NPS Form 10-900
(3-82)

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United States Department of the Interior
National Park Service

National Register of Historic Places Inventory—Nomination Form

For NPS use only
received NOV 21 1984
date entered DEC 20 1984

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

1. Name

historic (1) Joseph Bancroft & Sons Cotton Mills or Rockford Cotton Mills, and (2) Brandywine Cotton Mills or James Riddle & Son Mills

and/or common The Bancroft Mills

2. Location

street & number Rockford Road at the Brandywine River ___ not for publication

city, town Wilmington ___ vicinity of

state Delaware 19806 code 10 county New Castle code 003

3. Classification

Category	Ownership	Status	Present Use	
___ district	___ public	X occupied	___ agriculture	___ museum
___ building(s)	X private	X unoccupied	X commercial	___ park
___ structure	___ both	___ work in progress	___ educational	X private residence
___ site	**Public Acquisition**	**Accessible**	___ entertainment	___ religious
___ object	NA in process	___ yes: restricted	___ government	___ scientific
X complex	NA being considered	X yes: unrestricted	X industrial	___ transportation
		___ no	___ military	___ other:

4. Owner of Property

name See Continuation Sheet, Item 4

street & number

city, town ___ vicinity of state

5. Location of Legal Description

courthouse, registry of deeds, etc. City and County Building

street & number 800 French Street

city, town Wilmington state Delaware 19801

6. Representation in Existing Surveys

Also, see Continuation Sheet, Item 6

title Delaware Cultural Resource Survey (HN-3646) has this property been determined eligible? ___ yes ___ no

date ___ federal ___ state ___ county ___ local

depository for survey records Bureau of Archeology and Historic Preservation, State House

city, town Dover state Delaware 19901

7. Description

Condition		Check one	Check one
_X_ excellent	___ deteriorated	___ unaltered	_X_ original site
_X_ good	___ ruins	_X_ altered	___ moved date ___
_X_ fair	___ unexposed		

Describe the present and original (if known) physical appearance

The Bancroft Mills is a collection of buildings which stretches for three-quarters of a mile along the south bank of the Brandywine River about one-and-a-half miles from the center of Wilmington, Delaware. The property is confined to a narrow channel by high and precipitous banks which allow only a limited floor on the south shore. Across the stream, the northside valley floor is undeveloped private property identified as a wooded bowl which reaches upstream to parkland and downstream to the old brick masses of the Augustine Paper Mills (NR) below the Augustine bridge. On the bluffs above this riparian tract is Alapocas, a residential middle-class community laid out before 1941. Parkland protects much of the rest of the valley as it runs in an easterly direction to the city center; to the west is more parkland and the famed Hagley Mills, Breck's Mill, and the duPont Powder Works (NT; NL) while further upstream is the Rockland Mill (NR) now being renovated for residential use. Parkland continues to dominate the valley real estate as far as the Pennsylvania state line.

Close to the Bancroft Mills, on the site of the old St. Helena's Road workers' housing which once stood immediately upstream of the mills, is Brandywine Falls--a gated community of townhouse and flat-type condominiums. Perpendicular to the north entrance to the plant is Rockford Road; the main access to the subject site, this refers to a ribbon development of residential housing, comprised both of renovated workers' housing and new elements. To the east close by is a row of renovated workers' housing which lines the east side of the more secondary Ivy Road, parallel to Rockford Road. At the mill-end of these residential enclaves are three buildings which, like the historic housing, were once part of the mill complex: these are (1) a former research building, built in the last fifty years, (2) a former time-clock house, now greatly rebuilt and used for storage, and (3) an unidentified barn-like brick building (c.1911) now used for equipment storage for the Brandywine Falls community (Figure 1). High above the complex is a residential community dominated by comfortable upper-middle-class housing built largely in the first quarter of the twentieth century. This is interspersed occasionally by a few survivors of the older millowners' mansions and by infill properties resulting from recent subdivisions. The sloping road which leads to the downstream (Kentmere) gate, runs from the head of Olmstead's Bancroft Parkway (NR) allowing access to the surviving open space. The steep slopes behind the subject site are wooded, providing a vegetative barrier which visually isolates the Mills from the latter-day environment generally associated with the higher ground.

The complex itself is a conscious expression of man having worked with nature to create an outstanding sense of place. Within this context, the isolated canyon-like character of the location has been civilized by terracing which allows for three or four levels of landscape between the river and the cliffs. The building stock constructed at riverside on the terraces is strictly functional, largely devoid of ornamentation and unnecessary elements. There are approximately fifty such structures, many of which are three-sided units appended to more substantial buildings.

Practical rather than aesthetic, the complex identifies a notable melange--a unique industrial landscape. Other than in the semi-refined stonework that survives in

Please see Continuation Sheet 7A

8. 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	
X 1800–1899	___ commerce	___ exploration/settlement	___ philosophy	___ transportation	
X 1900–	___ communications	X industry	___ politics/government	___ other (specify)	
		X invention			

Specific dates 1848, 1859, 1878, 1895-1922 **Builder/Architect** Unknown

Statement of Significance (in one paragraph)

The Bancroft Mills complex, with the longest history of textile milling in the Brandywine Valley, represents the building forms and spatial patterns contrived by an industry which developed continuously from 1848 to 1922. The property was described in 1889 (when the property was less than half the size of the present plant) as the largest textile finishing company in the United States (Hoffecker, 1977:35). It grew rapidly after that time until by 1950 it was referred to as "one of the largest textile finishing operations on earth" (Anonymous, 1950). The sprawling character of the complex attests to remarkable technical accomplishments, all of which occurred as a consequence of early successes. The 1840's spinning mill which spawned the later expansion was itself the first local such enterprise to employ state-of-the-art technology. The extant property represents the first mill to produce durable window shades as well as the first in America to employ mercerizing (a treatment to increase a fabric's strength, luster, and affinity for dye) for the trade. By the 1940's the Bancroft Mills laboratory revolutionized the whole concept of fabric usage when it produced a synthetic resin which allowed for crease resistance with a minimum of loss in fabric strength. With the subsequent emphasis on synthetic fibers for textiles, the company also produced a first by texturing a man-made fiber. These accomplishments, which provided America with such household words as Hollands and mercerizing and later added "Sunfast," "Everfast," and "Banlon" to international vocabulary, represents a long-time mill history which ranges from the rise of the factory system through "laissez-faire" and into the era of government intervention in industry. Its family history, furthermore, ranges from the era of the artisan-craftsman-entrepreneur to the era of the industrial magnate-philanthropist. The success of the former led to the benevolence of the latter, making possible the basis for New Castle County's park system, the Wilmington Public Library, and the Delaware Museum of Art. As a conscious expression of all that such industrial and social achievement means to the Brandywine Valley and beyond, the Bancroft Mills hold significance at local, state, and national levels, providing strong associative values to the history of industry and invention. In direct reference to National Register criteria, Bancroft Mills embodies the distinctive characteristics of a turn-of-the-century industry. It also possesses the physical attributes necessary to express adequately the interdependence of diverse tasks involved in the finishing processes for which it was renowned (Criterion A). Its association with inventions that have made a significant contribution to the broad patterns of industry also emphasize the strength to which it addresses Criterion A. In reference to Criterion B, Bancroft Mills, as a long-time family-owned and -managed operation, is associated with the lives of persons signficant to the local past. William P. Bancroft, one of the founders of Bancroft Mills, was nineteenth-century Wilmington's most outstanding philanthropist (Hoffecker, 1983:33). He donated substantial sections of open space in and near Wilmington as public parkland, thus initiating the New Castle County Park System. William Bancroft also provided the beginning of the Wilmington Library. Samuel Bancroft, who owned Every Evening, a Wilmington newspaper which was the voice of the Democrats in Delaware, died in 1915, leaving a notable collection of pre-Raphaelite art. Following the death of his son, Joseph, Samuel Bancroft's great collection in 1938 became the nucleus of the Delaware Museum of Art. The museum, the library, and many sections of the parklands are located within two miles of the mills which made them possible. At the mills the buildings are characterized by the various forms

Please see Continuation Sheet 8A

9. Major Bibliographical References

See Continuation Sheet 9A

10. Geographical Data

Acreage of nominated property c 35 acres

Quadrangle name Wilmington North **Quadrangle scale** 1:24000

UTM References

	Zone	Easting	Northing
A	18	451200	4414624
B	18	452080	4411820
C	18	452600	4411720
D	18	451520	4411999
E			
F			
G			
H			

Verbal boundary description and justification

See Continuation Sheet 10A

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 Alice Kent Schooler, Principal Architectural Historian

organization John Milner Associates, Inc. **date** July, 1984

street & number 309 North Matlack Street **telephone** (215) 436-9000

city or town West Chester **state** Pennsylvania 19380

12. State Historic Preservation Officer Certification

The evaluated significance of this property within the state is:

___ national _X_ state ___ local

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

State Historic Preservation Officer signature John R Kern

title Director, DE Division of Hist. & Cultural Affairs **date** Oct. 31, 1984

For NPS use only

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

Entered in the National Register

for Keeper of the National Register **date** 12-20-84

Attest: **date**

Chief of Registration

GPO 894-785

Owners

The complex refers in part to New Castle County property #26-002.30, with subdivisions 001, 002, 006, 007, and 008 (New Castle County, 1983). The owners are recorded as follows:

001 - Brandywine Falls Development Co.
200 A Street, P. O. Box 2167
Wilmington, Delaware 19801

002 - Industrial Park Trust
Charles M. Allmond III, Trustee
62 Wilmington Trust Building
1118 King Street
Wilmington, Delaware 19801

006 - Charles C. Parks, Sr., and Inge R. Parks
44 Bancroft Mills
Wilmington, Delaware 19806

007 - Ganik and Co.
29 Bancroft Mills
Wilmington, Delaware 19806

008 - Industrial Park Trustee
Charles M. Allmond III
62 Wilmington Trust Building
1118 King Street
Wilmington, Delaware 19801

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Representation in Existing Surveys

Title: Historic American Engineering Record
Date: August 1974
Classification: Bulk; Textile (50.0) (15.7)
Depository: National Park Service
City: Washington, DC 20240
Priority: 1-A

Building 1, there is little of a deliberate architectural character to the place. Those buildings which are easily defined can be set up in one of four industrial types, each distinguished by their materials: (1) stone, (2) brick, (3) concrete and steel, and (4) corrugated metal and cement block. Significantly, each compares to some degree with peers in the Delaware Valley and elsewhere. The skeletal steel buildings, some of which demonstrate the trabeated characteristics of the early factories of Albert Kahn, are particularly notable for the fact that all had been built by 1911. Likewise, the piered brick buildings were built in the late nineteenth century, and the stone buildings represent earliest construction.

