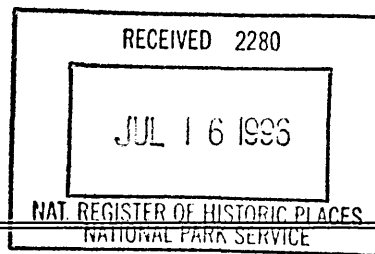


United States Department of the Interior
National Park Service

National Register of Historic Places Registration Form



1. Name of Property

historic name: O'Bannon Corporation Leather Division

other name/site number: O'Bannon Mill (preferred); Collins & Aikman Mill

2. Location

street & number: 90 Bay Spring Avenue

not for publication: N/A

city/town: Barrington vicinity: N/A

state: RI county: Bristol code: 001 zip code: 02806

3. Classification

Ownership of Property: private

Category of Property: building

Number of Resources within Property:

Contributing	Noncontributing	
<u>1</u>	<u> </u>	buildings
<u> </u>	<u> </u>	sites
<u> </u>	<u>1</u>	structures
<u> </u>	<u> </u>	objects
<u>1</u>	<u>1</u>	Total

Number of contributing resources previously listed in the National Register: N/A

Name of related multiple property listing: N/A

Property name O'Bannon Mill, Bristol County, Rhode Island

4. State/Federal Agency Certification

As the designated authority under the National Historic Preservation Act of 1986, as amended, I hereby certify that this X nomination ___ request for determination of eligibility meets the documentation standards for registering properties in the National Register of Historic Places and meets the procedural and professional requirements set forth in 36 CFR Part 60. In my opinion, the property X meets ___ does not meet the National Register Criteria.

___ See continuation sheet.

Frederick C Williamson
Signature of certifying official

11 July 1996
Date

State or Federal agency and bureau

In my opinion, the property ___ meets ___ does not meet the National Register criteria.

___ See continuation sheet.

Signature of commenting or other official

Date

State or Federal agency and bureau

5. National Park Service Certification

I hereby certify that this property is:

entered in the National Register
___ See continuation sheet.

___ determined eligible for the
National Register
___ See continuation sheet.

___ determined not eligible for the
National Register

___ removed from the National Register

___ other (explain):

Edson R Beall

7-23-96

Signature of Keeper

Date of Action

6. Function or Use

Historic: INDUSTRY

Sub: manufacturing facility
industrial storage

Current: VACANT

Sub: _____

Property name O'Bannon Mill, Bristol County, Rhode Island

7. Description

Architectural Classification:

NO STYLE

Other Description: _____

Materials: foundation BRICK, CONCRETE roof OTHER: tar
walls BRICK other _____

Describe present and historic physical appearance.

X See continuation sheet.

8. Statement of Significance

Certifying official has considered the significance of this property in relation to other properties: L

Applicable National Register Criteria: A

Criteria Considerations (Exceptions): _____

Areas of Significance: INDUSTRY

Period(s) of Significance: 1905 1926

Significant Dates: 1905 1912 1914 1926

Significant Person(s): _____

Cultural Affiliation: _____

Architect/Builder: _____

State significance of property, and justify criteria, criteria considerations, and areas and periods of significance noted above.

X See continuation sheet.

Property name O'Bannon Mill, Bristol County, Rhode Island

9. Major Bibliographical References

See continuation sheet.

Previous documentation on file (NPS):

- preliminary determination of individual listing (36 CFR 67) has been requested.
- previously listed in the National Register
- previously determined eligible by the National Register
- designated a National Historic Landmark
- recorded by Historic American Buildings Survey # _____
- recorded by Historic American Engineering Record # _____

Primary Location of Additional Data:

- State historic preservation office
- Other state agency
- Federal agency
- Local government
- University
- Other -- Specify Repository: private collection

10. Geographical Data

Acreage of Property: 2.77 acres

UTM References:	Zone	Easting	Northing	Zone	Easting	Northing
A	<u>19</u>	<u>304985</u>	<u>4624165</u>	B	_____	_____
C	_____	_____	_____	D	_____	_____

See continuation sheet.

Verbal Boundary Description: See continuation sheet.

Boundary Justification: See continuation sheet.

11. Form Prepared By

Name/Title: Virginia H. Adams, Director of Architectural Projects; Catherine deJ. Vieth, Assistant Architectural Historian; Matt Kierstead, Industrial Historian; Mary Kate Harrington and Joshua Safdie, Architectural Projects Assistants

Organization: The Public Archaeology Laboratory, Inc. Date: May 1996

Street & Number: 210 Lonsdale Avenue Telephone: (401) 728-8780
 City or Town: Pawtucket State: RI ZIP: 02860

United States Department of the Interior
National Park Service

National Register of Historic Places Continuation Sheet

Property name O'Bannon Mill, Bristol County, Rhode Island

Section number 7

Page 5

Description

Introduction

Located on the south side of Bay Spring Avenue in West Barrington, the O'Bannon Leather Division Mill (O'Bannon Mill) is a large brick building that was constructed in several phases between 1905 and 1914. It was the main mill building in a complex of smaller buildings used in the manufacturing of imitation leather by the O'Bannon Corporation. The O'Bannon Mill is bordered by a pond formed from the Annawomscutt Brook (also called Bay Spring Creek) to the west, Allin's Cove to the south, and the Providence, Warren, and Bristol Railroad to the east. Other small, associated buildings and water tower (not extant) were located west across the brook. The pond was lined with granite blocks in 1912 and contains the remains of a stone and earth dam at the southwestern end. Currently, only one one-story, two-by-one bay, shed-roof building of fire brick remains of these related structures and lies outside the nomination boundaries. Evidence of other buildings in the complex exists only as concrete floor slabs. A small one-story, one-bay, hipped-roof, vertical-sided structure (non-contributing) sits at the entrance gate to the property, near the intersection of Bay Spring Avenue and Annawomscutt Brook.

The O'Bannon Mill faces northwest, with seven bays along the primary facade and southeast end and 37 bays along the side elevations. Each bay measures approximately ten feet across. Constructed of hard-fired, red brick laid in American bond (also called mill bond) with slow-burning interior framing, the building ranges from two to three stories in height with the first story below ground level on three elevations (NW,NE,SE) and lit by narrow light well trenches. Although not confirmed, it is generally accepted that the mill is constructed of brick manufactured in Barrington. The mill's windows feature segmental-arch openings with triple courses of row-lock arches and cast concrete sills. The fenestration varies: although sash are uniformly 8/8, window design includes double- or single-hung sash and hopper-and-pivot-style windows. The southwest side of the building has been fully excavated, with the ground floor of the southwest elevation opening at ground level. A tarred, low-pitch, end-gable roof covers the main sections of the mill. One- and two-story brick additions on the southwest side have flat roofs. The remaining shed additions, elevator shaft, and loading docks all postdate the period of significance. With the exception of one gabled, metal garage, these additions were built after 1950.

United States Department of the Interior
National Park Service

National Register of Historic Places Continuation Sheet

Property name O'Bannon Mill, Bristol County, Rhode Island

Section number 7

Page 6

Site Development

The development of the site appears to have been as follows. By 1895, an L-shaped building stood west of the railroad and south of Bay Spring Avenue (Everts & Richards map 1895). A sketch dated 1903 (Bowen-O'Bannon Collection) shows a complex of at least four interconnected buildings (Figure 1). In 1905, the Frost Finishing Company replaced most of this mill with a one-story, five-by-fifteen bay brick-faced, wood-frame building with a southwest brick extension. According to a Providence Journal article from December 3, 1905, this new mill and an earlier mill to the north, possibly a portion of the one shown in 1903, were to be connected across a narrow passageway by a bridge. The boiler house and chimney of the 1905 mill were at the west corner of the building, and traces of footings for both structures are visible today within the engine room of the current building. Both of the mill buildings were one story in height at the level of the railroad tracks. In 1911, a photograph of the mill was published in the Providence Board of Trade Journal (Figure 2).

