large - points not labelled CONTROL *4/12/76*

HISTORIAN

Arch
p, 4 USGS
oA-C-115 Turner
12-8-73

NOT *signif.*

RAL HISTORIAN

AW
AW
11-77

boundaries accurate?
justified? logical?

ARCHEOLOGIST

7 - v. 8? -- sufficient min- imally?

OTHER

Jan. 14-6 L <> #
t2.1 Mief

*Rr/i-tmJ&O Boundary material, concave **>»irt To'i:Wt4^ NEED FOR*
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x 124 iu, m- Na:UA^ along Golf course experimental station and (2)
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Numerous...

Eyan

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Thanks

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WOP doesn't

match plat map,

(U^ USGS,

NO NR bound- aries.

HAER

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CHIEF

CHIEF

12-1

EEPER

1/26/76

Nati Fede

Sen Re-

NT:ai06-74

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Property

Clutterman Mills

State *NIXOLLAKLAJL^*

Working Number *P 15K*

SECONDARY DEFINITION RECEIVED 4/12/76

TECHNICAL

Photos _____
Maps _____

*boundaries too large -
points not labelled*

CONTROL

9/2/76

HISTORIAN

*I have reviewed boundary materials light of NR 152, which
materials are inconsistent on E. boundary of property.*

*Joe Townner
12-8-78*

There is no outlet to the river - in fact with the

ARCHITECTURAL HISTORIAN

*incidental to the past includes it. The boundary of the
Siwash. The boundary of the property is not shown on the map.*

*NO
FINDINGS
1-1-79*

There is no outlet to the river - in fact with the

ARCHEOLOGIST

*Boundary material, concave with Mtsico *w~
ff/ M.m. p-iAfc- tiOfyu^ fet'rt'-Js-rj a ^/3 X-rJ
CV <<woro>> 178 here parcel: 1805 map excludes structure
X4>>ut/ p-CiOit vwy numerous buildings*

OTHER

*JAMES H. GILMOUR
12/20/78*

HAER

Inventory _____

Review _____

REVIEW UNIT CHIEF

BRANCH CHIEF

*p have reviewed
boundaries carefully -
they correspond to Plats maps.*

1-9-79

KEEPER

12/26/79

National Register Write-up _____

Send-back _____

Entered _____

Federal Register Entry _____

Re-submit _____

INT:2106-74



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1 NAME

HISTORIC Eleutherian Mills

AND/OR COMMON
Eleutherian Mills

2 LOCATION

CITY, TOWN	VICINITY OF	COUNTY	STATE
Greenville		New Castle	Delaware

3 PHOTO REFERENCE

PHOTO CREDIT Hagley Museum

DATE OF PHOTO 1971 confirmed 1975

NEGATIVE FILED AT Historic Sites Survey, N.P.S.
1100 L Street NW, Washington, D.C. 20240

4 IDENTIFICATION

DESCRIBE VIEW, DIRECTION, ETC. IF DISTRICT, GIVE BUILDING NAME & STREET
Breck's Mill, northern and western elevations

PHOTO NO.



DE 15

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Greenville

___VICINITY OF

COUNTY

New Castle

STATE

Delaware

3 PHOTO REFERENCE

PHOTO CREDIT

Hagley Museum

DATE OF PHOTO

1971 confirmed 1975

NEGATIVE FILED AT

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1100 L Street NW, Washington, D.C. 20240

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PHOTO NO.

Western and southern (front) elevations, the Henry Clay Mill (Hagley Museum).



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PHOTO NO.

Looking north at powder mills on the western bank of the Brandywine Creek



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CITY, TOWN Greenville VICINITY OF COUNTY New Castle STATE Delaware

3 PHOTO REFERENCE

PHOTO CREDIT Sydney Bradford DATE OF PHOTO 1966 confirmed 1975

NEGATIVE FILED AT Historic Sites Survey, N.P.S.
1100 L Street NW, Washington, D.C. 20240

4 IDENTIFICATION

DESCRIBE VIEW, DIRECTION, ETC. IF DISTRICT, GIVE BUILDING NAME & STREET
Western elevation, the company office.

PHOTO NO.





Photo no. 4, following page 15

verified 1975

The Eleuthère Irénée du Pont residence,
"Eleutherian Mills," Hagley Museum,
Delaware.

NPS photo, 1966

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___ VICINITY OF

COUNTY

New Castle

STATE

Delaware

3 PHOTO REFERENCE

PHOTO CREDIT Sydney Bradford

DATE OF PHOTO 1966 Confirmed 1975

NEGATIVE FILED AT

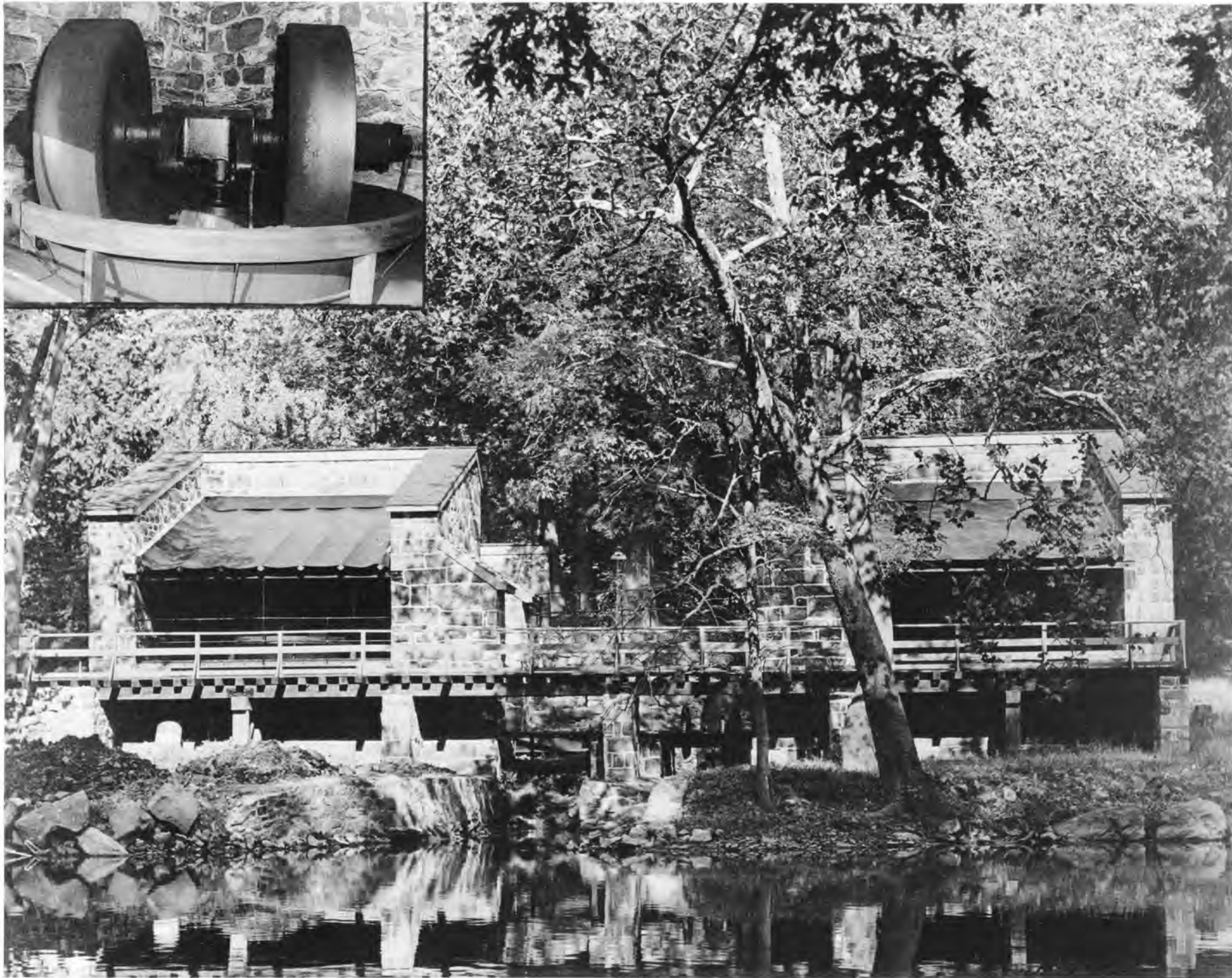
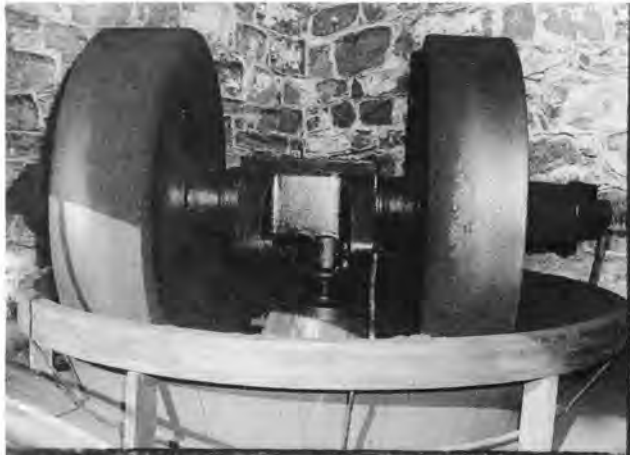
Historic Sites Survey, N.P.S.
1100 L Street, NW, Washington, D.C. 20240

4 IDENTIFICATION

DESCRIBE VIEW, DIRECTION, ETC. IF DISTRICT. GIVE BUILDING NAME & STREET

Front (west) facade of "Eleutherian Mills"

PHOTO NO.



UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

**NATIONAL REGISTER OF HISTORIC PLACES
PROPERTY PHOTOGRAPH FORM**

FOR NPS USE ONLY

RECEIVED

DATE ENTERED

SEE INSTRUCTIONS IN *HOW TO COMPLETE NATIONAL REGISTER FORMS*
TYPE ALL ENTRIES -- ENCLOSE WITH PHOTOGRAPH

1 NAME

HISTORIC

Eleutherian Mills

AND/OR COMMON

Eleutherian Mills - Hagley Museum

2 LOCATION

CITY, TOWN

Greenville

— VICINITY OF

COUNTY

New Castle

STATE

Delaware

3 PHOTO REFERENCE

PHOTO CREDIT

Hagley Museum

DATE OF PHOTO

1974 confirmed
1975

NEGATIVE FILED AT

Hagley Museum
Greenville, Delaware 19807

4 IDENTIFICATION

DESCRIBE VIEW, DIRECTION, ETC. IF DISTRICT. GIVE BUILDING NAME & STREET

PHOTO NO.

Eagle Roll Mills, (Cast iron wheels in insert), eastern elevation, from the east bank of Brandywine Creek



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Eleutherian Mills - Hagley Museum

2 LOCATION

CITY, TOWN

Greenville

— VICINITY OF

COUNTY

New Castle

STATE

Delaware

3 PHOTO REFERENCE

PHOTO CREDIT The Hagley Museum

DATE OF PHOTO 1973 confirmed 1975

NEGATIVE FILED AT The Hagley Museum
Greenville, Delaware 19807

4 IDENTIFICATION

DESCRIBE VIEW, DIRECTION, ETC. IF DISTRICT, GIVE BUILDING NAME & STREET

PHOTO NO.

West elevation, Birkenhead Mills





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HISTORIC Eleutherian Mills

AND/OR COMMON Eleutherian Mills - Hagley Museum

2 LOCATION

CITY, TOWN Greenville

— VICINITY OF

COUNTY

New Castle

STATE

Delaware

3 PHOTO REFERENCE

PHOTO CREDIT R.E. Greenwood

DATE OF PHOTO 1975

NEGATIVE FILED AT Historic Sites Survey, N.P.S.
1100 L Street NW, Washington, D.C. 20240

4 IDENTIFICATION

DESCRIBE VIEW, DIRECTION, ETC. IF DISTRICT. GIVE BUILDING NAME & STREET
C.I. du Pont residence, south end and east facade

PHOTO NO.



UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

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AND/OR COMMON

Eleutherian Mills - Hagley Museum

2 LOCATION

CITY, TOWN

Greenville

— VICINITY OF

COUNTY

New Castle

STATE

Delaware

3 PHOTO REFERENCE

PHOTO CREDIT

R.E. Greenwood

DATE OF PHOTO

1975

NEGATIVE FILED AT

Historic Sites Survey, N.P.S.
1100 L Street, NW., Washington, D.C. 20240

4 IDENTIFICATION

DESCRIBE VIEW, DIRECTION, ETC. IF DISTRICT, GIVE BUILDING NAME & STREET

PHOTO NO.

South (left) and East (right) sides, the steam powerhouse



UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

**NATIONAL REGISTER OF HISTORIC PLACES
PROPERTY PHOTOGRAPH FORM**

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TYPE ALL ENTRIES -- ENCLOSE WITH PHOTOGRAPH

1 NAME

HISTORIC Eleutherian Mills

AND/OR COMMON Eleutherian Mills - Hagley Museum

2 LOCATION

CITY, TOWN Greenville VICINITY OF COUNTY New Castle STATE Delaware

3 PHOTO REFERENCE

PHOTO CREDIT R.E. Greenwood DATE OF PHOTO 1975

NEGATIVE FILED AT Historic Sites Survey, N.P.S.
1100 L Street, NW, Washington, D.C. 20240

4 IDENTIFICATION

DESCRIBE VIEW, DIRECTION, ETC. IF DISTRICT. GIVE BUILDING NAME & STREET

PHOTO NO.

Western elevation of a pair of powder mills with the millrace in centerground.



UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

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PROPERTY PHOTOGRAPH FORM**

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AND/OR COMMON

Eleutherian Mills - Hagley Museum

2 LOCATION

CITY, TOWN

Greenville

— VICINITY OF

COUNTY

New Castle

STATE

Delaware

3 PHOTO REFERENCE

PHOTO CREDIT R.E. Greenwood

DATE OF PHOTO 1975

NEGATIVE FILED AT Historic Sites Survey, N.P.S.
1100 L Street NW., Washington, D.C. 20240

4 IDENTIFICATION

DESCRIBE VIEW, DIRECTION, ETC. IF DISTRICT, GIVE BUILDING NAME & STREET

PHOTO NO.

Machine Shop, western facade



UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

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PROPERTY PHOTOGRAPH FORM**

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HISTORIC Eleutherian Mills

AND/OR COMMON
Eleutherian Mills - Hagley Museum

2 LOCATION

CITY, TOWN Greenville VICINITY OF COUNTY New Castle STATE Delaware

3 PHOTO REFERENCE

PHOTO CREDIT R.E. Greenwood DATE OF PHOTO 1975

NEGATIVE FILED AT Historic Sites Survey, N.P.S.
1100 L Street NW, Washington, D.C. 20240

4 IDENTIFICATION

DESCRIBE VIEW, DIRECTION, ETC. IF DISTRICT, GIVE BUILDING NAME & STREET

PHOTO NO.

The Hagley dam, view to the north from the west bank.

UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

**NATIONAL REGISTER OF HISTORIC PLACES
PROPERTY MAP FORM**

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DATE ENTERED

SEE INSTRUCTIONS IN HOW TO COMPLETE NATIONAL REGISTER FORMS
TYPE ALL ENTRIES - ENCLOSE WITH MAP

1 NAME

HISTORIC **Eleutherian Mills**

AND/OR COMMON

Eleutherian Mills - Hagley Foundation

2 LOCATION

CITY, TOWN

Greenville

—VICINITY OF

COUNTY

New Castle

STATE

Delaware

3 MAP REFERENCE

SOURCE **Eleutherian Mills - Hagley Foundation**

SCALE **1"=200'**

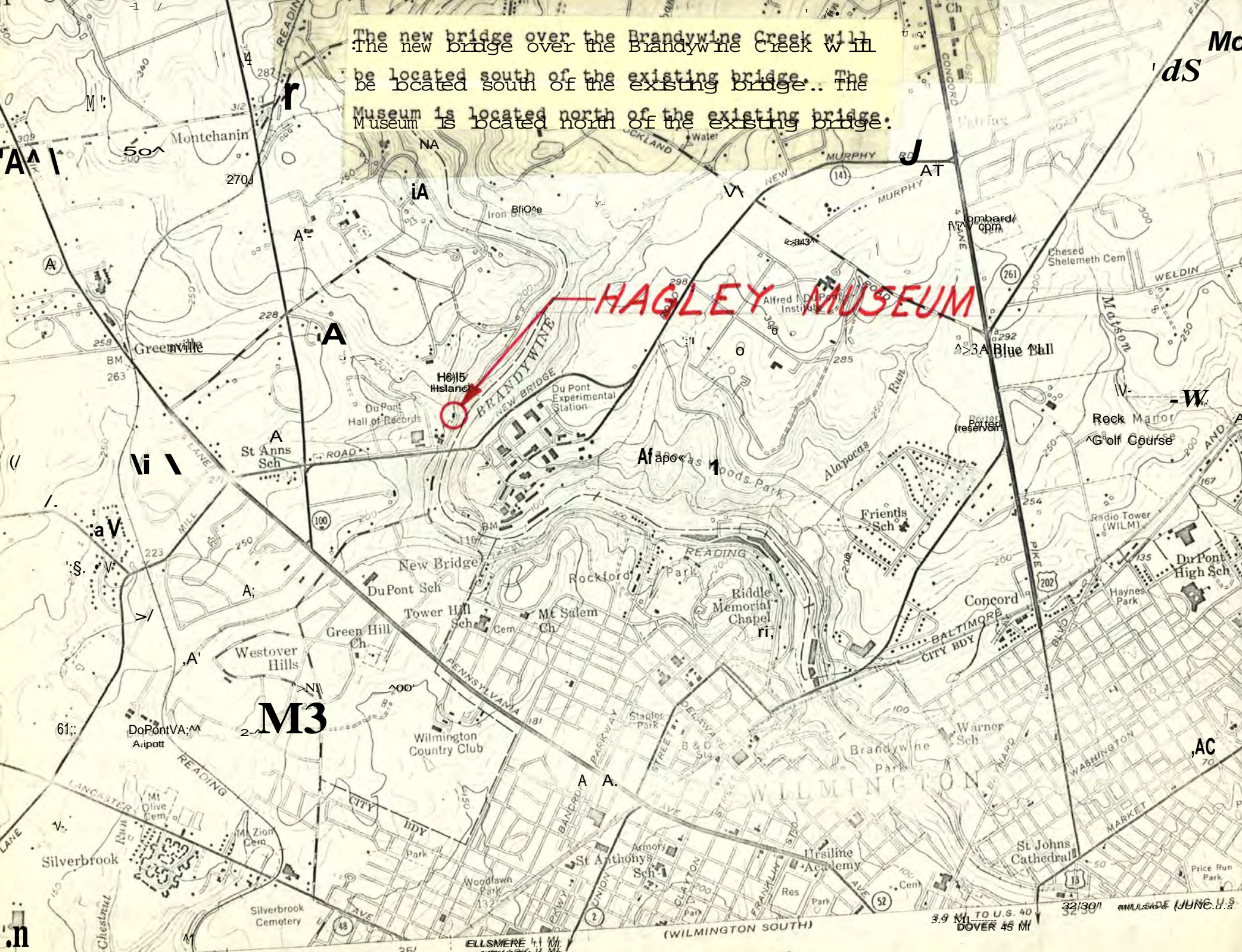
DATE **July 31, 1968**

4 REQUIREMENTS

TO BE INCLUDED ON ALL MAPS

1. PROPERTY BOUNDARIES
2. NORTH ARROW
3. UTM REFERENCES

The new bridge over the Brandywine Creek will be located south of the existing bridge. The Museum is located north of the existing bridge.



HAGLEY MUSEUM

H615
Islands

M3

3.9 MI TO U.S. 40
DOVER 45 MI

32°30' N 75°30' W
MULTISIDE (JUNE) U.S.

UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

NFI
NATIONAL REGISTER OF HISTORIC PLACES
PROPERTY MAP FORM

FOR NPS USE ONLY
RECEIVED
ssggS:ll:
DATE ENTERED

SEE INSTRUCTIONS IN HOW TO COMPLETE NATIONAL REGISTER FORMS
TYPE ALL ENTRIES - ENCLOSE WITH MAP

1 NAME

HISTORIC Eleutherian Mills

AND/OR COMMON Eleutherian Mills - Hagley Museum
Eleutherian Mills - Hagley Museum

2 LOCATION

CITY/TOWN	— VICINITY OF	COUNTY	STATE
Greenville		New Castle	Delaware

3 MAP REFERENCE

SOURCE U.S.G.S., Wilmington, North Quad:

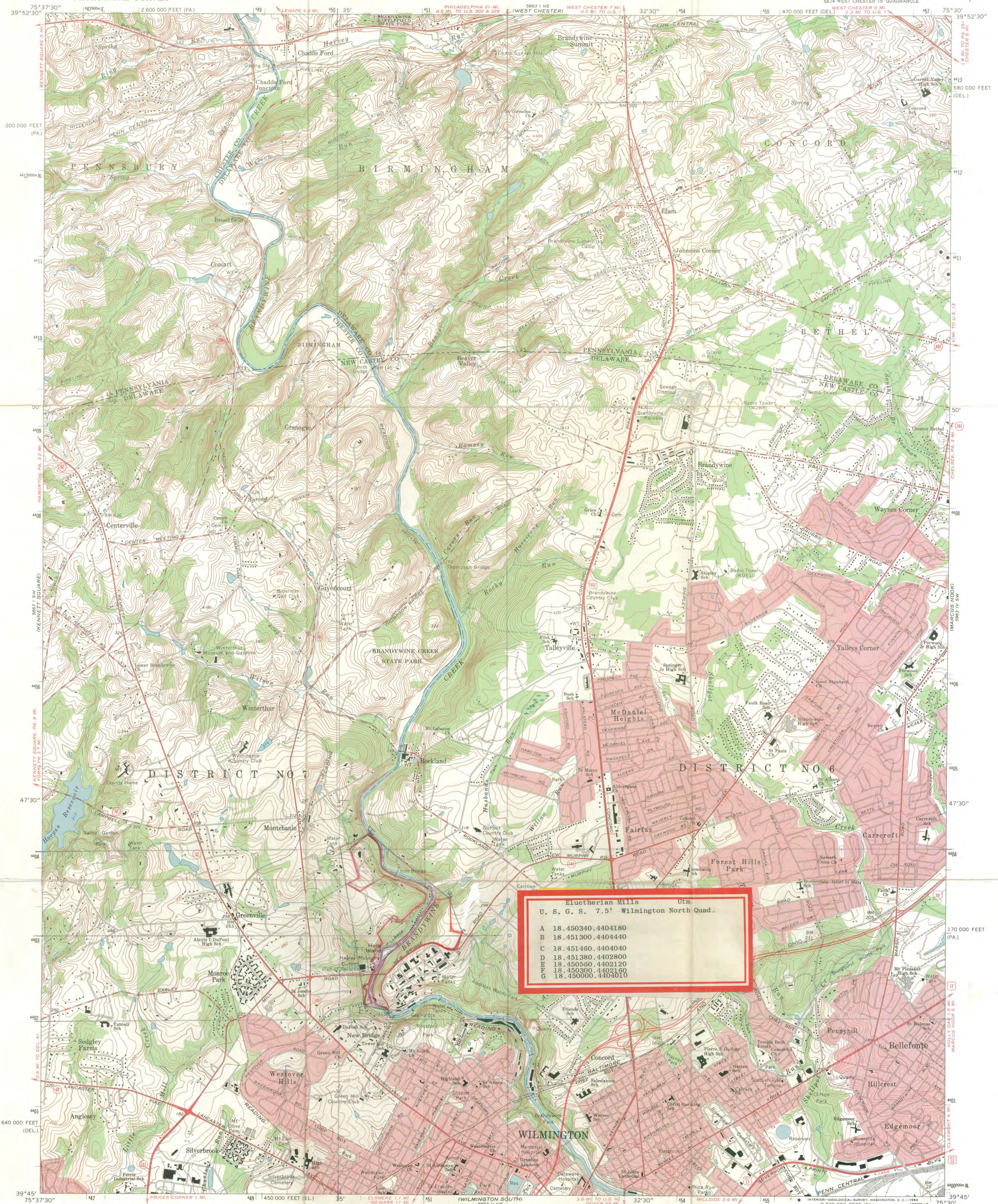
SCALE 1:24,000

DATE 1967

W REQUIREMENTS

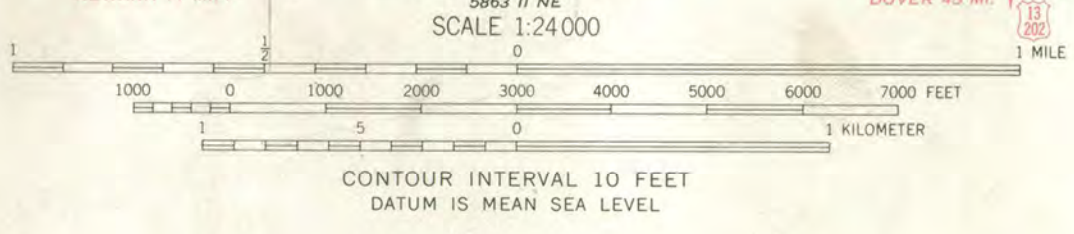
TO BE INCLUDED ON ALL MAPS

1. PROPERTY BOUNDARIES
2. NORTH ARROW
3. UTM REFERENCES



	Eluetherian Mills	Utm
U. S. G. S. 7.5' Wilmington North Quad.		
A	18.450340	4404180
B	18.451300	4404440
C	18.451460	4404040
D	18.451380	4402800
E	18.450560	4402160
F	18.450300	4402160
G	18.450000	4404010

Mapped, edited, and published by the Geological Survey
Control by USGS and USC&GS
Topography in Delaware by planetable 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



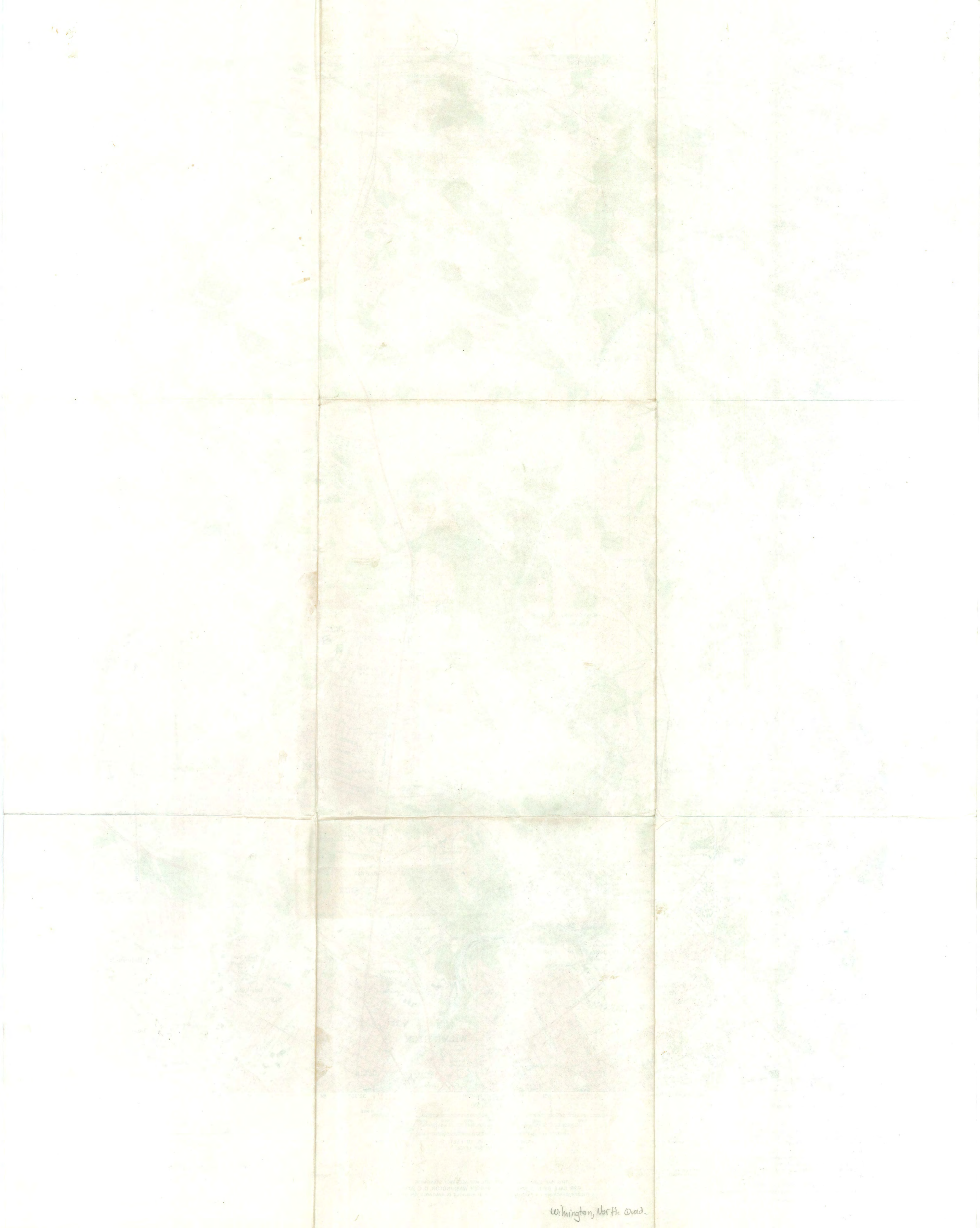
ROAD CLASSIFICATION

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

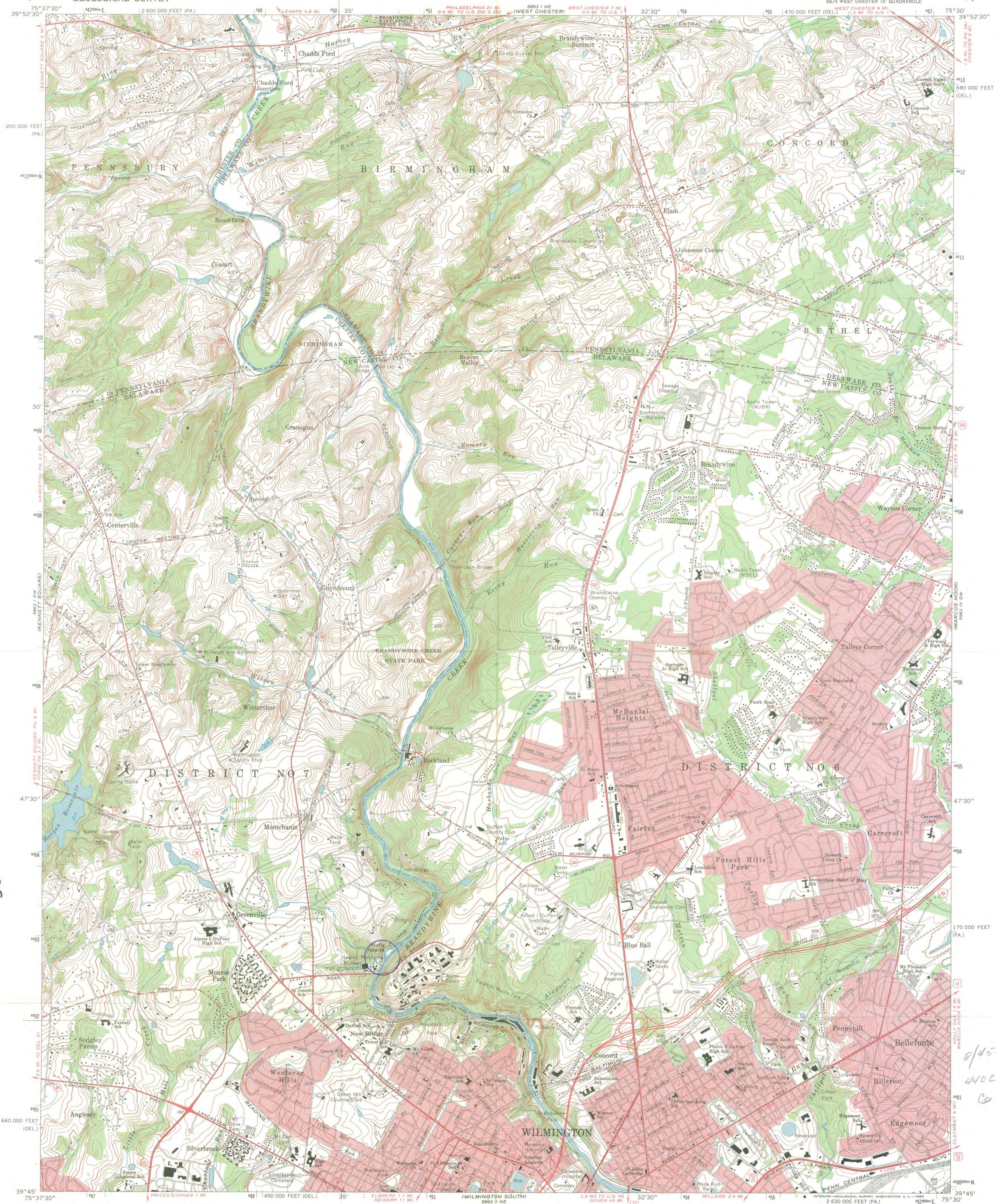
WILMINGTON NORTH, DEL. - PA.
SE 1/4 WEST CHESTER 15' QUADRANGLE
N3945-W7530/7.5

1967

AMS 5863 1 SE-SERIES V832



Wilmington, North Carol.