The size and/or the length of the buildings, their materials, locations, and fenestration--or lack of fenestration--all provide strong suggestion for the particular functions put to various units or groups. The diverse shapes and structures of the buildings testify to the rapid and makeshift expansion occasioned by the Mills' history, buildings chock-a-block with additions exist close to buildings which have survived virtually as they were originally intended. Likewise, roofscapes, aclutter with monitors and ranges of saw-toothed skylights, identify at once the use of natural light as an industrial resource and the cumulative aspects of the growth of the plant.

The terraces provide a strong cohesive force, supplying a subtle sense of verticality to what is otherwise an extensive but confined linear landscape. The levels provided by the terraces allow not only for three relatively parallel cartways to be inserted in the narrow plane; the terraces also provide a rationale for a limited number of banked buildings, allowing some choices for grade level access and egress to and from particular work spaces. Bridge connectors provide a further and higher horizon; adding a below-grade dimension are the remnants of the Rockford headrace, still visible as a waterway from the dam to the filtration plant and recessed but dry adjacent to Buildings 44 to 50.

Generally the footprint of the complex refers to the consolidation and rebuilding after 1895 of two separately owned 1840's millsites. The subsequent location of the principal power plant (Building 25) between the two properties by 1911 essentially linked the two as one. Each plant continued, however, to operate as a separate department within the Bancroft Mills. The Rockford plant (the original Bancroft Mill) tended generally to dyeing while the Kentmere plant (the former Brandywine Mills) worked with bleaching and finishing operations. Some elements, however, survive from the 1840's to 1860's. These are discernible at both sites, particularly in the regulated fenestration, the straightforward forms, and the rubble stone walls of Buildings 46 and 48 (Rockford) and Building 10 (Kentmere).

Within the context of pre-1905 construction, stuccoed stone walls and piered brick walls identify buildings which also feature interiors of slow-burning mill construction. Dating from the mid-to-late nineteenth century, these interiors employ posts which are either square (and capped with iron or timber flanges) (Plates 1 and 3) or turned (and capped in cast iron)(Plate 2). In work of the early twentieth century, when skylights made great inroads in mill construction, wall windows also seem to have concentrated on large expanses. Some single windows of the pre-1800 era do remain, particularly in the

Rockford section, but the later attention to wide expanses of glazing was articulated by twinned windows set in plain frames, often large enough to accommodate sash of an aggregate up to 32/32 lights. Just as these oversized openings suggest, the interior spaces were high, sometimes reaching to the extent of two floor levels.

At the various roof levels of the older buildings, rather complex truss sytems support the shallow roofs and saw-toothed skylights. Some of these fit no special identity as to type, suggesting instead that they were a carpenter's solution to the particular problems provoked by the spatial needs of particular textile processes at hand. In the newer buildings of concrete and steel, post-and-beam construction, the interiors represent the straightforward fireproof construction typical of the early twentieth century "factory," with floor and wall spaces opened to a greater degree than had been allowed by the slow-burning construction.

The fifty-three surviving buildings and structures provide a strong representation of the various functions related to textile manufacture or finishings, and all but four buildings are fifty years old or older.

Only the Kentmere plant presently serves as a textile mill, however; in the Rockford plant, buildings serve generally as offices or (textile) warehouse space. The inventory which follows under Item 7, pages 7C through 7L, addresses the particular characteristics of the components of the complex.

In summary, the inventory indicates that all buildings except Buildings 7a, 42, 44, and 67 contribute to the specific characteristics of an integrated textile mill of the turn of the century. Notably, all buildings relate to the property history and none therefore are intrusions. Buildings 11, 28, 35, and 45 are known no longer to exist.

See Figure 1, attached, for a base map of existing conditions.

Building 1 is a two-story-plus-basement "accumulated" stone building, dating largely from 1903. Its cumulative dimensions approximate 445' x 100'. Commonly referred to as the Kentmere main building, it represents a mix of old and new with the latter elements built after 1899, replacing or adding to the main building of the pre-1895 Brandywine Cotton Mill (Figure 2). Rusticated ashlar stonework, usually associated with formal facades, is featured in a small portion of the south wall, suggesting the survival of some of the old Riddle plant, a rather prepossessing "French Empire" structure (Figure 2). In 1905 an extension was added which allowed for additional machinery for the new mercerizing department (Bounds, 1951:89). By 1906, an additional floor was constructed to enlarge the so-called Grey Room (Bounds, 1951:90), and in 1913 a portion (as yet unidentified) was also added to process silk and cotton textiles (Bounds, 1951:105). The old Kentmere race, now unaccessible, runs under this building (Lubin, 1984). In 1927 the starch room and bleach house occupied the first floor while finishing was done on the second floor; a water wheel was in the northwest corner of the basement (Sanborn, 1927: 242). In 1961 Kentmere lawn was produced in this building, and cooling cans and tenters were among the machines occupying the second floor, with twelve kiers and other machines on the first floor. Two pent houses stood on the roof in 1961; one served as a mixing room for the tenters on the second floor (Pulsifer, 1961; Figure 3). The building presently serves as the main building of the Wilmington Finishing Company (WFCO), and thus continues its significant contribution to property history. Both historically and visually Building 1 constitutes a major contribution to the complex.

Building 2 is a two- and three-story building located between Buildings 1 and 16 over the old headrace. The property was built by 1911 (Figure 4) and probably in 1898 (Bounds, 1951:74). The third floor was probably erected in 1920 when an additional floor was approved for Building 2 (Bounds, 1951:119). A portion of this upper space is referred to as the fourth floor in 1961 (Pulsifer, 1961). The building has long been associated with the Kentmere bleachery. In this reference, in 1961, a portion of the first floor was recorded as set aside for cold storage while singe machines occupied the second and third (fourth?) floors (Pulsifer, 1961). Now part of WFCo, Building 2 contributes to the interpretation of post-waterpower history of the complex. It also contributes to the history of the finishing processes for which the property was long renowned.

Building 3 is a five-story building banked into the hillside between Buildings 6 and 7. In 1931 it was recorded in an aerial photograph (Plates 4 and 5), but no identification as to early use has been found. In 1961 the upper two floors served as storage and the third floor as a packing area. The first and second floors housed embossing and friction callenders (Pulsifer, 1961). Now part of WFCo, Building 3 contributes to the pre-1931 history of the complex and continues to function as a part of the textile industry.

Building 4 is a one-story structure which bridges the main Kentmere cartway between Buildings 1 and 5, and Building 6. In 1961 this served as a callender room (Pulsifer, 1961). Only a portion of this structure, an office space, is recorded in 1927 (Sanborn, 1927:242). Now part of WFCo, it holds limited significance for the complex (Plate 6).

Building 5 is a five-story stone building, 35' x 30', which stands south of Building 1, separated by the flyway of Building 4. This is probably the same structure for which construction was approved for use as a mixing house for soda in 1909 (Bounds, 1951:93). In 1927 this property contained a beetle room and a soda house (Sanborn, 1927:242), each of which referred to processes implicit in mercerizing. An additional floor to this building (probably the fifth floor) had been approved in 1920 (Bounds, 1951:119). Now part of WFCo, Building 5 contributes to the complex because it refers to specific and early processing factors.

Building 6, adjacent to Building 5, on the east, was built as an acid house (Bounds, 1951:105). In 1961 it served as a storage area. Now part of WFCo, it can be recorded at least to 1927, and thus contributes to the fifty-year history of the complex with emphasis on the use of acid in the finishing process.

Building 7, located at the west end of the Kentmere plant, is a five-story, brick-faced steel and concrete building (Plate 6). An additional floor, presumably the fifth floor, was approved in 1920 (Bounds, 1951:119). All floors were used for storage in 1961. Now part of WFCo, Building 7 contributes by reason of its "factory" construction, indicative of Bancroft's early use of fireproof industrial construction. Its location also makes Building 7 easily visible (Plate 6).

Building 7a is a concrete loading dock roofed with metal. Records suggest this Kentmere structure was built after 1922, and it is recorded on site in 1961. Now part of WFCo, Building 7a (Plate 6) seems to lack a fifty-year history, and therefore seems to be a non-contributing component.

Building 8 is a three-story building adjacent to Building 1. In 1961 the basement was used for color mixing basic to Aristos storage; the first floor housed book cloth operations (Pulsifer, 1961). Now part of WFCo, Building 8 can be documented at least to 1931. It contributes by reason of its fifty-year history and by reason of its role in finishing process history.

Building 9 has not been identified, and may be incorporated within another building.

Building 10 is a banked four-story-and-basement stone building with roof of shallow pitch (Plate 6). Approximately 40' x 30' this is probably a rare survivor from the Riddle Mills and may originally have been Building 2, a weaving space probably completed by 1854 and recorded by 1866 (Hexamer, 1866:420) (Figure 2). If so, a wheelhouse and a tailrace once stood close to the north wall. In 1875 weaving still took place on floors one through four (Hexamer, 1875:872, 873). In 1961 open stock areas were assigned to the upper three floors while the first and second floors were allotted to storage of chemicals and tubes. The present use of this building has been undetermined. Now part

of WFCo, Building 10 contributes heavily to the complex both by reason of integrity of building form and industrial reference.