Major reconstruction of the O'Bannon Mill took place in 1912, followed by an expansion of the second floor in 1914 to create the building standing today. This new construction between 1912 and 1914 established a mill purpose-built to manufacture imitation leather. In 1912 the terrain under and around the 1905 building was excavated to insert a lower floor level. The 1905 mill was enveloped on all four sides with new construction, and substantial portions of the old mill were razed (floor plans and photographs, Bowen-O'Bannon Collection). The footprint of the entire building was expanded from three (facade) and five (rear) to a full seven bays in width. This expansion and reuse of an older mill was common in mill development (Gordon and Malone 1994:327). The boiler house, engine room, and one-story bleach and dye house were also constructed in this phase. Several panoramic photographs and an artist's rendering depict the plant shortly after completion, and a Plant Appraisal of the O'Bannon Corporation on December 31, 1914 contains 56 handwritten pages of inventory data (Bowen-O'Bannon Collection). The mill is described as a brick building containing 61,500 square feet, with dimensions of 345 feet, 3 inches by 70 feet. The three-story portion of the mill extended for 70 feet, while the two-story portion continued for another 275 feet, 3 inches. Photographs taken in 1912 and 1914 (Bowen-O'Bannon Collection) reveal that the southern portion of the third story was added in 1914. The Boiler Room (50 feet by 40 feet), the Engine Room (30 feet by 40 feet), and the Bleach and Dye House (91 feet, 2 inches by 40 feet) are also mentioned. The appraisal states that the "whole building is complete with concrete floors, drains, all main partitions. Extra timbers and posts for the support of machines

United States Department of the Interior
National Park Service

National Register of Historic Places Continuation Sheet

Property name O'Bannon Mill, Bristol County, Rhode Island

Section number 7

Page 7

and including 10,000 gallon water tank on the roof of the building" (Appraisal 1914:3). The remainder of the complex contained a deep well pump house; small stores house; dope mixing house; small, soluble cotton store house; tank house; nitrating and cotton jelly house (including a cotton picker room, cotton dry room, nitrating room, and wash room, as well as extracting, dehydrating, and cotton jelly rooms); still house; laboratory; scale house; experimental building; various sheds; two factory cottages; factory privies; fire hydrant and hose; wood bridge over pond; and wagon bridge over dam (Appraisal 1914:3-5). The majority of these buildings were located west of the pond and were made of tile (fire-brick), or wood-frame covered in galvanized corrugated iron, novelty siding, matched board, or clapboard (Appraisal 1914:4-5). The subsequent development of the mill is recorded on Sanborn maps published in 1921, 1928, and 1928 revised in 1950 (Figures 3,4,5).

Mill Exterior

Although predominantly continuous and visually cohesive, the main body of the mill (1912,1914) logically divides into four sections from northwest to southeast (Figures 6a,b,c). A description of each section follows.

Built in 1912, the first (northwestern) section, or front portion, of the O'Bannon Mill measures seven-by-seven bays and is three stories in height. The southeastern two bays of this section's southwest elevation extend up slightly in a parapet wall that was most likely added in 1914. The facade and the first seven bays on each side elevation feature brick piers between the window bays. The main mill entrance is located on the primary facade in the second bay from the east and is approached by late-20th-century poured concrete steps and wrought-iron railing. The double-leaf, multi-light, wood-panel doors are surmounted by a brick segmental row-lock arch with a cast concrete keystone dated 1912 (Figure 7). This portion of the mill overlaps with the site of the 1905 mill; none of the walls from this part of the 1905 structure remain.

The second section of the mill, also built in 1912, extends ten bays to the southeast. It is also seven bays wide and three stories in height. Photographs taken during the time of construction document that the second floor of this section was added in 1914. It is similar in layout to the front portion, with a parapet wall on the last two bays of the southwest elevation, although none of it exhibits piers construction. This portion of the mill stands on the site of the 1905 mill building, with an original wall, now interior, from the 1905 building evident between the second and third sections of the mill.

United States Department of the Interior
National Park Service

National Register of Historic Places Continuation Sheet

Property name O'Bannon Mill, Bristol County, Rhode Island

Section number 7

Page 8

The third 1912 section measures seven-by-fifteen bays and is two stories in height. It has similar construction to the front sections of the mill, with regularly spaced, brick-arched fenestration. This section also occupies the site of the 1905 mill that was enveloped by new construction in 1912. Original walls, not interior, from the 1905 building exist along the southwest elevation of this portion.

A fourth section of six-by-seven bays and two stories was also added to the rear (southeast) elevation at that time. These expansions are evident in the physical material of the mill, and are also shown in photographs and floor plans completed in 1912 (Bowen-O'Bannon Collection). The original roof ridge of the third section was centered for a five-bay building and is now off-center in the seven-bay width. The roof ridge shifts to center position for the six bays added to the southeastern end of the mill. A loading dock and entrance have been added to the rear elevation in the late twentieth century.

The engine room, boiler house, and bleach and dye house were also erected by the O'Bannon Corporation in 1912. These three additions are contiguous and are attached along the southwest elevation of the mill. The engine room and boiler house are two stories in height, three bays in width, and each four bays in length. The flat roof is raised an additional half-story along the length of the northeastern bay of the boiler room. In addition, shallow iron-capped parapet walls extend up from both the northwestern and southeastern elevations of the engine room. The ground-floor windows of the boiler house have been filled with concrete block. Paired metal doors remain at ground level at the southwest end of the boiler house and also centered on the engine room, raised a half-story from ground level. In 1905, The Frost Finishing Company planned to make an addition to the southwest elevation that was to measure 20 by 26 feet. This was most likely the original boiler room, physical evidence of which remains as a parged brick-and-rubble foundation wall in the crawlspace of the current engine room. A one-story, three-bay-wide, brick bleach and dye house extends ten bays along the northwest elevation of the main mill building and adjoins the northwest wall of the engine room. The addition follows the same construction methods as the rest of the mill, although all of the windows have since been at least partially filled and replaced with metal casement windows.

A one-and-a-half-story, one-by-four bay addition appears near the southeast end of the southwest elevation. This structure has corrugated metal walls and gabled roof with a monitor roof. Since 1950, several other one-story, concrete block and metal-clad additions have been constructed and almost

United States Department of the Interior
National Park Service

National Register of Historic Places
Continuation Sheet

Property name O'Bannon Mill, Bristol County, Rhode Island

Section number 7

Page 9

completely cover the southwest elevation of the two-story section of the main mill. A tall, one-story, three-by-four bay, flat-roof, concrete block garage was added between the boiler house and the metal garage, and a one-story, one-by-two bay, gabled structure also covered in corrugated metal is attached to the south corner of the main mill building. In addition, a brick elevator shaft and one-story, one-bay, asbestos-clad loading dock were attached after 1950 to the southwest elevation of the main building at the northwest elevation of the one-story extension. The only addition to the northeast elevation of the main mill building is a small, one-story, two-by-one bay, side-gable, wood-frame loading dock located over the rail spur and completed after 1950. It is connected with the interior through original over-sized, multi-light, wood-panel double-leaf doors. Three other sets of smaller double-leaf doors were originally located along the northeast elevation; one pair has been partially filled and replaced with a single modern door.

Mill Interior

The interior of the O'Bannon Mill retains much of its standard slow-burning mill construction, although all of the manufacturing equipment has been removed. The mill framing consists of thick wood posts and beams carrying multi-layered, thick wood flooring instead of the previously popular, but dangerous, joisted mill floors (Gordon and Malone 1994:302). Slow-burning construction, also known as factory construction, became the norm in the middle of the nineteenth century and remained popular through the 1920s (Gordon and Malone 1994:305). In addition, the O'Bannon Mill was constructed using thick wood posts, rather than cast-iron columns. Although cast-iron columns were in use in British mills as early as the late eighteenth century, American engineers remained skeptical of using metal in a structural capacity. This was due in part to the collapse of the Pemberton Mill in 1860. By the 1910s, wood columns were still a common part of slow-burning mills and were recommended as "safe mill construction" by the mutual insurance companies (Gordon and Malone 1994:306).