Eleutherian Mills
Co. New Castle
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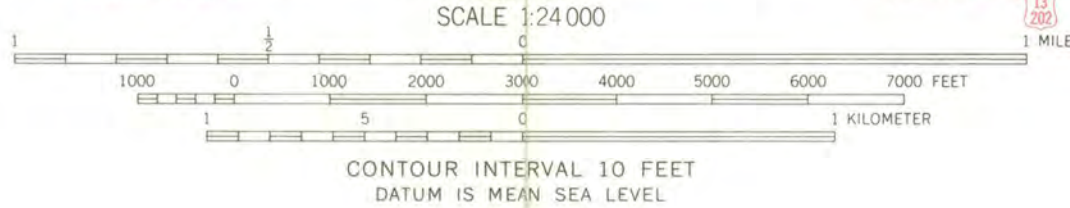
Mapped, edited, and published by the Geological Survey

Control by USGS and USC&GS

Topography in Delaware by planetable 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



ROAD CLASSIFICATION

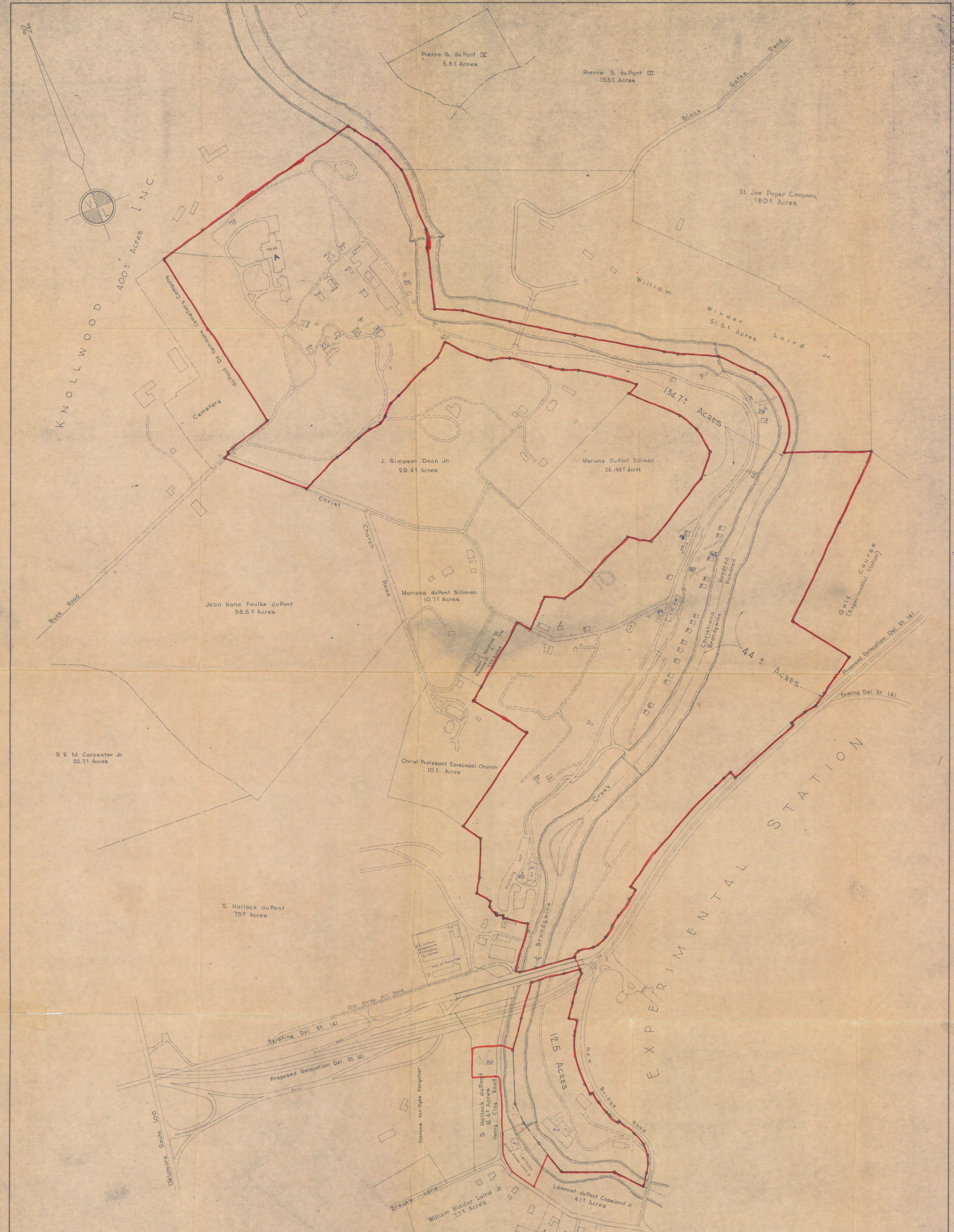
Heavy-duty	Light-duty
Medium-duty	Unimproved dirt
Interstate Route	U.S. Route
	State Route

WILMINGTON NORTH, DEL. - PA.
SE 1/4 WEST CHESTER 15' QUADRANGLE
N3945-W7530/7.5

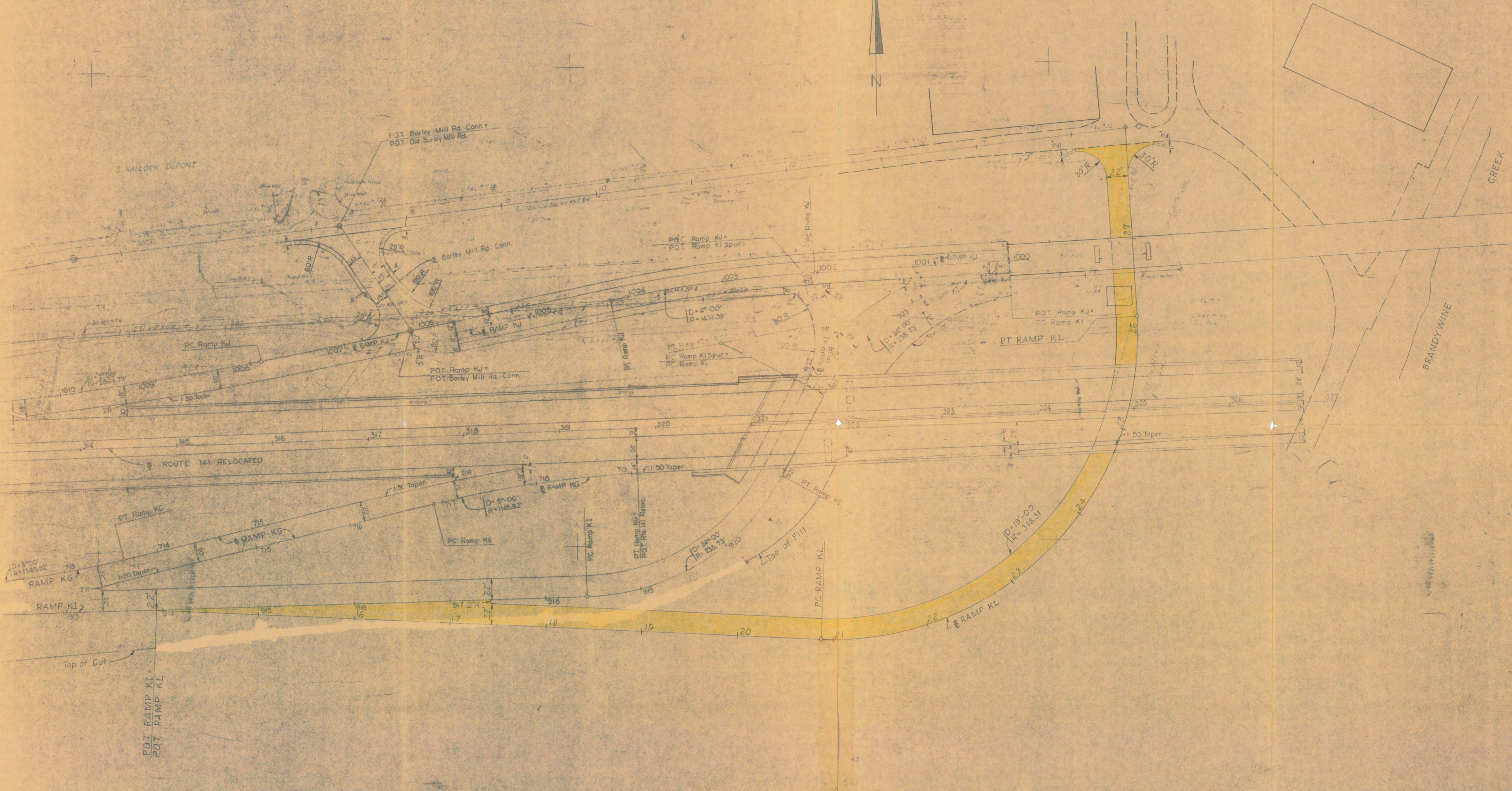
1967

AMS 5863 I SE - SERIES V832

THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS
FOR SALE BY U.S. GEOLOGICAL SURVEY, WASHINGTON, D.C. 20242
A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST



Graphic Scale
 0 100 200 300 400 500 600 700 800 900 1000
 WILMINGTON VAN DEMARK & LYNCH, INC. DELAWARE
 CIVIL ENGINEERS & SURVEYORS
 Scale: 1" = 200'
 July 31, 1968
 Drawn: HFS
 JOHN E. BRANTON
 REGISTERED LAND SURVEYOR
 Ref: Aug 23, 1971 - Photo A.C. & J. source



DELAWARE STATE HIGHWAY DEPARTMENT

ROUTE 141 RELOCATED
RAMP TO HAGLEY MUSEUM

Prepared By:
MICHAEL BAKER JR., INC.
HARRISBURG, PA.

DWG NO. 9053-12
SHEET NO. 1 of 2
SCALE: 1"=50' DATE: AUG, 1965

Eleutherian Mills
co. New Castle
DE.

EMMENTIAN MILLS HISTORICAL MUSEUM

*Klenhrian Mills - Hagley Foundation Incorporated
Greenville · Wilmington 7 · Delaware · OLYMPIA 8-2*

January 8, 1964

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1964
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Date
H L Y S
1/20

Dr. S. Sydney Bradford
National Park Service
103 South Third Street
Philadelphia 3, Penna.

Dear Dr. Bradford:

It was a pleasure to meet you during the A. H. A. Convention and to learn something of National Park Service plans for discovering and marking industrial sites. I have informed my colleague, Dr. Walter J. Heacock, Director of the Hagley Museum, of your interest in the early Du Pont works. As I mentioned to you, Dr. Heacock would be the logical individual for a survey of the northern Delaware area because of the Museum's interest in other industrial and in other industrial sites.

I met Dr. Herman Preudenberger of Tulane University, who is making a study of industrial architecture both here in the United States and in Europe. He might be of some service to you and the Park Service in their quest.

I look forward to meeting you when you visit the Foundation,

Yours sincerely,

Rich D. Williams

Richmond D. Williams
Director

RDW:raw
cc: Dr. Walter J. Headock

NOV 3 - 1966
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\fL' Dear *A, iteD<ll>

Am: |

I M pleased to inform you that SlouthiorMi Ullm, described in the «elottire» has been Araad to possess optional value in m—Foxatlog ox iUnetxatiap the biatnry of the Halted StatM,

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I-A

This site has been evaluated by the Advisory Board on National Parks, Historic Sites, Buildings, and Monuments to the studies prepared by the National Survey of Historic Sites and Buildings, pursuant to the Historic Sites Act of August 21, 1935. I have approved the recommendation of the Board.

As explained in the enclosed folder, the site is eligible to receive a certificate and a bronze plaque designating it a Registered National Historic Landmark. The Director of the National Park Service will notify the owner and provide him with the proper application forms.

In recognizing the historical importance of this site in your State, we wish to commend the owner for the care and preservation of this property.

Sincerely yours,

Stewart U

Secretary of the Interior

Hon. Harris B. NeDOMOU, ^A<
House of Rflpxosmtatives
Nasbington, D. C.

Enclosures

Regional Director, NE
Dr. Bradford

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Dear Stuart Villiamt

I am pleased to inform you that Bloatharlan Mills, described
in the enclosure, has been found to possess historical
value in commemorating or illustrating the history of the
United States.

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This site has been evaluated by the Advisory Board on
National Parks, Historic Sites, Buildings, and Monuments
through studies prepared by the National Survey of Historic
Sites and Buildings, pursuant to the Historic Sites Act of
August 21, 1933. I have approved the recommendation of the
Board.

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As explained in the enclosed folder, the site is eligible
to receive a certificate and a bronze plaque designating
it a designated National Historic Landmark. I am Director
of the National Park Service will notify the owner and
provide him with the proper application forms.

y. ^4#^;^y;::

In recognizing the historical importance of this site in
your State, we wish to commend the owner for the care and
preservation of this property.

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Sincerely yours,

Stewart L. Udell

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Secretary of the Interior

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Hon. John J. Hillisw
United States Senate
Washington, D. C.

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Enclosures

cc:
Regional Director, NE
Dr. Bradford

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UNITED STATES DEPARTMENT of the INTERIOR

- *-*-*-* *-* * *-*-*-* *-* *-* * * news release

NATIONAL PARK SERVICE
NATIONAL PARK SERVICE

Kelly - 343-4214
Kelly

For Release NOVEMBER 13, 1966

FIFTY-SEVEN SITES RECOMMENDED FOR HISTORIC LANDMARK STATUS BY PARKS ADVISORY BOARD

Fifty-seven sites in 26 States were recommended for Registered National Historic Landmark status by the Advisory Board on National Parks, Historic Sites, Buildings and Monuments at its meeting held in Washington, D. C., October 3-6, Secretary of the Interior Stewart L. Udall announced today. To date 746 sites have been declared eligible for inclusion in the Registry.

The new list includes Elutherian Mills, the E. I. du Pont early powder works near Wilmington, Delaware; the site from which Dr. Robert H. Goddard, the "Father of Rocketry," launched the world's first liquid propellant rocket in Auburn, Massachusetts; "Fair Lane," the Henry Ford Estate in Dearborn, Michigan; and the Woolworth Building in New York City, once the world's tallest building.

In announcing the sites Secretary Udall expressed his appreciation for the effort on the part of the owners who are preserving landmarks that "possess exceptional value and are of national significance in commemorating and illustrating the history of the United States."

Registered National Historic Landmarks, the designation given to selected sites, are not administered by the Department's National Park Service but are recognized by the Service with a certificate and bronze marker. Participation in the landmark program is on a voluntary basis; formal designation requires application by the owner.

X X X

(Attached are brief descriptions of the 57 sites recommended. Photographs of these areas are not available from either the National Park Service or the Department of the Interior.)

1. Wilson Dam, in Colbert and Lauderdale Counties, adjacent to Florence, Alabama. The suitability of Muscle Shoals on the Tennessee River for a publicly-owned hydroelectric plant was recognized by 1900, but not until 1916, when nitrates were needed for military uses, did Congress authorize the construction of Wilson Dam to provide power for two nitrate plants. Built between 1918 and 1925, the dam came under the administration of the Tennessee Valley Authority when it was established in 1933, and thus was the first hydroelectric plant in the TVA system. Over the years the Wilson Dam powerhouse has been improved, and it has the largest generating capacity of any of the TVA facilities.

2. Jerome Historic District, Jerome, Yavapai County, Arizona. The immense production of copper ore at Jerome made it by 1907 one of the great copper-mining centers in the world. Founded in 1883, 7 years after discovery of copper in the vicinity, Jerome remained an active mining town until 1953. Now largely abandoned, Jerome still contains a blast furnace used first in 1883 and many structures dating from the 1890s. One of these structures, the James H. Douglas Mansion, houses a mining museum operated by the State of Arizona.

3. James C. Flood Mansion, 1000 California Street, San Francisco, San Francisco County, California. James C. Flood became one of the Bonanza Kings of the Comstock Lode in 1873 when he and his partners obtained control of the Consolidated Virginia Mine, probably the richest lode of gold and silver ore yet found. His brownstone mansion on California Street was erected in 1886. The only 19th-century Nob Hill showplace to survive the San Francisco earthquake and fire in 1906, it is now owned by the Pacific Union Club.

4. Star of India, San Diego Embarcadero, San Diego, San Diego County, California. The Star of India, a three-masted, iron-hulled vessel, is the only extant Alaskan salmon bark. Constructed in Great Britain in 1863 as the full-rigged, three-masted Euterpe, she sailed in the India trade, served as a passenger ship carrying immigrants to New Zealand and Australia, and carried lumber from the State of Washington to Australia before she was purchased by the Alaska Packers Association in 1901. Modified to a bark and renamed the Star of India, she carried fishermen and cannery employees to the Alaska fisheries until retired in 1923. Owned by the Maritime Museum of San Diego and restored as a bark, the vessel is open to the public.

5. Well No. 4, Pico Canyon Oil Field, 3.6 miles north of San Fernando, Los Angeles County, California. The birthplace of California's petroleum industry. Well No. 4 of the Pico Canyon Oil Field was drilled in 1876, some 15 years after the search for oil in California had begun. Well No. 4 produced 25 barrels of oil a day in 1876--70 barrels daily when deepened in 1877--and was the first commercially successful well in the State. Near it stand several structures associated with the early days of the oil field. The field, which is owned by the Standard Oil Company of California, is not open to the public because of the danger of fire.

6. William C. Balston Home, on the campus of the College of Notre Dame, Belmont, San Mateo County, California. Erected between 1866-68, this mansion was the residence of William C. Balston (1826-1875), an eminent San Francisco financier. From 1864 until 1875 he played a major role in the exploitation of the Comstock Lode mines in Nevada and in developing and financing industry and railroad construction in California. His activities helped make San Francisco the commercial, financial, and industrial center of the Far West. The house is owned by the College of Notre Dame. Its first floor, which contains furnishings of the period, is open to the public upon request.
7. G. A. Thayer, San Francisco Maritime State Park, San Francisco, San Francisco County, California. The G. A. Thayer was built in 1895 and is the last of the three-masted lumber schooners built especially for the Pacific Coast lumber trade. The vessel is owned by the State of California, has been restored, and is open to the public.
8. Georgetown-Silver Plume Historic District, Clear Creek County, Colorado. The Georgetown-Silver Plume Historic District, consisting of Georgetown, Silver Plume, and the Loop Gorge between them, is probably the most scenic and historic of all the Colorado mining districts. Both Georgetown and Silver Plume, which are active communities, contain many buildings erected in the 1860s and 1870s, when the area was a major source of gold and silver. The famous aerial railroad that connected the two is gone, but the State, which owns much of the valley, including the railroad grade and a number of mine tunnels, is interested in developing the area as a State historical park.
9. Charles W. Morgan, Mystic Seaport, Mystic, New London County, Connecticut. The Charles W. Morgan is the world's only extant 19th-century wooden whaling vessel. Launched in July, 1841, she sailed under seven owners before completing her 37th and last whaling voyage in May, 1921. During her 80 years of service, her crews killed more than 2,500 whales and earned about \$2,000,000. Owned by the Maritime Historical Association of Mystic, the Morgan has been restored and is open to the public.
10. Armsmear, Samuel Colt Home, 80 Wethersfield Avenue, Hartford, Connecticut. Samuel Colt (1814-1862) added significantly to the development of firearms when he perfected the Colt Revolver in 1833. His revolver did not become popular, however, until after the war with Mexico, and Colt died before it reached its zenith of popularity in the post-Civil War West. Colt erected Armsmear, a large, rambling Italianate house in 1855. It is administered by the Trustees of the Colt Bequest.
11. Eleutherian Mills, on Del. 141 at Brandywine Creek Bridge, north of Wilmington, New Castle County, Delaware. Eleuthère Irénée du Pont (1771-1834) revolutionized gunpowder manufacturing in the United States. A Frenchman, du Pont migrated to the United States in 1799 and by 1803 had

established a powder works on the Brandywine River, Using techniques and machinery with which he had become familiar in France, he soon produced the best gunpowder in the Nation. It won quick recognition, and by 1810 du Pont owned the Country's largest powder factory. Since his death, his company, E. I. du Pont de Nemours and Company, has become one of America's major industrial firms. The site of the original works, the remains of a number of 19th-century powder works, and several other buildings are owned by the E. I. du Pont de Nemours and Company Foundation, which operates them as an industrial museum.

12. Fort San Marcos de Apalache, adjacent to St. Marks, Wakulla County, Florida. The history of the site of Fort San Marcos de Apalache spans more than 200 years. Erected by Spain in 1660 when the Province of Apalache was the granary for Spanish Florida, Fort San Marcos de Apalache was acquired by England in 1763, reclaimed by Spain in 1783, and garrisoned by American troops after the purchase of Florida by the United States in 1819. During the Civil War the Confederates again fortified the site. The State of Florida has developed the site as the San Marcos de Apalache Historic Memorial.

13. Savannah Historic District, Savannah, Chatham County, Georgia. James Oglethorpe's 1732 plan for Savannah created a community pattern that contained important innovations in urban design. Furthermore, the Historic District of Savannah is significant not only because it retains much of the original plan, but also because it includes many buildings of architectural merit. Among them are the Owens-Thomas House, considered one of the finest examples of English Regency architecture in America; the Pink House; the Green-Meldrin House; the Custom House; the City Hall; Talbot Academy; and Factors Row. The parks designed by Oglethorpe and a number of the historic buildings may be visited.

14. The Wayside, Henry Demarest Lloyd Home, 830 Sheridan Road, Winnetka, Cook County, Illinois. Henry Demarest Lloyd (1867-1903), lawyer and Journalist, was the most effective and responsible critic of industrial monopoly during the 1880s and 1890s. A capable writer, his polemic, Wealth Against Commonwealth (1894), remains a landmark in the history of anti-monopolism. Lloyd's home, a large, rambling brick structure, has been little altered since his death. It is privately owned.

15. Eugene V. Debs Home, 451 North Eighth Street, Terre Haute, Vigo County, Indiana. Eugene V. Debs (1855-1926) founded industrial unionism. His career as a labor leader began in 1875 when he joined the Brotherhood of Locomotive Firemen. Five years later he was a national officer of the Brotherhood and editor of its magazine. He resigned in 1892 and in 1893 organized the American Railway Union. Although it was short-lived, its inclusion of both skilled and unskilled workers inspired successful imitation by later labor organizations. The Debs home, a two story frame structure, is owned by the Eugene V. Debs Foundation and maintained as a memorial to Debs.

16. Boston Naval Shipyard, east of Chelsea Street, Boston, Suffolk County, Massachusetts. The Boston Naval Shipyard, one of the Nation's oldest, has built, repaired, and serviced naval vessels for over 180 years. The installation introduced the use of shelters for shipways, built one of the Nation's first dry docks, and pioneered in modern ship construction. It also made all the Navy's rope for more than a century. Still an active facility, it is administered by the Department of the Navy.

17. Pakachoag Hill, Goddard Rocket Launching Site, on Pakachoag Road, Auburn, Worcester County, Massachusetts. On March 16, 1926, Dr. Robert H. Goddard launched the world's first liquid-propellant rocket on this site, which was then a farm. But not until after the appearance of the German V-2 rockets during World War II did most American scientists recognize his accomplishments and benefit from his long years of rocket experimentation. Today Goddard is recognized as the "Father of Rocketry." The appearance of the site has not changed appreciably since 1926.

18. Captain R. B. Forbes House, 315 Adams Street, Milton, Norfolk County, Massachusetts. For decades Boston was the major American port engaged in the China trade. The house of Robert Bennett Forbes (1804-1889), head of the great China trade firm of Russell and Company, exemplifies this trade. Built in 1833, the house is a three-story Greek Revival structure decorated with Chinese motifs. It is furnished with Chinese furniture and art objects. The house is privately owned, but is open to the public from March 1 to November 30.

19. Long Wharf and Custom House Block, foot of State Street, Boston, Suffolk County, Massachusetts. Long Wharf and the Custom House Block memorialize the mercantile history of Boston, one of America's major ports. The original Long Wharf, begun in 1710 and completed in 1721, was long the city's busiest pier. As Boston's mercantile business increased the wharf was expanded and rebuilt, and the commercial structures along the waterfront were replaced. The Custom House Block, completed in 1848, is perhaps the most noteworthy of the massive granite structures built during Boston's commercial zenith.

20. Nantucket Historic District, Nantucket, Nantucket County, Massachusetts. The American whaling industry originated on Nantucket Island late in the 17th century. The industry flourished, and the town of Nantucket remained the leading American whaling port until the 1840s. The many handsome residences on Main Street, between Center Street and Monument Square, attest to the riches that whaling brought to the town. Notable among these are the "Three Bricks," which were erected by Joseph Starbuck for his three sons in the 1830s. Most of the residences in the historic district are privately owned.

21. New Bedford Historic District, New Bedford, Bristol County, Massachusetts. New Bedford began whaling in the 1760s, and by the 1840s was the Nation's major whaling port. Although the industry declined after 1857, the peak year of New Bedford's whaling, the town despatched whalers until 1925. The wealth and commerce produced by whaling are evident in the New Bedford Historic District, where a number of public and private buildings from the whaling era still stand. Outstanding among these are Mechanics Bank and the Merchants Bank at the foot of William Street, the Custom House at Second and William Street, and the house of William Rotch, Jr., on Johnny Cake Hill. The Waterfront Historic Area League, in cooperation with New Bedford's Urban Renewal Program, is sponsoring the effort to preserve the district.

22. Quincy Market, South Market Street, Boston, Suffolk County, Massachusetts. In 1826 the City of Boston erected one of the most notable urban markets in the United States, the Quincy Market. Still operated as a market, these buildings illustrate a formerly important aspect of the distribution of foodstuffs in a large city. The market buildings are also outstanding examples of commercial architecture. They are owned by the City of Boston.

23. St. Marys Falls Canal, Sault Sainte Marie, Chippewa County, Michigan. The St. Marys Falls Canal enabled the resources of the Lake Superior region to be exploited for the Nation's benefit after its completion in 1855. Now, as then, the canal performs a vital function in permitting passage between Lake Superior and Lake Huron. Modern locks have replaced the early ones, and a new lock is under construction. The Corps of Engineers operates the canal.

24. Fair Lane, Henry Ford Estate, 4901 Evergreen Road, Dearborn, Wayne County, Michigan. Henry Ford (1863-1947) revolutionized transportation in America by mass producing an inexpensive and reliable automobile. That car, the Model T, appeared in 1908, and will remain the herald of the automobile age. Ford lived at Fair Lane from 1915 until his death. The estate is now owned by the University of Michigan. The mansion is used by the University as a conference center for its Dearborn Campus.

25. St. Croix Boom Site, on State Route 95, 3 miles north of Stillwater, Washington County, Minnesota. Active from 1840 to 1914, the St. Croix Boom was the earliest, most important, and longest lived of the major log storage and handling areas of the once great white pine lumber industry in the Great Lakes' region. The Boom Site is marked by state historical signs that are located in an attractive wayside park at the river side. There are no remains of the boom, but the general setting of the site is unimpaired.

26. Pillsbury A Mill, Main Street and 3rd Avenue, S. E., Minneapolis, Hennepin County, Minnesota. Erected in 1880-81, this flour mill helped make Minneapolis the flour-milling center of the world from 1880 to 1930. It is owned by the Pillsbury Company and is not open to the public.

27. Soudan Mine, Tower-Soudan State Park, near Tower, St. Louis County, Minnesota. The opening in 1884 of this deep underground mine, the first on the Vermilion Range, began the development of one of the richest iron deposits in the Nation and spurred the emergence of Minnesota as the leading iron-producing State. The mine, which remained in operation until 1962, has been developed by the State of Minnesota as a state park.

28. Hull-Rust-Mahoning Open Pit Iron Mine, near Hibbing, St. Louis County, Minnesota. The immense output from this Mesabi Range mine, the largest in the world, made Minnesota the leading producer of iron ore and enabled the United States to become the world's greatest manufacturer of steel. Developed in 1895, the mine was also one of the first to be worked by open-pit or strip-mining techniques. Still in operation, the mine is owned by the United States Steel Corporation. Facilities are provided for visitors to view the mining operations.

29. Anheuser-Busch Brewery, 731 Pestalozzi Street, St. Louis, Missouri. Established in 1873, the Anheuser-Busch Brewery pioneered in the use of the pasteurization process in the production of beer, in the use of refrigeration cars for its shipment, and in the use of icehouses for its storage. Owned by Anheuser-Busch, Inc., the brewery covers some 70 city blocks and includes 158 manufacturing and warehouse buildings. One of the oldest buildings is the six-story brew house that dates from 1891-92.