Building 11 no longer exists. In 1927 it served as a loading platform on the north side of the river opposite Building 1.

Building 12 is a six-story building located on the middle terrace at Kentmere. An accumulated building, the first two stories are stone and brick. Possibly built prior to 1899, the building was then enlarged in 1909 for use as a singe house (Bounds, 1951:92). By 1927 the third through sixth stories were recorded as of steel frame construction (Sanborn, 1927:242). In 1961 the first floor was the turbine room and the second floor was occupied by winders and tenters. The newer, upper floors were used for griege layout and storage (Pulsifer, 1961). Now part of WFCo, Building 12 contributes both by reason of its early factory construction and its long-term reference to historical function.

Building 13 is a flat-roofed, three-story banked building, boasting unusually large bands of windows for its modest size. Close to Building 1, in 1927 it was used for storage. Now part of WFCo, Building 13 speaks well of the variety which characterizes the complex and therefore it contributes to the complex.

Building 14 has not been identified, and may be incorporated in another building.

Building 15 is a two-story brick structure which connects with Buildings 12 and 6 in Kentmere. In 1927 it was used as a singe house, a function it served as well in 1961 (Pulsifer, 1961). Now part of WFCo, Building 15 contributes to the complex by reason of function and siting.

Building 16 is a two-story-plus-basement building, 210' x 125' close to the old headrace of the Kentmere plant. Probably constructed in at least two phases, this was first built in 1900 (Bounds, 1951:93) and extended before 1920 (Bounds, 1951:118). The property emphasizes heavy construction with such features as iron columns and girders and a concrete first floor (Sanborn, 1927:242). In 1927 this served as a bleach house, a function it continued to serve in 1961. The cloth run which once extended from Rockford to Kentmere connected with the west wall of this building. (The covered chute, no longer extant, was authorized in 1911 (Bounds, 1951:99). It is pictured often (Plates 4 and 5)). Now part of WFCo, Building 16 contributes to the finishing history of the property, providing special reference to the pre-1911 era.

Building 17 is a three-story building, 125' x 20' which connects with Building 19. In 1927 this was a one-story building used as a chemical mixing house. In 1961 chemicals were stored here. Now part of WFCo, it provides a long history of the use of chemicals to the processes dealt with at Bancroft; therefore, it contributes to the complex.

Building 18 is a five-story steel and concrete building banked into the hillside on the uppermost level at Kentmere. It is recorded by 1911 (Figure 4) but unidentified. A conveyor connected this with Building 12 in 1927 (Sanborn, 1927:242) (Plate 4). In

1961 the building functioned as space for bale and roll storage and featured a loading platform close to the upper terrace railroad track. One of the few service buildings to survive essentially as it was first intended, Building 18 contributes to the pre-1911 history of the complex.

Building 19 is a three-story steel-framed building, 20' x 55'. In 1927 the third story connected with Building 22. The function has not been determined but, like Buildings 7 and 18, it contributes by reason of its early trabeated construction, signifying the interest in fireproof (as opposed to slow-burning) construction by 1911.

Building 20 is attached to Building 16(a). Its historic function has not been determined. The degree to which it contributes, therefore, cannot be estimated at this time.

Building 21 has not been identified, and may be incorporated in another building.

Building 22 is a one-story building, dating from before 1927 and recorded in 1961 as a weld shop (Pulsifer, 1961). Now part of WFCo, this is a service building with a long history which shows it as contributing to the complex.

Building 23 is a three-story building, 80' x 60', probably built in 1908 (Bounds, 1951: 92). In 1927 the lower floors were used as a machine shop and box shop (Sanborn, 1927: 242). In 1961 the building still served as a machine shop. Located on the upper terrace of the Kentmere tract, Building 23 and Building 24 are easily visible from the river (Plates 4 and 5). Building 23 contributes a strong visual and historical statement.

Building 24 is a three-story building, 80' x 60'. Both basement and first floors are concrete. A portion of this building in 1927 served as a carpenter shop (Sanborn, 1927: 242); in 1961 this was a pipe shop (Pulsifer, 1961). Building 24 has a support role more than fifty years old; it therefore contributes by reason of its emphasis on the administrative integration of service factors in turn-of-the-century industry.

Building 25 was begun in 1909 (datestone in west corner). The smokestack and foundation were completed in 1911 (Bounds, 1951:99). A hugh pile (50' x 200'), this is at once a boiler house and the landmark central unit fo the complex, located on the middle terrace of the consolidated plant. In 1927 eight boilers operated from this building. Its 250' stack, visible for more than a mile along the river, stands immediately north of the power house (Plates 7 and 8), emphasizing the strong visual contribution made by Building 25. Building 25 contributes as well in that it literally consolidated the Riddle and Bancroft plants.

Building 26 is a four-story brick building, irregular in plan but approximating 50' x 70' (Plate 7). Originally part of a triangular three-building element, encompassing Buildings 26, 27, and 28 (no longer standing), this was probably originally a drug warehouse (Bounds, 1951:89), specifically for the storage of ingredients used in dyeing.

In 1927 this unit was used for storage of cotton cloth (Sanborn, 1927:242). In 1961 it served a similar function. Together with Building 27, Building 26 contributes by reason of its historic service function. The mass created by its relationship to Building 27 (g.v.) also emphasizes its contribution as a terminal vista (Plate 7).

Building 27, a drug storehouse in 1927, was the center element of a three-building unit immediately west of the boiler house. Viewed from the west, its oblique end wall is blank at the first floor level, indicating the original placement of Building 28 (Plate 7). Building 27 visually defines the end of Rockford and the beginning of Kentmere, thus it contributes significantly as a terminal vista in a man-made landscape (Plate 7).

Building 28 no longer exists. Used as a laboratory in 1927, this was a one-story building, approximately 15' x 35'. In 1961 it was the hospital.

Building 29 is a five-story stuccoed stone and brick building, 70' x 40'. Eleven bays long, this is a straightforward rectangular building built at the east end of Rockford's upper terrace in 1884 (datestone). It is documented in photos by 1888 (Plate 8). In 1892 this was a woodworking shop and in 1927 a storage facility and office. Rag and remnant rooms occupied the space in 1961. Now renovated for professional office use, the interior features new spaces reached by a centrally-located open-tread dogleg staircase. Although recent changes, including the removal of original sash, have somewhat affected integrity, Building 29 contributes both by reason of its placement and its long-time historical reference.

Building 30 is a four-story brick building approximately 50' x 55', built on the site of a boiler house built before 1905 (Plate 9). In 1927 this was an office. In 1961 a portion of the main office occupied the second floor. The building has recently been renovated outside and in and now serves as professional office space. Although newly rendered in stucco (Plate 10), Building 30 contributes particularly because, with Building 29, it provides a range of similar building forms which wall the site, resulting in a formidable sense of dimension in the south tier.

Buildings 31, 32, and 33 no longer exist. These were relatively modest three-story spaces (Plate 8). In 1927 Buildings 31 and 32 were offices, and Building 33 was used in part as the executive dining room. In 1961 a cafeteria occupied the first and second floors with storage above.

Building 34 is located south of the principal cartway, opposite the west end of Building 41. This is a small structure which in 1927 functioned as a hose house (Sanborn, 1927: 242). It still serves that role; inside is a portable engine. Building 34 contributes by reason of its reference to an in-house fire department.

Building 35 no longer exists. A two-story frame building, it stood close to Rockford Road on the south side of the present parking lot. It is visible in a 1931 photo (Plate 4).

Building 36 has not been identified and may be incorporated in another building.

Building 37 has not been identified, and may be incorporated in another building.

Building 38 has not been identified, and may be incorporated in another building.

Building 39 has not been identified other than it related to the Rockford plant.

Building 40 has not been identified, and may be incorporated in another building.

Building 41 is a filter plant. The successor to a settling pool built in 1860 to provide clean water for bleaching, this is located at the end of the existing race and adjacent to a settling tank on the west end of the Rockford plant. It is roofed over close to ground level (Plate 11 and Plates 4 and 5). In 1927 a (FP 600 RPM) Buffalo turbine was housed here. The property still serves as a filter plant for the WFCo. With its strong references to the bleaching process and to the adaptive reuse of the race as a water supply and the Brandywine as an industrial resource, Building 41 contributes significantly to the complex.

Building 42 is a narrow frame hyphen between Buildings 41 and 44. It holds no major significance to the history of the complex because it seems to be less than fifty years old.

Building 43 is a pump house relating to the operable portion of the Rockford race. Because Building 43 relates closely in function to Building 41, it contributes to the complex.

Building 44 is a two-story-above-basement reinforced-concrete building erected after 1905 (Plates 9 and 10), before 1931 (Plates 4 and 5), and rebuilt after 1940. An ice house occupied part of this property in 1927. In 1866 this was the approximate site of a stone-and-frame boiler house and blacksmith shop with a balconied warping house attached to the interior northeast wall (Hexamer, 1866:102). In 1961, a testing laboratory occupied the upper floors, while the basement was utilized for engraving-roll storage (Pulsifer, 1961) (Figure 5). Currently this serves as the gallery, studio, and home of noted sculptor Charles Parks, Sr. The building (Plates 11, 12, and 13) houses other office space as well. Considerable interior renovation has taken place in the last decade to accommodate current functions; included in this work was the elimination of a limited amount of second floor space to provide the height necessary to create Parks' monumental "Madonna of Peace." Because this is largely a structure which is less than fifty years old, the property presently is a non-contributing component. After 1990, however, its function as a laboratory may emphasize a greater significance, as will ultimate reference to its present use.

Building 45 is no longer standing. It had been one of the buildings constructed over the Rockford race in the twentieth century, probably in 1903 as a storehouse and packing room (Bounds, 1951:87) (Plate 14).