The main entrance at the front (northwest) of the building leads to a vestibule with vertical, beaded, tongue-and-groove board sheathing that in turn leads to a similarly clad staircase, rest rooms, and office space on the first and second floors. The first two levels of the main mill building are mostly open space with chamfered posts and beams placed in varying rows, primarily two rows creating three aisles. The majority of the posts are connected to the beams with cast iron brackets. In the third section of the ground floor, some of the beams are further supported by a row of small-diameter metal columns. Posts on the first floor in the third

United States Department of the Interior
National Park Service

National Register of Historic Places Continuation Sheet

Property name O'Bannon Mill, Bristol County, Rhode Island

Section number 7

Page 10

section of the building are reinforced with cross-bracing that was added by 1914 (Appraisal 1914:3). Interior brick walls divide the space inside the mill into large rooms: three rooms on the ground floor, four rooms on the first floor, and two rooms on the second floor. According to the 1921 Sanborn Map (Figures 6a,b,c), the ground floor contained rooms for a box and machine shop, storage, and coating, respectively from northwest to southeast. The first floor was used for shipping, embossing, coating, and a color room, respectively, while the second floor contained office and storage space. The one-story bleach and dye house held a coating and filling room in 1921.

Brick-filled original arched windows are evident on the interior wall between the second and third sections of the first floor, the northwest and northeast walls of the one-story bleach and dye house, and the wall separating the boiler house and engine room. The southwestern brick wall of the second and third sections of the mill and the brick wall separating the boiler house and engine room both date to the 1905 mill building. The boiler house is open throughout its two- to two-and-a-half-story height, and the engine room has a raised floor with a crawlspace below. The roof of the engine room is supported by steel I-beams. One boiler dating from 1951 remains in the boiler house, but all equipment has been removed from the engine room. The second floor of the mill retains original rest rooms with vertical, beaded, tongue-and-groove board sheathing lit by pyramidal skylights. This skylight design is repeated on the roof of the two-story rear portion of the mill and in the one-story bleach and dye house addition.

Summary

In conclusion, the O'Bannon Mill stands virtually as built in 1912 and 1914. It stands as an example of the transition from tall, multi-storied, gabled or mansard-roof mill buildings of the nineteenth century to the single-story, flat-roof mill buildings of the early twentieth century. The mill was built with slow-burning construction methods specifically to manufacture imitation leather. The only permanent changes since 1914 are the brick elevator shaft and loading dock at the northwest corner of the mill. The series of sheds and structures attached to the south end of the west elevation are all exterior elements that could be easily removed and do not compromise the integrity of the mill.

United States Department of the Interior
National Park Service

National Register of Historic Places Continuation Sheet

Property name O'Bannon Mill, Bristol County, Rhode Island

Section number 7

Page 11

Photographs

Photographs taken by Aaron Usher (Aaron Usher III Photography) and Catherine Vieth (PAL Inc.), May/June 1996.

Original Negatives at: Rhode Island Historical Preservation
and Heritage Commission
Old State House
150 Benefit Street
Providence, Rhode Island 02903

8" x 10" Photographs

- Photo 1: Primary Facade
View Southwest
- Photo 2: Southwest Elevation
View North
- Photo 3: Southwest Elevation
View Northeast
- Photo 4: Northeast Elevation
View West
- Photo 5: Northeast Elevation
View Southwest
- Photo 6: Rear Elevation
View North
- Photo 7: Ground Floor Interior
View Southeast
- Photo 8: Ground Floor Boiler House
View Southeast
- Photo 9: First Floor Vestibule
View West
- Photo 10: First Floor Interior
View North

United States Department of the Interior
National Park Service

National Register of Historic Places Continuation Sheet

Property name O'Bannon Mill, Bristol County, Rhode Island

Section number 7

Page 12

Photo 11: First Floor Interior
View West

Photo 12: Second Floor Interior
View North

United States Department of the Interior
National Park Service

National Register of Historic Places Continuation Sheet

Property name O'Bannon Mill, Bristol County, Rhode Island

Section number 7

Page 13

Figure 1
Historic Sketch, Bowen-O'Bannon Collection



United States Department of the Interior
National Park Service

National Register of Historic Places Continuation Sheet

Property name O'Bannon Mill, Bristol County, Rhode Island

Section number 7

Page 14

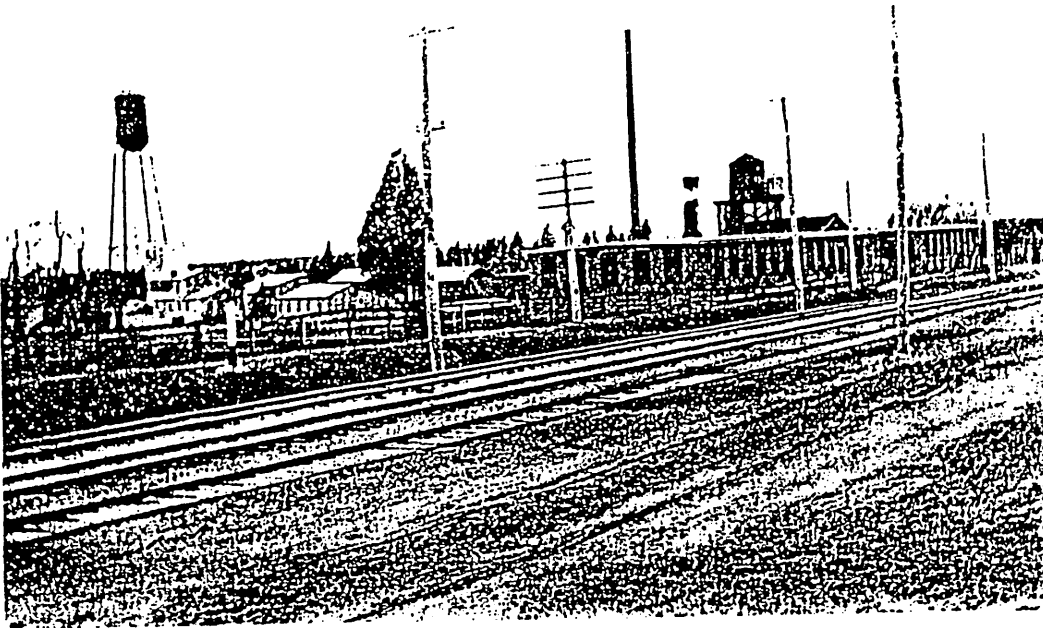
Figure 2

Source: Providence Board of Trade Journal
1911 The Frost Finishing Company. June:298.

298

BOARD OF TRADE JOURNAL

[JUNE, 1911]



FROST FINISHING CO.

Manufacturers
of

Artificial Leather

Factories

West Barrington, R. I.
West Nutley, N. J.