30. Watkins Mill, 6 miles north of Excelsior Springs, Clay County, Missouri. Built in 1859-60 and operative until 1886, this mill and its original textile machinery form the best-preserved mid-19th-century woolen mill in the United States. The mill is owned by the State of Missouri and has been developed as a state park.

31. Ringwood Manor, Ringwood Manor State Park, near Ringwood, Passaic County, New Jersey. Ringwood Manor was long associated with the iron industry. An iron furnace went into blast in 1742, and in 1764 the American Company, Colonial America's largest industrial enterprise, assumed control of the ironworks. Decades later, Abram S. Hewitt, an outstanding post-Civil War iron manufacturer, purchased Ringwood in 1853. The existing manor house dates from about 1810 and was considerably enlarged by Mrs. Hewitt. Ringwood Manor is included in the State of New Jersey's Ringwood Manor State Park.

32. Watervliet Arsenal, South Broadway, Watervliet, Albany County, New York. Established in 1813, the Watervliet Arsenal near the end of the 19th century became the government's cannon factory and began to produce huge sea coast cannon. It completed the Nation's first 16-inch gun in June 1902. The post's great cannon factory remains in use, producing modern weapons. The Department of the Army administers the arsenal.

33. Lyndhurst, Jay Gould Estate, Tarrytown, Westchester County, New York. Jay Gould (1836-1892) was a post-Civil War financier, and his shrewdness and ruthlessness as such epitomize the post-Civil War era of unrestrained capitalism. Gould purchased Lyndhurst in 1880 and lived there until his death. The National Trust for Historic Preservation now owns Lyndhurst and operates it as a house-museum.

34. Andrew Carnegie Mansion, 3 East 91st Street, New York, New York. Andrew Carnegie (1835-1919) dominated the Nation's steel industry from 1873 until 1901. His ability as a salesman and his talent to choose exceptionally able men as lieutenants enabled him to form the vast industrial empire that he sold for \$492,000,000 in 1901. The "King of the Vulcans" built his mansion in 1901 and lived there until his death. Now owned by Columbia University, it houses the University's School of Social Work.

35. Arden, E. H. Harriman Estate, Arden, Orange County, New York. Edward Henry Harriman (1848-1909) was a pre-eminent organizer and builder of railroads in the late 19th and early 20th centuries. He displayed both an amazing financial acumen and an unusual knowledge of the practical side of railroading, which enabled him to operate his railroads in an efficient manner. His reorganization and development of the Union Pacific Railroad in the early 20th century illustrates both of the preceding attributes. Harriman began constructing the house at Arden in 1905, and it was completed shortly before his death. It is now owned by Columbia University.

36. Pierpont Morgan Library, 33 East 36th Street, Manhattan, New York, New York. John Pierpont Morgan (1837-1913) exemplifies the emergence of the financier as a major force in American industry. He acquired a powerful influence in the railroad industry after 1873, organized the gigantic United States Steel Company in 1901, and helped to prevent a financial panic in November 1907. Morgan's handsome library, completed in 1906, contains artistic and literary treasures acquired during and after his life.

37. George Eastman House, 800 East Avenue, Rochester, Monroe County, New York. George Eastman (1854-1932) created popular photography by developing the film and the camera, the Kodak, that carried photography to the people. Eastman's residence, built in 1905, reflects the taste and ideas of its builder. Now administered by George Eastman House, Inc., it is operated as a photographic museum.

38. Woolworth Building, 233 Broadway, New York, New York. Frank W. Woolworth (1852-1919) originated the variety chain store. The success of his innovation is commemorated by the Woolworth Building, which was completed in 1913 at a cost of \$13,500,000. The once tallest building in the world, it is still owned by the F. W. Woolworth Company.

39. Old Salem Historic District, Winston-Salem, Forsyth County, North Carolina. Established by the Moravians in the 1760s, Salem soon became the commercial center for the North Carolina Piedmont. A majority of the town's original structures still stand. Some, such as the girls' school, now part of Salem College, continue to be used for their original purposes; others have been restored by Old Salem, Inc., and are open to the public. Together, these remaining buildings reflect the zeal and confidence of the town's founders.

40. Duke Homestead and Tobacco Factory, on State Route 1025, 1/2 mile north of Durham, Durham County, North Carolina. After the Civil War, Washington Duke returned to his farm north of Durham to find little remaining except a quantity of leaf tobacco. He and his sons processed this tobacco, packed it into bags labeled "Pro Bene Publico," and marketed it. Successful in this venture, Duke decided to go into tobacco manufacturing. Over the years this family tobacco business grew in size and importance, becoming in 1890, under the leadership of James B. Duke, the American Tobacco Company, the Nation's leading cigarette company. The Duke Homestead and Tobacco Factory are owned by Duke University and are open to the public except in the winter.

41. Jay Cooke Home, on Gibraltar Island, Put-In-Bay, Ottawa County, Ohio. Jay Cooke (1821-1903) achieved his greatest eminence as a financier during the Civil War, when he sold millions of dollars worth of bonds for the North. Cooke's success contributed to the stability of the Federal Government and thus to its victory in the war. Cooke built his Gibraltar Island house in 1864-65, using it as a summer residence for the remainder of his life. Now owned by Ohio State University, the house serves as a dormitory for biology students doing research at the Franz Theodore Stone Laboratory.

42. Ohio and Erie Canal, Locks 37 and 38 and the section of canal between them, on State Route 631 in Valley View Village, Cuyahoga County, Ohio. The Ohio and Erie Canal, which united Cleveland and Portsmouth, was completed in 1832, 13 years before its sister canal, the Miami and Erie, which linked Cincinnati and Toledo. These two state-built canals were the main lines of a 1000-mile canal network that connected Lake Erie to the Ohio River and gave access to New York, Pennsylvania, and Indiana canals. This system brought rapid growth in population, industry, and commerce to Ohio. The section of canal in Valley View Village contains water and includes two locks, numbers 37 and 38, and the aqueduct over Tinkers Creek. The canal is owned by the State of Ohio.

43. Samuel Elmore Cannery, foot of Flavel Street, Astoria, Clatsop County, Oregon. Erected in 1881, this is the finest surviving example of a 19th-century salmon cannery in the United States, as well as the oldest continuously operated cannery. It is now owned by Bumble Bee Seafoods, Inc., which offers guided tours of the plant during the summer.

44. Jacksonville Historic District, Jacksonville, Jackson County, Oregon. The large number of unaltered commercial and residential structures of the 1852-1884 period in Jacksonville make the town one of the finest examples of a mid-19th-century inland commercial community in the Pacific Northwest. The Southern Oregon Historical Society, Inc., maintains a museum at Jacksonville, where self-guiding tour leaflets may be obtained.

45. Stiegel-Coleman House, near Litzitz, Lancaster County, Pennsylvania. The Stiegel-Coleman House memorializes two of the County's early industrialists, William Henry Stiegel and Robert Coleman. Stiegel achieved fame both as an iron manufacturer and glass maker before the American Revolution, and Coleman, the owner of several ironworks, amassed one of the notable fortunes in post-Revolutionary Pennsylvania. Stiegel erected the original section of the house between 1756-58, and Coleman built an addition to it in the 1780s. The house is privately owned.

46. Cornwall Iron Furnace, Cornwall, Lebanon County, Pennsylvania. The charcoal iron industry produced most of America's iron until 1865, and Cornwall Iron Furnace is a superlative example of a charcoal furnace. This ironworks made pig iron from 1742 to 1883. Still in excellent condition, Cornwall Furnace is now owned by the State of Pennsylvania and administered by the Pennsylvania Museum and Historical Commission. It is open to the public.

47. Andalusia, Nicholas Biddle Estate, Bucks County, off State Road, 1.4 miles north of Philadelphia, Pennsylvania. Nicholas Biddle (1786-1844), statesman and financier, was the president of the Second Bank of the United States from 1823 until 1836. His clash with Andrew Jackson over the Bank's rechartering is an epochal event in American history as Jackson's victory both doomed the bank and confirmed the triumph of Jacksonian democracy. Biddle's erudition and taste are reflected by Andalusia, on which he lavished much attention and work. The estate is privately owned.

48. The New Market, South Second Street, between Lombard and Pine Streets, Philadelphia, Pennsylvania. Philadelphia's New Market established no precedent when completed in 1745. Nevertheless, it illustrates a formerly vital aspect of the distribution of foodstuffs. The market's gable roof and arched ceiling are supported by two parallel rows of brick pillars. A fine house built in 1804, the "Head House," stands at the market's north end. The market is municipally owned.

48. ~~Drake Oil Well, Drake Well Park, near Titusville, Pennsylvania.~~
49. ~~Drake Oil Well, Drake Well Park, near Titusville, Pennsylvania.~~
Edwin Drake (1819-1880) drilled the world's first oil well in the summer of 1859. He struck oil on August 27, thus beginning one of America's major industries. The State of Pennsylvania has developed the site as Drake Well Park, which is administered by the Pennsylvania Museum and Historical Commission. The park includes a replica of Drake's first derrick and a museum.

50. ~~Horseshoe Curve, on Penn. 193 about 5.5 miles west of Altoona, Blair County, Pennsylvania.~~
Horseshoe Curve was one of the most notable accomplishments of railroad construction in the ante bellum United States. Furthermore, its completion joined the eastern and western divisions of the Pennsylvania Railroad and thus contributed to the rise of one of the Nation's major railroads. Horseshoe Curve is still owned and used by the Pennsylvania Railroad.

51. ~~Old Slater Mill, Roosevelt Avenue, Pawtucket, Providence County, Rhode Island.~~
The Old Slater Mill memorializes the founding of the American cotton manufacturing industry. Samuel Slater (1768-1835) erected the mill in 1793 and installed in it machinery he had copied from that which he had used as an apprentice in a cotton mill in England. Slater's cotton mill was the Nation's first, and it stimulated the growth of a major industry. The Old Slater Mill, which includes the original mill and some later additions, is owned by the Old Slater Mill Association and is operated as a museum.

52. ~~Lucas Gusher, Spindletop Oil Field, Spindletop Avenue, 3 miles south of Beaumont, Jefferson County, Texas.~~
The tapping of the Spindletop Oil Field by the Lucas Gusher in 1901 opened the vast oil deposits of the Texas Gulf coastal plain to commercial development and marked the beginning of the modern petroleum industry. By 1922 Texas was the third ranking oil producing State in the Nation, and after 1927, the first. The site of the Lucas Gusher is marked by a 58-foot granite monument.

53. ~~Bingham Canyon Open Pit Copper Mine, Tooele County on Utah 48, 16 miles southwest of Salt Lake City, Utah.~~
Opened in 1904 by the Utah Copper Company, the Bingham Canyon Open Pit Copper Mine was the first open pit copper mine in the world. It was also more important than the many low grade copper ore mines that it inspired. Still active, it is owned by the Kennecott Copper Corporation. Viewing facilities for visitors are provided on the west rim of the pit.

54. ~~Robbins and Lawrence Shop, South Main Street, Windsor County, Vermont.~~
In the 1840s and 1850s the Robbins and Lawrence Shop created and produced machine tools that speeded the industrial revolution in America by improving the production of interchangeable parts and thus

stimulating mass production. The shop is now owned by the American Precision Museum Association, Inc., which intends to develop it as an industrial museum illustrating the history of machine tools.

55. ~~Alexandria Historic District, Alexandria, Arlington County, Virginia.~~ The numerous early structures on Alexandria's waterfront suggest the prosperity of the town during the period, 1732-1861, in which it was an important tobacco and grain port. About 200 structures dating from that period remain today. These structures include warehouses, taverns, mercantile establishments, and private dwellings. Outstanding among these are the Ramsay House, the city's oldest; Gadsby's Tavern; Chequire House; Gilpin House; and the houses along Prince Street. Most of the historic buildings in the district are privately owned.

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56. ~~James Monroe Law Office, 908 Charles Street, Fredericksburg, Virginia.~~ From 1786 until 1789, James Monroe (1758-1831), fifth President of the United States, practiced law in this law office. The structure, a 1 1/2 story brick building, has been restored and is furnished with furniture that Monroe purchased while Minister to France and subsequently used in the White House. Owned by the University of Virginia and administered by the James Monroe Memorial Foundation, the law office is open to the public.

57. ~~Port Gamble Historic District, Port Gamble, Kitsap County, Washington.~~ Port Gamble, founded in 1853, was one of the earliest and most important lumber producing centers in the Puget Sound area. Still active today, Port Gamble is one of the finest surviving examples of a mid-19th-century lumber company-owned town on the Pacific Coast.

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November 15, 1966

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Dr. Walter J. Heacock
Director
The Hagley Museum
Greenville
Wilmington, Delaware

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Dear Dr. Heacock:

We are pleased to inform you that Eleutherian Mills, described briefly in the enclosure, has been found to possess exceptional value in commemorating or illustrating the history of the United States, and is thus eligible for registration as a National Historic Landmark.

The Registry of National Historic Landmarks is a permanent register of nationally significant historic and archeological sites. Its purpose is to identify and recognize these sites and to encourage their owners to preserve them. Eligible Landmark sites are chosen through studies prepared by the National Survey of Historic Sites and Buildings; evaluated by the Advisory Board on National Parks, Historic Sites, Buildings and Monuments; and approved by the Secretary of the Interior in accordance with the Historic Sites Act of August 21, 1935.

As explained in the enclosed folder, recognition and registration of landmark sites are afforded by certificates and bronze plaques, which are provided free of charge to the owners or administrators of these sites upon their application and agreement to adhere to simple preservation practices. If you wish to apply for the certificate and plaque, copies of the application form are enclosed. The form should be completed in triplicate and two copies returned to the National Park Service. You may retain the third copy for your records.

We will be happy to have Eleutherian Mills included in the Registry.

Sincerely yours,

At

/s/ Howard R. Stagner

Assistant Director

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Enclosures
cc: Regional Director, NE
Dr. Bradford

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November 16, 1966

144-RU

Memorandum /

To: Regional Director, Northeast Region

From: Chief, Division of History Studies

Subject: Registered National Historic Landmark Certificates for Sites in the Northeast Region

We are enclosing the following Registered National Historic Landmark Certificates for sites in your Region:

- Axshneak of Samuel Colt Home, Connecticut
- Charles W. Morgan, Connecticut
- Ep Lutheran Mills, Delaware
- The Wayside, Henry Demarest Lloyd Home, Illinois
- Eugene V. Debs Home, Indiana
- Nantucket Historic District, Massachusetts
- Long Wharf and Custom House Block, Massachusetts
- Pakachoag Hill, Goddard Rocket Launching Site, Massachusetts
- Boston Naval Shipyard, Massachusetts
- Captain R. B. Forbes House, Massachusetts
- New Bedford Historic District, Massachusetts
- Quincy Market, Massachusetts
- Fair Lane, Henry Ford Estate, Michigan
- St. Marys Falls Canal, Michigan
- Ringwood Manor, New Jersey
- Andrew Carnegie Mansion, New York
- Nidbank, John Philip Sousa House, New York
- Woolworth Building, New York
- Watervliet Arsenal, New York
- George Eastman House, New York
- Pierpont Morgan Library, New York
- Alden, B. H. Hallinan Estate, New York
- Lynchurst, Jay Gould Estate, New York
- Jay Cooke Home, Ohio
- Ohio and Erie Canal, Ohio
- Cornwall Iron Furnace, Pennsylvania
- Etiegal-Coleman House, Pennsylvania
- Andalusia, Nicholas Biddle Estate, Pennsylvania
- Horseshoe Curve, Pennsylvania
- Drake Oil Well, Pennsylvania
- The New Market, Pennsylvania
- Old Slater Mill, Rhode Island
- Robbins and Lawrence Shop, Vermont

1:1 ROBERT M. UILEY

Robert M. Uiley

Dr. Bradford

Bradford

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December 6, 1966
(Date)

Mr. George B. Hartzog, Jr.
Director
National Park Service
Department of the Interior
Washington, D. C. 20240

Dear Mr. Hartzog:

As the (owner, owners) of Bleutherian Mills
(Name of site)

located in Wilmington New Castle Delaware
(city) (county) (State)

(I, we) hereby make formal application for a certificate () and a bronze plaque, 17" x 18" (), designating this historic property as a Registered National Historic Landmark. (Check one or both as desired.)

1. Fully conscious of the high responsibility to the Nation that goes with the ownership and care of a property classified as having exceptional value and worthy of Registered National Historic Landmark status, (I, we) agree to preserve, so far as practicable and to the best of (my, our) ability, the historical integrity of this important part of the national cultural heritage.

2. Toward this end, (I, we) agree to continue to use the property only for purposes consistent with its historical character.

3. (I, we) agree to permit an annual visit to the property by a representative of the National Park Service, as a basis for continuing landmark status.

4. If, for any reason, the three conditions mentioned above cannot continue to be met, it is agreed that the Registered National Historic Landmark status shall cease and that until such status is restored by the Secretary of the Interior, neither the Registered National Historic Landmark certificate nor the plaque will be displayed.

Sincerely yours.

Walter J. Heacock
Walter J. Heacock
General Director

Emile F. du Pont
Emile F. du Pont
President

Bleutherian Mills Hagley Foundation
Greenville
Wilmington, Delaware 19807

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UNITED STATES
DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE
Northeast Region
143 South Third Street
Philadelphia, Pa. 19106

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In Reply Refer to:

H34
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NER

March 21, 1967

Memorandum:

To: Director
Attn: National Survey of Historic Sites and Bldgs., WSC

From: Regional Director, Northeast Region

Subject: Registered National Historic Landmark Presentation Ceremony:
Eleutherian Mills, Wilmington, Delaware

Date: May 8, 1967

Time: 12:00 o'clock noon

Place: In front of the Eleutherian Mills Residence

Presenter: Mr. Lemuel A. Garrison, Regional Director, Northeast Region

Presentee: Mr. Emile F. du Pont, President and Mr. Walter J. Heacock, General
Director, Eleutherian Mills

Plaque: Shipped 3/21/67 to Mr. Joseph P. Monigle, Assistant to the Director

Certificate: In Regional Office

Guests:

Remarks: None


Lemuel A. Garrison

cc:
Mr. Standish, Information Officer, WASO

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Sincerely yours,

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Mbs: a: Caleb Boggs
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Hon. WiXUam W. Both, fr:
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Mr. W. C. Turner
U.S. Department of Transportation
Federal Highway Administration
Washington, D. C. 20591

Dear Mr. Turner:

On January 15 you referred to the Mutual Park Service several
4661M at relating to proposed changes in State Route
141 at a point near Blountian Mills. request your review and
comment under the National Historic Preservation Act. In reply,
we refer to the enclosed document **Advisory Council on Historic
Preservation Proceedings for Compliance.** In accordance with the
first step, you have examined the National Register, and apparently.
In accordance with the second step, you have found that there is no
effect on the protected historical values of Blountian Mills.
In accordance with that finding. Follow the Advisory Council
Procedure, there is no need to take further action unless the
undertaking is found to affect the National Register property at
step two. We mention this because National Park Service review
and comment is unnecessary on undertakings that do not affect a
protected property.

Although the letters of Dr. Leon deValinger, the State Liaison
Officer, express concern about access routes to Blountian Mills,
his comments do not present an adverse effect upon protected historical values.
Therefore, it is our opinion that Section 106 of Public Law 89-665 is
not a factor in this proposal, and that problems of access should
be resolved at a local level.

Sincerely yours,

4. Feb 1969

S. J. ...

ASSOCIATE DIRECTOR

Enclosure

CCS
Dr. Leon deValinger, Jr., State Liaison Officer, 1000 A, S
Building, Dover, Delaware 19901
Regional Director, North East Region
HR
JLRogers: jah

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ELEUTHEKIA S MILLS HAGLEY FOUNDATION INCORPORATED
ELEUTHERIAN MILLS - HAGLEY FOUNDATION INCORPORATED

RECEIVED
1968 MAY 3 11:31 AM
HIGHWAY DEPT.
DOVER, DEL.

Greenville · Wilmington 7 · Delaware · Olympia 8-2401

May 2, 1968

Mr. Ernest A. Davidson
Director of Operations
State Highway Department
P. O. Box 778
Dover, Delaware 19901

Dear Mr. Davidson:

I have reviewed the print of the proposed alignment for Route 141 enclosed with Mr. John A. Lucey's letter of April 16 to Mr. R. D. Brogan of the Du Pont Company Engineering Department. Since that letter requested the views of the Eleutherian Mills-Hagley Foundation on this proposed reconstruction, I am addressing my response to you.

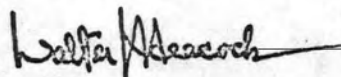
The location of the new bridge downstream from the present Tyler McCrannell Bridge satisfies the basic objection which we had to the earlier proposal. The small amount of Foundation land which will be required for the new structure poses no problem that I can foresee. The print does not, however, show the route of the new highway immediately after crossing the Brandywine. The earlier route would have destroyed a protective screen of trees on Foundation property opposite the Museum. I do not believe that this is true of the new plan, but I would like to have this point clarified.

I appreciate the serious efforts of the State Highway Department to accommodate the special needs of the property owners along Route 141; but I would like to suggest one small addition which would greatly facilitate traffic to and from the Hagley Museum, especially for large buses. I am enclosing two prints which show a "proposed ramp" and an "alternate proposed ramp." Either of these proposals would eliminate the "Z" approach to our entrance gates shown on your print. A great many of our 100,000 visitors each year come in organized bus tours, and this more direct approach would be a considerable improvement. The print also shows a slight modification of the connecting link between Old Barley Mill Road and Ramp KJ to better accommodate traffic leaving the Museum.

if f, <f ths new bridge and highway will make it more difficult for all
At best, the new bridge and highway will make it more difficult for all
of our visitors to find the Museum and only a careful study of approach signs
will eliminate this problem. I would appreciate discussing this matter with
the appropriate person at the proper time.

Thank you for the opportunity to respond to the proposed changes in
Route 141, and for your consideration of the proposal I have made.

Yours very truly,



Walter J. Heacock
General Director

WJH:f
Enc.

RECEIVED
BUREAU OF PUBLIC ROADS
OCT 1 1968
DIVISION OFFICE
DOVER, DELAWARE 19901

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DAVIDE ANDRSON, P...
HENRY P. Cannon, II, v.c.c.
MRS. VERNON E. DERRICKSEIN, Secretary
MRS. CHESTER T. EICKERSON
EDWIN P. MESSICK
MRS. DANIEE F. WOLCOTT



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John doVt. insecr. Jr.
Stefo R. Kivjit

Capt. T. Colohan
State Archivist

CHIEF, PLANS & DESIGN
Delaware State Highway Dept.

STATE OF DELAWARE
Historic Sites Commission

August 23, 1968

Mr. John A. Lucey
Review Engineer
State Highway Department
Dover, Delaware 19901

Dear Mr. Lucey:

I regret exceedingly the delay in replying to your letter and your telephone inquiries relative to Contract #66-07-002, Kennett Pike Interchange, Route 111. As I told you, my duties as State Liaison Officer under the Historic Sites Act are guided largely by the listing of historic sites in the National Register. As yet we have not received the official forms for listing these buildings and sites within our State. When they are received, the Hagley Museum and its area will undoubtedly be placed on the National Register. We have in the meantime, however, received a publication entitled, The National Register of Historic Places 1968, compiled by the Keeper of the National Register, Department of the Interior, National Park Service, Washington, D.C. Page 8 of that publication lists the Eleutherian Mills, north of Wilmington on Delaware Hill at Brandywine Creek Bridge.

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- over -

Mr. John A. Lucey

- 2 -

August 23, 1968

Thus, without our having received the forms and listing it, this site is already placed in the National Register by virtue of having been designated as a National Historic Site a few years ago at which time the plaque and the certificate of designation were awarded. Inasmuch as this action has been taken and the Elutherian Mills site is already listed, it will not be necessary for us to wait further in giving you a response. This site is on the National Register and is subject to the laws and regulations regarding it. Thus, the Bureau of Public Roads can determine any limitations which may govern them in making their decisions relative to this Contract.

Again I wish to tell you that we regret the delay, but this is necessarily the case when a new Federal project requiring state cooperation is involved.

Very truly yours,


(State Archivist and
State Liaison Officer

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Ca.V.D as: :ISON :...sticht
HENRY P. CANS, II, ic President
MRS. VERNON B. DERRICACN, Secretary
MRS. CHESTER T. D'ETERSON
EDWIN P. MESSICOY
MRS. DANIEL F. WOLCOTT



Lepp doVallgor, Jf:
State Archivist

Capt. E. T. Calahan,
Assistant State Archivist

STATE OF DELAWARE
State of DELAWARE
PUBLIC ARCHIVES COMMISSION
DOVER
DELAWARE

August 29, 1968

Mr. John A. Lucey
Review Engineer
State Highway Department
State Highway Department
Dover, Delaware 19901

RECEIVED
SEP 2 1253
CHIEF, PLANS & DESIGN
OBLEN
DC
Highway Dept.

Dear Mr. Lucey:

In response to your telephone call I wish to verify my letter of August 23rd to you and say that the Hagley Museum has been designated as a National Historic Site by the National Park Service of the Department of the Interior. This designation which has not been given to many buildings or sites in our State carries with it the consideration and protection with which the Bureau of Public Roads should certainly be familiar.

As you have indicated that the Bureau requires a more specific comment, I wish to say that the Hagley Museum in the vicinity of the Kennett Pike Interchange, Route 111, covered by Contract #66-07-002, is one of the prime historic areas of our State or it would not have received this National designation. Such a site is worthy of protection, and encroachment on any of the buildings themselves or their grounds would be detrimental to this historic area. I concur with the

Mr. J. A. Lucey
Mr. J. A. Lucey

- 2 -

August 29, 1968
August 29, 1968

thought in Dr. Walter J. Heacock's letter that the new bridge
and highway will probably make it more difficult for the
visitors to find or gain entrance to the Museum. I hope these
comments will serve your purpose.

Very Sincerely,
W. J. Heacock
Estate Archivist and
State Liaison Office

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RECEIVED
BUREAU OF PUBLIC ROADS
OCT 1 1968
DIVISION OFFICE
DOVER, DELAWARE 19901

Mr. Jay W. Miller

-2-

September 30, 1968

At the request of Mr. Walter J. Heacock, General Director of E. Lutheran Mills Hagley Foundation, Incorporated the Department directed our Consultant to study alternate means of entrance to Hagley Museum for eastbound traffic on Route 141. The latest scheme provides for traffic bound for the Museum to cross under the new and existing bridges and connect to Old Barley Mill Road opposite The Hall of Records as shown on Drawing No. 9053-12.

Please advise if additional material is required for your submission to the Advisory Council on Historic Preservation in Washington, D.C.

Very truly yours,
Very truly yours,

STATE HIGHWAY DEPARTMENT
STATE HIGHWAY DEPARTMENT

E. B. Palenski
Chief, Plans & Design Division
Chief, Plans & Design Division

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cc:
Mr. L. L. LeCompte

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Hr. August Schofer
Regional Federal Highway Administrator
Baltimore, Maryland

DEC 4 1968
IDCr. 01969

Jay W. Miller /s/ jay W. Miller
Division Engineer DIVISION ENGINEER
Dover, Delaware

Preservation of Historical Sites - Route 141 * Hagley Museum
02-00.1

The proposed Route 141 project will pass near the historical site of the Hagley Museum. The project will not necessitate a taking from the site; however, the access to the site will be altered. It should be further noted that the design of this project began in June 1968. This office has worked closely with the State in determining the location and design of the route.

Representatives of the Hagley Museum have attended meetings held for design considerations in the area and have not objected in any way to the proposed project. As stated in the Department's letter, Mr. Heacock, the General Director for the Hagley Museum, has cooperated with them in developing an acceptable design for the new entrance.

The Highway Department has experienced much delay in obtaining comments from Mr. DeValinger, the State's Coordinator, and it is our opinion that the information supplied by him is the best that can be obtained at this time.

This office does not believe that the project has any adverse effects on the site or the site's general setting and recommends approval of the location of Route 141 as submitted.

Attached are three copies of the following:

- State's letter dated September 30, 1968
- State's tourist map showing Rt. 141
- Letter from Mr. DeValinger dated August 23 and 29, 1968
- Map showing location of Museum
- Drawing No. 9053-12 showing entrance to Museum
- Letter from Mr. Heacock dated May 2, 1968

Attachments

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

BUREAU OF PUBLIC ROADS
WASHINGTON, D.C. 20591

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HR

JAN 15 1969

IN REPLY REFER TO:
IN REPLY REFER TO:

34-30
34-30

A/
Mr. George B. Hartzog, Jr.
Director, National Park Service
Department of the Interior
Interior Building
Washington, D.C. 20240

Dear Mr. Hartzog:

We are enclosing the following material concerning the State's proposed improvement of State Route 141 from I-95 near Newport to U.S. 202:

State's letter dated September 30, 1968
State's tourist map showing Route 141
Letters from Mr. de Valinger dated August 23 and 29, 1968
Map showing location of Museum
Drawing No. 9053-12 showing entrance to Museum
Letter from Mr. Heacock dated May 2, 1968
Memorandum from Division Engineer Miller dated October 10, 1968

The State is developing plans for the conversion of State Route 141 to a freeway. In the vicinity of the Hagley Museum, Route 141 will be relocated approximately 150 feet to the south of the existing road. The existing road will be retained to provide local service. The enclosed plan and map show this relationship.

The relocation of Route 141 will not require any right-of-way taking from the museum, which is located to the north of the existing route. The access to the museum will be altered but the State has been working with representatives of the museum to provide adequate access. The means of access has been the only point of concern of the museum's administration to the proposed relocation of Route 141. The proposed access to and from the museum is in accordance with suggestions made by the General Director for the Hagley Museum.

It appears there is local agreement. However, since the Eleutherian-Mills site is listed in the National Register of Historic Places, we would appreciate your review and comments on the proposal.

Sincerely yours,

F. C. Turner
Director of Public Roads

Enclosures - A-

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Revised 1/18
Montgomery 2/18
Fitzway 2/18
Cahmally 2-18
Freeman
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Director of Finite INMNI
U. S. Department of Transportation
Highway Administration
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Dear Mir« fierasrt

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Regitmal Director, Northeast Region

FOR SIGNATUBI

Dr. Mariah 2/17 f:Xiypyypp%,m;fpipP

Albert Kruse
123 Edgewood Road, Alapocas
Wilmington, Delaware 19803

MR. William J. Mortagh

10/27/69.

KEEPER OF THE NATIONAL REGISTER
801 19TH ST., N.W.
WASHINGTON, D.C.

DEAR MR. MORTAGH -

IN MY COPY OF VOL 34 - NO. 37, PART I OF THE
FEDERAL REGISTER ON PAGE 2584 AT THE BOTTOM
OF THE 3RD COLUMN THERE IS A LISTING OF THE
BOUNDARIES OF THE HISTORIC PINEWATER CASTLE
DELAWARE; THIS AREA WOULD HAVE BEEN CORRECT
FROM 1954 TO 1968 BUT WAS EXCLUDED IN 1968.