Building 46 is a long, five-story building (Plates 10 and 13). This represents, in part, the earliest building in the Rockford plant. The six-bay west section, built originally in 1848 as a gable-roofed three-story stone building (Plate 12), represented the major portion of the Bancroft Mills until 1859. In 1866 it was recorded as 83' x 50' with weaving rooms in the basement and first floor areas, a mule room at the third floor, and spinning and spooling facilities in the attic (Hexamer, 1866:102). By 1888 Building 46 superseded the pre-1866 wheelhouse when it was lengthened. By 1888 the roof had also been raised (Plate 8) with the fourth floor constructed in frame. In 1892 this was the cotton mill, a building seventeen bays long and the commanding building of the Rockford plant (Hexamer, 1892:2556). By 1930 this represented the broadcloth department (Bounds, 1951:139). Together with Buildings 50 and 51, this building boasts remnants of early features identified with Buildings 1, 2, and 3 of the mid-nineteenth century mill (Plate 15; Figure 6). These include the now infilled arched openings of the wheelhouse (Plate 16), the turbine housing close to the east wall of Building 50 (Plate 17), and changes in window construction which identify original end walls. The upper floor of Building 46 is presently shored to prevent collapse (Plate 18). By reason of its age, scale, location, and historic function, Building 46 contributes markedly to the complex (Plate 19). Notably, the early west section is readable in a 1888 photo (Plate 8).

Building 47 is an appendage to Building 46, adjacent to the principal cartway and projecting over the race. The structure (Plate 11) incorporates a loading dock (Plate 10) and was built before 1931 (Plate 4,), probably in 1904. Metal window frames and metal-sheathed shutters suggest this may have been a picker house, added to Building 46 when weaving was being conducted at the site. These features emphasize that Building 47 contributes significantly to the complex.

Building 48 serves as an appendage to Building 46. Built over the old Rockford race, this is a below-grade structure with a saw-tooth roof oriented south (Plates 20, 21, and 22). The only one of its kind, Building 48 contributes by reason of its uniqueness.

Building 49 is the eastern appended unit adjacent and south of Building 46 (Plate 20). A four-story structure, it served as storage space in 1961 and was bridged to Building 9 (Pulsifer, 1961). Building 49 contributes by reason of the part it plays in providing Rockford's riverside range of buildings with a sense of cumulative adjacency. As part of the manufacturing components which relate to the Rockford plant, it also contributes. A Warren truss roof is notable by reason of its integrity (Plate 23). Notable also is the original exterior wall of Building 46 extended. In form, function, and long-time history, Building 49 contributes substantially to the complex.

Building 50 is a five-story, masonry-walled building 200' x 45' (Plates 10, 12, and 19). A major component of the Rockford plant, built by 1892, this relates in part to what was Building 3 in 1866, a one-story stone and frame building 100' x 45'. In 1866 bleaching and callendering operations took place in the basement; packing and folding was assigned to the first floor (Hexamer, 1866:102). By 1888 this was at least a three-story building (Plate 8), but in later years it was expanded through the use of tiers of cantilevered floor spaces and skylights. An example of the roof-raising enlargements

is a makeshift truss which incorporates wrought iron tension rods. In 1961 the upper two floors were relegated to office space and storage, functions which the building serves at the present time. With a history akin to that of Building 46 and with a location that emphasizes an unbroken range of principal structures at riverside, this contributes greatly to the interconnecting character of the complex.

Building 50a, appended to Building 50, built above it and over the race, is a stone and brick structure, five stories high, built after 1892 (Plate 19). In 1961 it was used for the storage of rolls and open stock, as well as chemicals (Pulsifer, 1961). On the upper floor, wood posts feature the complex's characteristic cast iron caps; a butterfly-type roof employs a standard beam system (Plate 1). An integral part of the riverside scheme, it contributes to the complex.

Building 51, attached to Building 50 on the east (Plate 12), is a five-story accumulated building which represents, in part, the Rockford dyehouse, built before 1892 (Hexamer, 1892:2556). New floors were added in 1898 and the building was further extended the following year to contain mercerizing machines (Bounds, 1951:74). By 1961 the dyehouse operation had been assigned to the tiered riverside sections of Buildings 50, 51, and 52 (Pulsifer, 1961). In Building 51, in particular, five examiners were featured on the inland first and second floors where there were also spaces for roll storage. Packing and shipping took place on the third floor while dryers were among the machines occupying fourth floor space. The building is presently vacant, but its long history and its part as one of an unbroken chain of riverside buildings emphasize the great degree to which it contributes to the complex.

Building 52 is a four-story building which combines masonry and light frame members to emphasize a curtain wall construction which allows for great expanses of glass at the upper levels. Originally built before 1892 as a dyehouse (Hexamer, 1892:2556), it was rebuilt or enlarged in 1899 and 1904 (Bounds, 1951:89) and continued to operate as a dyehouse (Sanborn, 1927). This features a roof of single pitch with rolled and riveted I beams as upper level vertical members. In 1961 the machinery contained here included a mangle on the first floor, a dip box and tenters on the second floor. A steel-framed mezzanine served as a starch mixing space for the tenters, and the remnants of steel pans, 20' to 30', still survive in the lower area. Dry cans and a steam agar were included in the third floor machinery. It is now vacant. Construction details, emphasizing form following function, point to a major contribution provided by this building, which is historically significant as well as structurally significant.

Building 53 has not been identified. If this was or is close to Buildings 51 and 52, it may have served as a drug house in 1892 (Hexamer, 1892:2556), and thus would contribute to the pre-1931 integrity of the complex.

Building 54 is a two-story-plus-basement brick building approximately 90' x 40' (Plage 25). Built in 1904 (datestone), this buildings was set into a bank and stuccoed, and is characterized by paired windows with an aggregate of 24/24 sash. In 1927 this was dyehouse #3. In 1961 the first floor was used in part for an analine black

washer. The second floor served as roll storage for tenters for the Eddystone, Pennsylvania, plant and the third floor was occupied by dry cans and an agar (Pulsifer, 1961). Now part of WFCo, this service building was integral to the pre-1931 operation, and therefore contributes to the complex.

Building 55 is a shed-type structure, open-ended on the east and attached on the west to Building 63 (Plate 25). Now part of WFCo, this seems to have been a color house in 1927. The asbestos-clad flume, or cloth conveyor, started from this point (Plates 4 and 5) to carry cloth to the Kentmere plant.

Building 56 is a minor building which in 1961 served as a fire pump/hose house. It holds no major historical significance, but it contributes just as does Building 34.

Building 57 is a warehouse on the north shore, outside of the complex, as it is presently defined.

Buildings 58, 59, 60, 61, and 62 have not been located but may be integrated in existing fabric.

Building 63 is a three-story brick building, 30' x 35'. It served as a color house, a function it continued to serve in later years. In 1961, the first floor was the analine black dyehouse and the third floor the makeup room for analine black dye. The second floor served as a receiving and mixing area (Pulsifer, 1961) (Plates 24 and 25). This is now part of WFCo. Considering its reference to the prominence of black dye, a factor with significant reference in the property history, Building 63 contributes to the complex.

Building 64 has not been identified.

Building 66 is a two-story CMU and galvanized structure roofed in metal (Plate 6). This stands close to the Kentmere gate below the cartway. In 1961 it was a part of the Pyroxylin coating (impregnating) process relating to book-cloth material. Known as "Arrestox," this process was functioning in 1939, suggesting the building dates at least from that time. Now part of WFCo, it holds limited significance but may be said to contribute to the complex, reflecting a post-1911 finishing history.

Building 67 is a modest two-story brick building which stands close to Building 66 near the Kentmere gate. Its present function is unknown, but in 1961, although no lumber was applied, it served as the Organsol building with mixing and storage allotted to each floor (Pulsifer, 1961). Now part of WFco, it was not recorded in 1931 (Plate 4) so cannot be considered as contributing to the history of the complex for National Register purposes.

Two iron-trussed bridges relate to the complex. One is located between Buildings 54 and 42, between the Rockford and Kentmere plants. The other crosses the Brandywine to connect Building 1 with the north shore. These bridges, each composed of a Pratt

deck truss, were built c.1909 to allow cart and pedestrian access to new rail services. Each is recorded by 1911 (Figure 4). Rare surviving examples of their type in Delaware, these were not recorded in the 1982 bridge survey (Fitzsimmons, 1982). In reference to the complex they contribute to identification of that point in time when the mills were at their peak, using two railroads (one on the north shore) for transport.

The Rockford Dam and Headrace were built in 1878 (datestone). Constructed of blue granite similar to some fo the stone which characterizes some parts of Building 1, the dam and upper race are well maintained Brandywine Valley landmarks (Plates 26, 27, and 28). Integral to the water power history of the mill, and used even after steam was first inaugurated, these structures, which reflect at least the third generation of such construction at the site, contribute greatly to the long-term interpretation of the property. They are still in use, supplying water to the filter plant.

The J. Morton Poole House is a three-bay, two-story dwelling built above a banked basement. Perhaps related in part to one of the original dwellings on Joseph Bancroft's 1831 property, this in the 1840's was the home of J. Morton Poole, a machinist, who, in addition to being Bancroft's brother-in-law, later became a renowned lower Delaware Valley-area machinist. From 1862 to c.1894 this was the home of Andrew Wilde, bleacher and dyer, the principal employee who trained John Bancroft Sr. The house features a south front facade, protected by a shed-roof porch which overhangs the cellar area. The pitched roofline is articulated at the gable ends by pediments, the south one of which is marked with the date of 1836. Although the house has been substantially renovated, including several changes in window detail, the general image and its setting provide strong historical references. It presently serves as a private residence in the Brandywine Falls community (Plates 11 and 12). As the only domecile which survives close to the riverside and within sight of the mills, the Poole House provides a strong contribution to the long-term interpretation of the complex.