Selling Agents

O'BANNON CORPORATION
74 Duane Street . . . New York

United States Department of the Interior
National Park Service

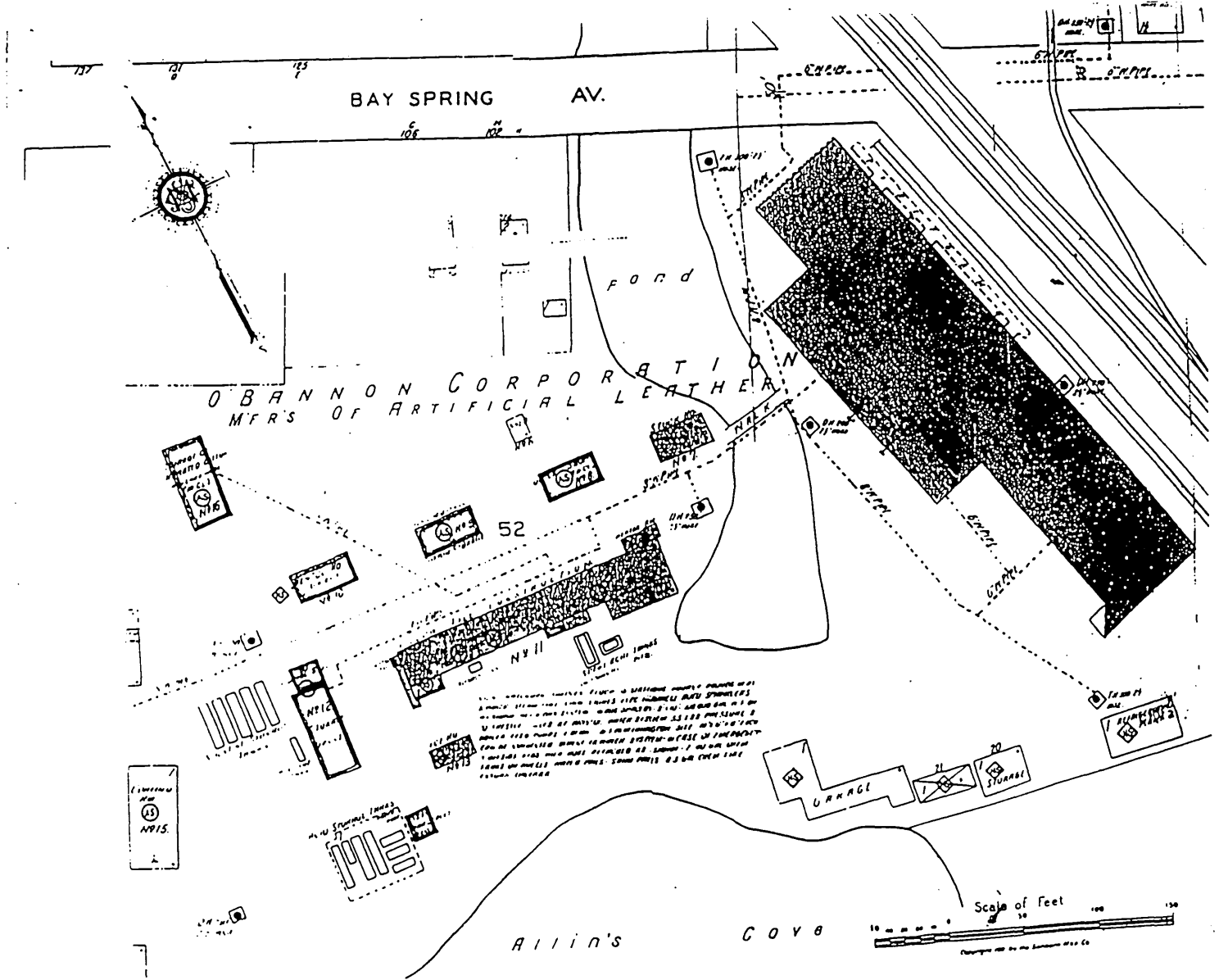
National Register of Historic Places Continuation Sheet

Property name O'Bannon Mill, Bristol County, Rhode Island

Section number 7

Page 15

Figure 3
Sanborn Fire Insurance Co. Map of West Barrington, RI (Plate 9), 1921



United States Department of the Interior
National Park Service

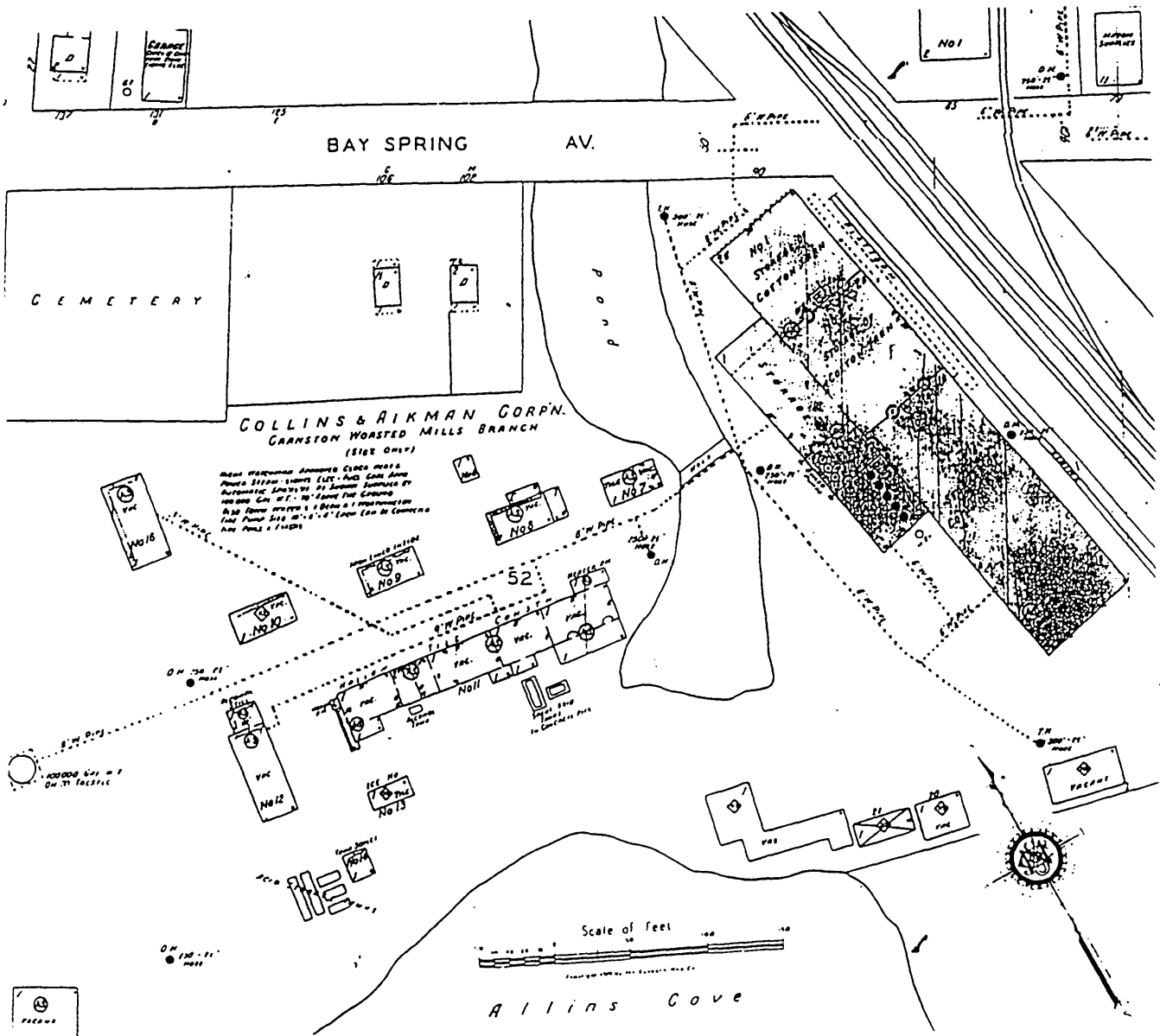
National Register of Historic Places
Continuation Sheet