IF YOUR WORK IS IN A STATE MAP WOULD
ANY CORRECTIONS YOU WOULD BE GLAD TO SEND
YOU A CORRECTED DESCRIPTION, PLEASE TELL ME
IF THIS WOULD BE DESIRABLE.

YOURS SINCERELY

Albert Kruse, P.A.I.A.

S.P.C. PEIR, DELAWARE

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mmr Kruse;

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extended the boundaries in 1964. HxterSion of the National Historic
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Seard @a i^atloaal Paths, Historic Sites, IBuildings, as4 FJontasants, and
final approval by the Secretary of the Interior. You may. If you wish,
imiueat the eirector, National Park Service, to have the area studied
again, with the pwishillity of an extension @f its hoendaries.

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standard nc«9inati«m fat» hy the State hlsiso® Officer, sad Is presently
ia the process of bolsf added to the Register.

m would sug^st that you contact thr. Leke 4eyalnmfr, Jr., State 'Archivist,
Archives Bldg, Dover, Delaware. IP O i ared sake your wishes kn«w» to
h.h, as It is through bin that nosnations to the National Register frm
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Thank you for bringing this matter to our attention, and if we may be

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William J. Murtagh (Sgd.J) ;;

William J. Murtagh
Keeper of the National
Register

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cc: Dr. Uon eVainger, Jr, vitne k^Ivst, A<Mves Building 4 Ow<<44|4?S^
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Regional Director, Northeast Region w/cy inc.
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ESTHERIAN MILLS HAGLEY FOUNDATION INCOR. RATED

Greenville · Wilmington · Drlaunre

January 19, 1970

Mr. Chester L. Brooks
Superintendent
Independence National Historical Park
313 Walnut Street
Philadelphia, Pennsylvania 19106

Dear Mr. Brooks:

You may recall that during your recent visit we discussed the geographic boundaries of the National Historic Landmark designation of our property.

In our preservation and interpretation of the former Du Pont powder works, we consider the Eleutherian Mills and Hagley sections of the property as an entity. For over a century these adjoining areas were operated as an industrial unit. Today the surviving residential and agricultural structures at Eleutherian Mills complement the powder mills, unique to our country, which are still standing in Hagley.

As you know, we did not have the opportunity to discuss this matter with those responsible for proposing our site for the Landmark designation. We would have pointed out the intimate relationship of the two sections which comprise the overall property and urged their total inclusion in the designation. I am enclosing a map which shows the area in question.

May we assume that although only "Eleutherian Mills" is named in the award, that the entire inter-related Eleutherian Mills-Hagley area is covered? Incidentally, we found the Landmark designation an asset during our recent successful opposition to a proposed highway and bridge location which we felt would have an unfavorable effect upon the character of our property.

I hope that you and Mr. Kurjack enjoyed your recent visit and that you will feel especially welcome to return at any time.

Yours very truly,



Walter J. Heacock
General Director

WJH:pf
Enc.

Independence National Historical Park
 Independence National Historical Park
 313 Walnut Street
 Philadelphia, Pa. 19106

H34

February 4, 1970

Dr. Walter J. Heacock
General Director

Elutherian Mills - Hagley Fdn, Inc.
 Greenville, Wilmington, Delaware 19807

Dear Dr. Heacock:

Thank you for your letter of January 19, 1970, and the attached map of the Elutherian Mills - Hagley Foundation site.

We have checked our records and hasten to assure you that although the name used in the landmark designation for this site, based on the National Survey of Historic Sites and Buildings, is somewhat imprecise, it was intended to cover both the Elutherian Mills and Hagley Sections. These Sections, as you point out, constitute a historical entity and it is precisely as an industrial unit that "Elutherian Mills", to use the Survey's somewhat loose terminology, assumes its greatest significance in America's history under the Commerce and Industry theme or classification.

Copies of relevant pages from the National Survey are enclosed for your files, as are also copies of your original application for Registered National Historical Landmark designation and acknowledgment by our Regional Office.

We enjoyed our visit to "Elutherian Mills" immensely and want to thank you, Norman Wilkinson, and Joe Monte for your hospitality. We were greatly impressed with everything we saw and need hardly add that the distinguished Elutherian Mills Hagley Foundation, just as concerned with conservation as the National Park Service, is doing a tremendous job of protecting and preserving the historic buildings, structures, and sites included in the Elutherian Mills - Hagley complex. Your interpretive program is of a very high order, and don't be surprised if one of these days you discover members of the Independence interpretive staff down your way "shopping the competition."

Sincerely yours,

Chaster L. Erooks
Superintendent

cc: Regional Director
 ca: w/cy Dr. Heacock's letter

December 4, 1972

O A H P
H <i>[Signature]</i>
HH <i>[Signature]</i>
HA <i>[Signature]</i>
HHA <i>[Signature]</i>
HR <i>[Signature]</i>
12/20

Mr. Louis E. Reid, Jr.
 Chief Division of Technical Assistance
 Bureau of Outdoor Recreation
 Department of the Interior
 Washington, D. C. 20240

Dear Mr. Reid:

This is in regard to the July 14, 1972 memorandum to you from Mr. Willis King, Assistant Director, Bureau of Sport, Fisheries & Wildlife, concerning the Brandywine **CSSTSI** Ladder which you forwarded to the Advisory Council.

The memorandum indicates that the Eleutherian Mills National Historic Landmark will be affected by the proposed construction of fish ladders. In addition, the National Park Service's May 16, 1972 biennial report on this Landmark states that the shad ladders will be a "severe intrusion" unless specially designed. As you know, it is not necessary for the effect to be "adverse" for the Advisory Council to comment under its statutory authority. If there is any effect, "beneficial or adverse", the Council is to be given a reasonable opportunity to comment.

In order to expedite this matter, enclosed is a proposed response to Mr. King.

Thank you for your continuing cooperation.

Sincerely yours,

John D. McDermott

John D. McDermott
 Acting Executive Secretary

- cc: ED - Flynn
- PH - Healey
- DDG - Garvey
- DDG - Harrison

(file: Eleutherian Mills NHL: Delaware)

K. Tappan M. Harrison ch: 12/4/72



STATE OF DELAWARE
 DEPARTMENT OF STATE
DIVISION OF HISTORICAL AND CULTURAL AFFAIRS
 OLD STATE HOUSE • THE GREEN • DOVER • 19901
 (302) 736-5685

BUREAU OF ARCHAEOLOGY AND
 HISTORIC PRESERVATION

May 26, 1983
 May 26, 1983

Carol Shull
 Chief of Registration
 National Register of Historic Places Branch
 Interagency Resource Management Division
 National Park Service
 Department of the Interior
 Washington, D.C. 20240

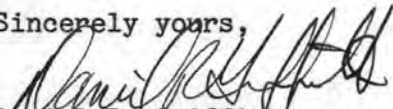
Dear Ms. Shull:

We have a question about the boundaries for the National Historic Landmark "E. Leutherian Mills" in New Castle County. The verbal boundary description records the boundary as the Foundation-owned land, plus Breck's Mill and the C. L. Dupont House. The map included with the nomination shows a somewhat larger area than that actually owned by the E. Leutherian Mills-Hagley Foundation.

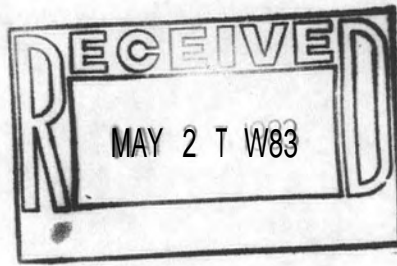
The Foundation wants to apply for development money to rehabilitate the "New Machine Shops" located just outside the main gate to the museum. They do not own the shops at the present time. If it is within the boundary then they may apply, but we cannot determine if the shops are on the National Register or not.

We would appreciate a response as soon as possible, as there is a June 15, 1983 deadline for applications for the program.

Sincerely yours,


 Daniel H. Griffith
 Deputy State Historic
 Preservation Officer





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National Park Service
U.S. Department of the Interior

National Register, History
and Education

(office location)
1201 Eye Street, NW
8th Floor
Washington, DC 20005

USPS mailing address:
1849 G Street, NW
(2200)
Washington, DC 20240

202/354-2210/2211 phone
202/371-2229/6447 fax

National Register, History & Education Fax

To: Dan Griffith
Fax number: 302: 739: 6711
From: Sprinkle
Date: 11-18-02
Pages to follow: Sev "CA-V"

Comments: As requested

1. Section 10 from 1979 National Historic Preservation Act through which boundary was established.
2. Section of 1968 Map of Eff. Foundation & FA Boundary - showing 2 parcels
3. 1970 Site Visit Report - for reference SR-ISI & Beau Bridge
4. Boundary Project review sheet, w/ W&E attached stating that "State Nomination" includes Bridge, but with final opinion that Bridge was ~~not~~ included

JAS.

Confirmation Report - Memory Send

Page : 001
Date & Time: Nov-18-02 15:46
Line 1 : 202-343-1835
Machine ID : NRHE NPS WASO

Job number : 310
Date : Nov-18 15:44
To : 913027396711
Number of pages : 007
Start time : Nov-18 15:44
End time : Nov-18 15:46
Pages sent : 007
Status : OK

Job number : 310

*** SEND SUCCESSFUL ***



National Park Service
National Park Service Interior

National Register, History
and Education
(office location)
1201 Eye Street, NW
Washington, DC 20005
Weeninatora, OC 2000B

USPS mailing address:
USPS mailing address:
2023 Street, MW
Washington, DC 20240
Weeninton, DC 20240
202/354-2210/2211 phone
202/304-2210/2211 phone
202/374-2229/0447 10/c

National Register, History & Education Fax

To: Daw Griffith
Fax number: 202-343-4711
From: Sprinkle
Subject: It-18k-02
Pages to follow: Several

Comments: As requested.

1. Section 10 from 1979 Nomination through which boundary was established.
2. Section of 1968 Map of E.H. Foundation with Boundary - shows 2 yr. v. 31.5
3. 1970 State V.I.H. Report - Referencing SR 141 & New Budge.
4. Boundary Project report showed ~~attached~~ attached stating that "State Nomination" includes Budge, but with final opinion that Budge was NOT included.

JHS.

EXPERIENCE YOUR AMERICA

The National Park Service cares for special places saved by the American people so that all may experience our heritage.

National Park Service

Property Eleutherian Mills

BOUNDARY DEFINITION
RECEIVED 4/12/78

State Delaware Working Number 1144

TECHNICAL

Photos _____
Maps _____

avoidance for large CONTROL
points not labeled 4/12/78
HISTORIAN

I have reviewed boundary material in light of NE 62, and has none! NHL materials need clarification: VBD, plat map, 18466 are inconsistent on E. boundary of N. portion of property. See Towners 12-8-78

ARCHITECTURAL HISTORIAN

There is no verbal boundary description - there needs to be a verbal boundary description. The highway overpass needs to be included - the state's information for the past includes it. What exactly is included as a run historical structure. This basically includes the post office information on the mill site. Casual comparison should be made between state information and the what on site of the undisturbed structures - perhaps the needs boundary justification.

ARCHAEOLOGIST

OTHER
John H. Gilman
12/20/78

Reviewed boundary material, cross with town map for consistency among maps, plat map and uses map info. Golf Boundary or 188 hole picture - along golf course experimental station and on west boundary of 188 hole parcel. 1885 map excluded structure on west side, plus map included it. Numerous drawings available.

HAER

Inventory _____
Review _____

NEW UNIT CHIEF

BRANCH CHIEF

1-4-79

KEEPER

4/26/79

ELEUTHERIAN MILLS

Verbal boundary description added.

Utm points added and labeled.

The boundary as drawn corresponds with the grant of land donated specifically for the creation of the Eleutherian Mills-Hagley Foundation. The grant did not include the highway overpass.

Post historic structures include rest rooms and bus stops and exhibition building.

OK
J. H. Gilman 5/15/78

National Register Write-up
Federal Register Entry

Re-submit

Entered

REGISTRY OF NATIONAL
HISTORIC LANDMARKS

REPORT OF BIENNIAL VISIT TO
Eleutherian Mills

Date of visit January 21, 1971

Visited by Charles E. Brooks Superintendent Independence P
Donald E. Erickson Asst. Superintendent " "
(name) (title) (office)

Received by Dr. Walter J. Seacode, General Director, Eleutherian Mills
(name) (title) (office)

Also Mr. Samuel F. Hinkle, Asst. to Director, and
(MOBON)* Dr. Burton Wilkinson, Research Fellow of the Bagley Foundation

Condition: Excellent, The Eleutherian Mills • Bagley Foundation, Inc.,
as a protection against loss in an untimely job of preservation
and protecting this unique industrial site.

Operation: Through its Museum and Exhibit buildings, the Foundation
continues to present a year-round interpretative program of
a very high order

*Grounds, structure/s, furnishings
**Note any changes in ownership, sponsoring organizations, operating staff,
use, location of plaque and certificate, etc.

Special Problems

Conversion of State Route 141 to a Freeway and relocation of the main bridge in the vicinity of the Hagley Museum last year, posed a threat to historic property. But the landmark designation came to the rescue. In the words of Pt. Hancock, "We found the landmark designation an asset during our recent successful opposition to a proposed highway and bridge location which we felt would have an unfavorable effect upon the character of our property."

Suggestions Offered None

(signed)

9 MAJOR BIBLIOGRAPHICAL REFERENCES

- William Carr, The du Ponts of Delaware (New York, 1964).
 John Chamberlain, 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).

GEOGRAPHICAL DATA

ACREAGE OF NOMINATED PROPERTY: 191.2
 UTM REFERENCES

<u>AH 81</u>	<u>111501</u>	<u>2810</u>	<u>14404180</u>	<u>6118</u>	<u>M51</u>	<u>P.00</u>	<u>14404440</u>
ZONE	EASTING	NORTHING	NORTHING	ZONE	EASTING	NORTHING	NORTHING
<u>C 18</u>	<u>111501</u>	<u>2810</u>	<u>14404180</u>	<u>6118</u>	<u>M51</u>	<u>P.00</u>	<u>14404440</u>
ZONE	EASTING	NORTHING	NORTHING	ZONE	EASTING	NORTHING	NORTHING

VERBAL BOUNDARY DESCRIPTION

The landmark boundaries for Elutherian Mills are indicated in red on the enclosed plat map provided by the Elutherian Mills Hagley Foundation. The landmark boundaries are coterminous with the Foundation boundaries, except in the southeast corner of the property, where the landmark boundaries include the separately owned C. I. Dupont residence. It must be noted as well that the plat map, dated 1968, does not indicate the Foundation's acquisition of Brack's Mill. These boundaries enclose the significant features of the Elutherian Mills complex, while excluding the post-historic intrusions.

LIST ALL STATES AND COUNTIES FOR PROPERTIES OVERLAPPING STATOR COUNTY BOUNDARIES

STATE	CODE	COUNTY	CODE
STATE	CODE	COUNTY	CODE

FORM PREPARED BY

NAME/TITLE

Richard Greenwood, Historian, Landmark Review Task Force

ORGANIZATION

Historic Sites Survey

STREET & NUMBER

1100 L Street

CITY OR TOWN

Washington, D.C.

TELEPHONE
523-5464

STATE

STATE HISTORIC PRESERVATION OFFICER CERTIFICATION

THE EVALUATED SIGNIFICANCE OF THIS PROPERTY WITHIN THE STATE N.D. 131966

NATIONAL _____

STATE _____

LOCAL Designation: _____

As the designated State Historic Preservation Officer for the National Historic Preservation Act of 1966 (Public Law 89-665), 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.

FEDERAL REPRESENTATIVE SIGNATURE

DATE

May 19, 1978

TITLE

FOR NPS USE ONLY

I HEREBY CERTIFY THAT THIS PROPERTY IS INCLUDED IN THE NATIONAL REGISTER

iiiiiii

DATE

1/26/79

DIRECTOR, OFFICE OF ARCHITECTURE AND HISTORIC PRESERVATION

ATTEST:

DATE

1-4-79

KEEPER OF THE NATIONAL REGISTER

UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

FOR NPS USE ONLY
FOR NPS USE ONLY

RECEIVED

DATE ENTERED

NATIONAL REGISTER OF HISTORIC PLACES
INVENTORY - NOMINATION FORM

CONTINUATION SHEET

ITEM NUMBER 10

PAGE 2

F 18.450560.4402120

F 18.450300.4402160

G 18.450000.4404010

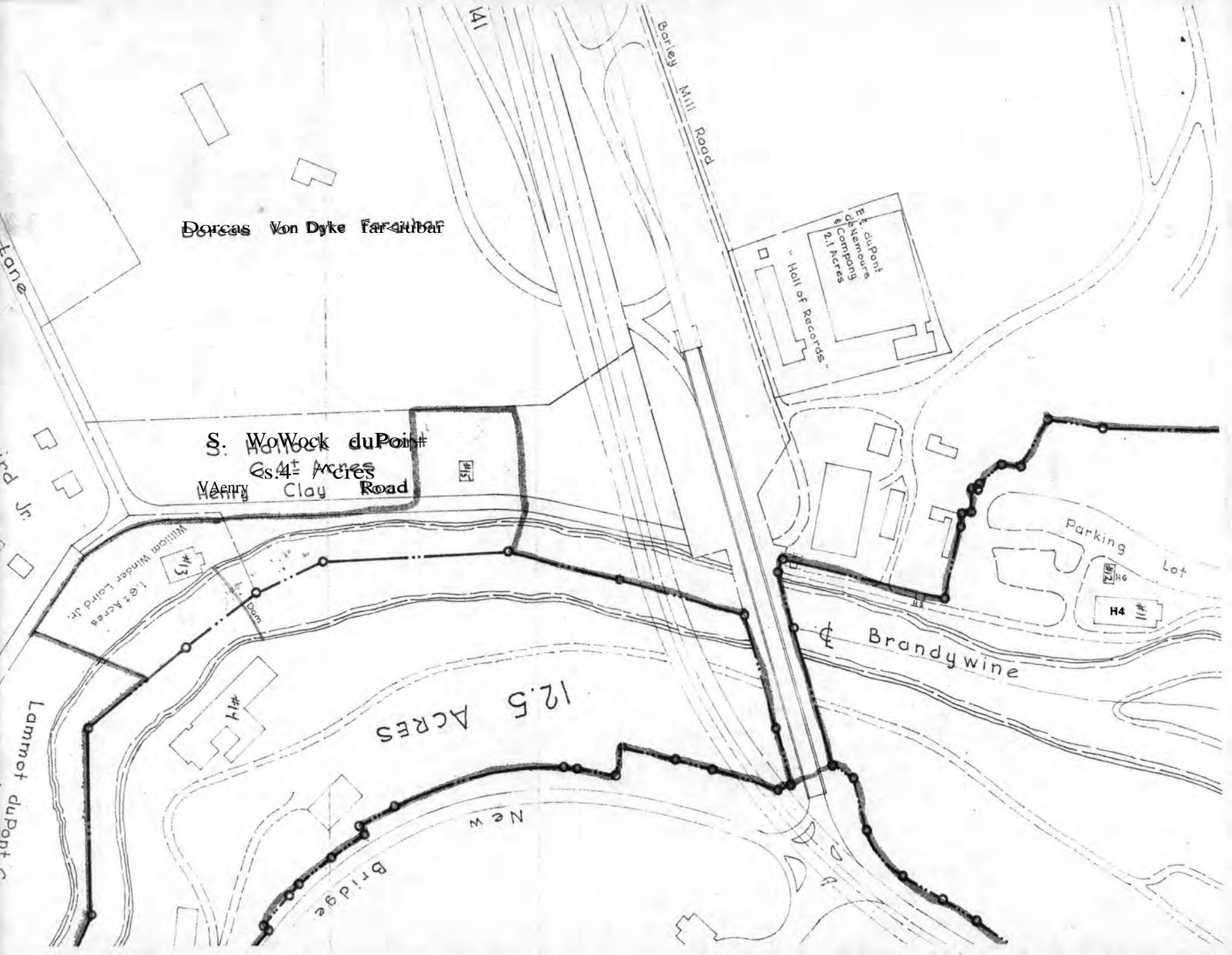
Verbal Boundary Description (See Property Map)

Parcel #1 12.5 Acres

Beginning at a point which is 25' north of New Bridge Road and in the center of Brandywine Creek, proceed northwest approximately 200' to a point; thence west approximately 350' to a point; thence north approximately 150' to a point; thence southwest approximately 225' to a point; thence in a northerly direction approximately 725' to a point; thence west approximately 175' to a point; thence northerly approximately 200'; thence easterly approximately 250' to a point; thence north-easterly 450' to a point; thence east 300' to a point; thence southeast approximately 25' to a point; thence southwesterly approximately 300' to a point; thence east 50' to a point; thence 1100' in a southerly direction to the point of origin.

Parcel #2 178.7 Acres

Beginning in the center of Buck Road, proceed southeast approximately 550' along the west curb of Christ Road to a point; thence east approximately 1250' to a point; thence approximately 1200' southeast to a point; thence west approximately 100'; thence southerly approximately 600'; thence southwesterly approximately 700'; thence north-west approximately 85'; thence southwesterly 550' to a point; thence northwest 85'; thence southwest approximately 150'; thence northwest 50'; thence southwest 550'; thence south 400'; thence southwest approximately 700'; thence south approximately 75'; thence 350' southwest; thence southerly approximately 400' to a point; thence southwest 300'; thence east approximately 400' to a point; thence northeasterly approximately 600' to a point; thence north approximately 50'; thence northeast approximately 950' to a point; thence approximately 50' south; thence northeasterly 1050' to a point; thence northwesterly approximately 400' to a point; thence north-easterly 1150' to a point; thence west approximately 550' to a point; thence 2250' in a north-northwesterly direction to a point; thence north 1200' to a point; thence west approximately 1400' to a point; thence south approximately 1200' to the north curb of Buck Road; thence 300' along the northern curb of Buck Road to a point; thence south 25' to the center line of Buck Road; thence west along the center line to the point of origin.



Dorcas Von Dyke farmland

S. W. W. duPont #
Es. 4+ Acres
Henry Clay Road

Hall of Records
E. duPont
de Nemours
& Company
2.1 Acres

Parking Lot

Brandywine

12.5 ACRES

New Bridge

William Winder Laird Jr.
1.8 Acres

#14

#13

#16

H4

New

lane

rd Jr.

Lammot duPont

Barley Mill Road



STATE OF DELAWARE
DEPARTMENT OF STATE
Division of Historical and Cultural Affairs
TUDOR INDUSTRIAL PARK
884 8TH BRIVE
DOVER, DELAWARE 19901
(302) 739 - 5314

OFFICE OF THE DIRECTOR
10/20/2002

Mr. Robert Kleinburd
Realty & Environmental Specialist
Federal Highway Administration
J. Allen Frear Federal Building
300 South New Street
Dover, DE 19904-6726

RE: SR 141/Tyler McConnell Bridge Study (State Contract number 93-106-01, Federal Aid Project number STP-N267(1)); status of Section 106 consultation

Dear Mr. Kleinburd:

DelDOT has asked us to review and comment on the materials presented to the Working Group meeting held November 25, 2002 (Meeting No. 18). In general, the presentation materials appear to have been prepared and organized with the intent of leading the viewer to a specific conclusion, rather than providing the viewer with balanced information from which to draw their own conclusions. The materials contain some information that is misleading, and does not always accurately portray issues relating the Section 106 consultation process, or the 4(f) process as we understand it. We recommend that DelDOT make several changes to these materials prior to presenting them to the Section 106 consulting and interested parties, and the general public. Our specific comments are enclosed for your consideration.

We also would like to take this opportunity to review the Section 106 consultation on this undertaking to date, and provide our view of the current status and path forward. Our comments are based on recent conversations with representatives of the Advisory Council on Historic Preservation (the Council), the National Park Service, and yourself. In particular, we draw on a meeting held at the National Park Service's office on December 18th, 2002, a meeting attended by representatives of all of these agencies.

Consultation between July 2000 and February 2002

Within this period, the Federal Highway Administration (FHWA) and DelDOT had, in consultation with the DE SHPO and others, completed the initial steps of the Section 106 process. They had reestablished the undertaking, identified the consulting parties, established a plan to involve the public, determined the Area of Potential Effects (APE), and identified historic

properties within the APE. By August 2001, the Section 106 process had progressed to the next step, Assessment of Adverse Effects (36 CFR Part 800.5 of the regulations implementing Section 106 of the National Historic Preservation Act). The consulting parties had discussed preliminary assessments in conjunction with reviewing various project alternatives, but with the February 2002 statement by DelDOT's Secretary establishing a preferred alternative, we were poised to begin the formal assessment of the effects of that alternative on historic properties. It was considered likely that this assessment would result in a finding of Adverse Effect, and we expected that an Agreement resolving the Adverse Effects (and thereby completing the Section 106 process), would have been reached by the end of this year. However, in the six months following the Secretary's declaration of a preferred alternative, FHWA and DelDOT did not pursue the Section 106 consultation.

Separation of the SR 141/SR 100 Intersection

In August 2002, DelDOT proposed separating the SR 141/SR 100 intersection from the larger project. We advised DelDOT that it could take this approach without risk of "segmenting" the Section 106 undertaking, provided that the intersection project were designed in such a manner as to not influence design alternatives for the bridge crossing. FHWA and DelDOT formally initiated consultation on the intersection project in October 2002. The Section 106 consultation concluded with our conditional concurrence with a No Adverse Effect finding for the intersection project on December 17, 2002.

Historic Property Boundary Issues

In September 2002, DelDOT proposed revising the boundary of the Eleutherian Mills National Historic Landmark (NHL). After consulting with the National Park Service, we advised DelDOT that amending an NHL boundary is a formal process, which requires taking a written request before the full NHL Board; this process may take anywhere from 12 to 18 months.

Subsequently, DelDOT asked about the possibility of revising the historic boundary of the National Register-listed Brandywine Powder Mills Historic District, the current boundaries of which overlaps nearly entirely those of the NHL. We advised DelDOT that a National Register boundary can be informally revisited by consensus Determination of Eligibility; if there is consensus on a revised boundary, it can suffice for the purposes of a Section 106 review. However, we also asked DelDOT to clarify the purpose for which it would wish to amend the boundaries of historic properties at this stage in the consultation.

DelDOT stated that it was raising this issue in response to the FHWA's comments on the Draft Supplemental Environmental Assessment (DSEA), a document prepared for compliance with the National Environmental Policy Act. In its comments on the DSEA, the Federal Highway Administration requested that DelDOT verify the boundaries of the Eleutherian Mills NHL and other historic districts for the purpose of the required 4(f) analysis. Although the FHWA indicated that the boundary definitions seemed arbitrary, in our view the FHWA's comments

only reinforced why FHWA thought it was important to verify the boundaries. DelDOT's interpretation of FHWA's comments, as portrayed in materials it presented to the Section 106 consulting parties and the Working Group, seem to overstate the issues (see enclosure for further comments on the November 25th Working Group meeting materials). Our recent trip to the National Park Service's office demonstrated that the task of verifying the boundaries of the NHL could have been easily and simply accomplished.

In our view (and apparently that of the National Park Service) the current boundaries of the NHL for Hagley are quite clear; the nominated property consists of the two legal parcels transferred to Hagley for the establishment of the museum. The NHL boundary appears to have been purposefully drawn to exclude DelDOT's right-of-way containing the Tyler McConnell Bridge. We do not consider this boundary to be arbitrary, as it is common practice to use legal parcel boundaries in defining nominated property.

FHWA also referenced other historic districts in its comments on the DSEA. The main problem with historic property boundaries in this area lies in the fact that at least three other historic districts (Brandywine Powder Mills, Brecks Mill Area/Henry Clay Village, and Walkers Bank/Walkers Mill) overlap parts of the NHL boundary and, in some cases, each other. While this does make for some confusion, it does not affect the issue of the location of historic property boundaries in the immediate vicinity of the Bridge; none of these other districts include the DelDOT right-of-way that contains the Bridge. DelDOT, however, has questioned whether or not the area within its right-of-way should be included in the NHL or other historic property boundaries.

Current Status of the Section 106 Process and Next Steps

DelDOT's suggestion to revise the boundary of the Eleutherian Mills NHL and/or the Brandywine Powder Mills Historic District to include its right-of-way essentially sends us backwards in the Section 106 process. The Council has advised us that such questions are within the purview of 36 CFR Part 800.4, the Identification of Historic Properties step in Section 106. That step had been completed in August 2001, when we concurred with the determinations in the consultant's cultural resource survey report, with respect to both eligibility determinations and definition of historic boundaries for properties within the Area of Potential Effect (letter from DE SHPO to FHWA dated August 8, 2001). As noted above, we had moved on to the next step in the Section 106 process, discussion of the undertaking's effects on historic properties. DelDOT's proposal to redraw the historic property boundaries returns the process to the Identification step.

Therefore, any further discussion of alternatives, such as DelDOT's November 25th presentation to the Working Group, the members of which are considered members of the public, is premature. Within the Section 106 process, it would have been more appropriate for DelDOT to

have worked with the FHWA, the Council, the National Park Service, our office and other consulting and interested parties (particularly owners of historic properties within the Districts in question) to resolve the question about the boundaries prior to depicting specific proposed boundary changes in materials given to members of the public. Similarly, this issue should have been resolved prior to DelDOT presenting specific conceptual details on construction alternatives for the project to the public.

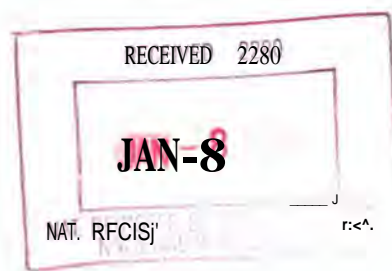
When new Identification issues arise near the end of the Section 106 consultation process, it is usually because the project footprint, and therefore, the Area of Potential Effect, has changed, or new information on potential historic properties in the APE has come to light. Neither is the case here. Based on the information we have to date, we see no compelling reason at this time to revisit historic property boundaries for the purposes of this project. Within the APE, the location of historic properties, both individual and contributing elements of districts, are well established; the redrawing of the boundary would seem to serve no purpose at this point in the consultation.

If DelDOT wishes to pursue a boundary re-assessment and revision for the Eleutherian Mills NHL, the Brandywine Powder Mill Historic District, or other historic properties in this area, DelDOT should have its consultant prepare a formal determination of eligibility and submit it to the FHWA, the DE SHPO and consulting parties for review and comment. The FHWA, as the Agency Official, would then submit the determination to the Keeper of the National Register of Historic Places of the U.S. Department of the Interior, along with the comments of the DE SHPO and consulting parties.

If DelDOT does not pursue the boundary revisions, we can return to the point in the Section 106 process we were last year: reviewing design options for the project, including preliminary assessments of effects on historic properties, in accordance with 36 CFR Part 800.5 of the regulations. DelDOT should immediately consult with the Section 106 consulting parties and interested parties to clarify the reasons for revisiting the February 2002 preferred alternative. DelDOT should then discuss equally all of the alternatives that were previously deemed to meet the project purpose and need, and any new alternatives that could avoid or minimize adverse effects on historic properties. DelDOT should also brief the Section 106 consulting and interested parties on the decision-making process for determining if or when conditions would be met to trigger the need for additional transportation capacity over the Brandywine River along the Route 141 corridor.