ALL MEASUREMENTS OF BUILDINGS ARE APPROXIMATE AND TAKEN FROM A PHOTOCOPY OF A 1926/7 INSURANCE SURVEY OF THE COMPLEX.

structures, and materials appropriate to a time of rapid transition; they elude as well to the turn of the century as an expansion, a time that had encouraged both makeshift growth and innovation. The chance location of the turn-of-the-century mills, an operation which relied heavily on the technology of chemistry, in a city renowned for its chemical industries is also significant. The more historically determined riverside location of the property adds further significance in that it has promoted a curving, terraced plan which is unique to Bancroft Mills (Criterion C). In the realm of invention Bancroft Mills provides peripheral reference to some of the earliest use in the Delaware Valley of technology in the textile industry; moreover, the property as it presently stands, refers more directly to process and chemical inventions which allowed Joseph Bancroft & Sons Co., Inc. to achieve and retain a renowned reputation from the 1860's through the 1950's (Criterion A).

Joseph Bancroft & Sons Co. ceased operation in 1961. The property has survived largely intact from that time, still readable as a long-lived industrial environment. The building stock puts further emphasis on the specific spurt of growth which occurred from the 1880's to 1922, a time during which two adjacent mills were consolidated and overhauled. Significantly, although the complex was west of the built-up portion of Wilmington in the late nineteenth century, its growth and development coincided to a time when Wilmington was reaching its maturity as an industrial city and its harbor and rail facilities were being improved. Bancroft's beginnings, however, refer to a more rural connotation when the Brandywine Valley was itself emerging as a renowned industrial locus. By 1830, for example, the duPont powder mills on the Brandywine were the largest of their kind (Hoffecker, 1977:35), and it was as duPont's downstream neighbors that the founder of the Bancroft Mills established his first mill.

In 1831 Joseph Bancroft, a spinner from Britain's new industrial midlands, bought an unused grist mill and machine shop near duPont's powder mills. Bancroft's goal was to establish a cotton mill capable of spinning cambric muslin equal in quality to that produced in Britain. In addition to the old stone mill, Bancroft's purchase included a dam, two houses, three cottages, a boiler house, a barn, 50.7 acres, and one-half the waterpower on the Brandywine for a distance of about three-quarters of a mile downstream (New Castle County, 1983). Operating largely on borrowed capital, Bancroft replaced the dam, enlarged the race, improved the waterwheel, and built an operation which utilized four hand-mules set up on the second floor of the mill. In the building's basement was the machine shop of J. Morton Poole, Bancroft's brother-in-law, who later established what has been called the most outstanding machine tool industry in America (Prince, 1927:6). The English-born Bancroft had much in his favor when he began his business; he was familiar with British technology and he chose an optimum location--one later referred to as having the best waterpower in the state of Delaware (Scharf, 1888:II, 797). Furthermore, he had good personal and business connections. As part of America's organi-

zational revolution of the Jacksonian era when private merchant capital was being redirected into textile production, Bancroft elicited financial support from local transportation tycoon, Thomas Janvier. Bancroft's venture then vied with contemporary upstream mills financed by E. I. and Alfred duPont, Daniel Lammot, and others. (In addition to Bancroft Mills, cotton mills had been established at Rockland (1810), Brecks Mill (1813), and Hagley (1814), and Bancroft himself had worked at Rockland before starting his own enterprise.)

When he suffered heavy damage in a flood in 1839, Joseph Bancroft not only rebuilt close by his original site, he also continued to enlarge the operation until, by 1844, he had introduced some of the first self-acting mules and fly frames in America. He thus mechanized to the point that one man could watch a machine produce a thread one thousand times finer than could be produced by a hand mule (Bounds, 1951:22; Wallace, 1978:381). The machines worked faster, broke fewer threads, and held more spindles than their antecedents; moreover, they self-cleaned much of the fly and did not require a spinner to push in the carriage during winding-on (Wallace, 1978:381).

Just as Bancroft had set up his second-generation mill at the old Job Harvey Mill site, James Riddle and Henry Lawrence in 1845 bought the site of the nearby Gilpin paper mill, intent on setting up yet another cotton mill on the Brandywine. Riddle and Lawrence rebuilt on the flood-stricken shore where Joshua and Thomas Gilpin in 1787 had made history with Delaware's first paper mill.

By 1850 their Brandywine Mills, so-called, was recorded as a well-established operation, with more capital investment than had Bancroft at that time (United States, 1850). Lawrence sold out his half interest to his partner in 1859 (New Castle County, 1859); however, James Riddle then continued to enlarge the plant, increasing it almost fourfold in less than twenty years (United States, 1870). When Riddle died in 1873, the business was left to his son, Leander, who died intestate and without hiers in 1880 (New Castle County, 1873, 1881). Jeannie M. Field, Leander's sister, succeeded as owner, eventually renting the mills to C. J. Milne and Company. In 1888 the Riddle Mills featured 12,000 spindles which in part produced a weekly output of 1,200 pieces of fancy ticking, 57 yards in each piece (Scharf, 1888:II, 801).

Whereas James Riddle and Son specialized in the manufacture of cheviot and fancy ticking, Bancroft's operation as early as 1859 had added finishing, bleaching, and callendering to its operations, preparing cotton cloth made mostly in New England for Bancroft's "Holland" window shades--cotton shades which, by the finishing process, were given properties close to that of Dutch linen.

Following the Civil War, in order to emphasize the company's finishing expertise, Joseph Bancroft & Sons established a laboratory for further experimentation in strengthening and waterproofing cotton goods. Coloidal chemists and machinists were integral members of the staff and the family members themselves contributed to such scientific emphasis. Trained as machinists, William and Samuel Bancroft were also well versed in the chemistry of dyes and finishes. Their cousin, John Bancroft, added his own expertise in 1877 when, after the death of Joseph Bancroft, he came from Providence, Rhode Island, eventually.

to supervise the finishing department. By the 1880's Samuel Bancroft was noted as the first American finisher to make Turkey Red. The firm also gained renown for making the first "fast black" (Eckman, 1931:86). In 1883, after beetle machines imported from England were installed, the company produced the only window shade in the world guaranteed not to fade (Prince, 1927:9).

Advances in chemical and process technology at the Bancroft Mills from the 1870's on included updating the motive power. Power to run calenders, mangles, and other oversized machines in 1875 was one large bucket waterwheel, twenty feet in diameter; consequently, operations had to stop when the river water was low. Literally to take up the slack, a new turbine waterwheel was installed by 1888 (Eckman, 1931:80). The use of steam expanded over the next thirty years with boiler plants operating adjacent to several factory buildings. Significantly, in the same era of technological change, the old partnership transferred to corporate ownership in 1889 (New Castle County, 1889), enabling the business to raise capital more readily with limited liability. The Bancroft Mills then introduced mercerizing to the American trade and grew at an ever quicker pace. In 1895, in order to expand both its manufacturing and finishing branches, the corporation purchased the Riddle Mills (New Castle County, 1895), consolidating the two mills in a little less than fifteen years and installing the huge central boiler plant.

In addition to expansion of work space at both mills and improved motive power, the consolidation took into consideration improved transport. By 1894, in order to take advantage of the nearby railroad lines designed to tap Pennsylvania's coal fields, the company created a spur to the mill site. Incorporated into the consolidation plan were several loading sheds and new railroad sidings to transport materials and finished goods to and from the site. By 1909 service on the Pennsylcania R.R. was also integrated across the river. By 1911 the new boiler house, which literally and visually linked the two mills was located on a terrace wide enough to afford ample siding for coal delivery and storage (Bancroft, 1921).

After on-site expansion was essentially complete, the company acquired by 1914 the former Garner Mills in Reading, Pennsylvania, transferring fabric production to the plant in order to increase the finishing capabilities at the Brandywine site. Following this, Bancroft put the first 81-inch beetled Hollands made in America on the market. The so-called "Basco" finishing, a viscose process, was trademarked in 1920 (Bounds, 1951:118). By 1922 the former Kentmere headrace, the last remnant of the old water power era, had been infilled, and the mills had achieved their present image.

With the addition of a third mill, the second mill in Pennsylvania in 1925, the Delaware plant continued to specialize in finishes, working particularly with coated window shades and book cover materials. In the 1930's the plant's experiments with impregnating polymerisable resins to make fabric crease resistent resulted in Bancroft's introduction of the so-called Everglaze process. In 1941 New York's Lord and Taylor department store took a full bank of its Fifth Avenue windows to introduce Bancroft's new finish for chintzes, chambrays, and an infinite number of other fabrics made under Bancroft licenses. World War II interrupted further experiments, however, and it was not until

1950 that a perfected Everglaze process was trademarked. Bancroft then licensed the process to sixty-five top firms (Anonymous, 1950). The company's strength up to this time had rested in the diversity and quality of its products, but, after World War II, when textile manufacturing in the northeast took a major turn to the south or abroad, Joseph Bancroft & Sons Co. ceased operation. The Wilmington plant was sold to the present owners in 1968 (New Castle County, 1968). The remarkable and relatively undisturbed landscape remains, however, as do the institutions established for the public good--all the result of industrial innovations that began with Joseph Bancroft and continued with his heirs.