Property name O'Bannon Mill, Bristol County, Rhode Island

Section number 7

Page 16

Figure 4
Sanborn Fire Insurance Co. Map of West Barrington, RI (Plate 15), 1928



United States Department of the Interior
National Park Service

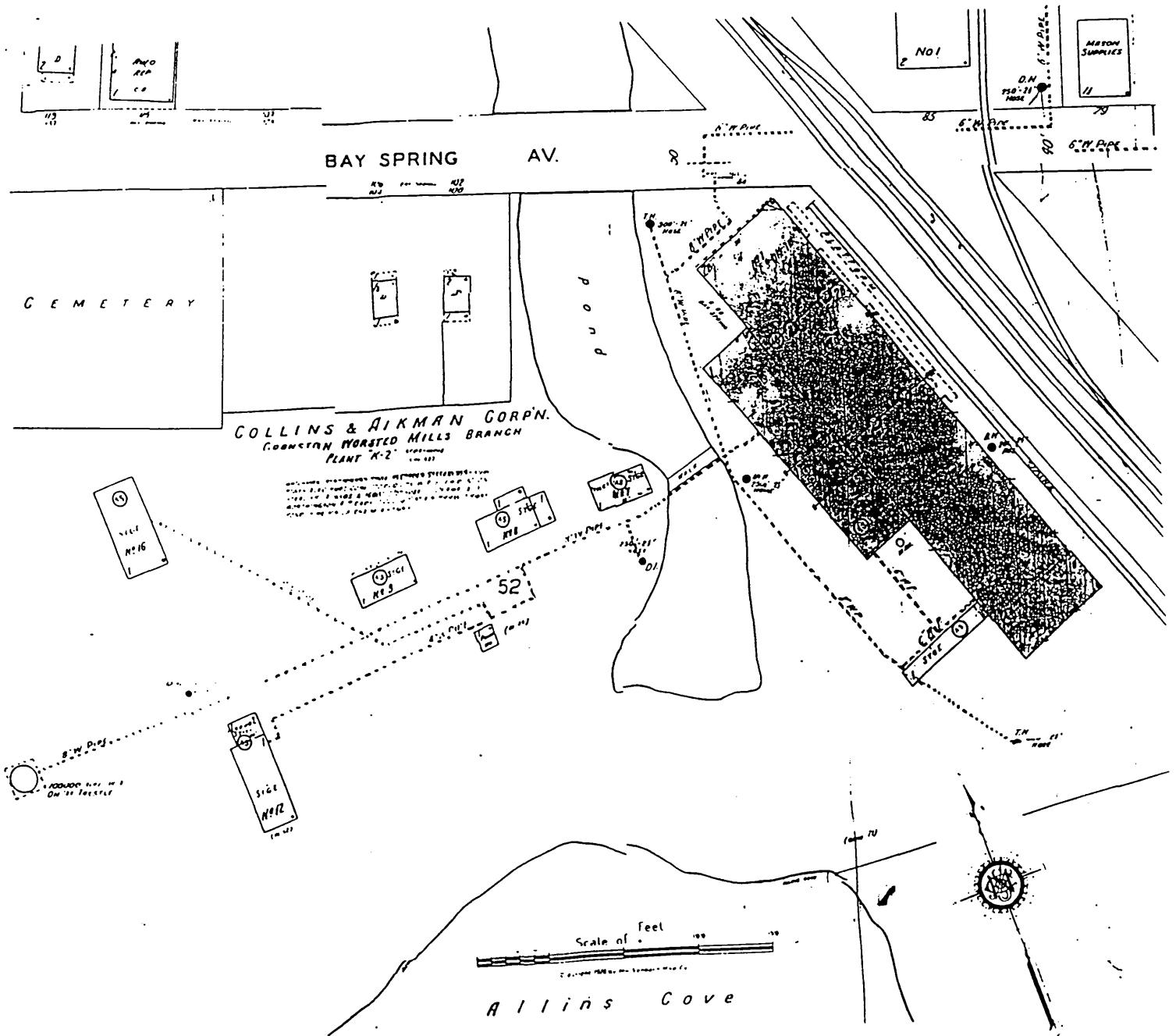
National Register of Historic Places Continuation Sheet

Property name O'Bannon Mill, Bristol County, Rhode Island

Section number 7

Page 17

Figure 5
Sanborn Fire Insurance Co. Map of West Barrington, RI (Plate 15), 1950



United States Department of the Interior
National Park Service

National Register of Historic Places Continuation Sheet

Property name O'Bannon Mill, Bristol County, Rhode Island

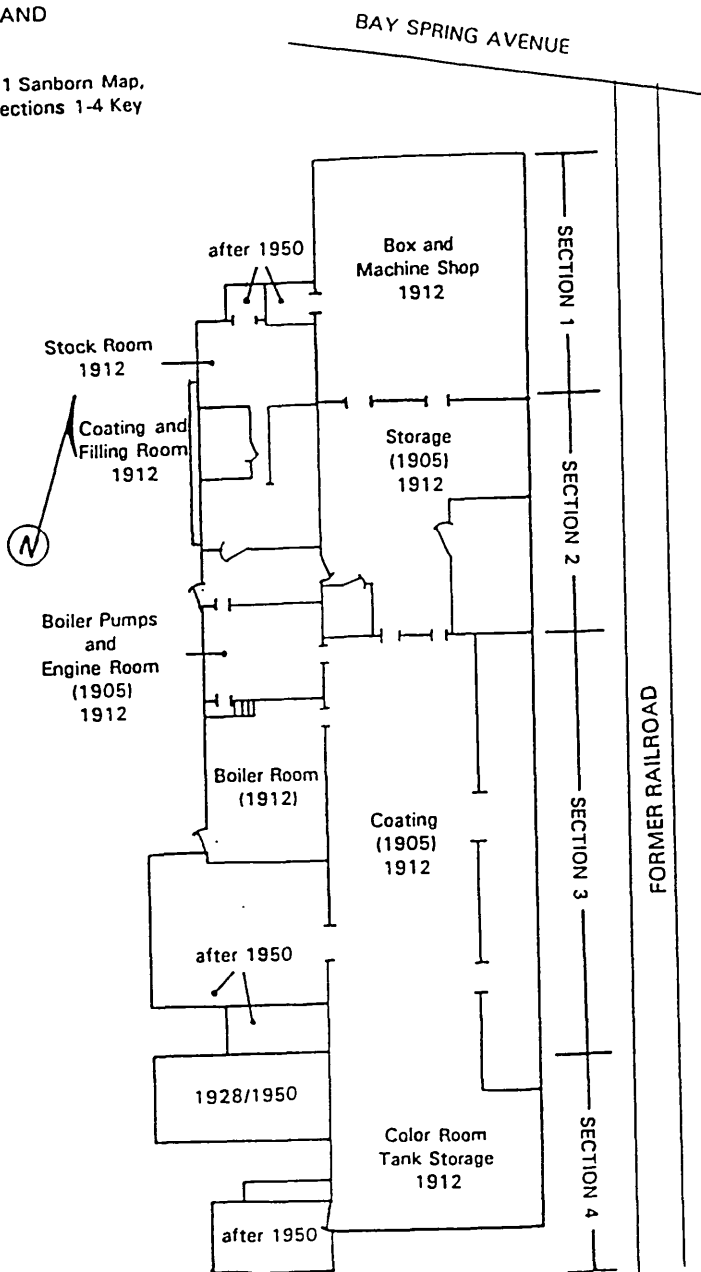
Section number 7

Page 18

Figure 6a.
O'BANNON MILL
Ground Floor Plan

BARRINGTON, RHODE ISLAND
- Not to Scale -

With Uses As Shown on 1921 Sanborn Map,
Dates of Construction, and Sections 1-4 Key