Whichever path FHWA and DelDOT pursue, the meeting scheduled for January 6th, 2003, at 9:30 am, could serve as the forum for discussing these issues with the Section 106 consulting and interested parties. However, we recommend that DelDOT postpone the Public Workshop scheduled for later that same day; minimally, DelDOT should restrict the Public Workshop presentation to a discussion of the SR 141/SR 100 Intersection project and a brief status report on the bridge project. Again, in our view of the Section 106 process, it is premature to present to the general public materials such as were given to the Working Group on November 25th, 2002, regarding historic property boundaries and project alternatives concerning the bridge. To avoid

Letter to R. Kleinburd
December 30, 2002
Page 5



such problems in the future, we urge FHWA and DelDOT to coordinate the 4(f) analysis and Section 106 process in a manner that satisfies both processes in accordance with their respective applicable regulations and guidance.

Additionally, as noted at the beginning of this letter, we found some of the material in the November 25th presentation to be misleading or inaccurate. Our specific comments on this material are enclosed. We hope you will ensure that DelDOT considers these comments in developing materials to present to the Section 106 parties, and future presentations to the Working Group and other members of the public.

Thank you for your consideration of these comments. If you have any questions, please do not hesitate to contact me.

Sincerely,

Daniel R. Griffith

Director/State Historic Preservation Officer

Enclosure

cc: Karen Theimer Brown, Advisory Council on Historic Preservation (w/enclosure)
Martha Catlin, Advisory Council on Historic Preservation (w/enclosure)
William Bolger, Philadelphia Support Office, National Park Service (w/enclosure)
Carol Shull, Keeper of the National Register of Historic Places, National Park Service
Nathan Hayward, Secretary, Delaware Department of Transportation (w/enclosure)
Carolann Wicks, Chief Engineer, DelDOT (w/enclosure)
Michael Angelo, Asst. Director of Development, DelDOT (w/enclosure)
Therese M. Fulmer, Manager, Environmental Studies, DelDOT
Michael C. Hahn, Senior Highway Planner, DelDOT (w/enclosure)
Marc Cote, Project Management, DelDOT (w/enclosure)
Stephanie Bruning, Preservation Planner, New Castle County Dept. of Land Use
Susan Chase, Interim Executive Director, Preservation Delaware Inc.
Chris McEvelly, Historic Roads & Bridges Committee, Preservation Delaware Inc. (w/encl.)
Joan Hazelton, Historic Roads & Bridges Committee, Preservation Delaware Inc. (w/encl.)
Daniel Costello, Senior Program Associate, National Trust for Historic Preservation (w/encl.)
George Vogt, Director, Hagley Museum and Library (w/enclosure)
Joseph Finch, St. Joseph on the Brandywine (w/enclosure)
Gail Van Gilder, Delaware Greenways Inc. (w/enclosure)
Linda and Steve Boyden, 5 Old Barley Mill Road
Joe Flanagan, 9 Old Barley Mill Road
Lonnie Dobbs, Henry Clay Village
William Hellman, Rummel Klepper & Kahl, LLP (w/enclosure)
Richard Meyer, John Milner Associates, Inc. (w/enclosure)

Mr. Willis King
Assistant Director
Bureau of Sport, Fisheries & Wildlife
Department of the Interior
Washington, D. C. 20240

Dear Mr. King:

Your memorandum of July 14, 1972, outlining some of the steps proposed for construction of the fish ladders on Brandywine Creek, indicates that construction will affect 10 old dams within the Eleutherian Mills National Historic Landmark listed on the National Register. Properties listed on the National Register are entitled to the protection of the National Historic Preservation Act of 1966 (80 Stat. 915); specifically, Section 106 which provides that:

The head of any Federal agency having direct or indirect jurisdiction over a proposed Federal or federally assisted undertaking in any State and the head of any Federal department or independent agency having authority to license any undertaking shall, prior to the approval of the expenditure of any Federal funds on the undertaking or prior to the issuance of any license, as the case may be, take into account the effect of the undertaking on any district, site, building, structure, or object that is included in the National Register. The head of any such Federal agency shall afford the Advisory Council on Historic Preservation established under Title III of this Act a reasonable opportunity to comment with regard to such undertaking.

In implementing this section, the Advisory Council has adopted compliance procedures applicable to all Federal undertakings which provide that:

At the earliest stage of planning or consideration of a proposed undertaking, including master and regional planning, the Agency Official shall: (a) Consult the National Register to determine if a National Register property is involved in the undertaking; and (b) upon finding involvement, apply the

"Criteria for Effect." Upon applying the criteria and finding no effect, the undertaking may proceed.

Upon finding that the undertaking will have an effect upon a National Register property, the Agency Official shall: (a) Notify the State Liaison Officer and the Executive Director; and (b) in joint consultation with them, determine whether or not the effect will be adverse
(Federal Register, November 14, 1972, p. 24146)

Your memorandum does not reflect that the required determination of effect has been made. However, it seems clear that the project will have an effect on the National Register property and therefore it would be appropriate for the Advisory Council to receive a request for a consultation pursuant to their procedures.

Thank you for your cooperation.

Sincerely yours,
Sincerely yours,

Louis E. Reid, Jr.
Louis E. Reid, Jr.

UNITED STATES
UNITED STATES
DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

Files of
Files of

~~THE BRANCH OR HISTORY~~

NATIONAL SURVEY OF HISTORIC SITES AND BUILDINGS

SUBJECT: Eleutherian Mills, Wilmington, Delaware

DATE: 1966

REGISTERED NATIONAL
HISTORIC LANDMARKS

UNITED STATES
DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE
WASHINGTON, D. C.

National Survey of Historic Sites and Buildings

Bleutherian Mills, Delaware

Bleutherian Mills, near Wilmington, is the site of the powder works that revolutionized powder manufacturing in America. Some of the early buildings of B. I. du Pont de Nemours and Company, which now is one of America's major concerns, still stand, appropriate monuments to an industrial saga.

Sleuthre Rene© du Pont was born on June 24, 1771, in France and migrated to America in 1799. He soon discovered that the powder produced in the United States was inferior. Having worked in the French powder industry, du Pont knew that a factory employing the newest techniques and machinery would produce the best powder in America. Thus he organized B. I. du Pont de Nemours and Company in 1801 and chose a site on the Brandywine River, where the state of 1803 sufficient progress had been made on the works to begin to prepare saltpeter.

His assumption that America would welcome excellent powder was soon verified. He sent his first shipment to New York in the spring of 1804. It won instant approval. Within six years, du Pont owned the largest powder factory in America. The War of 1812 spurred Rene© to purchase in 1813 an adjoining tract and be erected a new mill that doubled his factory's output.

Following the Treaty of Ghent, the du Pont works continually expanded. The founder's death on October 31, 1834, did not impede the firm's subsequent expansion. During the Civil War, the company produced some 4,000,000 barrels of powder. After 1861, the company continued to grow and it began to diversify its interests. Today, the concern maintains its early record for excellence.

The du Pont Company in 1952 created the Bleutherian Mills - Hagley Foundation and gave it the site of the original works. Since then the Foundation has developed the Hagley Museum, which maintains and interprets this industrial site. Among the structures at the site are Rene©'s residence, which was completed in 1803, the first office building of the company, the walls of over 20 early nineteenth-century powder mills, an old machine shop, and an old cotton mill. The latter two structures contain excellent exhibits concerning the powder and other industries.

**UNITED STATES
DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE**

NATIONAL SURVEY OF HISTORIC SITES AND BUILDINGS

1. STATE Delaware	2. THEME(S): IF ARCHEOLOGICAL SITE: WRITE "ARCH" BEFORE THEME NO. XVII-B, Commerce and Industry XV F-B, Commerce and Industry
-----------------------------	---

3. NAME(S) OF SITE Eleutherian Mills	4. APPROX. ACREAGE
--	--------------------

5. EXACT LOCATION (County, township, road, etc. If difficult to find, sketch on Supplementary Sheet)
On Delaware 141 at Brandywine Creek Bridge, north of Wilmington, New Castle County

6. NAME AND ADDRESS OF PRESENT OWNER (Also administrator if different from owner)
Eleutherian Mills-Hagley Foundation: Mr. Walter J. Heacock, Director

7. IMPORTANCE AND DESCRIPTION (Describe briefly what makes it important and what remains are extant)

E. I. du Pont de Nemours & Company was founded by Eleuthère Irénée du Pont in 1801 as a black powder manufacturing concern. From the first, the company manufactured a product of superior quality. Soon the manufactory dominated the American powder industry; it also gained a reputation for excellence that the du Pont organization still possesses. It is apparent then, that the early du Pont buildings at "Eleutherian Mills," near Wilmington, Delaware, commemorate the beginning of an American industrial saga.

France was Irénée's homeland. Born on June 24, 1771, to Pierre Samuel du Pont de Nemours, a Huguenot, du Pont at sixteen became an apprentice to Antoine Lavoisier. Lavoisier was an eminent scientist and the director of France's powder industry. Under his tutelage, Irénée learned much about the manufacture of powder. A transfer to the arsenal at Essone followed the conclusion of his apprenticeship and Irénée completed his training there. On November 26, 1791, he married Sophie Madeleine Dalmas, despite the objections of his father and the anger of two other suitors.

Irénée probably would not have migrated to America if it had not been for the French Revolution. Both he and his father were political moderates; nevertheless, they suffered so from the passion of the extremists that in 1799 they decided to emigrate to the United States. Du Pont père planned to establish a colony in the western section of Virginia. On October 2, 1799, he and a family group of thirteen boarded the ship American Eagle and on January 1, 1800, landed at Newport, Rhode Island.

Once in America, the elder du Pont soon abandoned his plan to establish a settlement in Virginia. The high cost of land, among other factors, turned him from his project.

8. BIBLIOGRAPHICAL REFERENCES (One but tottree; give location of manuscript and rare works)
William H. Carr, The du Ponts of Delaware (New York, 1964); John Chamberlain, The Entrepreneurial Americans: A Business History of the United States (New York, 1960); D.A.E.; M.F. du Pont de Nemours and Company, Du Pont, The Autobiography of An American Enterprise (New York, 1932); Eleutherian Mills - Hagley Foundation, "The Hagley Museum," (n.p., 1957); Stewart H. Holbrook, The Age of the Moguls (New York, 1953); John K. Wilder, The DuPont Dynasty (New York, 1933).

9. REPORTS AND STUDIES (Mention best reports and studies, or, if Study, IABS, etc.)

10. PHOTOGRAPHS: ATTACHED: YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>	11. CONDITION Excellent	12. PRESENT USE (Museum, farm, etc.) Industrial museum	13. DATE OF VISIT 7/5/66
14. NAME OF RECORDER (Signature) S. S. Bradford	15. TITLE Historian	16. DATE 1/17/67	

**UNITED STATES
DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE**

**NATIONAL SURVEY OF HISTORIC SITES AND BUILDINGS
SUPPLEMENTARY SHEET**

This sheet is to be used for giving additional information or comments, for more space for any item on the regular form, and for recording pertinent data from future studies, visitations, etc. Be brief, but use as many Supplement Sheets as necessary. When items are continued they should be listed, if possible, in numerical order of the items. All information given should be headed by the item number, its name, and the word (cont'd), as, 6. Description and Importance (cont'd) . . .

STATE Delaware	NAME(S) OF SITE Eleutherian Mills
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But Irénée soon learned of the inferior quality of American powder. A hunting occurrence involving poor powder stimulated the young Frenchman to visit the Nation's largest powder factory in Frankford, Pennsylvania. The inspection convinced him of the low state of American powder manufacture and caused him to consider producing it himself. On January 5, 1801, Irénée and his brother, Victor, sailed from New York for France, hoping to obtain financial backing for a powder works. They were successful in their quest and a company was formed on April 21, 1801. While in France, Irénée also acquired powder manufacturing machinery and information about new manufacturing techniques.

Upon his return to America, Irénée quickly implemented his plans. He surveyed several sites for a powder factory and finally choose one on the Brandywine River in Delaware. Already the location of a great flour milling industry, the Brandywine offered an excellent source of waterpower. Furthermore, du Pont's site lay near Philadelphia. He paid \$6,740 for 95 acres bordering the river, and on July 19, 1802, began the construction of his factory. By the winter of 1803 he had built a house, barn and completed a large part of the refinery. Sufficient building had been completed by the summer of 1803 to enable Irénée to begin to prepare saltpeter.

Irénée's assumption that America would welcome excellent powder was soon verified. He sent his first shipment of 25-pound sacks of powder to New York in the spring of 1804. The powder won instant approval. By the end of 1804 he had sold a total of 39,000 pounds. In 1805 he sold triple that amount. Within six years, du Pont owned the largest powder factory in America and garnered \$44,000 in profits. The War of 1812 spurred Irénée to purchase in 1813 an adjoining tract, known as the Hagley property, for \$47,000 and there he erected a new mill that doubled his factory's output.

Following the Treaty of Ghent, December 24, 1814, the du Pont works continually expanded, and sometimes exploded. Despite the explosions, the company supplied an ever-increasing supply of powder to meet the demands of a growing country. The founder's death on October 31, 1834, did not impede the subsequent expansion of the concern. During the Civil War, the company produced some 4,000,000 barrels of powder for the Federal government. In the decades following the Civil War, the company continued to grow and began to diversify its interests. Today, the concern is one of the Nation's major companies and maintains its early record for excellence and innovation.

**UNITED STATES
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STATE Delaware	NAME(S) OF SITE Eleutherian Mills
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Present Condition of the Site

The du Pont Company in 1952, on the 150th anniversary of the establishment of the concern, created the Eleutherian Mills -- Hagley Foundation and gave it 185 acres, including the site of the original works. Since then, the Foundation has developed the Hagley Museum, which maintains and interprets this industrial site.

The most significant structure at "Eleutherian Mills" is the residence of Irenée du Pont. Completed by the summer of 1803, the two-story, dormer-windowed and gable-roofed building sits near the top of a ridge that overlooks the Brandywine. The house is constructed of stone that has been stuccoed a sand color. Its woodwork is cream colored. The house originally consisted of just a large central section, but a wing was added on either side about 1850. Each wing is two stories high and has a dormer window on their respective gable roofs. Inside the house, a hallway runs through the width of the residence. Various rooms lie off either side of the hallway and at the back of it a handsome, winding staircase leads to the second floor. From the house's back porch one overlooks the site of the first mills, none of which now stand.

When Irenée lived, he could survey his plant from his house. Just below it and still some distance from the river was the refinery, where sulphur and saltpeter were prepared for use in making powder. Farther down the hill and on the river stood the powder mills. These buildings had very thick stone walls on three sides and light wooden fronts and roofs facing the Brandywine. Any explosion would thus be directed across the river.

Near the front of the residence is the company's first office building. The du Ponts conducted the business from the house until 1837, but in that year constructed the stone office that is just south of the house. Until 1899, the company conducted its affairs from this building.

As one leaves the residence on a museum-operated bus, he traverses the route that has been traveled since 1802. The road curves to the west of the residence as it descends the hill and then turns east at the foot of the hill and then follows the curving Brandywine. One passes by the site of the original mills and then by mills erected over a century ago. The remains of 21 of the latter still stand. One also come to the old machine shop, erected in 1858, where working models and dioramas explain the manufacture of black powder. At the entrance to the "Eleutherian Mills" is a large three-story stone building that was erected in 1814 by Irenée and some associates as the Hagley Cotton Mills. It now houses exhibits devoted to the industrial history of the United States.

**UNITED STATES
DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE**

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STATE
Delaware

NAME(S) OF SITE
Bentley Mills

The Hagley Museum is open from 9:30 a.m. to 4:30 p.m. Tuesdays through Saturdays. Sundays, 1:00 -- 5:00 p.m. The residence is only open from May 22 to June 5, and from September 21 to October 16. The tour of the grounds starts at the old cotton mill and then proceeds up the river.

REGISTRY OF NATIONAL
HISTORIC LANDMARKS

REPORT OF BIENNIAL VISIT TO
REPORT OF BIENNIAL VISIT TO

Eleutherian Mills

Date of visit January 13, 1970

Visited by Chimter L. Brooks Bupsi Btsadnt Xa Bsi W0
Phasis C. Kurisek Asst. Superintendent " "
(name) (title) (office)

Received by Dr. Walter J. Heacock General Director Eluthisri HUB
W. J. Heacock Director "
(name) (title) (office)

Also Mr. Joseph P. Monigis, Asst. to Director and
Br. Leonard Wilkinson, Research Fellow of the Bglsty Poudstimi

Condition: Excellent. The Eleutherian Mills - Hagley Foundation, Inc.,
as a preservation agency has done an outstanding job of pre-
serving and protecting this unique industrial site.

4-

Operation** Through its Museum and Exhibit buildings, the Foundation
continues to present a year-round interpretive program of
a very high order.

*Grounds, structure/s, furnishings

**Note any changes in ownership, sponsoring organizations, operating staff,
use, location of plaque and certificate, etc.

Special Problems

Conversion of State Route 141 to a Freeway and relocation of the route and bridge in the vicinity of the Bagley Museum last year, posed a threat to historic property. But the landmark designation came to the rescue. In the words of Dr. Heacock, "we found the landmark designation an asset during our recent successful opposition to a proposed highway and bridge location which we felt would have an unfavorable effect upon the character of our property."

Suggestions Offered None

(signed)

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RESORTS

THE NEW YORK

TIMES. 50 N. Bay, Oct 1

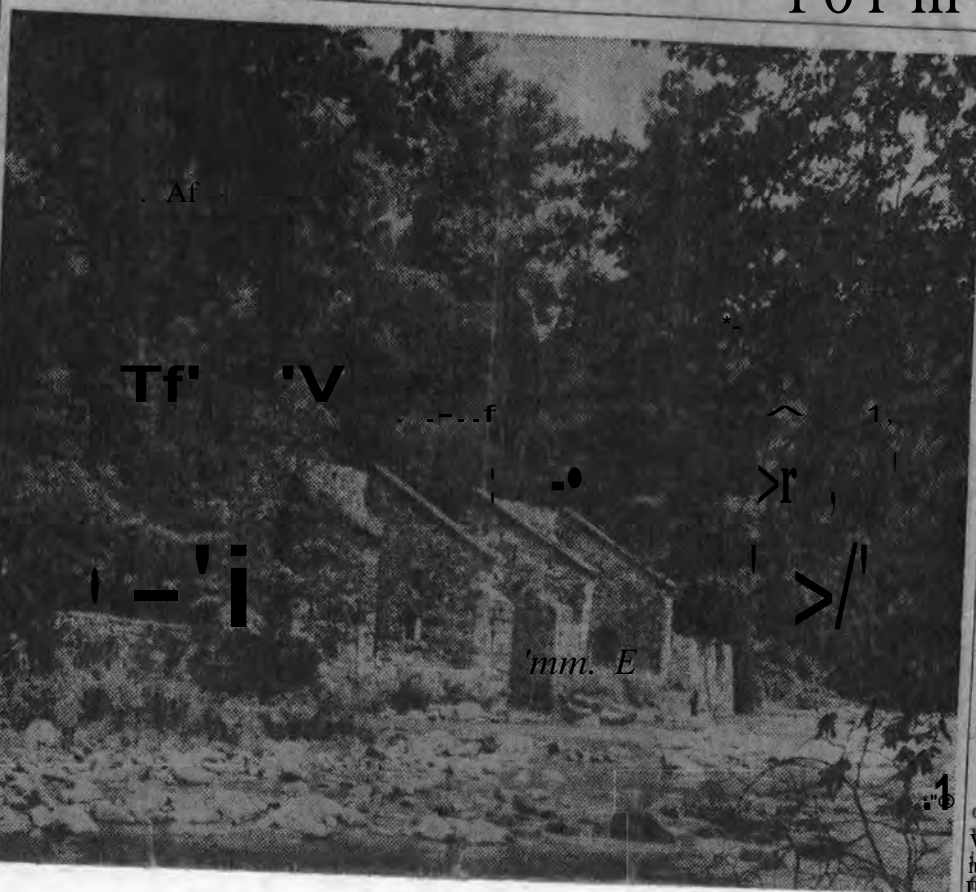
OLD MILLS OF THE BRANDY WINE FORM A MUSEUM

By JAMES H. McCormick

WILMINGTON, Del. — On this city's outskirts historians, artists and researchers are busily recreating in miniature the bustling industrial pageant of lower Brandywine Valley of some one hundred and fifty years ago when it was the greatest flour-milling and explosives-manufacturing area in America.

Before the end of the seventeenth century the crude dams of Swedish grist mills had harnessed the flowing power of Brandywine Creek, and all during the eighteenth and early nineteenth centuries sawmills, grist mills, slitting mills, paper mills, snuff mills, textile mills, and many others elbowed for room along the stream. The fourteen Quaker flour mills near Wilmington were one of the wonders of young America to foreign travelers.

Much has been readied for the traveler to see along the creek. On the Hagley Yard historic site are more than twenty clearly used buildings which were used to make the black powder pioneer America needed to clear land and arm itself. Eleuthere Pont, who started



Breck's Mill and Walker's Mill. Neither is open to the public but at many hours of the day both are better photographs than the tree-shrouded buildings in Hagley Yard.

The natural beauty of the lower Brandywine Valley adds its appeal for those less interested in America's industrial past. Between the time the powder mills were shut down and the foundation took over in 1922, the area was landscaped with white and red azaleas, forsythia and jonquils. Rows of pink trees shade the millraces. Large Blue Atlas cedars, as well as native walnut, sycamore, beech, locust and willow turn the creek bank into a lush green park. There even remain a few of the willow trees that supplied boughs for making charcoal when du Pont first started his risky venture. This month the display of fall colors here is comparable to any in the Middle Atlantic States.

Guides Unnecessary

Anyone interested in Americana needn't postpone a trip to Wilmington until the program is completed or the roused

traveler to see along the creek. On the Hagley Yard historic site are more than twenty clearly identified buildings which were used to make the black powder pioneer America needed to clear land for itself. Eleuthere made powder during the War of 1812, and the adjacent Hagley Yard.



Remains of powder mills built on Brandywine Creek by E. I. du Pont around 1812.

Grinding Wheels Intact
 Here were once active rolling mills where salt-peter, sulphur and charcoal were mixed together to form powder. In place at one mill are its two ten-ton iron grinding wheels. Adjacent buildings were graining or corning mills where the compressed powder cake from the rolling mills was broken into pellets. Finally, in the glazing mills, the powder was dried and coated with graphite. Because powder making was always dangerous, each of the individual mill buildings is small and specially constructed for greater safety. Three of the four walls were of massive stone; these remain unaltered today. The ceiling and the fourth wall, the one facing Brandywine Creek, were of wood. In case of

an explosion, its force would be directed up and away from workers and mills. Remnants of other powder-making facilities include powder storehouses dug into the hillside behind the mills. Channels that carried the water to run the mills paralleling Brandywine Creek, now serve as a summer home for Canadian geese returning to their farms on their banks. The first building to be reconstructed began its life as a textile mill in 1814, was converted to the manufacture of metal kegs for du Pont black powder, and is now being readied for new usefulness as a museum. Such reconstruction, as

well as the creation of exhibits, models and dioramas, are major tasks of the Eleutherian Mills-Hagley Foundation. This non-profit educational organization was created in 1952 by the du Pont company and members of the du Pont family. Its purpose is to present a visual historical pageant of the country's industrial past, tracing its growth from colonial times to the business activity of the wine valley. The museum will be dedicated next year when Hagley Yard wears its brightest flowers. Meanwhile, the major effort of the staff will be to create mod-

els, exhibits and dioramas for display in the museum after its dedication. This reporter had a preview glimpse of a working model of an early Swedish water-powered grist mill and a rough model of the automatic flour mill patented by Delaware inventor Oliver Evans in 1790. Closer to completion are exhibits of the Lenni-Lenape Indians who inhabited the Brandywine valley. The most impressive diorama under construction is an over-all view of the powder mill area in 1806. Beyond the limits of the Hagley Yard are two War of 1812 textile mills in good repair—

dle Atlantic States. Guides Unnecessary
 Anyone interested in Americana needn't postpone a trip to the museum. The program is completed or to be completed. There's plenty to be seen now, and it will be complete as the foundation staff would have it. Hagley Yard is open daily from 10 A. M. to 5 P. M. Most motorists park by the museum and walk around the yard, but those who prefer to do so may drive through the grounds. Guides are not needed, and there is no charge. Near-by attractions are numerous to list. They include Old Swedes' Church in downtown Wilmington; Longwood Gardens, near Kennett Square, Pa., with its famous flower gardens and greenhouses; and historic New Castle, Del., where William Penn stepped ashore in 1682 and where many Colonial homes are still in places. The New Jersey Turnpike provides a fast thruway from New York City to Philadelphia and is typical of those of an East coast city.

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NEWS AND NOTES FROM THE FIELD OF TRAVEL

1



READY FOR THE STARTER'S FLAG—Le Circuit Mont Tremblant St. Jovite, a Laurentian auto-racing track 90 miles from Montreal, begins season Saturday.

10 A.M. to 5 P.M. daily, until Sept. 30. Admission is 50 cents for adults, 25 cents for children.

LAURENTIAN RACE

Le Circuit Mont Tremblant St. Jovite, an auto-racing track 90 miles from Montreal via the Laurentian Auto-route, will open its third season Saturday with two days of sports-car competition. The summer schedule includes major meets July 9 and 10, July 29 and 30, and Sept. 10 and 11. Admission to the races will be \$4, with no charge for children under 12. There are eight acres of free parking at the track, and eight restaurants and snack bars. The 2.8-mile track has a natural hillside grandstand that accommodates 40,000 to 50,000 spectators.

SOUND AND LIGHT

The third annual sound-and-light program at Boscobel, an 18th-century mansion at Garrison-on-Hudson, N. Y., will begin on June 1. It will be held Wednesdays and Saturdays through Labor Day. The performances are at 9 P.M., and admission is \$1.50. Combined admission for a tour of the house and gardens with the sound-and-light presentation is \$2.75 for adults, \$1.50 for those under 21. A tour of the house alone is \$1.50. House and garden tours are available daily, except Tuesdays, from 9:30 A.M. to 5 P.M. The sound-and-light audience is limited to 250. Reservations may be made by writing Boscobel Restoration, Garrison-on-Hudson, or telephoning LO 2-7444 in New York City, or 914-CO 3638.

CANCELLATION

covered bridge and an extensive collection of Currier and Ives prints; a fieldstone house built in the early 1700's; a 165-acre 19th-century farm; and an early 19th-century town house. Tickets are \$2. For details, write the Hanover Area Historical Society, Hanover, Pa. 17331. Hanover is 220 miles from New York, 20 miles west of York, Pa., and 15 miles east of Gettysburg.

DELAWARE MILLS

Elcutherian Mills, the Delaware residence built by B. F. du Pont in 1803 on the grounds overlooking his gunpowder mills and the Brandywine River, is open to the public from now until June 5. Hours are 9:30 A.M. to 4:30 P.M., Tuesdays through Saturdays, and 1 to 5 P.M., Sundays. The historic home and the 25 mill buildings are on a 200-acre site. The mills and two museums filled with models and dioramas of early water-powered industries of Delaware are open the year round, but it is only at this season and from Sept. 20 to Oct. 16 that the du Pont residence can be visited. In the 19th century, the du Pont black powder mills were the largest of their kind in the nation, producing much of

the powder used in the Civil War. The mills are about 130 miles from New York, just off State Route 141, three miles north of Wilmington.

CKSTENNIAL

Osborn House, in the northern Catskill Mountains near Windham, N. Y., will be opened for its 100th season this Friday. The Osborn House first was opened as a resort hotel in 1866, when Windham was known as Osbornville. The hotel accommodates 250 guests. Windham lies about 150 miles north and slightly west of New York City, off State Route 23.

History News, June 1964

Inter-American Center Developing in Florida

Steps were taken late in April and early in May toward the development of an Inter-American Center in St. Augustine, Florida. The development of the center is part of a National Quadricentennial Commission project to focus attention on the Hispanic origins of America during St. Augustine's quadricentennial celebration in 1985.

The project includes a proposed building, the Pan American Center, which is to offer to all the republics of Latin America the opportunity to present exhibits depicting the society and culture of their country. Flanking it will be individual exhibition buildings of certain of the Latin American nations.

Late in April, the inter-American project was launched with ceremonies in Washington, D.C., at which officials of the State Department and representatives of all the Latin American countries celebrated a "partnership" between the Organization of American States and the National Quadricentennial Commission in the development of a permanent Inter-American Center in St. Augustine.

In May, Earle W. Newton, director-general of the quadricentennial commission, and Major General Henry W. McMillan, representing the State of Florida, visited the presidents of most of the South American countries to enlist their support for the quadricentennial program and for the development of the series of national exhibition centers.

A committee for the Inter-American project has been established by the National Commission. Funds are being raised from national corporations to finance the \$200,000 Pan American Building.

SAH Schedules Tour

Seventy-five members and guests of the Society of Architectural Historians will visit Portsmouth, New Hampshire and the Kittery, Maine area on the society's summer tour August 21-23.

Host organization for the tour will be Strawberry Banke, Inc., a group which is carrying out a major restoration project in a colonial area of Portsmouth.

Participating members and guests will take a walking tour of Portsmouth and bus tours of Portsmouth; Kittery and York, Maine; and Rye Beach and New Castle, New Hampshire.

Du Pont Buildings Opened On Trial Basis in Delaware

The first office of the Du Pont Company and "Eleutherian Mills", the residence built in 1803 by E. I. du Pont, overlooking his powder mills on the Brandywine in Delaware, were opened to the public on a trial basis from May 12 to June 7. The historic home was deeded in 1952 to the

Eleutherian Mills-Hagley Foundation of Wilmington, Delaware, by Mrs. Francis B. Crowninshield, a great-granddaughter of E. I. du Pont. Experience gained by the month-long trial opening is being studied by the foundation in anticipation of future public openings.



Pictured above is the restored first office of the Du Pont Company, built in 1837, three years after E. I. du Pont's death. Succeeding presidents of the Du Pont Company conducted the company's affairs in this stone structure until 1890, when a larger

building was erected a half-mile away. The office has been refurnished by the Hagley Museum with appropriate furniture, including the desk used by General Henry du Pont, E. I. du Pont's son.



"Eleutherian Mills," built of Brandywine granite and covered with stucco, was designed by Pierre Bauduy, a French refugee from Santa Domingo and early partner of E. I. du Pont.

The center section of the present structure was the original residence, which also contained du Pont's office. In the 1850's General Henry du Pont constructed the matching stone wings.

Museums Conference Planned in Michigan

The Historical Society of Michigan is sponsoring its thirteenth annual Michigan Museums Conference June 25-27 at Grand Rapids, Michigan, with the Grand Rapids Public Museum as host.

Following the theme of "Interpreting Our Heritage," the three-day conference will offer sessions on exhibit techniques and inexpensive audio-visual techniques, and talks on goals for Michigan museums, the development of the Grand Rapids Public Museum, and the value of membership. Tours are also scheduled, including a behind-the-scenes tour of the educational activities of the Grand Rapids Public Museum and a planetarium demonstration.