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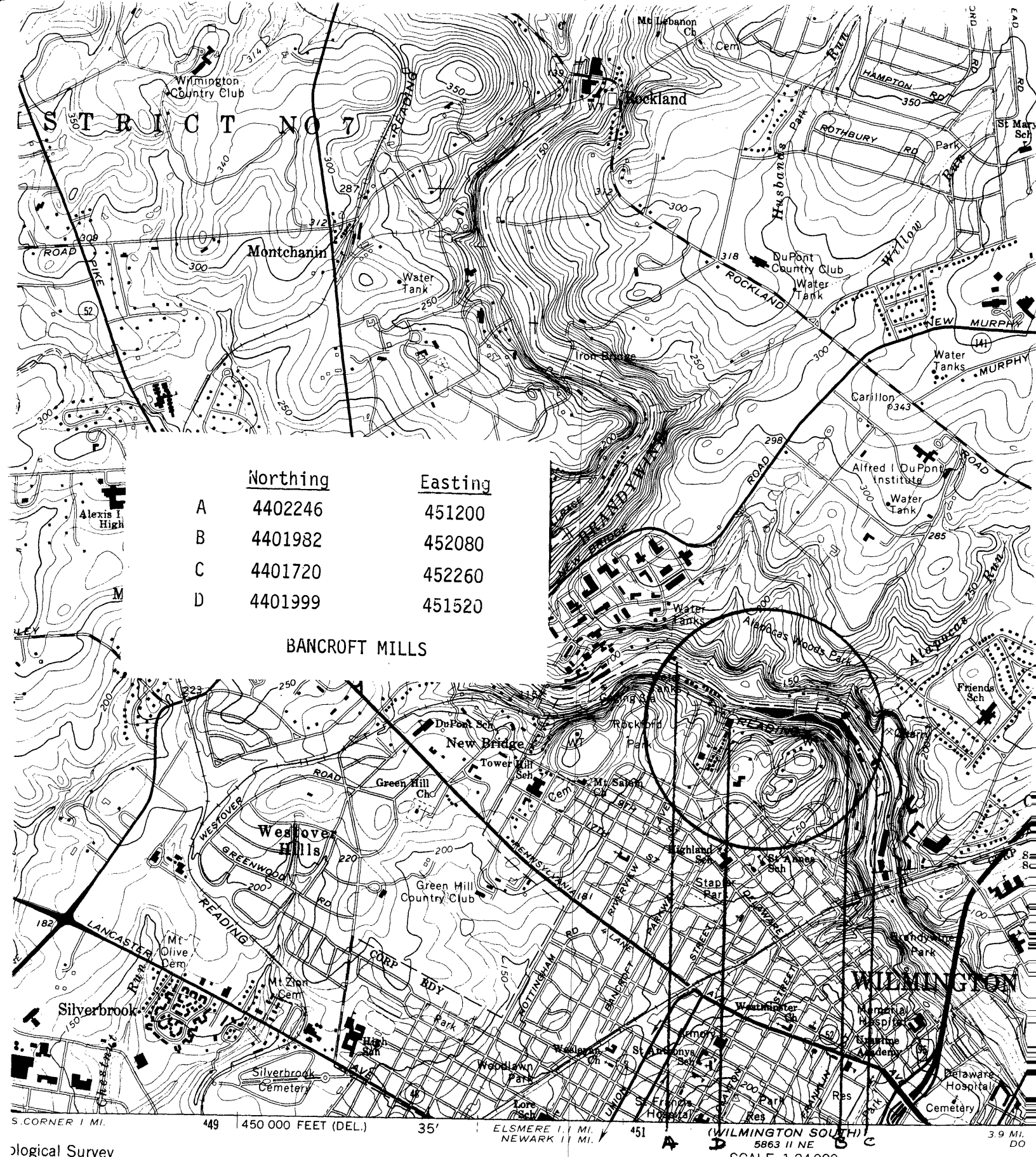
Verbal Boundary Description and Justification

The bounds of most of the complex are explained graphically in Figure 1, the Base Map. They extend from the Rockford dam, more than five hundred feet upstream of the Rockford plant, along the edge of the race to a point about twenty feet west of the J. Morton Poole House. Turning south, the bounds then meet the legal property lines of property 26-002.30, New Castle County, following said lines to a point where the Kentmere gate identifies the eastern terminus. With the exception of the Kentmere and Rockford dams which are considered in toto, the bounds then relate to the midstream line which marks the bounds between the City of Wilmington and Brandywine Hundred. Included within these bounds are tax parcels 26-002.30, 001, 002, 006, 007, and 008.



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A	4402246	451200
B	4401982	452080
C	4401720	452260
D	4401999	451520

BANCROFT MILLS

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UTM GRID AND 1973 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

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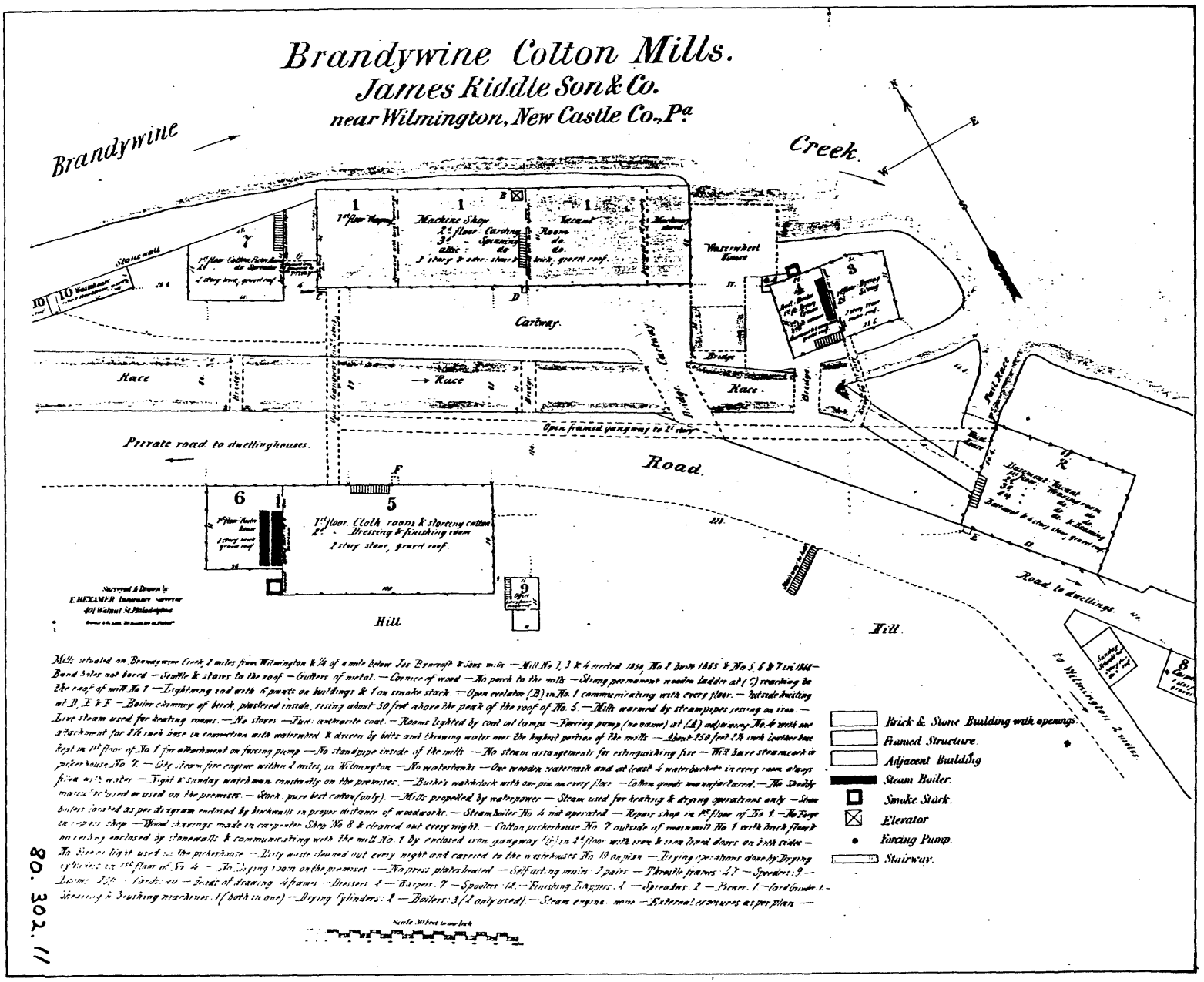