United States Department of the Interior
National Park Service

National Register of Historic Places Continuation Sheet

Property name O'Bannon Mill, Bristol County, Rhode Island

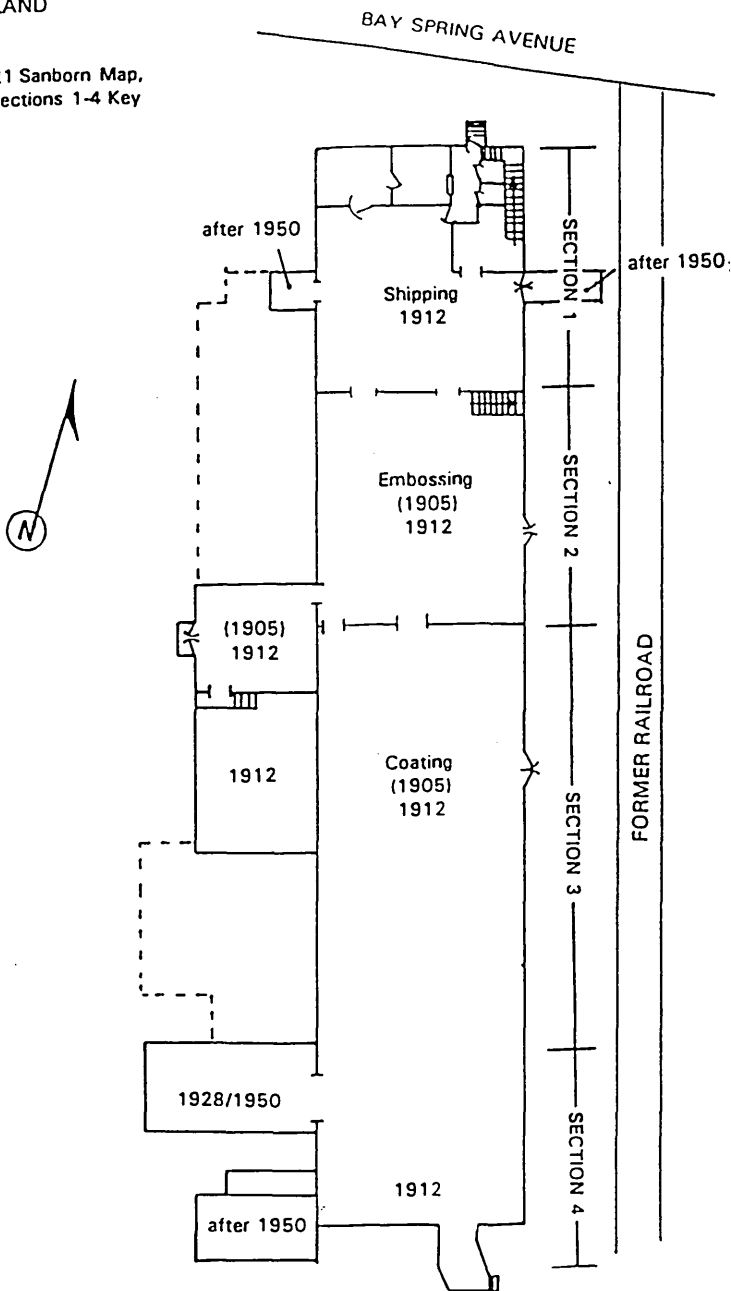
Section number 7

Page 19

Figure 6b.
O'BANNON MILL
First Floor Plan

BARRINGTON, RHODE ISLAND
- Not to Scale -

With Uses As Shown on 1921 Sanborn Map,
Dates of Construction, and Sections 1-4 Key



United States Department of the Interior
National Park Service

National Register of Historic Places Continuation Sheet

Property name O'Bannon Mill, Bristol County, Rhode Island

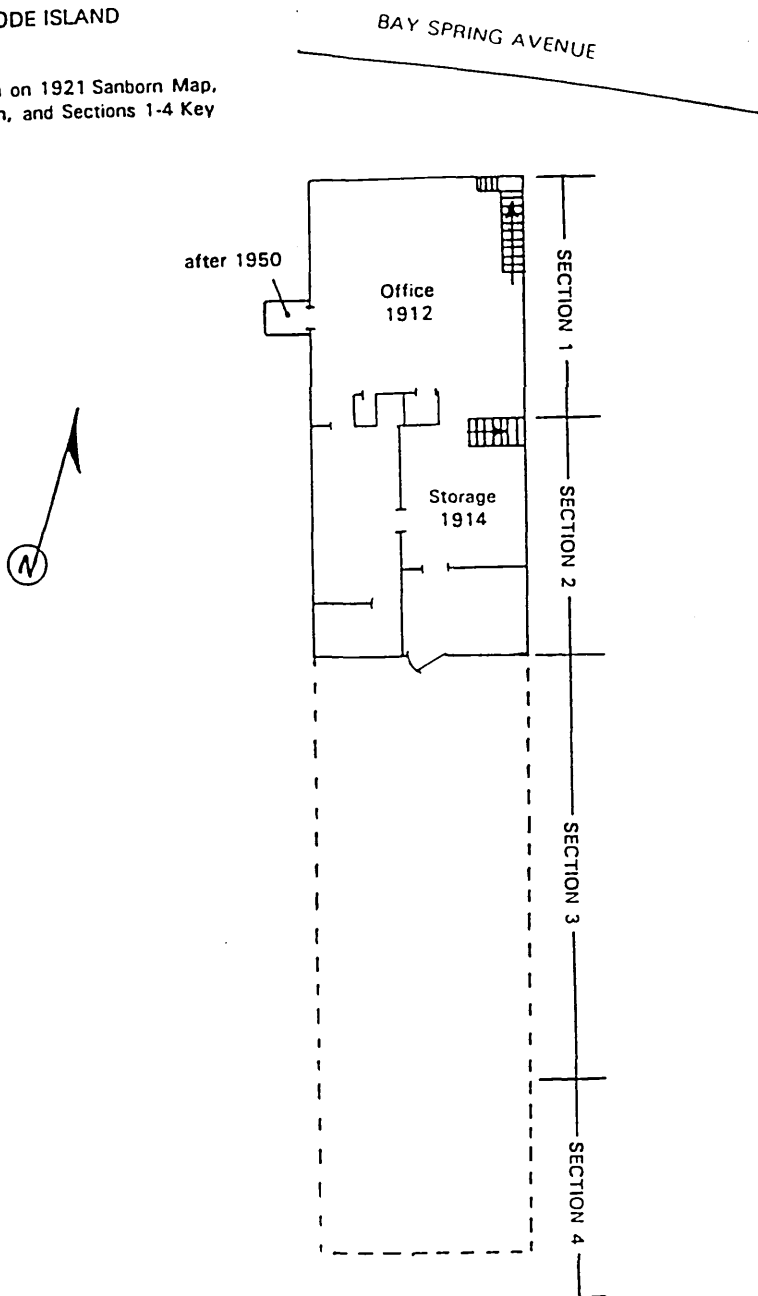
Section number 7

Page 20

Figure 6c.
O'BANNON MILL
Second Floor Plan

BARRINGTON, RHODE ISLAND
- Not to Scale -

With Uses As Shown on 1921 Sanborn Map,
Dates of Construction, and Sections 1-4 Key



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National Park Service

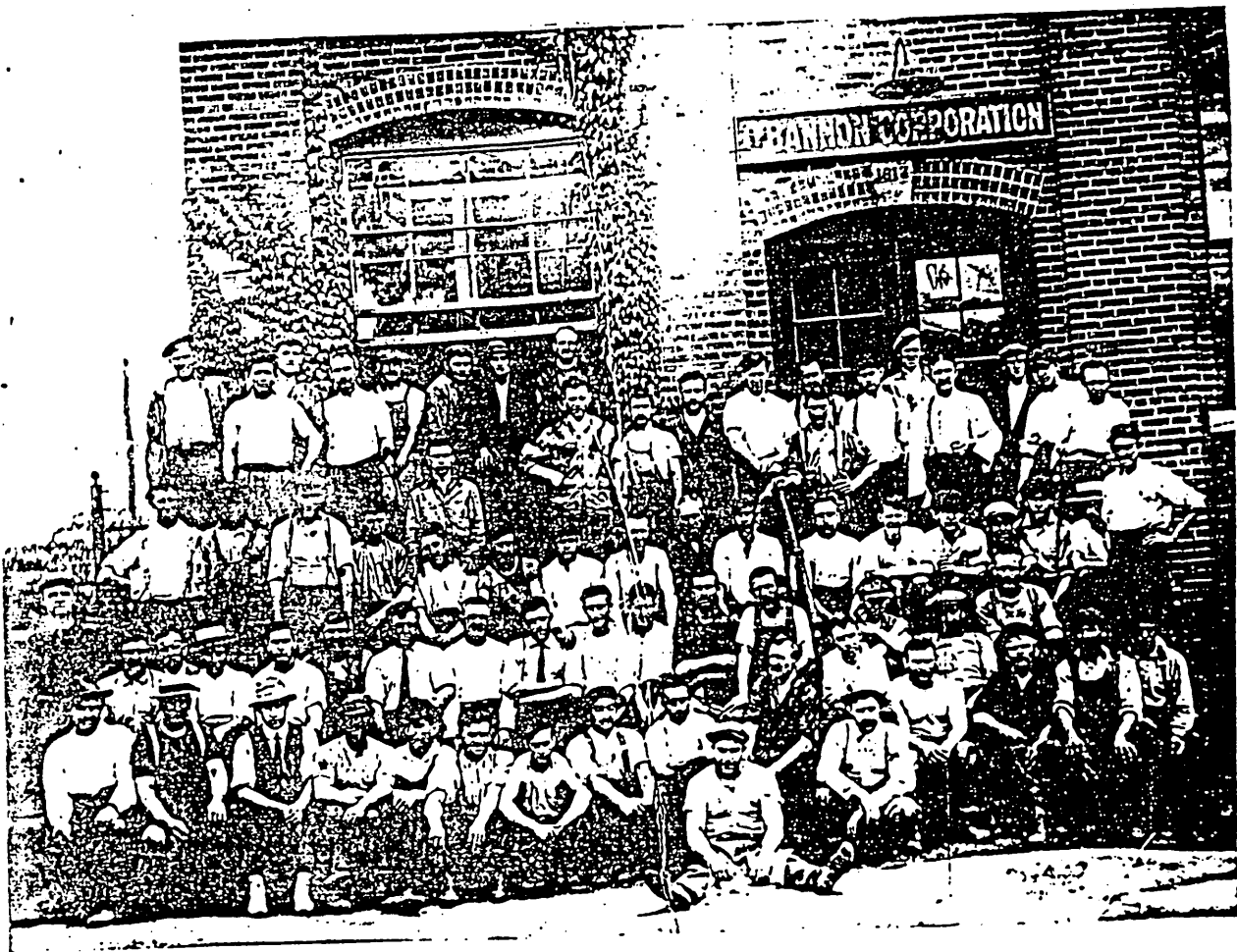
National Register of Historic Places Continuation Sheet