On Saturday, June 27, conference participants will take a bus tour of Grand Rapids and visit the Indian Mound Excavation, concluding the meeting with a box lunch at Indian Mound Park.

The Michigan Museums Conference is the first of three society-sponsored meetings planned for the summer and fall of this year. July 24 and 25 the society will hold its Upper Peninsula History Conference at Ontonagon, and September 18 and 19 it will hold its annual meeting in Flint.

American Heritage To Publish Dictionary

Plans for a new dictionary to be created and published by American Heritage Publishing Company, Inc., were announced recently by James Parton, company president.

The *American Heritage Dictionary*, Parton said, will incorporate the findings of contemporary linguistic science and also indicate what words and word relationships are approved by a panel of linguistic authorities.

William Morris, former editor-in-chief of the forthcoming Grolier "Universal Encyclopedia," has joined the American Heritage staff as editor in charge of the dictionary program. Completion of the dictionary is expected to take several years. It will be published in a number of editions for varying reader requirements.

The company regularly publishes *American Heritage*, *The Magazine of History*, which is co-sponsored by the American Association for State and Local History.

Introducing . . .

Iowa is the home state of William J. Petersen, superintendent of the State Historical Society of Iowa, and it is Iowa that has reaped the benefits from his many talents.

Born in Dubuque in 1901, Petersen attended Iowa schools, receiving his B.A. from the University of Dubuque and his M.A. and Ph.D. from the University of Iowa. In 1958 he was awarded an honorary LL.D.



William J. Petersen

from Iowa Wesleyan College. Petersen has been with the State Historical Society of Iowa since 1930. For 17 years he served as research associate, and in 1947 he was appointed superintendent, the position he now holds. In the years since he assumed the top post, membership in the society has grown from 1123 to more than 8000. He initiated the society's renowned steamboat trips, which have averaged more than 500 participants yearly over the past 15 years. Affectionately known as "Steamboat Bill," he serves as guide and entertainer on each trip.

Under Petersen's superintendency the society has also initiated Amana and overland tours and has acquired, developed, and marked historical sites. Its publication program has been expanded and its research facilities developed. In 1957 noted historians Paul M. Angle and Earle Schenck Miers named the society as one of 23 institutions they felt were outstanding "Doorways to American Culture." Wrote the historians, "No field of Iowa life has remained untouched . . . States older than Iowa have larger historical literatures, but no state has had its past so thoroughly explored and so widely disseminated by its own historical society."

One of Petersen's proudest achievements for his native state and the historical society was the acquisition of funds for the construction of the society's new headquarters, which were dedicated in 1960 during the annual meeting of the American Association for State and Local History in Iowa City. Petersen secured legis-

lative support for a \$200,000 appropriation for the Centennial Building, then succeeded in soliciting a matching \$100,000 in private donations. The Centennial Building is the first home owned by the society, and the society's collections are expanding with its now-adequate space.

In addition to his work with the historical society, Petersen has many years of teaching to his credit. Since 1947 he has been an associate professor at the State University of Iowa, and has taught at several other schools during summer sessions.

He is also a writer, having contributed more than 250 articles to historical magazines and other publications, and edited several books. He is the co-author of *True Tales of Iowa* (1932), and author of *Two Hundred Topics in Iowa History* (1932); *Steamboating on the Upper Mississippi* (1937); *Iowa: The Rivers of Her Valleys* (1941); *A Reference Guide to Iowa History* (1942); *Looking Backward on Hawkeyeland* (1947); *Iowa History Reference Guide* (1952); *The Story of Iowa, two volumes* (1952); *The Pageant of the Press* (1962); and *Mississippi River Panorama* (1963). *The Pageant of the Press* received an Award of Merit from the American Association for State and Local History.

In 1953 Petersen was secretary of the American Association for State and Local History; he has also served on the association council and as a regional chairman for the Award of Merit Committee.

He holds membership in the American Historical Association, the American Academy of Political and Social Science, the Society of American Archivists, the Mississippi Valley Historical Association, the Southern Historical Association, and numerous fraternal and civic organizations.

WANTED

The Detroit (Michigan) Historical Museum is preparing an exhibit on the pioneer Davis, or Davis-Hammond, railroad refrigerator cars, designed and built in Detroit from 1868. Patent records and contemporary sources have been consulted, but the museum is seeking additional information, particularly on the dimensions and placement of the interior ice bunkers and their support framing. Information, recollections, or location of one still extant would be appreciated by the Industrial History Division, Detroit Historical Museum, 5401 Woodward Avenue, Detroit, Michigan 48202.

Hagley Museum Builds Water Wheel



An artist's sketch of the Birkenhead powder mills on the Brandywine as they will appear when the wooden water wheel and roof are reconstructed.

A full-sized wooden water wheel of the type which powered mills and factories in past centuries will turn again on the Brandywine this fall. The Hagley Museum has announced that it will reconstruct a sixteen-foot diameter, breast-type wheel on the former Du Pont powder mill property near Wilmington, Delaware.

Already under construction, the wheel will replace one known to have been used more than a century ago at the Birkenhead Mills in Hagley. The pair of mills were built by E. I. du Pont in 1822-24 and were probably the first powder mills to be equipped with rolling wheels rather than the mortars and pestles used prior to the 1820's.

A wooden roof will also be restored on one of the mills, and a flume and sluice gate reconstructed to control water flow from the mill-race to the wheel. Robert A. Kane, the museum's engineer who is supervising the construction, has made use of a number of old photographs and drawings in duplicating the original appearance of the mill.

According to Kane, locating a white oak tree of sufficient size to provide a finished main shaft for the wheel twenty-six inches in diameter and twenty-one feet long proved difficult. Eventually one was located which proved to meet these specifications. Other parts of the wheel are being fashioned of oak, gum, and white pine.

The bucket section of the wheel will be nine feet wide, but the longey shaft is required to reach between the pair of mills to the stone piers where

the ends are fitted into bearing boxes. During a study of the buildings, grease marks from lubrications of the first wheel were found on the stonework.

Museum records describe a number of such wheels which at one time powered all of du Pont's and other mills in the area. Following the Civil War most mills converted to the more efficient water tubings.

Museum to Emphasize Cleveland Industry

Construction has begun on a million-dollar museum for the Thompson Auto Album and Aviation Collection at University Circle in Cleveland, Ohio. The museum is being built by the Western Reserve Historical Society.

To finance the building, the Leonard C. Hanna, Jr., Fund has donated an amount matching the sum raised by the Historical Society. The two-story museum is being constructed in Florentine style to complement the adjoining Western Reserve Historical Society buildings.

The museum will feature a collection of automobiles presented to the Society by Thompson Ramo Wooldridge, Inc., whose former president, Frederick C. Crawford, has been assembling the collection since 1937.

One-hundred-thirty autos dating from the Panhard-Levassor, reputedly the oldest closed car on the North American continent, to a 1932 Peerless, the last auto manufactured in

Vermont Historians Attend Summer Meet

Vermont history devotees convened at the Pavilion Hotel in Montpelier on Thursday and Friday, August 20 and 21, for the annual summer meeting of the Vermont Historical Society.

After greetings were delivered to the group by Vermont's Lieutenant Governor, the Society held its first session, which dealt with "Earliest Vermont." John K. Wright, retired director of the American Geographical Society, was chairman of this program.

At Thursday's luncheon Jere R. Daniell, II, curator of Old Deerfield and professor-elect at Dartmouth College, spoke on "The Deerfield Story."

Chairman of an afternoon program dealing with the St. Albans Civil War raid was Sterry R. Waterman, circuit judge of the United States Court of Appeals. Panel members were Graham S. Newell, professor of history at Lyndon State College; Gary E. Heath, book review editor of two Vermont newspapers; and John Kazar of Vermont College.

The evening session was devoted to motion picture of moving a covered bridge, the presentation of the Francis watch by Stephen T. Riley of the Massachusetts Historical Society, and a paper by Robert E. Pike of Monmouth College, New Jersey, on the "Last Log Drive on the Connecticut."

While the Society's trustees met on Friday morning, members had an opportunity to attend a book sale at the Society bookstore and to visit Montpelier museums. They reassembled at the hotel for lunch, at which time Kenneth Scott of Queensborough Community College in New York discussed counterfeiting in Vermont.

Cleveland, will be displayed.

The exhibits will emphasize Cleveland as an early auto manufacturing center where such makes as Winton, Baker, Chandler, Grant, Jordon, Owen-Magnetic, Peerless, Rauch-Lang, Royal Tourist, Stearns, and White were produced. The earliest airplane in the collection is the Bumblebee, a 1911 Curtiss Pusher.

The new museum will also house an extensive library on recent transportation history, a street of shops, an auditorium, and a mechanic's shop where antique cars will be renovated.

The building is expected to be completed and dedicated in March, 1965.



WHAT'S GOING ON

Two new Colonial Williamsburg color films were added to the schedule of evening programs at the Information Center late in July. Both dealing with American folk art, "Around the World in Eighty Feet" and "Folk Artist of the Blue Ridge" were produced by Arthur L. Smith, director of audio-visual programs for Colonial Williamsburg, in association with Mary C. Black, director of the Abby Aldrich Rockefeller Folk Art Collection. Recently the two films were selected for Chris Certificate Awards in the special fields category of the twelfth annual Columbus, Ohio, Film Festival.

A special program of summer activities for children was carried out by the U.S. Army Signal Corps Museum in Fort Monmouth, New Jersey, on successive Tuesday afternoons from July 14 through August 25. Two ninety minute sessions, one for children aged nine to twelve and another for those between the ages of twelve and sixteen, helped approximately eighty young people learn some history of the Signal Corps. The program consisted, according to the official announcement, "of games, puzzles, rebuses, cryptograms, and learning activities based on specific exhibits which give the historical background of the Signal Corps from its establishment in 1860."

Two exhibits, "U. S. Progress in Space" and "Photography from Five Years of Space," were open to the public at the Danbury Scott-Fanton Museum in Danbury, Connecticut, during August by special arrangement with the National Aeronautics and Space Administration. The exhibit was made up of 94 photographs, mostly in color, depicting highlights from the Government Space Agency's four major program fields: manned space flight, space sciences, applications, and advanced research and technology. The photography is technically the work of NASA, Life, National Geographic, and New York Times cameramen. With the photographs were 36 panels and 13 scale models, including a one-third scale models of the Mercury capsule.

The Barber County Historical Society of Medicine Lodge, Kansas, hopes to compile a county history which will consist of sections on the history of county families and organizations. To date, society members have assembled chronicles of sixty families and ten organizations. Other recent projects of the group include a survey of the town's Highland Cemetery which resulted in a list of all names and data on headstones, and surveys by teams of other local cemeteries. In addition to its data-gathering projects, the Barber County Society helps to operate a historical museum owned by another group in the area.

At a recent meeting of the council of the Essex Institute of Salem, Massachusetts, David R. Proper was named librarian of the Institute. The Institute's library, one of the largest repositories of local history in the country, contains a collection of books and manuscripts that deal with the activities of people from eastern Massachusetts both in the United States and abroad. Proper joined the Institute staff two years ago. A native of Keene, New Hampshire, he graduated from the University of New Hampshire in 1955. He received an M.A. degree from Middlebury College in 1961 and an M.S. degree from the Simmons School of Library Science in 1962. He taught in New Hampshire public schools and at Procter Academy before coming to Essex Institute.

The Bates-Scotfield Homestead, erected in 1705 on Old Kings Highway in Darien, Connecticut, has recently been presented to the Darien Historical Society. Plans are underway to move the dwelling to a new site and to restore it to its original saltbox lines. It will become a museum for the Society.

Shenandoah Valley's historic Belle Grove plantation in Frederick County, Virginia, has been received as a gift to the National Trust for Historic Preservation from the estate of the late Francis Welles Hunnewell of Wellesley, Massachusetts, and Middletown, Virginia. The limestone

mansion was built in 1787 for Major Isaac Hite, Jr., a Revolutionary officer, whose grandfather Jost Hite sponsored the pioneer settlement of German families on the Virginia frontier as early as 1731. One hundred acres of land surrounding the mansion are included in the gift, as well as an endowment of \$200,000, the income of which will be used to preserve and maintain the property. The estate was purchased by Hunnewell in 1929, and was restored under the direction of the late Horace W. Peaslee, architect of Washington.

The Phippsburg, Maine, Historical Society officially opened its new museum to the public on July 20. The museum, a former one-room school built in 1859, has been in preparation for two years. Its exhibits depict the history of Maine's coastal area. The Phippsburg Society, founded in 1960, published this summer Phippsburg, Fair to the Wind, a 240-page history of the town with over 100 illustrations.

The Webster County, Nebraska, Historical Society has signed a contract to purchase the J. W. Auld mansion in Red Cloud for a headquarters building. Many items of the original furnishings for the mansion were made available by Mrs. Gertrude Auld of Lincoln. Organizations throughout the county are working to secure donations for completion of the project. The Red Cloud Lions Club is serving as sponsor.

Congress may wish to establish a National Historic Site of Ellis Island, New York Harbor gateway to the new world for more than 16 million immigrants, a National Park service field report suggests. Located about 13,000 feet from the Jersey City shoreline, Ellis Island contains approximately 27.5 acres of land. Development of this site as an addition to the National Park System would be tied in closely with the American Museum of Immigration now under construction on Liberty Island. It would also complement the Jersey City plan to redevelop into a 400-acre waterfront park the shoreline opposite Ellis Island, replacing a deteriorating and blighted waterfront dock area. Ellis Island as a park would harmonize with both the Statue of Liberty and the future waterfront park in New Jersey.

(Continued on page 184)



ANNOUNCEMENT OF THE HAGLEY ASSOCIATES

The first Newsletter, published in 1972, offered the possibility of a formal friends' organization. With the approval of the EM-HF Trustees, General Director Walter J. Heacock has announced the establishment of the Hagley Associates "later this fall."

The Hagley Associates will consist of a membership vitally interested and closely involved in EM-HF activities. In return, members will be offered a program of interesting and unusual events.

"For more than twenty years," according to Dr. Heacock, "the Eleutherian Mills-Hagley Foundation . . . has sought to maintain standards of excellence equal to those in the best museums, research libraries, and historic preservation projects throughout the country. We have served a broad public, but our programs have been financed by private endowment."

In 1975 the Foundation will attempt to change its status from private to public in order to eliminate a Federal Excise Tax penalty and other restrictions placed on privately financed institutions. The establishment of a supporting friends' organization will assist in meeting the requirements for public status.

This new and important program is being coordinated by Mrs. A.B.C. Strange who joined the Foundation staff this summer as Special Projects Consultant. Mrs. Strange feels that ". . . the Hagley Foundation has its own unique qualities unlike any other museum and library complex in the country. Acknowledging our responsibility to share historical knowledge

(Continued on p. 2, col. 3)

DONATION OF LAND INCREASES PROPERTY ACREAGE

A land acquisition increases the Hagley Foundation property by over six acres. Given by Mr. and Mrs. Henry H. Silliman, this lovely hillside setting includes the Brandywine Manufacturers' Sunday School, now occupied by Miss Pauline Seitz.

Miss Seitz, who has lifetime rights to the house, is the granddaughter of John Gibbons, foreman of the old Du Pont Powder Works, for whom the Gibbons House is named.

The Brandywine Manufacturers' Sunday School was incorporated in 1817 by E. I. du Pont for the benefit of workingmen's children. Prior to this date, beginning about 1814, classes were taught first in John Siddall's factory, then moved to the top floor of Henry Clay Cotton Mill, the present museum.

As the children worked six days a week, Sunday was their only day for for-

mal instruction. Religious lessons were combined with the rudiments of reading, writing, and ciphering.

The school was nondenominational and the student body broke into sections for religious instruction. By the 1840s the Roman Catholics, Methodists and Presbyterians had built their own churches leaving only Episcopalians as the mainstay in BMSS.

The school eventually became a part of Christ Church, Christiana Hundred. The Free School Law of 1829 overrode the need for industrial Sunday Schools. Later the building was converted to a dwelling.

With the generous gift of Mr. and Mrs. Silliman, the Brandywine Manufacturers' Sunday School Building again becomes part of the property, a welcome addition to the Eleutherian Mills-Hagley Foundation.

Brandywine Manufacturers' Sunday School



HAGLEY FELLOWS BEGIN TWENTIETH YEAR



1974 Hagley Fellows at picnic, l. to r., Charles O'Donnell, Jane Welsh, James Hallock, Leslie Stuart, f. James Edmonson

The Hagley Program began its twentieth year with the annual orientation course for new Fellows, "Industrial History and the Museum." The five new students followed two weeks of instruction and philosophy with a tour of museums from the Smithsonian Institution to Upper Canada Village.

Hagley Fellows James Hallock and James Edmonson create a first for the program this year. Each became interested in the Museum Studies program during his first year in graduate school at the University of Delaware and subsequently applied to the Hagley Program. Each served an internship with the Museum this summer — Mr. Hallock with the curators and administrative office and Mr. Edmonson with the Research Department.

Jane Welsh is the daughter of a member of the first class of Hagley Fellows. Peter Welsh (M.A. 1956) is Director, New York

Historical Association and its Farmers Museum, Cooperstown.

New appointments for former Fellows include: David Salay, Curator of Historical Resources, New York Historical Association, Cooperstown; Rosemary Troy, Director of Education, Monmouth County Historical Society; Robert McDonald, Director, Louisiana State Museum, New Orleans; Carroll Pursell, Mellon Professor of the Humanities, Department of History, Lehigh University, Bethlehem, Pa.; Darwin Stapleton, Editorial Assistant for the papers of Benjamin Henry Latrobe, Maryland Historical Society, Baltimore.

Gus Giebelhaus is on a one year leave of absence from the Fellowship Program. He will spend a year in England lecturing at the University of Birmingham.

The Hagley Fellowship Program is planning a spring 1975 event to commemorate its twentieth anniversary.

LIBRARY OFFERS VARIETY OF RESEARCH MATERIAL

1974 Grants-in-Aid

The Foundation has awarded Grants-in-Aid for Library study to: Brian Danforth, New York University (Decline of the Port of Philadelphia after 1812); Monte Calvert, Clarkson College of Technology and former Hagley Fellow (History of American Manufactured Gas Industry); William Becker, University of Maryland, Baltimore County (Development of Foreign Trade by American Manufacturers, 1893-1913); Jean Perkins, Swarthmore College (The Relationships between the Physiocrats and the *Philosophes*).

Du Pont Biographies

Joseph Frazier Wall, Parker Professor of History, Grinnell College, Iowa is working on a biography of Alfred I. du Pont. Dr. Wall's other published works include *Henry Watterson, Reconstructed Rebel* and a biography of Andrew Carnegie.

Harold Hancock, professor at Otterbein College, Westerville, Ohio, is Delaware's most prolific historian. His works include, *Delaware Loyalists, Delaware During the Civil War*, and forty articles on Delaware history. He is working on a biography of General Henry du Pont.

PICTORIAL COLLECTION ISSUES ILLUSTRATED BROCHURE

The Pictorial Collections Department of EM-HL has published an 18-page illustrated brochure to encourage pictorial research and to promote the donations of pictures from corporate and personal collections. Entitled "Pictorial Collections", the pamphlet presents information on the largest and most important segments of the 200,000 views now available for research.

Text and pictures illustrate Library collections on bridge building, transportation, steel making, steam turbines, Du Pont Company activities and everyday life in Delaware and nearby Pennsylvania.

Daniel Muir, Curator of Pictorial Collections uses the brochure to explain the role of his department in providing "visual documentation for the study of economic, industrial, and technological history of the mid-Atlantic states."

Copies of the brochure may be obtained at the Library or by contacting the Pictorial Department.

Pictorial Collections



ELEUTHERIAN MILLS HISTORICAL LIBRARY

HAGLEY ASSOCIATES

(Con't. from p. 1)

in technical, economic and social history, we anticipate many future seasons that will involve learning experiences of fun and imagination as we present ourselves to the public. The enthusiasm of the Director and staff is a promising forecast for the success of the Hagley Associates."

**RESIDENCE OPEN
OCTOBER 1-31
and CHRISTMAS
DECEMBER 21-29
(EXCEPT 23 & 25)**

EXCAVATION OF HYDROELECTRIC PLANT COMPLETE

Hydroelectric Plant 1892



The archaeological dig conducted on the site of the Museum's Hydroelectric plant this summer under the direction of Staff Archaeologist James Akerman was completed in mid-August. Museum research and curatorial staff have ascertained 1892 as the construction date of the original "New Century Power House."

The site was deliberately filled between 1927 and 1936. Artifacts resurrected from the excavation include bottles from local breweries, a coal hopper, pieces of china and pottery, a child's toy truck and legs from a dry table used in the powder yards before 1820.

Although electricity was introduced into du Pont homes and mills as early as 1884, the power came from a dynamo and kerosene-powered steam engine. The electrical system was expanded and modernized with the building of the New Century plant containing water powered turbines. By 1892 all offices, plants, and the du Pont family homes on the property, those on Kirk Road and Kennett Pike, Winterthur, and St. Joseph's and Christ Churches were powered by the hydroelectric plant on the Brandywine. The plant was located at the edge of the river in a direct line downhill from the steam power plant.

Water power from the Brandywine



During excavation



It is hoped with today's emphasis on the conservation of energy and natural resources that the Museum and Foundation buildings may one day again be powered by the Hagley hydroelectric plant. Present plans are for the development of an operating exhibit within the structure and eventual reconstruction of the wooden second story.

NEW ADVISORY COMMITTEE MEMBERS

Three new members have been named to the Foundation Advisory Committee which met October 7-8. Mr. Silvio Bedini, Deputy Director, Museum of History and Technology, Smithsonian Institution; Dr. James J. Heslin, Director, The New-York Historical Society; Professor Thomas P. Hughes, Department of History and Sociology of Science, University of Pennsylvania.

FALL CONFERENCE FOCUSES ON FINANCING

On October 25, 1974, the Library will sponsor a conference entitled "Financing Business in the Nineteenth Century." Papers will be delivered by Daniel Hodas, former postgraduate Research Fellow, EM-HL, on "The Merchant as Financier: Financing America's Early Transportation System" and Julian Skaggs, Widener College, on "Lukens Steel: A Case Study of Internal Financing." Glenn Porter, Harvard University, will act as commentator and Herman Krooss, New York University, will serve as session chairman.

A report from the spring 1974 conference will be published in the near future. Its title: "The Engineer as an Agent of Technological Transfer: the 19th Century."

WHITAKER TEXTILE PLANT YIELDS VALUABLE MACHINERY

The Museum has received through Mr. R. Chase Whitaker an early milling machine, a paper cutter and other equipment from the disbanded William Whitaker and Sons Textile Plant in Philadelphia.

A boxed slide-valve steam engine of the 1850 to 1880 period was discovered in a basement room under six inches of reinforced concrete floor. The Museum curatorial staff removed the engine by cutting out a 4' X 10' section of floor.

The engine has been placed in one of the powder yard's engine houses once used to power the pack house and provide steam for two drying houses. It will be restored to operating condition this winter.

The Whitaker collection also includes trade catalogues, sample and technical books on textile weaving and equipment, and some early company records. Eventually the EM-HF will receive all company records of the Whitaker Plant.

NEW PUBLICATION

Brandywine Village by Carol Hoffecker (former EM-HF staff member) is a major new addition to the history of Wilmington. It is documented with original research, historical photographs and other illustrations. Published by Old Brandywine Village, Inc., the production was coordinated by the publications department of EM-HF.

ADDITIONS TO LIBRARY

- Small collection of books and periodicals on mushroom culture, a gift from the widow of G. Raymond Rettew, Jr., director of Chester County Mushroom Labs for many years. During World War II, Mr. Rettew worked on development of penicillin.

- Sun Oil Company Collection: 9800 items (1929-1951) on the Houdry Process Corporation papers — technical and administrative data on catalytic cracking method of obtaining gasoline from crude oil.

- George Atwell Richardson Collection. Approximately 1100 views of Bethlehem Steel industry operations, including mining, refining, fabrication and installation of products, plant facilities, worker housing and picnics.

HOLIDAY PICNIC ON THE BRANDYWINE

This summer St. Joseph's on the Brandywine Roman Catholic Church revived an old 4th of July tradition by holding a picnic on the Hagley Museum grounds. In the days when many church members were powdermen, their families would parade to the Brandywine after the morning service for their annual picnic.

Interest in reviving the tradition resulted from an illustrated talk given to church members early this year by Deputy Museum Director Joseph P. Monigle on the history of St. Joseph's.

Many of this year's participants wore 19th century costumes. Representative Pete du Pont was the after-picnic speaker.

ANNUAL REPORT MAILED

The illustrated 1973 Annual Report represents the second published report of the EM-HF. The feature article explores use of the Library and publications resulting from Library research. The report offers the usual financial statement and has been mailed to an expanded list of friends of the Foundation who are *Newsletter* recipients, persons interested in historical agencies, and government officials. Additional copies of all annual reports may be obtained by writing to the Foundation Public Relations Office.

FOUNDATION NEWS BRIEFS

Charles Brelford McCoy, son of John McCoy, first president of the Foundation Board of Trustees, elected to the Board . . . **Richmond Williams** (Library Director) elected president of the American Association for State and Local History at the annual meeting in Austin, Texas . . . **David Henry Krahel** (Manager, Museum Store) addressed AASLH meeting delegates on "The Sales Desk: Why Bother?" . . . **Eugene Ferguson** (Curator of Technology) rejoined EM-HF staff after a year's leave on special assignment with the Smithsonian Institution. He has a joint appointment with the University of Delaware as Professor of Technology . . . **Walter Heacock** (General Director) attended the annual meeting of the American Association of Museums, Fort Worth, Texas . . . **Thomas Cochran** rejoined the Foundation staff as Senior Resident Scholar . . . **Norman Wilkinson** (Director of Research) addressed joint meeting of the N.Y. State Historical Association and the Lake and Valley Garden Club at the Fenimore House, Coopers-town, N.Y. "Gardening: A du Pont Family Tradition" . . . **Jacqueline Hinsley** (Assistant Research Director) and **James Akerman** (Exhibits Laboratory Supervisor) spoke to a group of horticultural interns from the National Trust on garden research and archaeology and conducted a tour of the restored E. I. du Pont garden . . . **Jon Williams** attended seminars of American History, NYHSA, Coopers-town, N.Y. and gave his talk with music performance "Music on the Midway -

1893-1904." . . . New staff appointments: Nancy Venuto, Museum Manager/Coordinator School Programs . . . Libba Sevison, Public Relations.

NEH INTERNS BEGIN NEW PROGRAM

Mrs. Nancy Venuto, Coordinator of School Programs for the Museum, has announced the appointment of Susan Eleuterio and Lois Himmel as interns. The program is supported by the National Endowment for the Humanities, an independent federal agency whose purpose is to serve all areas and levels of humanistic study in the United States.

In consultation with Mrs. Venuto and other Museum Staff the interns will be responsible for planning and implementing of an educational program expressly designed to meet curriculum needs of inner city students utilizing the Hagley Museum facilities. The area of concentration will be grade level 5 consisting of 1200 students from the Wilmington Public Schools.



New staff members try out new electric car l. to r. Libba Sevison and Nancy Venuto



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THE HAGLEY MUSEUM, USA

By JOHN CORNFORTH

POWDER FOR PIONEERS

THE HAGLEY MUSEUM, USA—I *o* By JOHN CORNFORTH

The main theme of the Hagley Museum, near Wilmington, Delaware, is the early history of the Du Pont Company and industrial development along the Brandywine. This article is concerned with the history of the Company down to its founder's death in 1834; the museum will be described next week.



1.—THE ELEUTHERIAN MILLS IN 1806. Charles Dalmas's drawing shows the du Pont's house on the hill and the Brandywine

“I WILL stay a day at Wilmington to see the Brandywine”, wrote Eleuthère Irénée du Pont to his father in 1801. And from his perhaps intentionally casual remark has grown one of the most important companies in America and, what concerns us more here, one whose early history mirrors the development of the whole country. When E. I. du Pont was looking for a site for his projected gunpowder mill, he could not have envisaged the company's extraordinary expansion and diversification; nor could he have envisaged that the site he found on the Brandywine would be turned into one of the most stimulating museums in America. It might not be on the route of people intent on a tour of the great art museums of the east coast, who would think of Wilmington in terms of the Henry Francis du Pont

collection of American furniture and decorative art at Winterthur, but the loss would be theirs, for it provides a picture of industrial development that is vivid even to someone with a complete block about technological matters. The whole concept is almost overwhelming in its thoroughness and finish, for even museum feet are taken care of by rides through the woods in an open jitney car with a taped account of the history of Hagley geared to the speed of the vehicle.

E. I. du Pont's visit was, of course, crucial, but he was by no means the first to appreciate the industrial possibilities of the Brandywine valley. The Swedes and the Dutch settled there in the 17th century, but it was not until the 1720s that Samuel Kirk and other millers began to make full use of the waters of the Brandywine and to establish

the new town of Wilmington (founded 1735) as a centre of flour milling. The river, which rises in the Welsh mountains of Pennsylvania, was not only a marvellous source of power (it drops 125 ft. in its last five miles), but it was conveniently placed both for the grain growers in Chester County and for trade along the coast, and eventually across the world, for just below Wilmington the Brandywine joins the Delaware River and either Wilmington or the neighbouring town of Newcastle could be used by ocean-going ships. Other users of water power soon started to join the flour millers, and by the end of the century there were grist mills, forges, slitting mills, paper mills, fulling mills and even a snuff mill in the district. In addition, a cosmopolitan group of people had settled in Wilmington, among them Alexander Hamilton Rowan,



2.—THE BRANDYWINE AND THE HAGLEY DAM IN WINTER



3.—E. I. DU PONT'S HOUSE WITH THE FIRST OFFICE ON THE LEFT. The latter was the headquarters of the company from 1837 until 1892

the heir to Killyleagh (*COUNTRY LIFE*, March 19 and April 9, 1970), who started a calico mill. There was quite a strong French colony that included Col. Anne-Louis de Toussard and Pierre Bauduy, both of whom played significant roles in the early history of the company.

But it was largely chance, or rather a series of disasters, that brought the du Ponts from France to America in the first place. E. I.'s father, Pierre, was one of Louis XVI's senior administrators, and through his work he had come to know first Franklin and then Jefferson during the latter's term as ambassador to Louis XVI. The outbreak of the revolution soon brought an end to Pierre du Pont's official career and his salary, and he and E. I. then started a publishing house. In a series of pamphlets Pierre preached moderation and constitutional monarchy and he also organised a guard that was nearly wiped out in August, 1792, when the mob attacked the Tuileries. He went into hiding and was not arrested until July 1794, but he was released soon after the execution of Robespierre at the end of that month. Meanwhile E. I. had continued the business, and he maintained it for another year, until he and his father were both arrested and imprisoned, their newspaper suppressed and the presses destroyed by the police. It was only then that Pierre realised the hopelessness of his family's position in France and worked out a plan to found a new colony near the new capital at Washington, setting sail for America with the main party of his family in the autumn of 1799.