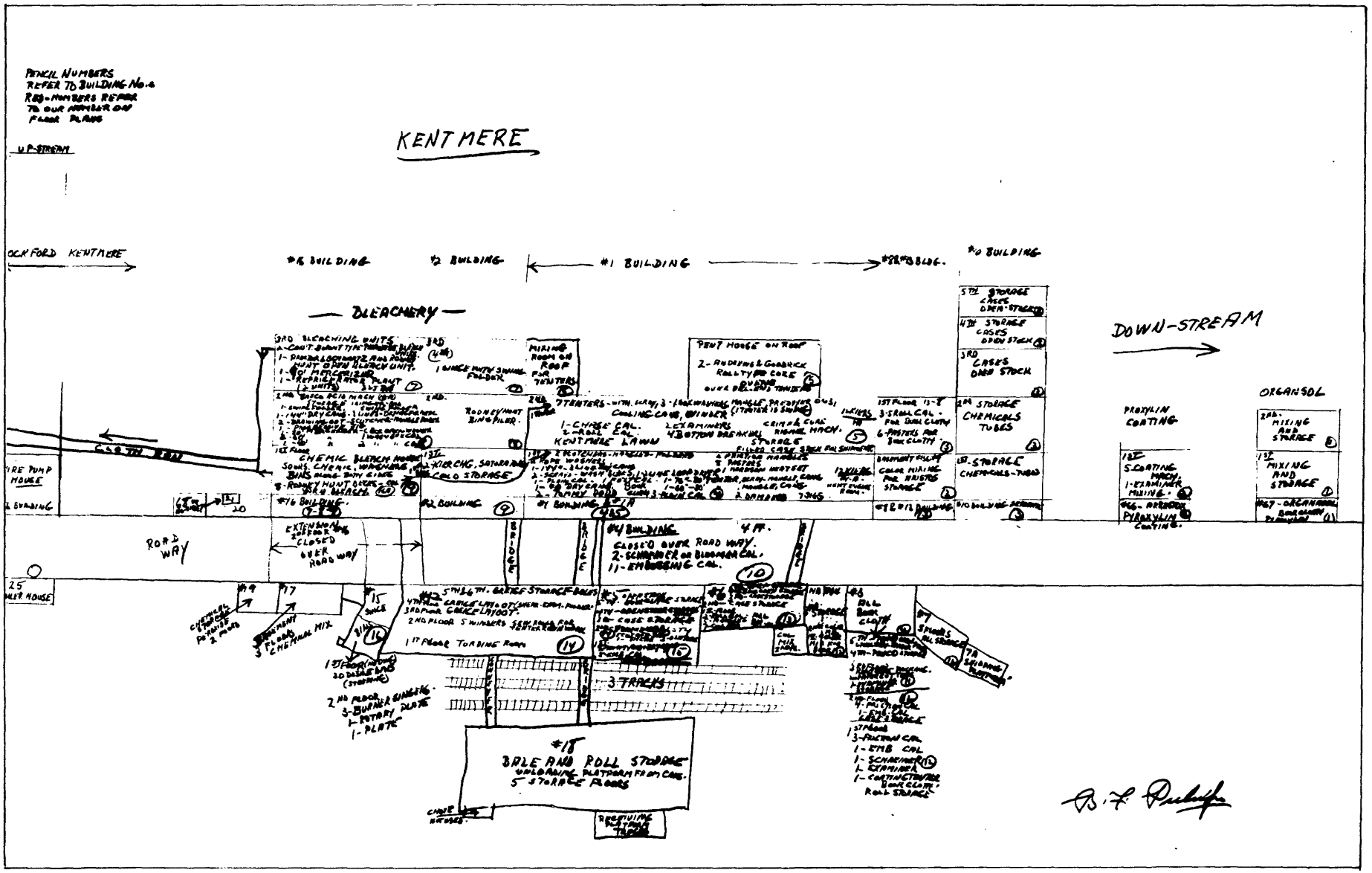
Mills situated on Brandywine Creek, 2 miles from Wilmington & ¼ of a mile below Jos Bancroft & Sons mills — Mill No 1, 3 & 4 erected 1850, No 2 built 1865 & No 5, 6 & 7 in 1866 — Band saws not used — Scuttle & stairs to the roof — Gutters of metal. — Cornice of wood — No porch to the mills — Strong permanent wooden ladder at (?) reaching to the roof of mill No 1 — Lightning rod with 6 points on buildings & 1 on smoke stack. — Open evelator (B) in No. 1 communicating with every floor. — Outside hoisting at D, E & F — Boiler chimney of brick, plastered inside, rising about 50 feet above the peak of the roof of No. 5. — Mills warmed by steampipes resting on iron — Live steam used for heating rooms. — No stoves — Fuel: anthracite coal. — Rooms lighted by coal oil lamps — Forcing pump (no name) at (A) adjoining No. 4 with one attachment for 1¼ inch hose in connection with waterwheel & driven by belts and throwing water over the highest portion of the mills — About 250 feet 2½ inch leather hose kept in 1st floor of No 1 for attachment on forcing pump — No standpipe inside of the mills — No steam arrangements for extinguishing fire — Will have steam work in pickerhouse No 7. — City steam fire engine within 2 miles, in Wilmington — No waterhawks — One wooden watercask and at least 4 waterbuckets in every room, always filled with water — Night & Sunday watchman, constantly on the premises. — Boiler's watchclock with one pin on every floor — Cotton goods manufactured. — No Daddy waste picked or used on the premises. — Stock, pure best cotton (only). — Mills propelled by waterpower — Steam used for heating & drying operations only — Steam boilers inspected as per 31 section enclosed by brickwalls in proper distance of woodwork. — Steam boiler No 4 not operated — Repair shop on 1st floor of No 1. — No Forge in repair shop — Wood shavings made in carpenter Shop No 8 & cleaned out every night. — Cotton pickerhouse No 7 outside of mainmill No 1 with brick floors & no cellar, enclosed by stonewalls & communicating with the mill No. 1 by enclosed iron gangway (E) on 4th floor with iron & iron lined doors on both sides — No Steam dryer used in the pickerhouse — Dirty waste cleaned out every night and carried to the waste house No 10 on plan — Drying operations done by Drying cylinders on 1st floor of No 4 — No Drying room on the premises — No press plates heated — Self acting mules: 2 pairs — Throstle frames: 47 — Spoolers: 9 — Looms: 250 — Cards: 20 — Seats of drawing frames — Drawers: 4 — Rovers: 7 — Spoolers: 12. — Finishing Jaggers: 4 — Spreaders: 2 — Reeler: 1. — Card Grinder: 1. — Dressing & Brushing machines: 1 (both in one) — Drying Cylinders: 2 — Boilers: 3 (2 only used). — Steam engine, none — External measures as per plan —

Surveyed & Drawn by E. HEXAMER Topographical Surveyor 401 Walnut St. Philadelphia