Property name O'Bannon Mill, Bristol County, Rhode Island

Section number 7

Page 21

Figure 7
Historic View, no date, Barrington Preservation Society Files.



United States Department of the Interior
National Park Service

National Register of Historic Places Continuation Sheet

Property name O'Bannon Mill, Bristol County, Rhode Island

Section number 8

Page 22

Significance

Introduction

The O'Bannon Mill is significant for its historical associations with the development of the specialized coated fabric textile industry in Rhode Island at the turn of the twentieth century under the Frost Finishing Company (1905-1911) and, most importantly, the O'Bannon Corporation (1911-1926), manufacturers of imitation leather and other coated fabrics. Both companies housed in the mill were identified in period literature as the largest and best equipped imitation leather firms in the country and perhaps the world. The O'Bannon Mill was the flagship plant of the New York- and Boston-based O'Bannon Corporation, which had four plants: three in Rhode Island and one in Massachusetts. Although short-lived, the company was an early, and perhaps the first, operation to successfully commercialize production of pyroxylin-coated fabrics, increasing its capital assets nearly 15-fold in less than five years, gaining a national reputation, and earning a War Department Certificate for its contribution to World War I. In Rhode Island, all manufacturing buildings, save this one, have been demolished. It is one of a small number of imitation leather manufacturing plants to have existed in Rhode Island, and one of few in New England. An impressive collection of archival materials associated with the O'Bannon Corporation's history and the coated fabric manufacturing process enhances the building's significance. The specialized fabric theme continued with the production of automobile upholstery yarns under Collins & Aikman Corporation ownership (1926-1959). Built in 1912 and 1914 and essentially unaltered, the mill is also noted as a well-preserved example of early-twentieth-century standard mill construction and design. It represents a mill type ubiquitous in Rhode Island during this period and contains potentially valuable information concerning physical plant requirements of a specific industry (imitation leather) for which it was purpose built. In a local historical context, the mill is significant as one of two surviving buildings associated with the Town of Barrington's few industries. The industries housed in the O'Bannon Mill were important employers of Barrington residents and have associations with immigrant populations (Italian, Irish, and French Canadian). In addition, the general manager under the O'Bannon Corporation was Richard LeBaron Bowen, whose family now retains many of the company papers. Mr. Bowen was a member of one of the town's oldest families, was a noted scholar and historian in Rhode Island and southeastern Massachusetts, and played a role in Rhode Island textile manufacturing throughout his career. The mill possesses integrity of location, design, materials, workmanship, feeling, setting, and association. It meets Criterion A at the local level, with a period of significance from 1905 to 1926.

United States Department of the Interior
National Park Service

National Register of Historic Places Continuation Sheet

Property name O'Bannon Mill, Bristol County, Rhode Island

Section number 8

Page 23

The history of the O'Bannon Mill is rooted in the story of the Rhode Island textile industry and fundamental shifts that began at the end of the nineteenth century. It reflects trends toward smaller, more diversified production, the expansion of a wide range of coated textiles, and the marriage of science and industry that increasingly characterized the textile arena of the twentieth century, culminating in the production of extruded, synthetic fibers in the 1930s. The O'Bannon Mill's development demonstrates the increased complexity of industrial production, the targeted aspect of interstate investments, and the nascent overlap between the textile and automotive industries, as well as a strong connection between imitation leather and explosive munitions manufacturing due to a general similarity in chemical components and the nitrocellulose process. These areas of historical context still reside in primary archival materials and warrant further research and analysis. The authors of this nomination intend to present a brief outline of the factors instrumental in the industry as a whole and to place the O'Bannon Mill, an excellent example of these industrial trends, within that framework.

Rhode Island Textile History Context Summary

During the first three quarters of the nineteenth century, the textile industry in Rhode Island experienced enormous growth, both in the number of manufacturing operations and in the gross output of textiles. The industry used the state's water sources for power and processing, and to an increasing extent, supplemental steam power. The majority of textile manufacturers established cotton and woolen mills throughout the Pawtuxet and Blackstone River valleys. Toward the latter half of the nineteenth century, the Rhode Island textile industry saw a gradual shift from individual proprietorships and partnerships to corporation-owned (still comprised of one or two individuals) mill operations.

The Civil War, followed by Panic of 1873, brought about by the failure of two major New York brokerage houses (RIHPC, Providence Industrial Sites 1981:16), had significant effects on the cotton industry in Rhode Island, including the collapse of the A. & W. Sprague Manufacturing Company, a mill operation that controlled approximately 25% of the state's cotton industry (RIHPC, Woonsocket 1976:29). Rhode Island textile manufacturers responded to these events by increasing development trends in other types of textiles, particularly the manufacture of fine woolen goods and knitware. Established non-textile industries, such as machine tools, and newer industries, including rubber, also expanded.

United States Department of the Interior
National Park Service

National Register of Historic Places Continuation Sheet

Property name O'Bannon Mill, Bristol County, Rhode Island

Section number 8

Page 24

The 1880s and 1890s saw the maturation of industry in Rhode Island, marked by the continued specialization and diversification of manufacturing concerns. In addition to a continuing strong core in the cotton and machine tool industries and a thriving woolen and worsted industry, the Rhode Island industrial economy was buoyed by the development of the silk, lace, jewelry, wire, rubber, and synthetic materials industries. These specialized industries developed at existing industrial locations but also focused on previously undeveloped sites, such as West Barrington, that met needs for transportation, processing water, and labor supply. Despite the presence of these new industries, however, traditional textiles, now including coated fabrics for book covers and window shades, still accounted for the majority of Rhode Island's industrial capital.

This period was also one of changes in mill power systems. Following the introduction of electrical motors in the mid-nineteenth century, mill owners were slow to move away from water and steam, which had surpassed water power by the 1880s. However, most mills had made the change from water power and/or steam direct drive power systems to electric motor, generator-driven systems in the first decades of the twentieth century. In many mills, group-drive systems, rather than individual motors, allowed the retention of existing shafting and belting arrangements (Gordon and Malone 1994:318). Mills might generate their own power or purchase it from an electrical utility supply company. Improvements in electric motor technology, most notably the jump from direct current (DC) to alternating current (AC), was the last major hurdle in the move to electrical power for mill machinery operations.