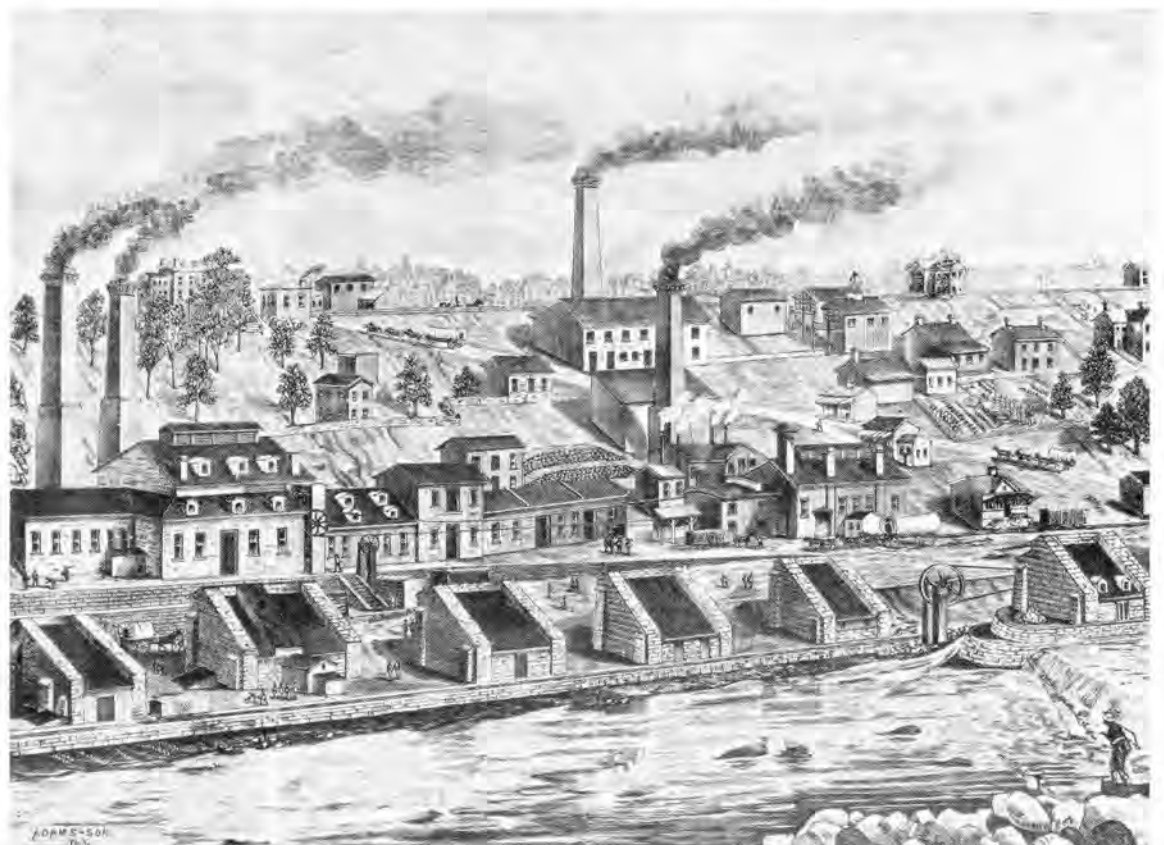
Once across the Atlantic the impossibility of the new scheme became obvious, and from New Jersey, where the family first settled, Pierre du Pont began to dabble in a series of impracticable projects while the family's remaining capital dwindled away. It was in this increasingly grim situation that E. I. thought he saw an opportunity for making use of his experience with the great French chemist, Lavoissier, who had run the government powder works at Essonne. Lavoissier had trained him to produce a gunpowder, or black powder as it was generally

called, that was of far higher quality than any made in America, and he himself had briefly managed a saltpetre refinery for the revolutionary government.

The idea of powder-making apparently came to him when he was with Col. Toussard, a French-born American artillery officer who had gone to America with Lafayette and was known to E. I.'s diplomat brother Victor; and it was Toussard who eventually showed him the Brandywine. But before E. I. was persuaded about a site there, he and Victor had to return to France early in 1801 to pursue their father's schemes as well as raise capital, buy machinery and find workmen for the black-powder enterprise. As far as plans, machines and men were concerned they got help from the French government, for their enterprise was seen as anti-English, and for capital they calculated they needed \$36,000 including 6,000 for a site, 6,000 for equipment bought in France, 1,000 for advances to workmen and 12,000 free capital. This was

raised in 18 shares of \$2,000: 11 were taken by the du Pont family, three by Frenchmen and the four kept for Americans by Archibald McCall, a Philadelphia merchant, and Pierre Bauduy. The aim was to pay 6 per cent interest plus a share of the profits, 18 parts being kept for the shareholders, 9 parts being allotted for the director's salary, and 3 parts being reserved for Colonel Toussard, who had no capital to invest but whose advice and good-will was vital.

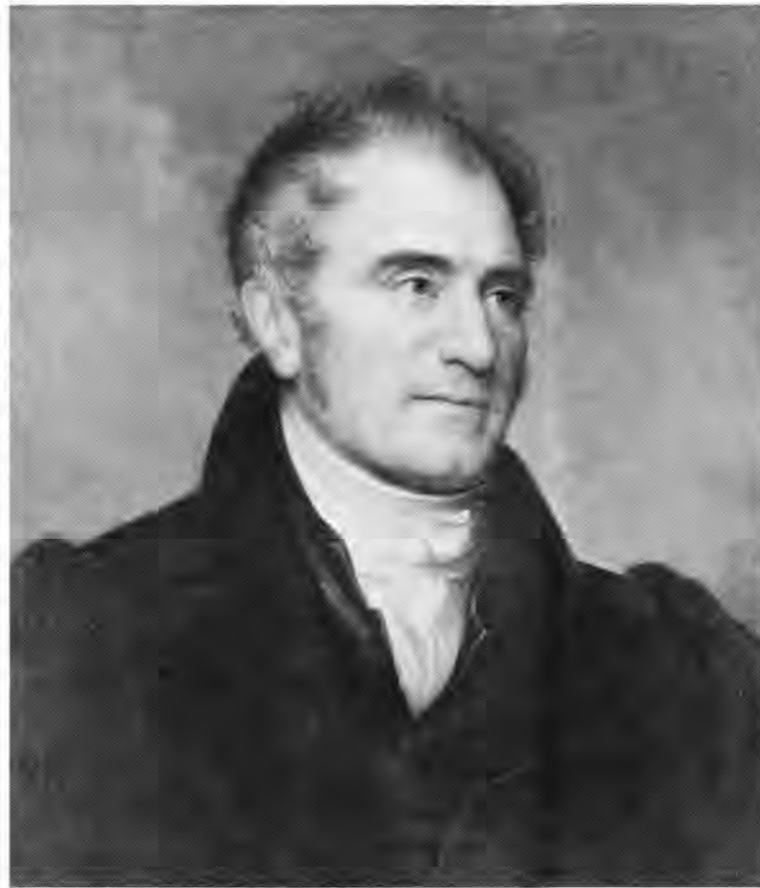
When the brothers returned from France in July, 1801, the company had been formed but no site found. Both Toussard and Bauduy supported the idea of the Brandywine, where there were not only the advantages appreciated by the millers but willow for charcoal; and finally, in April, 1802 E. I. du Pont was able to buy 95 acres that had originally formed part of a plantation but had had a mill built on it soon after 1794. Although this had been burnt in 1797, the dam remained and there was not only plenty of space for buildings,



4.—AN IMPRESSION OF THE POWDER MILLS IN 1831

but the site was well away from Wilmington itself, both important considerations in view of the danger of explosions. At first the new enterprise was called the Lavoisier Mills, but soon it was changed to the Eleutherian Mills. The name Hagley derives from a farm called after the Worcestershire seat of the Lyttletons, and this E. I. added to his property in 1813; the separate name, however, continued in use, and it is because the museum building, to be described next week, is on the Hagley site, that it is so called today, the two names being joined in that of the controlling Eleutherian-Mills Hagley Foundation.

Construction began in 1802, and in the following February E. I. wrote to his father: "We have accomplished an astonishing amount of work since August, but I am dismayed when I think what is still before us. Within three months we have built a large house and barn of stone and a greater part of the refinery; we have repaired the water-course and the sawmill in which we prepare the wood for our framework, and a part of that used for the machines. This month we have still to build three mills and one or two other buildings; to dig a new race for one of the mills; to make the drying place, the magazine, the workmen's quarters. It is evident we cannot make powder before autumn". In the end the first powder was not produced until 1804, and then it came in five sizes: for cannons, muskets, F for large guns, FF for small calibre and double barrelled guns, and FFF for rifles. The scale of the mills at that time can be gathered from a drawing (Fig. 1) done in 1806 by Charles Dalmas, E. I.'s brother-in-law. By far the largest building is the du Pont's own house, allegedly designed by Bauduy, who also designed Wilmington Town Hall. Dalmas shows the back of it with its double portico from which the whole plant could be seen, and the front as it is today, a delightful synthesis of the



5.—E. I. DU PONT IN 1831. A copy of the portrait by Peale

American and French traditions, is shown in Fig. 3. Much of its present character is due to its restoration by the late Mrs. Francis B. Crowninshield, the founder's great-granddaughter, who was given the property by her father after the mill closed in 1921 and who in her turn offered it as an historical site in 1952.

Close by the house is a small stone building that was the headquarters of the company from 1837 until 1892 and used by E. I.'s son, Henry, who ran the company without the aid of a secretary from 1850 to 1889. It has been restored in recent years and like the house is now regularly open to visitors.

E. I. du Pont was not just an intelligent

chemist but from the beginning realised what a formidable task he had set himself and how vital was the support of the American government. Hence the share of the profits paid to Toussard, for soon after 1800 he became Inspector of Artillery and, as du Pont wrote to one of the French backers, he "promises to keep us provided with Government salt-petre and to order the Government powder from us. . . ." A few years later E. I. was thinking on the same lines, for he asked for the same three shares of the profits to be held in reserve "to be given to certain persons who had much influence with President Adams and his Secretary, a kind of influence that was unnecessary with the upright Jefferson."

Towards the end of 1804 Jefferson had said to him in a letter: "It is with real pleasure that I inform you that it is concluded to be for the public interest to apply to your establishment for whatever can be had from that for the use of either the naval or military department. The present is for your private information; you will know it officially by applications from those departments whenever their wants may call for them". And they were very considerable: out of the 38,525 lb. produced the first year, 35,000 were taken by the government; in 1805 they took 67,200 out of 152,000; and by 1809 they had bought 421,050 lb. in all.

War or the threat of war, whether in Europe or America, was always good for the powder trade, for if it was in the former it meant lack of competition from foreign manufacturers, and if it was in America, as in 1812 when there was war with England, there was greatly increased demand. But it was not wholly profitable, because increased demand meant expansion and extra investment, while at the same time there was pressure from Bauduy and the French stockholders to liquidate. For over 30 years E. I. walked a tight-rope that a weaker man would have stepped off: he bought out Bauduy and the French investors; he carried his brother Victor, who was no business man; and he withstood the appalling losses in life and money that explosions entailed. In 1815 nine men were killed and \$20,000 worth of damage done; in 1817 his father died as a result of fire fighting; and in 1818 36 men were killed. No wonder that he reckoned over all losses of \$200,000 in the years 1817-19.

Despite these disasters the du Pont graphs went up. The value of the original shares more than quadrupled in the first 11 years. Production continued to increase and by 1827 140 men were employed and 800,000 lb. of powder made annually. Such results could not be sustained purely by war, and it was the conquest of America that was the real making of the company. Powder was used in every aspect of pioneering; for roads and later railways, for clearing sites for houses, towns and farms as well as for the lives depicted in modern Westerns. It is a stirring story and, as will be seen next week, at the Hagley Museum, it is told in a stirring way.

Illustrations: Hagley Museum.

INTERPRETING INDUSTRIAL HISTORY

THE HAGLEY MUSEUM, USA—II ◊ By JOHN CORNFORTH

This second article on the Hagley Museum, near Wilmington, Delaware, concentrates on the way in which the history of the Brandywine River and the Du Pont Company is presented to visitors. It is a scheme of particular interest in view of the recent report from the British Standing Commission on Museums and Galleries on the preservation of technological material.



1.—AN AERIAL VIEW OF THE HENRY CLAY COTTON MILL AND THE RIVER. The mill is now the museum building

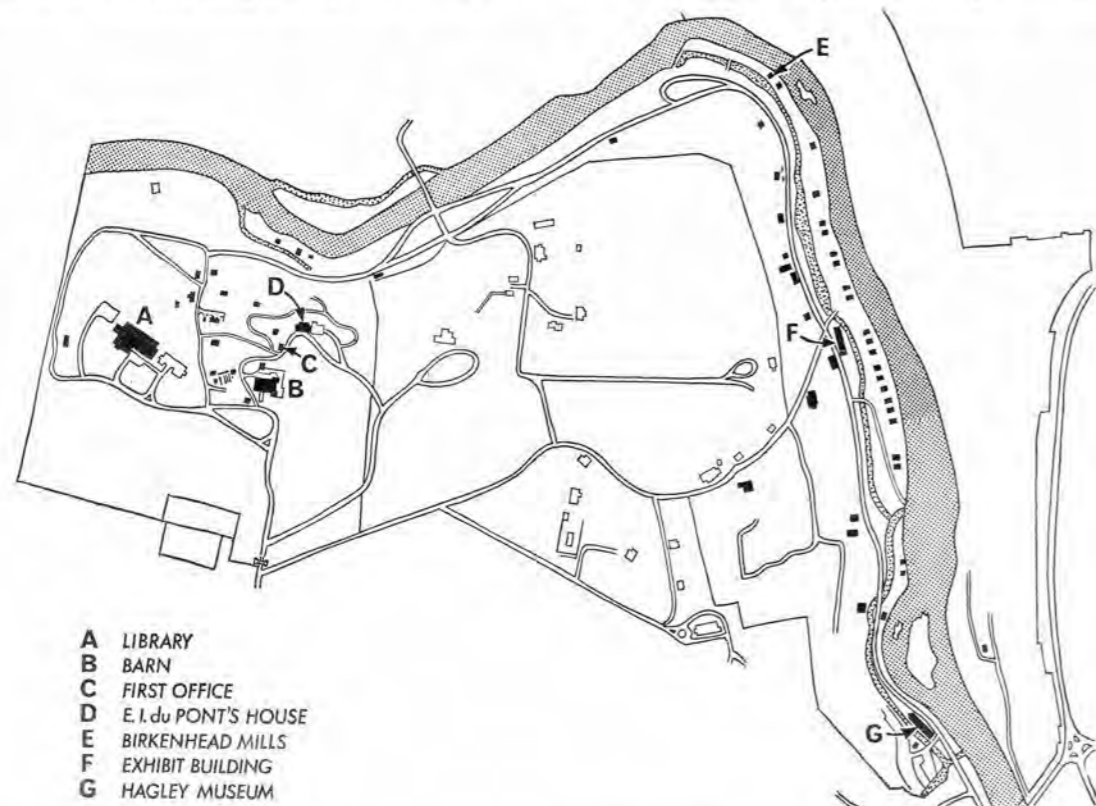
IN 1776 there were 13 states; in 1840, 26; in 1900, 45; and the Stars and Stripes only numbered 48 in 1912. In 1620 it took 67 days to cross the Atlantic; in 1920, 7. In 1776 the population stood at 4 million; 150 years later it was 105 million. And in the sphere of industrial expansion, 14½ million tons of iron were produced in 1810, 96 million in 1860 and 804 million in 1900. Such are the basic facts about the development of America about which many American

visitors to the Hagley Museum are probably a little shaky and about which most foreign visitors are likely to be woefully ignorant. But in a 10-minute display in the main museum building that includes three screens and narrative and other sound effects all are treated to a potted visual history of America from 1776 to 1920: statistics on politics, population, industrial production, transport and communications are all combined together to demonstrate how a 1,000

years of progress have been accomplished in 150. The brilliant simplicity of the message is based on an exceedingly complex piece of equipment that took two years to devise and construct, and if it is the star turn of the museum display, it also epitomises the great care and skill lavished on creating a balance between preservation, reconstruction and interpretation at Hagley.

The opportunity was provided by Mrs. Francis B. Crowninshield in 1952, when she offered the old du Pont family house and surrounding land as a historical site after the 150th anniversary celebrations of the Du Pont Co. The Company came forward with an offer of 6 million dollars as endowment, and the Eleutherian-Mills Hagley Foundation was set up to create and manage an industrial museum. The first part of the site was opened in 1957, a year before Mrs. Crowninshield's death.

One of the great problems that faced the Foundation from the start is that powder-making is only a visually dramatic industry when something goes disastrously wrong: the buildings are fairly small and scattered and intentionally not completely solid. Indeed, most of those on the Hagley site had been damaged at some time by explosions, and parts of E. I. du Pont's earliest mill had been swept away in the years after 1821 when Mr. and Mrs. Crowninshield were making an elaborate garden running down the hillside from the house to the river. A great deal of explanation



6.—PLAN OF THE HAGLEY SITE



2.—THE "TALKING" MAP OF THE BRANDYWINE IN THE MUSEUM BUILDING

was necessary if E. I. du Pont's achievement was to be intelligible to a public unversed in industrial archaeology: models, dioramas, and the combined effects of film, sound and light all needed to be employed in order to create a picture of industrial development along the Brandywine and to show the processes of powder-making. Research had to be carried out on the ground and in archives, and, as we shall see, the research programme has continued to play a major role in the development of the Foundation. It needed to be a museum that told a story, and that it does supremely well.

The tour begins at the Henry Clay cotton mill (Fig. 1), originally built for cotton spinning about 1814-15 and altered to its present form probably in the 1860s after various commercial ups and downs. Glimpses of other mills along the river that are gained from the approach road show that Hagley is part of a larger early industrial landscape, and prepare the visitor for two of the largest display elements on the site, both housed in the Clay mill. This has been completely gutted, and within the old shell have been constructed three floors: one devoted to the Brandywine, one to the development of American industry in general; and the top one to a temporary exhibition space. The Brandywine is intro-



3.—PART OF A DIORAMA OF POWDER MAKING IN THE EXHIBIT BUILDING. This shows the refining of saltpetre in progress

duced in the form of a large relief map tracing its course from the mountains to the Delaware river (Fig. 2); at the press of a switch it disappears in darkness to be revealed by a series of circuits of light and tapes that explain its history from the arrival of the Swedes in the 17th century to the high point of Wilmington's prosperity as a milling centre about 1815. Then follow a series of models and dioramas that include a working model of the completely automatic flour mill that was designed by Oliver Evans who was born in Wilmington in 1755. Another shows the

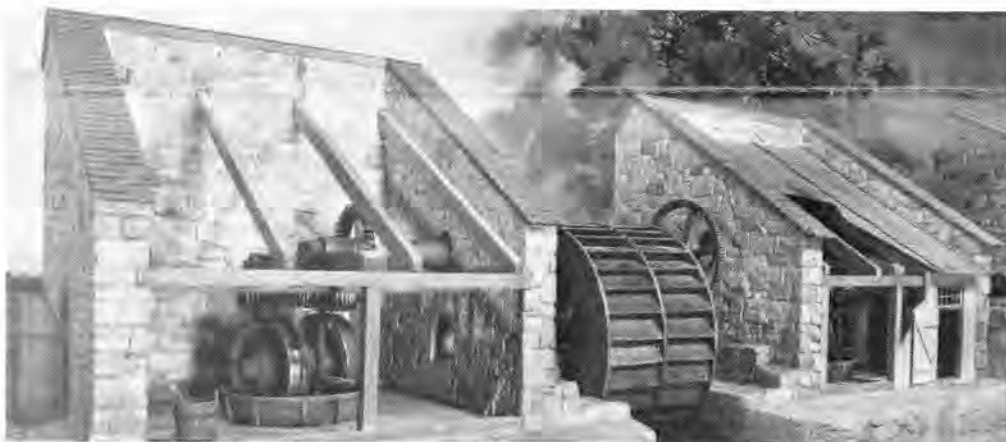
differences between the overshot, undershot and breast wheels and how their design was related to the normal water pressure. This kind of display is particularly valuable because it makes static relics in the landscape intelligible.

From the water wheel one passes on to the invention of the water turbine in the 1820s and its adoption on the Brandywine in the 1840s. Then follows the first chapter of the history of the Du Pont Company, which was described last week.

The evolution of American industry on the floor above includes the conquest of America described at the beginning of this article, and an exposition of why the demand for powder increased in the way it did. It also shows how industrial organisations have developed, how concepts of management have evolved, how the unions were created and how the lives of industrial workers have improved since the 19th century. It may come as a surprise to find this section at all, but it is indicative of the strong historical feeling running through the whole project that these aspects are tackled, and its inclusion shows how closely the concept of the museum is related to changes in historiography. It also helps to counteract the romantic gloss that it is all too easy to give such a project, particularly when it is set in such a picturesque landscape and has been so carefully planted over past decades to give the appearance of private pleasure grounds and gardens.

The views of the river, of the dams and of the flumes planted up with shrubs and specimen trees add greatly to the pleasure of a visit to Hagley and is a continuation of the early-19th-century enthusiasm for the beauties of the Brandywine. But the noise and the waste should not be entirely forgotten, even if the mills never looked quite as satanic as they did in the 19th-century woodcut illustrated last week.

The first leg of the jitney ride from the museum building takes one past the remains of various stone buildings between the flume and the river, but their purpose only becomes clear when the Exhibit Building is reached. Here the old machine shop has been gutted to make way for a display devoted to powder making, which includes the two models shown in Figs. 3 and 4. The diorama of the refinery (Fig. 3) shows the first stage in which the sulphur and saltpetre were purified: the crude saltpetre was boiled in the round iron kettles, the unwanted salts dropping to the bottom and the impurities floating to the top, where they could be skimmed off. From the kettles the solution was transferred to the rectangular cooling vats, where it crystallised. The next stage was to crush the two ingredients between mill stones, and then they were sifted before being mixed in the rolling mill.



4.—MODEL OF A PAIR OF ROLLING MILLS. This shows how the water which was used to drive the mills mixed the powder. (Below) 5.—THE BIRKENHEAD MILLS BUILT IN 1822-24 AND NOW PARTLY RESTORED. The idea of the three stout stone walls and a light roof and fourth wall was that the wall would blow out over the river if there was an explosion



The process of mixing is shown in Fig. 4: here charges of 300-600 lb. consisting of 10 per cent sulphur, 75 per cent saltpetre and 15 per cent charcoal were mixed by hand and then incorporated for 3 to 8 hours. Cast-iron wheels for a rolling mill were introduced at Hagley in 1822, and the model shows one of the Birkenhead mills that were built between the two earlier sites that year. There was always the risk of an explosion at this stage, and so water had to be added to cool the charges, and it was because of the risk that the mills were built with three stout stone walls and completed with a light roof and fourth wall that would blow out over the river (Fig. 5).

When one has seen the model (Fig. 4) in the Exhibition Building the remains of the Birkenhead rolling mills (Fig. 5) further up stream become intelligible. In one half the machinery has been restored and the roof put on, but the restoration has only been carried so far that the process becomes clear after a visit to the Exhibit Building.

The jitney ride then continues up to the original area of the Eleutherian Mill and to the house, the first office and the barn. Here one gets a sense of the agricultural background to much early industry. E. I. du Pont was a farmer as well as an entrepreneur, and from the start there was a duality about the enterprise. In the photograph of the barn (Fig. 6) a Conestoga wagon is shown outside; originally developed in the 1740s and '50s, they could carry 100 to 112 casks of powder and needed six horses to draw them. The casks were made on the place, and so a cooper's shop (Fig. 7) has been fitted up on the lower floor of the barn; here are all the tools and materials used in the trade; but not content with this, the shop goes dark at the press of a switch, the back wall turns out to be a screen of theatrical scrim and a short film on coopering is shown.



6.—A CONESTOGA WAGON OUTSIDE THE BARN. These wagons, drawn by six horses, could carry 100 to 112 casks of powder

Near by is the Eleutherian Mills Historical Library, which is not on the visitors' route, but is as important to the Foundation as the museum itself. The emphasis is on American economic, industrial, business and technological history and, as well as a library of some 80,000 books, there is an archive that includes not only all the du Pont records from 1802 to 1915 but a great deal of documentary material relating to other firms. Originally formed by Pierre S. du Pont, who also created the Longwood Gardens, it was brought from Longwood to Hagley when the new library building was completed in 1961. Since then it has developed a programme that leads to history degrees given by the University of Delaware and has started on an ambitious programme of publications.

Whether one is interested in history or the concept of museums, Hagley is a fascinating place, and at a time when British ideas

on the range and role of museums is developing so rapidly there seems particular point in drawing attention to it. Even though no project here is ever likely to be so well endowed, there are many specific lessons to be learnt from it quite apart from the general encouragement that it offers to those who are trying to create industrial museums in this country. Except for the admirable Pilkington Glass Museum at St. Helens in Lancashire, the possibilities of this kind of museum have scarcely been seen by the British public, although interesting work is going ahead at Coalbrookdale in Shropshire and Beamish in Co. Durham, to name but two sites. And if more money were available, more could be done.

In their recent report on the preservation of technological material the Standing Commission on Museums and Galleries have recommended an annual grant-in-aid of £200,000 to be used to help with the purchase and removal of material and they have also asked for funds for capital works to be increased. Both are admirable ideas, but the sum seems very modest, considering the huge scale of some of the most worthwhile sites and projects.

One lesson that might be learnt from Hagley is its dual use as a museum and research centre. The two parts complement each other and give the whole place an intellectual vitality that is most stimulating, as well as solving the purely practical problem of coping with the bulk of industrial archives. Our county record offices are admirable institutions, but they are invariably short of space, and it is perhaps worth exploring the possibility of a similar kind of dual use at certain sites outside some of our large industrial cities.

Enthusiasm for industrial archaeology and for the concept of preserving historic industrial monuments and sites has caught on quickly in Britain, but it seems that so far few companies have been infected by it, probably because they have had little or no experience of what a positive place a museum can be. Perhaps some of those who have never considered the history of their own companies in a Hagley light could take a day off from their next trip to New York or Washington and, like E. I. du Pont in 1801, stay a day at Wilmington to see the Brandywine.

Illustrations: Hagley Museum.



7.—THE COOPER'S SHOP. Here visitors can see a film on coopering thrown on the screen wall at the back of the shop

1. FEDERAL ASSISTANCE	2. APPLICANT'S APPLICATION	a. NUMBER b. DATE Year month day 19 77 7 27	3. STATE APPLICATION IDENTIFIER a. NUMBER 76061503 b. DATE ASSIGNED Year month day 1976 6 15
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4. LEGAL APPLICANT/RECIPIENT a. Applicant Name : State of Del., Dept. of State. b. Organization Unit : Div. of Historical & Cultural Affairs c. Street/P.O. Box : Hall of Records d. City : Dover County : Kent e. State : Delaware ZIP Code: 19901 f. Contact Person (Name & telephone No.): Lawrence C. Henry (302) 678-5314	5. FEDERAL EMPLOYER IDENTIFICATION NO.: 516-000-279 6. PRO-GRAM (From Federal Catalog) a. NUMBER : 1151904 b. TITLE : Historic Preservation
---	---

7. TITLE AND DESCRIPTION OF APPLICANT'S PROJECT Matching grant-in-aid for the Eleutherian Mills; Gaining Mill Development Project, Phase I. New Castle County Source of non-federal match: private funds and donated services of the property owner, the Eleutherian Mills - Hagley Foundation.	8. TYPE OF APPLICANT/RECIPIENT A-State B-Interstate C-Substate District E-City F-School District G-Special Purpose District H-Community Action Agency I-Higher Educational Institution J-Indian Tribe K-Other (Specify): Enter appropriate letter <input checked="" type="checkbox"/> A
9. TYPE OF ASSISTANCE A-Basic Grant B-Supplemental Grant C-Loan D-Insurance E-Other Enter appropriate letter(s) <input checked="" type="checkbox"/> A	

10. AREA OF PROJECT IMPACT (Names of cities, counties, States, etc.) State of Delaware	11. ESTIMATED NUMBER OF PERSONS BENEFITING 600,000	12. TYPE OF APPLICATION A-New B-Renewal C-Revision D-Continuation E-Augmentation Enter appropriate letter <input checked="" type="checkbox"/> D												
13. PROPOSED FUNDING <table border="1" style="width:100%; border-collapse: collapse;"> <tr><td>a. FEDERAL \$</td><td>1,850.00</td></tr> <tr><td>b. APPLICANT</td><td>1,850.00</td></tr> <tr><td>c. STATE</td><td>.00</td></tr> <tr><td>d. LOCAL</td><td>.00</td></tr> <tr><td>e. OTHER</td><td>.00</td></tr> <tr><td>f. TOTAL \$</td><td>3,700.00</td></tr> </table>	a. FEDERAL \$	1,850.00	b. APPLICANT	1,850.00	c. STATE	.00	d. LOCAL	.00	e. OTHER	.00	f. TOTAL \$	3,700.00	14. CONGRESSIONAL DISTRICTS OF: a. APPLICANT : One b. PROJECT : One	15. TYPE OF CHANGE (For ISO or IIS) A-Increase Dollars B-Decrease Dollars C-Increase Duration D-Decrease Duration E-Cancellation F-Other (Specify): Enter appropriate letter(s) <input type="checkbox"/> T
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b. APPLICANT	1,850.00													
c. STATE	.00													
d. LOCAL	.00													
e. OTHER	.00													
f. TOTAL \$	3,700.00													
16. PROJECT START DATE Year month day 19 77 7 27		17. PROJECT DURATION Months 36												
18. ESTIMATED DATE TO BE SUBMITTED TO FEDERAL AGENCY Year month day 19 77 7 27		19. EXISTING FEDERAL IDENTIFICATION NUMBER 10-77-00073-00												

20. FEDERAL AGENCY TO RECEIVE REQUEST (Name, City, State, ZIP code) National Park Service, OAHF, Washington, D.C. 20240	21. REMARKS ADDED <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
---	---

22. THE APPLICANT CERTIFIES THAT:	a. To the best of my knowledge and belief, data in this preapplication/application are true and correct, the document has been duly authorized by the governing body of the applicant and the applicant will comply with the attached assurance if the assistance is approved.	h. If required by OMB Circular A-35 this application was submitted pursuant to its instructions therein, to appropriate clearinghouses and all responses are attached: None: <input type="checkbox"/>	Response attached <input checked="" type="checkbox"/>
(1) Delaware State Planning Office <input type="checkbox"/> (2) WILMAPCO <input type="checkbox"/> (3) <input type="checkbox"/>		<input checked="" type="checkbox"/>	

23. CERTIFYING REPRESENTATIVE a. TYPED NAME AND TITLE Lawrence C. Henry, Director State Historic Preservation Office	b. SIGNATURE 	c. DATE SIGNED Year month day 1977 7 27
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24. AGENCY NAME Department of the Interior	25. APPLICATION RECEIVED Year month day 1977 07 28
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26. ORGANIZATIONAL UNIT National Park Service	27. ADMINISTRATIVE OFFICE Grants Administration Div	28. FEDERAL APPLICATION IDENTIFICATION
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29. ADDRESS 18th and C Streets NW, Washington, D.C. 20240	30. FEDERAL GRANT IDENTIFICATION 10-77-00073-00
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31. ACTION TAKEN <input checked="" type="checkbox"/> a. AWARDED <input type="checkbox"/> b. REJECTED <input type="checkbox"/> c. RETURNED FOR AMENDMENT <input type="checkbox"/> d. DEFERRED <input checked="" type="checkbox"/> e. WITHDRAWN	32. FUNDING <table border="1" style="width:100%; border-collapse: collapse;"> <tr><td>a. FEDERAL \$</td><td>1,850.00</td></tr> <tr><td>b. APPLICANT</td><td>1,850.00</td></tr> <tr><td>c. STATE</td><td>.00</td></tr> <tr><td>d. LOCAL</td><td>.00</td></tr> <tr><td>e. OTHER</td><td>.00</td></tr> <tr><td>f. TOTAL \$</td><td>3,700.00</td></tr> </table>	a. FEDERAL \$	1,850.00	b. APPLICANT	1,850.00	c. STATE	.00	d. LOCAL	.00	e. OTHER	.00	f. TOTAL \$	3,700.00	33. ACTION DATE Year month day 19 77 09 09	34. STARTING DATE Year month day 1977 09 09	35. CONTACT FOR ADDITIONAL INFORMATION (Name and telephone number) Stephen D. Newman 202 523-5472	36. ENDING DATE Year month day 1980 09 08	37. REMARKS ADDED <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
a. FEDERAL \$	1,850.00																	
b. APPLICANT	1,850.00																	
c. STATE	.00																	
d. LOCAL	.00																	
e. OTHER	.00																	
f. TOTAL \$	3,700.00																	

38. FEDERAL AGENCY A-95 ACTION a. In taking above action, any comments received from clearinghouses were considered. If agency response is due under provisions of Part 1, OMB Circular A-35; it has been or is being made.	b. FEDERAL AGENCY A-95 OFFICIAL (Name and telephone no.): same as #35
---	--

SECTION I - APPLICANT/RECIPIENT DATA

SECTION II - CERTIFICATION

SECTION III - FEDERAL AGENCY ACTION

Source of match in proposed funding section (13-b) is a non-profit corporation:

Ev Lutheran Mills Hagley Foundation
Greenville
Wilmington, Delaware 19807

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Black Powder Exhibit Building: This restored 1858 machine shop, located on the Hagley Museum property near Wilmington, Delaware, houses a series of working models illustrating the steps in the manufacture of black powder.