80. 302. 11

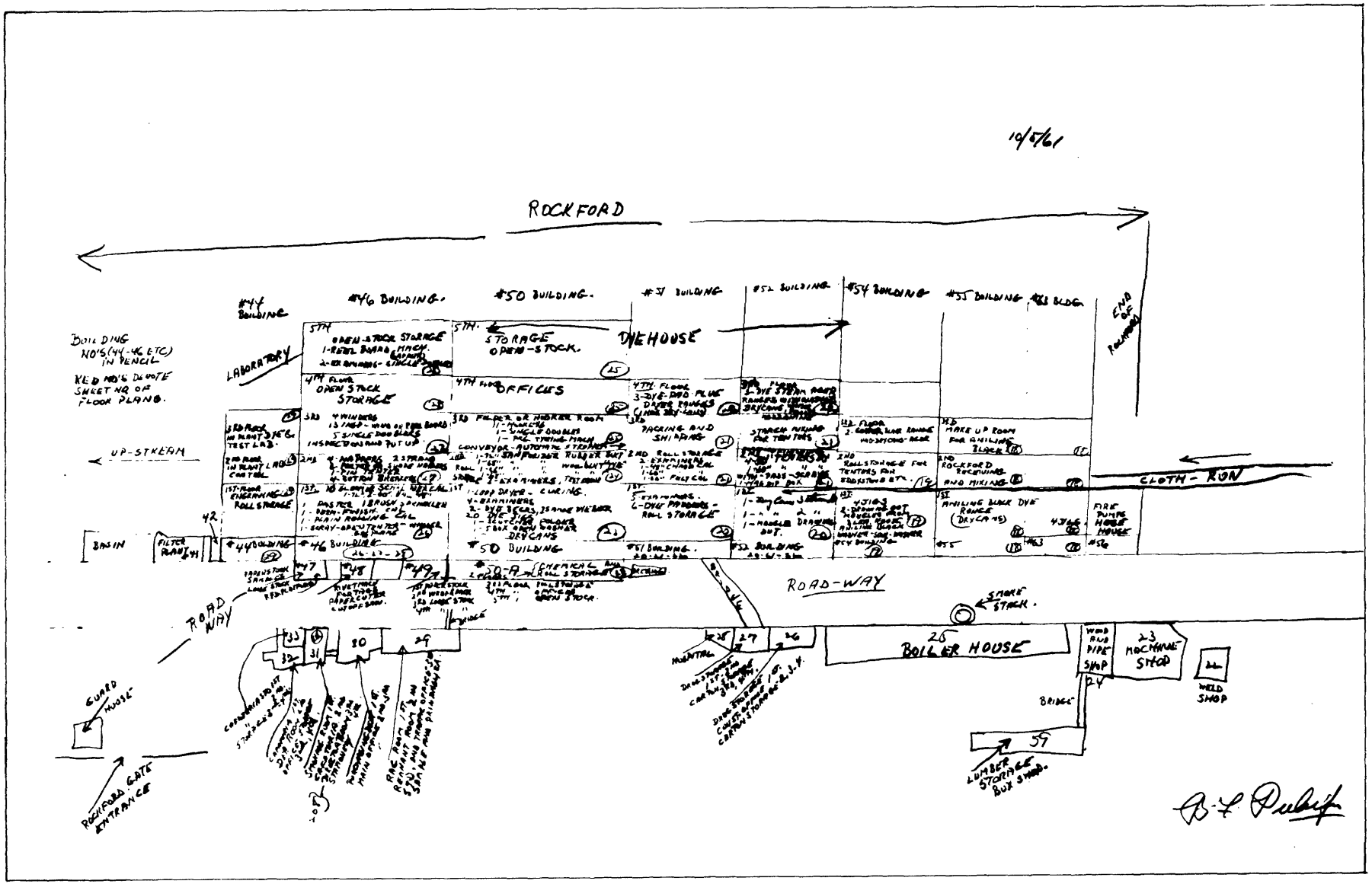
Hexamer Survey, Brandywine Mills, 1866

Figure 2



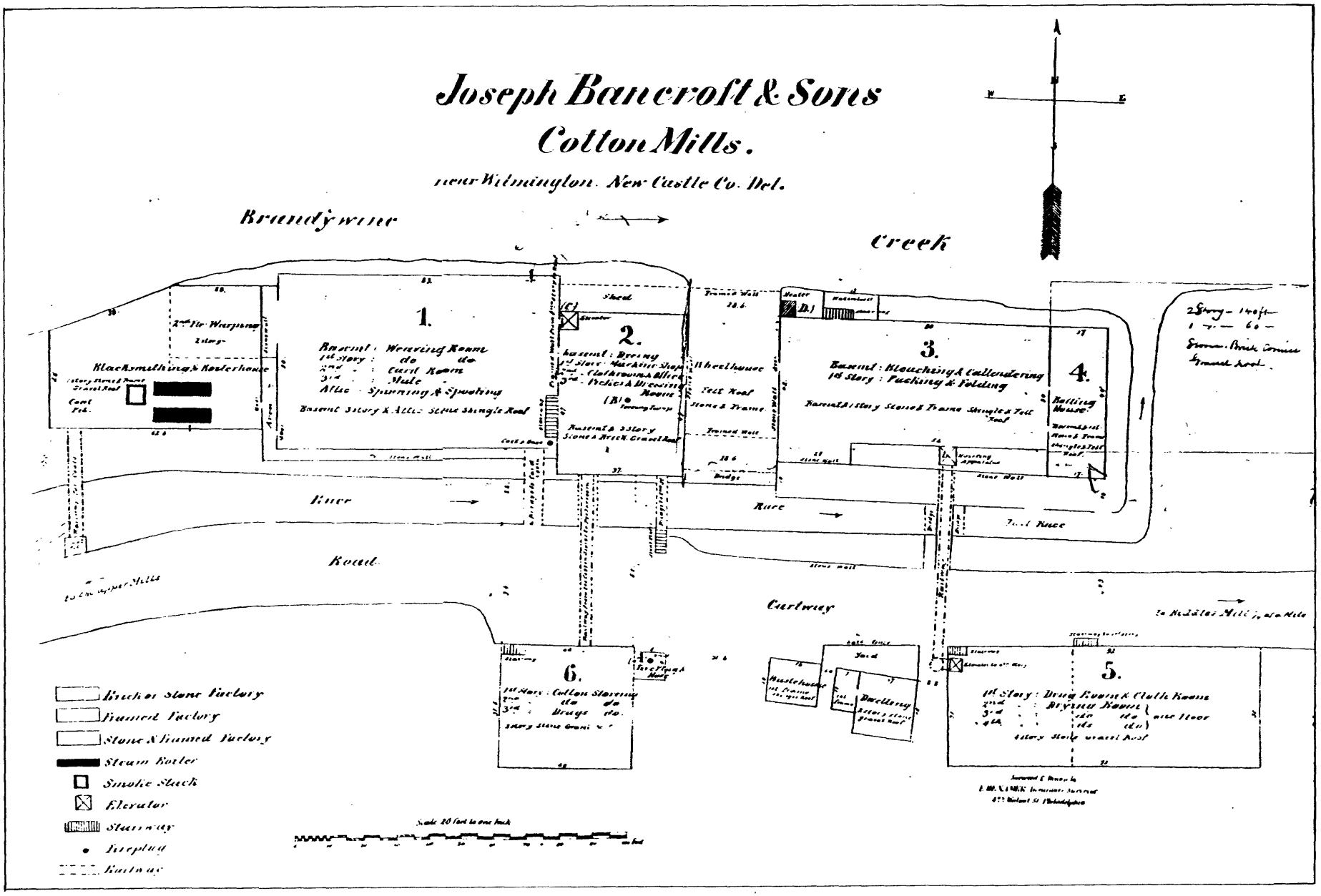
Pulsifer Survey, Kentmere, 1961

Figure 3



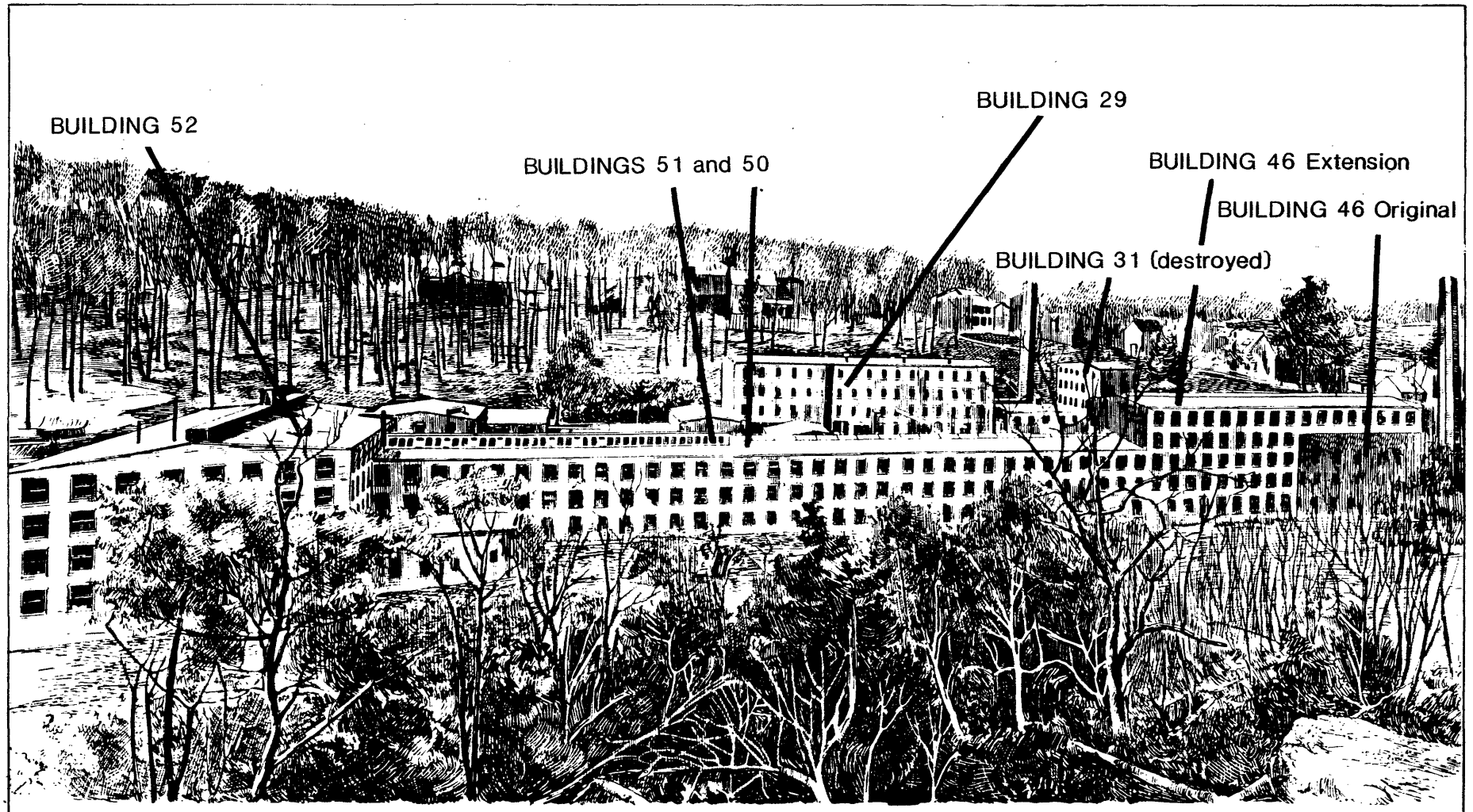
Pulsifer Survey, Rockford, 1961

Figure 5



Hexamer Survey, Bancroft Mills, 1866

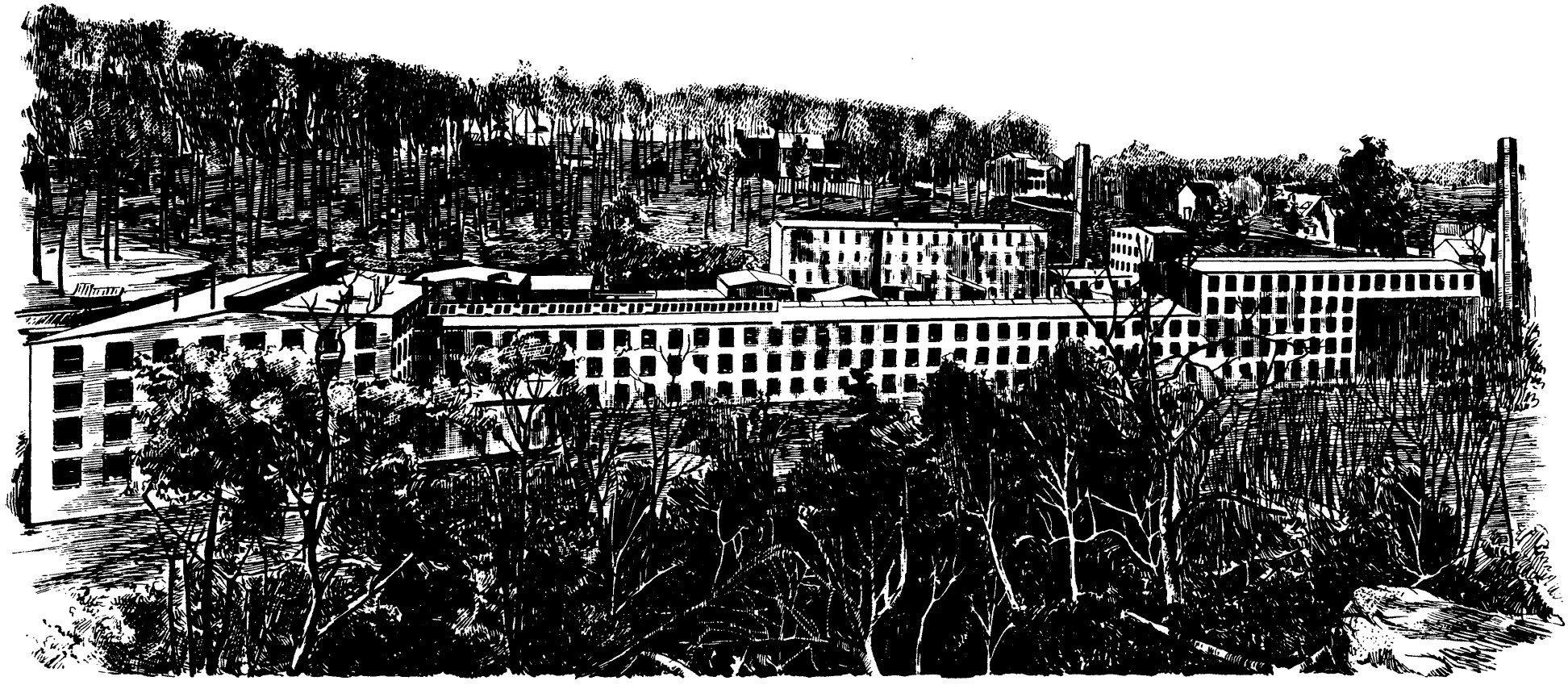
Figure 6



BANCROFT MILLS c. 1880

(From an old woodcut)

Figure 7



BANCROFT MILLS, c. 1880

(From an old woodcut)

Figure 7(a)