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Hagley Museum, Wilmington, Delaware: "Eleutherian Mills" overlooks the former du Pont powder manufactory on the Brandywine. The center section was constructed in 1803 by E. I. du Pont; the wings were added in the mid-nineteenth century.

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HAGLEY MUSEUM, Wilmington, Delaware

The 185-acre property of the Museum includes the original Du Pont black powder manufactory on the Brandywine, and this 1814 textile mill, which contains exhibits on early American industry.

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Hagley Museum, Wilmington, Delaware: Bass Otis, America's first lithographer, painted this view of Eleutherian Mills, the black powder manufactory established on the Brandywine by E. I. du Pont in 1802, as it appeared about 1840.

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Hagley Museum, Wilmington, Delaware

Among early industries practiced along the Brandywine was the tanning of leather. The process is explained by this diorama in the Museum.

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HAGLEY MUSEUM, Wilmington, Delaware

This exhibit portrays one of the many uses of black powder in early America. George Washington watches as work progresses on the Potomac River Canal in 1785.

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the HAGLEY MUSEUM



HISTORIC



ELEUTHERIAN MILLS-HAGLEY FOUNDATION
WILMINGTON, DELAWARE

Sesquicentennial Monument at Eleutherian Mills

BRANDYWINE INDUSTRY



On the 18th of July, 1802 Eleuthère Irénée du Pont, powder maker and emigrant from France, settled his family in a small house on the Brandywine, four miles from Wilmington, Delaware. The property which he had selected had already been partially developed as an industrial site, for the Brandywine's water power had been attracting millers for more than a century.

Before 1690 crude dams of Swedish grist mills had first harnessed this power. All during the 18th and early 19th centuries saw mills, grist mills, slitting mills, paper mills, snuff mills, textile mills, and many others elbowed for room along the sixty-mile length of the Brandywine.

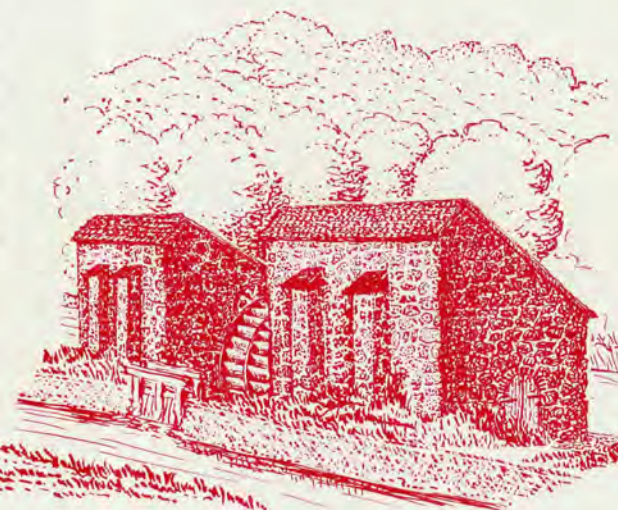
Two years after du Pont's arrival the first kegs of black powder were shipped from "Eleutherian Mills", which was expanded during the War of 1812 to include the adjacent Hagley area. For 117 years these mills on the Brandywine supplied much of the nation's needs for explosives in peace and war.

Desirous of preserving the industrial tradition of this historic area, members of the du Pont family at the time of the 150th anniversary, contributed 165 acres of the original powder mill property to an educational foundation created for that purpose.

Further endowed by E. I. du Pont de Nemours and Company, the Eleutherian Mills-Hagley Foundation began its activities in 1952.



FIRST DU PONT OFFICE



BLACK POWDER MILLS

SITE OF ELEUTHERIAN MILLS 1802

IRON BRIDGE

BIRKENHEAD MILLS
1822 - 24

The Hagley Museum is devoted to the industrial history of the United States. Concentrating on the Brandywine Valley, its exhibits are designed to show how the diversity of mills which drew their power from this small river in Colonial and early Federal periods epitomized the beginnings of industry throughout the nation.

In this context of early Brandywine industry the story of the founding and growth of the du Pont Company is related.

The museum building was constructed in 1814 as a textile mill by a group of five businessmen headed by E. I. du Pont. In 1884 it was converted to the manufacture of metal kegs for the adjacent powder yards, and served in this capacity as the "Henry Clay Keg Factory" until the powder works closed in 1921. For museum usage the interior was completely rebuilt, and the exterior brought into architectural conformity with its original appearance.



BLACK POWDER



The powder mills which E. I. du Pont founded on the Brandywine were the continuation of a 500-year-old industry. The Chinese are credited with the invention of gunpowder, but a 13th century English friar, Roger Bacon, first wrote down the formula for the explosive mixture.

America's first powder mill began its operation in Milton, Massachusetts, in 1675. It was small and primitive as were the scores of succeeding powder mills in other parts of the colonies.

From the beginning the du Pont mills represented the best experience of European



powder makers and were superior in design and in product to other American powder factories.

The three ingredients – saltpeter from India, sulphur from Italy, and charcoal from local willow branches – were first incorporated by batteries of mortars and pestles which were soon replaced in du Pont's mills by ponderous cast iron roll wheels. Next the mixture, already dangerously explosive, was pressed into cakes which were sent to a graining or corning mill to be broken into pellets of desired size. As a final step the grains of powder were sent to a glazing mill where they were coated with graphite, before being packed in canisters or kegs for shipment.



From these mills came much of the powder used in early 19th century canal building, mining, the opening of the West, and in the nation's wars.



EAGLE GLAZE MILL



DIRECTIONS

From Wilmington via 11th Street to Delaware Avenue; Delaware Avenue to Pennsylvania Avenue (Route 52, the Kennett Pike). Route 52 to Barley Mill Road. Right on Barley Mill Road (Route 141). Cross Route 100. One-tenth mile beyond this intersection bear left onto black top road, leading down to Brandywine Creek and turn left to the entrance gates of the Museum.

Visitors approaching via Route 1 should turn south onto Route 52 (the Kennett Pike) at Hamorton, Pa., and proceed to Barley Mill Road (Route 141), just beyond Greenville, Delaware. Left on Barley Mill Road. Cross Route 100. One-tenth mile beyond this intersection bear left onto black top road leading down to Brandywine Creek and turn left to the entrance gates of the Museum.

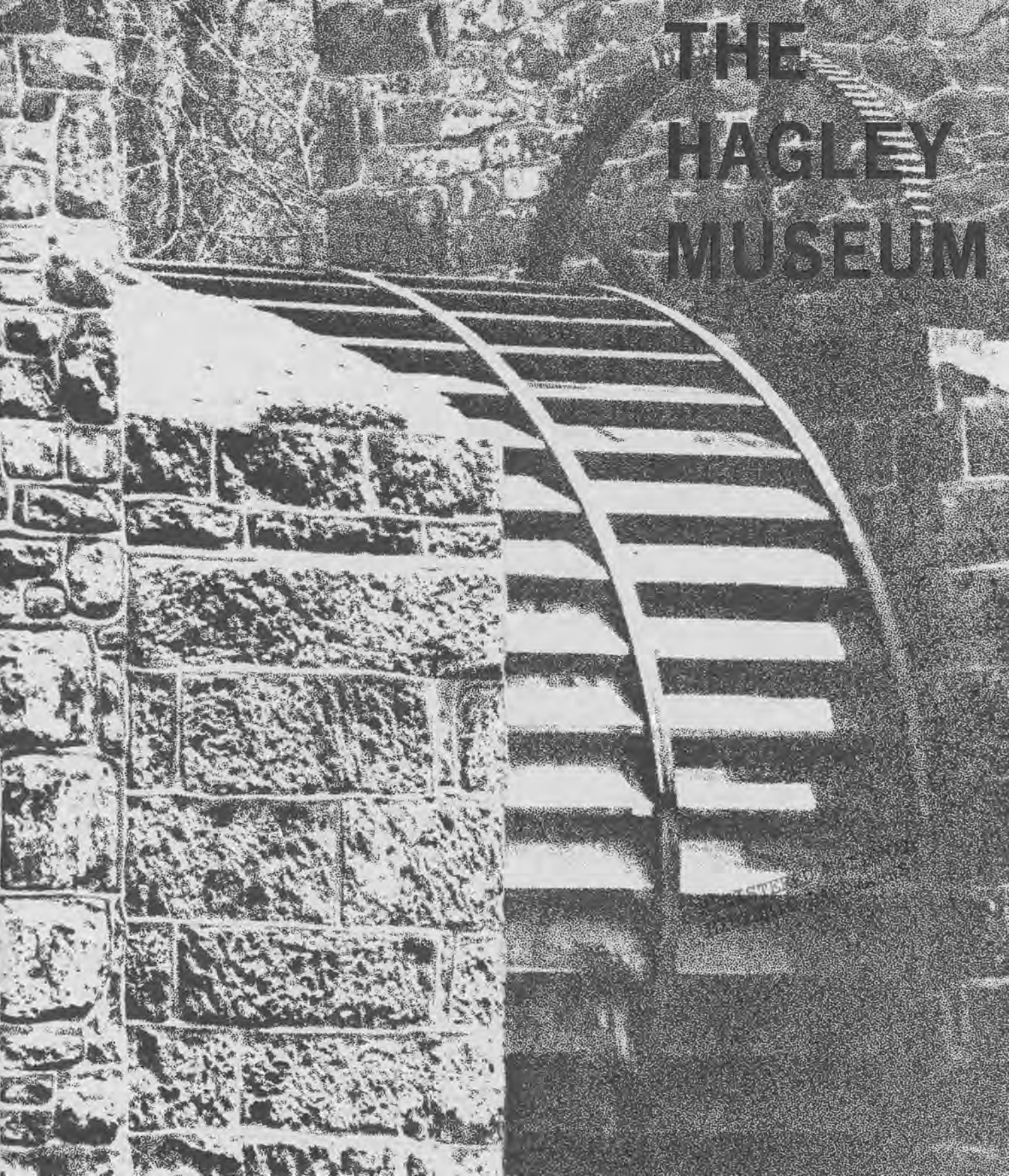
Visitors approaching via Route 202 should turn west onto New Bridge Road (Route 141) near Fairfax Shopping Center. Follow Route 141; cross Tyler McConnell Bridge over the Brandywine; turn sharp right onto black top road one-tenth mile beyond bridge and proceed down this road to Brandywine Creek and turn left to the entrance gates of the Museum.


Schedule of local buses which pass the entrance gates of the Museum may be obtained from the Delaware Coach Company.

Closed on Mondays

Admission is free.

THE HAGLEY MUSEUM





The Brandywine was an important mill-stream from earliest colonial times. During the 18th and 19th centuries saw mills, grist mills, slitting mills, paper mills, snuff mills, and textile mills were built along its 60-mile length. □ By the beginning of the American Revolution Wilmington had become the leading flour-milling town of the colonies. Diligent Quaker millers combined water power, ample raw materials, and available capital into a highly successful enterprise. □ In 1802 a new family and a new industry arrived on the Brandywine: E. I. du Pont, powder maker and immigrant from France, settled his family on their property at "Eleutherian Mills." The Du Pont mills represented the best experience of European powder makers and were superior to other American powder manufactories. □ From these mills came much of the explosives used in canal building, mining, the opening of the West, and in the nation's wars. The powder manufactory prospered from the beginning, and soon became the largest in America.





In 1814 E. I. du Pont and several associates built the Hagley Cotton Mill on land purchased the year before to expand his powder manufactory. From 1817 to 1823 the top floor housed the Brandywine Manufacturers' Sunday School where workers' children received religious and secular instruction. In 1884 the mill was converted to the manufacture of metal powder kegs, and continued in this role until the powder yards closed in 1921. As a result of several fires and decades of hard use, the building required extensive reconstruction for museum use.



Models in the Black Powder Exhibit show how saltpeter from India, sulphur from Sicily, and charcoal processed from local willow trees were first incorporated by batteries of mortars and pestles; or, after the 1820's, by ponderous cast-iron roll wheels. After the incorporation, the mixture, now a dangerously explosive "powder cake," was pressed to give it density, then broken into pieces. Next, it was sent to a corning mill for screening to grain size, then dried, glazed with graphite, and packed into kegs and canisters for shipment.



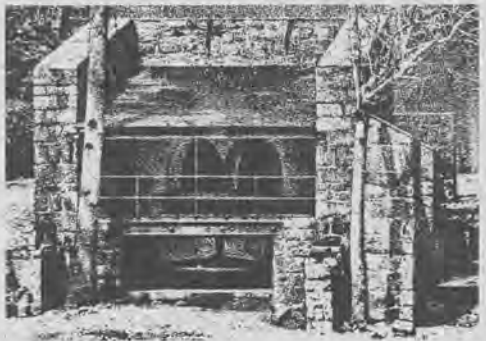
The Hagley Museum exhibits are devoted to the industrial history of the United States. Dioramas and models on the first floor tell how the diversity of mills which drew their power from the Brandywine in colonial and early federal periods epitomized the beginnings of industry throughout the nation. The Museum's second floor exhibits trace the evolution of American industry through the latter half of the 19th and early decades of the 20th century. In this context the story of the founding and growth of the Du Pont Company is related.



As the Du Pont powder yards along the Brandywine grew rapidly to become the largest in the nation, supporting operations were continually enlarged. In 1858 a sizeable, vault-roofed machine shop for construction and repair of powder-making machinery was erected between the main road and the raceway in Hagley. The exterior of this granite building has been restored to its original appearance. The interior now houses a series of working models and dioramas demonstrating the successive steps in the manufacture of black powder.



Late in the summer of 1803 Eleuthère Irénée du Pont moved his wife Sophie and their three children into their newly-constructed home at "Eleutherian Mills." Located on a steep hillside overlooking the powder yards on the Brandywine, the stuccoed stone structure has served as residence for five generations of the du Pont family. The furnishings are principally those of its last resident, Mrs. Francis B. Crowninshield, great-granddaughter of E. I. du Pont. They reflect the tastes and interests of this family over the past century and a half.



The remains of twenty-one powder mills are still standing between the raceway and the Brandywine. With heavy stone walls on three sides combined with light roofs and stream-side facades, their design was intended to vent the blast force of an accidental explosion harmlessly across the water. All of the powder mills were at one time powered by water wheels or turbines which received their flow through individual flumes from the raceway. One rolling mill in Hagley retains the ten-ton cast-iron wheels and the great pinion gear that turned them.

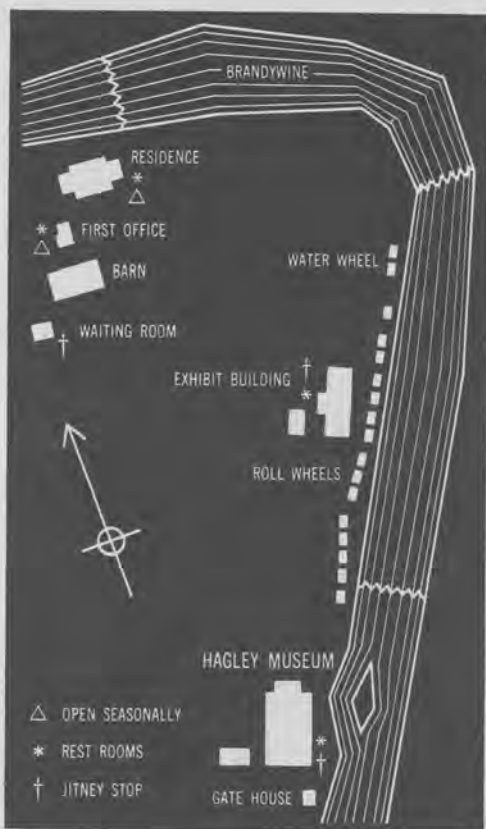


The water wheel was the traditional means by which the latent force of a millstream was converted into power to move machinery. Many of the DuPont powder mills were constructed in pairs; their equipment driven by a centrally-placed water wheel. Water impounded by the dam was diverted into the raceway, thence through sluice gates to the water wheel. A typical installation of this type has been restored in Hagley at a pair of roll mills which were built in 1822-24. The 16-foot wheel, turning at 9 r.p.m., would have generated twenty-one horsepower.



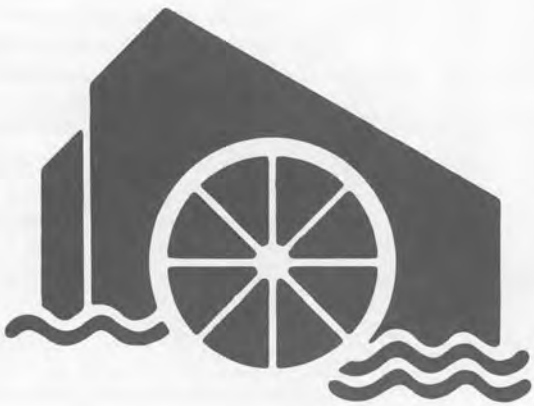
Until 1837 Company business was transacted from the family residence at "Eleutherian Mills." In that year Alfred Victor du Pont, son of the founder, constructed a small stone office building a short distance from the house. Here a vast amount of correspondence and bookkeeping was carried on by Company presidents and their small staffs in the ensuing decades until 1890, when a larger office was constructed a quarter-of-a-mile away. The First Office has been restored and furnished in the style of the latter half of the nineteenth century.

Tuesdays Thru Saturdays
9:30 A.M.-4:30 P.M.
Sundays 1:00-5:00 P.M.
Groups by Reservation
Closed Mondays **Admission Free**
Greenville, Wilmington, Delaware



In 1952 at the 150th anniversary of the founding of the Du Pont Company, the Eleutherian Mills-Hagley Foundation was established as a non-profit, educational corporation. Its immediate purpose was to preserve and to interpret an important industrial site, and to relate this regional development to the broader story of the nation's progress. Endowed by E. I. du Pont de Nemours & Company and entrusted with 185 acres of the original powder mill site, the Foundation began its program with the establishment of the Hagley Museum.

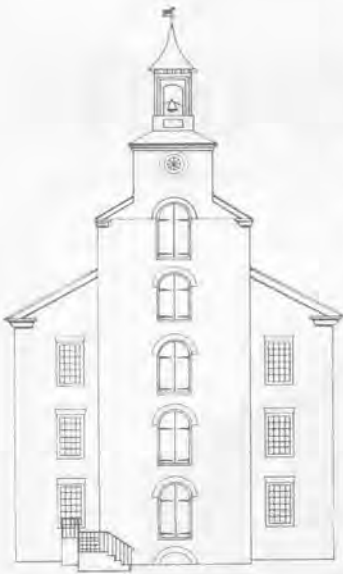
Hagley Museum



The main **Hagley Museum** building is a former cotton spinning mill constructed in 1814 by E. I. du Pont and several associates.

The mill was converted to the manufacture of metal powder kegs in 1884 and continued in that role until the powder yards closed in 1921.

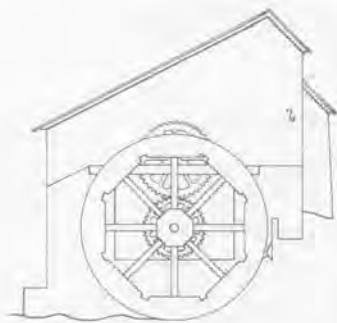
When construction of the Museum began in 1955, the walls of the mill were retained and a new interior built to house exhibits devoted to American industrial history. Dioramas and working models show how Brandywine mills epitomized the beginnings of industry; additional exhibits



trace the development of manufacturing through the early 20th Century.

A picker house, where raw cotton was unbaled, now serves as the **Museum Store**.

An 1858 machine shop is now the **Black Powder Exhibit Building**, where dioramas depict the manufacture of black powder in the early Du Pont mills.



First powered by waterwheels, then by water turbines, the mills were designed with heavy granite walls on three sides and lightly built roofs to vent the blast force of accidental explosions toward the creek. A waterwheel has been reconstructed at the 1820s **Birkenhead Mills**; a water turbine will turn the cast iron wheels in the Eagle Roll Mills when restoration to 1886 is completed.

Part of the narrow gauge rail system begun in the 1830s to move equipment and powder through the Hagley Yard has been restored and typical work cars are in place on the tracks.

In 1803 Eleuthère Irénée du Pont moved his family into their newly built home at Eleutherian Mills. The stuccoed stone **Residence** overlooking the powder yards was occupied by the du Ponts for five generations; its furnishings reflect their varied tastes.

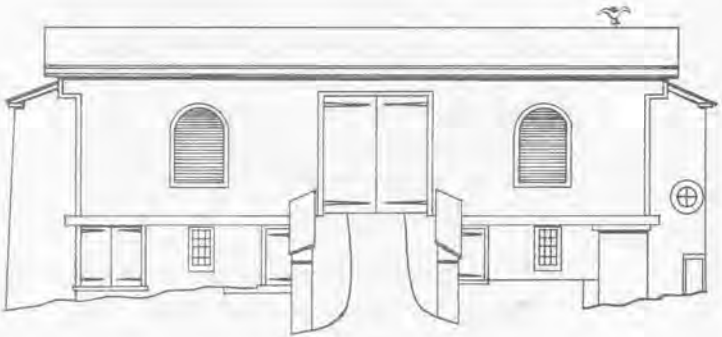
Company business was transacted at home until 1837 when Alfred Victor du Pont, eldest son of the founder, constructed a stone office building nearby. The restored **First Office** is furnished in late 19th-century style.

The frame structure close to the Residence is traditionally known as the **Workshop** of Lammot du Pont (1831-1884). Contents represent his



activities as inventor, engineer, architect, builder and chemist. Originally located on the adjoining property of Nemours, the Workshop was moved to its present site in 1969.

The Eleutherian Mills area is open from mid-April to early June and during the month of October.



E. I. du Pont and his descendants combined gardening and farming with industry at Eleutherian Mills. The family garden is currently being restored to the 1803-1840s period.

The **Barn**, built simultaneously with the Residence, now contains exhibits of 19th-century farm tools, weathervanes, vehicles, a Conestoga wagon of the type used to haul powder, and a Cooper Shop similar to those operated by the Du Pont Company to supply kegs and barrels for packing powder. Hay, corn and oats were grown to provide fodder for riding and carriage horses as well as draft horses and mules which pulled work vehicles and delivery wagons.

The Brandywine was an important millstream from early colonial times. During the 18th and 19th Centuries grist mills, saw mills, slitting mills, paper mills, snuff mills and textile mills were built along its 60-mile length. By 1776 Brandywine flour mills had become the most productive in the colonies.

In 1802 Eleuthère Irénée du Pont, immigrant powder maker from France, settled his family on the Brandywine and began construction of a black powder manufactory which he named "Eleutherian Mills."

From the Du Pont mills, which operated continuously until 1921, came the explosives used in hunting, canal building, mining, the opening of the West, and in the nation's wars. The powder yards grew to be the largest in America.

In 1952 at the 150th anniversary of the founding of the Du Pont Company, the Eleutherian Mills-Hagley Foundation was established as a nonprofit educational corporation, endowed by E. I. du Pont de Nemours & Company. With the creation of the Hagley Museum on the 185-acre site of the first powder mills, the Foundation began a program to preserve and interpret early Brandywine industry and its significance to national progress.



Tuesdays thru Saturdays & Holidays
9:30 A.M.-4:30 P.M.

Sundays 1-5 P.M.

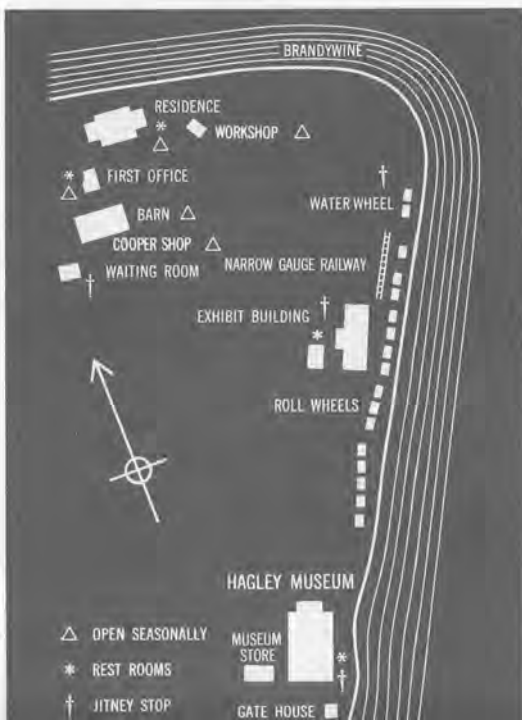
Closed Mondays, Thanksgiving,
Christmas, New Year's Day

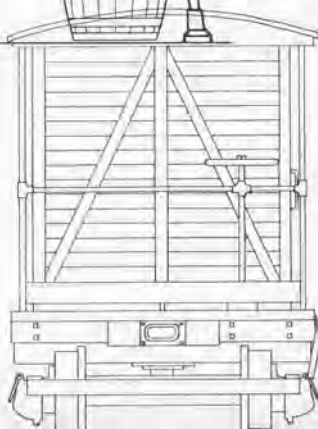
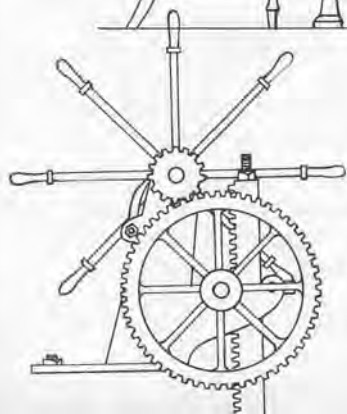
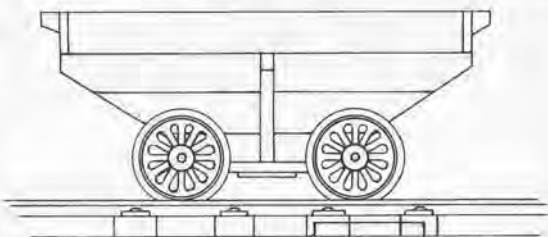
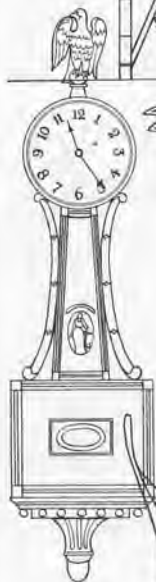
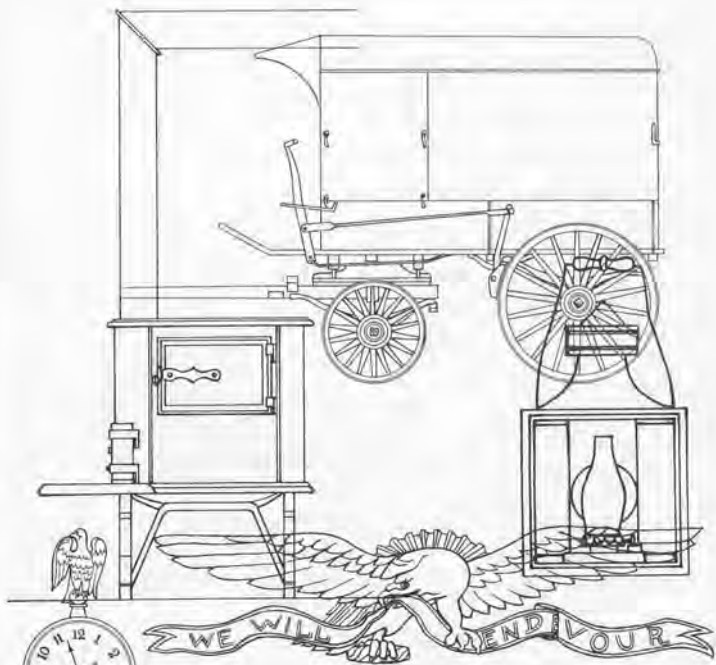
School and Tour Groups
by Advance Reservation

Greenville, Wilmington, Delaware

1-302-658-2401

Admission Free





Unscanned Materials

- *Eleutherian Mills-Hagley Foundation. Eleutherian Mills-Hagley Foundation, Inc., 1976.*
- *Hagley Museum Guide: A Chronicle of America's Industrial Heritage. U.S.A.: Eleutherian Mills-Hagley Foundation, Inc., 1963.*
- *The Hagley Museum: A Story of Early Industry On the Brandywine. U.S.A.: Eleutherian Mills-Hagley Foundation, 1957.*

Map Brochures:

- *Delaware Highways, Discover Wonderful Delaware, 1968.*
- *Welcome to Delaware, 1961-1962.*