Between the turn of the century and World War I, Rhode Island's textile manufacturers began to feel increasing competition from southern industries. In general, northern textiles manufacturers were impeded by their outdated factories and obsolescent machinery. Increasing competition from synthetic goods manufacturers, conservative or even incompetent management, and increasing labor unrest further adversely affected the industry (RIHPC, Lincoln 1982:38). Although the drastic increase in World War I production helped to postpone the inevitable, many northern textile manufacturers found themselves unable to compete with their southern rivals after the war ended. Consequently, the 1920s saw a marked decline in Rhode Island's textile industry, a decline that would spread to ancillary industries as well. The first two decades of the twentieth century were also characterized by major industrial research and development investment in product chemistry and design. From the automotive to the rubber, metals, and textiles industries, all focused resources on improving existing and developing new products and processes.

United States Department of the Interior
National Park Service

National Register of Historic Places Continuation Sheet

Property name O'Bannon Mill, Bristol County, Rhode Island

Section number 8

Page 25

Those manufacturers that weathered the competition at the turn of the century and survived the post-war decline in Rhode Island's industries did so by cutting employment, increasing specialization, and turning to the development of fledgling industries begun at the end of the nineteenth century. Specialization during this time included innovative dyeing, printing, and finishing techniques (RIHPC, Warwick 1981:38) as well as the production of specialized textiles such as lace, silk, and new kinds of coated fabrics. Industries that proved to be profitable included new ancillary industries, such as machine tooling, and new technologically based industries such as jewelry, base-metals, and wire. Another group of new industries focused primarily on the application of chemistry to textile manufacturing, creating synthetic fibers, coated fabrics, imitation leather, rubber, and, eventually, high-grade plastics.

Even these companies, however, could not withstand the Panic of 1929 and the subsequent Depression. By 1931, unemployment in Providence was 40% in the textile industry, 47% in the jewelry industry, and 38% in the base-metal industry (RIHPC, Providence Industrial Sites 1981:30). The cotton cloth industry in Rhode Island had fallen into complete decline by World War II, and the woolen industry collapsed directly after the war. Rhode Island lost approximately 40,000 textile jobs between 1929 and 1954 (Bonham and Kulik 1978:25).

Imitation Leather Manufacturing

Imitation leather manufacturing was one type of specialized production of coated fabrics. Rubber coated fabrics, for example, were also made by the O'Bannon Corporation. The manufacture of imitation leather was a fairly simple process, but in the 1910s the machinery used was costly and the process was just coming into its own. Although attempts at the creation of imitation leather were documented as early as 1884, it was not until the 1910s that industry was able to produce a quality substitute for genuine leather. The desire to develop such a substitute seems to have sprung from a combination of two factors: a depletion of raw hide stock suitable for leather production and a growing demand for leather goods, particularly in the automobile industry (Metallurgical and Chemical Engineering 1918:97). The development of the Frost Finishing Company (FFC) and the O'Bannon Corporation thus occurred at a critical and seminal time in the beginnings of the imitation leather industry as a viable commercial enterprise. Although the actual circumstances of their connection have not been discovered, it is clear that O'Bannon was acting as sales agent in New York

United States Department of the Interior
National Park Service

National Register of Historic Places Continuation Sheet

Property name O'Bannon Mill, Bristol County, Rhode Island

Section number 8

Page 26

and saw potential for growth several years prior to the formation of the O'Bannon Corporation.

In the first decades of the twentieth century, a number of processes were being used to manufacture imitation leather, but the best imitation leathers were made from a soluble cellulose nitrate, or pyroxylin, base, the process used by the O'Bannon Corporation. O'Bannon may have invented a particularly successful method employing this process; in any event both the FFC and O'Bannon Corporation manufacturing concerns were apparently early and successful endeavors in the field of imitation leather manufacturing.

Imitation leather may be defined generally as any number of composite materials made up of a cellulose-based material (most commonly cotton or linen cloth) that is treated with a pyroxylin coating and embossed in imitation of leather grain. Pyroxylin is a flammable mixture of cellulose nitrates (cellulose-based substances, usually cotton linters, treated with a low concentration of nitric acid) that is less explosive than guncotton, a product used with smokeless powder, and is soluble in either a mixture of ether and alcohol or other organic solvents. During the first step in the process, cellulose nitrate is dissolved in a solvent. Oils (often castor oil) and pigments are then added to this solution, giving it a more authentic leather color and making it more resistant to wear and fading. This solution is sometimes referred to as a "dope." The dope is then applied to a base material (usually cotton or linen cloth) in thin sheets during the coating process. In order to produce a heavy-grade imitation leather, such as would be used for automobile upholstery, up to 30 coats may be applied. After the final coat has dried, the composite material is passed through an embossing roller or press, a machine that applies a leather grain to the material with textured stamps or rollers. The finished product is sometimes given a final protective sealant to prevent wear. The imitation leather may then be cut or sewn as easily as real leather.

Not only was imitation leather used in a variety of goods (e.g., home furnishing and automobile upholstery, shoe uppers, handbags, and luggage), but the pyroxylin process was discovered to be applicable in the manufacturing of plastics, lacquers, adhesives, photographic film, and synthetic fibers (Brady 1947:145-148). Most relevant to the history of the O'Bannon Corporation, the components used in the manufacture of both imitation leather and guncotton, were similar. Both used nitrated cellulose; imitation leather pyroxylin was usually less than 12.5% nitrogen

United States Department of the Interior
National Park Service

National Register of Historic Places Continuation Sheet

Property name O'Bannon Mill, Bristol County, Rhode Island

Section number 8

Page 27

and was flammable and soluble, while guncotton used a higher-nitrated product and was explosive and insoluble.

O'Bannon Mill, West Barrington

Historically, Barrington, located southeast of Providence on the Barrington and Warren Rivers and Narragansett Bay, was an agricultural and bayside town, with no industrial water power opportunities and few water sources for industrial processing. The principal town industries were brickmaking in central Barrington from the 1850s to the 1930s and three textile-related firms on Bay Spring Avenue in West Barrington from the 1890s to 1990. The town also had a small shipbuilding industry in the eighteenth century and an oystering industry in the late nineteenth century.

West Barrington was initially settled by the Allin family but had little development until the mid-nineteenth century. The area began to develop as a fashionable residential section with the establishment of the Drownville Station on the Providence, Warren, and Bristol Railroad (PW&B Railroad) in the 1850s and the platting of streets off Middle Highway. By 1870, however, Bay Spring Avenue ended where the railroad tracks cross Annawomscutt Brook, and no development had occurred west of the brook to Bullocks Cove (Beers 1870 map). Between 1870 and 1895, Bay Spring Avenue was continued westward, and Bullocks Cove emerged as a summer resort area and was built up with small houses. The Barrington community as a whole evolved as a residential suburb of Providence in the late nineteenth and early twentieth centuries.

The earliest documented use of the O'Bannon Mill site on Annawomscutt Brook (also called Bay Spring Creek) at the head of Allin's Cove (also called Drown's Cove) on Bay Spring Avenue (also called Shore Street and Park Avenue) in West Barrington coincides with the first expansion of this coastal section of West Barrington. It appears to have occurred in the 1880s or 1890s, at the same time that the brickworks, in operation since mid-century, underwent major expansion with the formation of the New England Steam Brick Company (RIHPC, Barrington 1993:20). The relatively late development of this industrial location took advantage of the brook's water flow for processing and of the transportation access provided by the adjacent PW&B Railroad for movement of raw materials and finished goods. Early uses of the site included dyeing and finishing lace and cloth, both processes that required relatively good quality water. Annawomscutt Brook is one of two water courses, both small, in Barrington. Use of the other,

United States Department of the Interior
National Park Service

National Register of Historic Places Continuation Sheet

Property name O'Bannon Mill, Bristol County, Rhode Island

Section number 8

Page 28

Mouscochuck Creek, had been monopolized by brick manufacturing for many years. The central and western areas of Barrington possessed an existing labor force in the French Canadian and Italian immigrants, who constituted the major work force in the brick yards from the 1870s onwards (Ibid.). The unique combination of these amenities (water, transportation, and labor) in West Barrington fostered the growth of two historically related mill complexes north and south of Bay Spring Avenue in the late nineteenth and early twentieth centuries. Both closed in 1959. Of the two mills, only the O'Bannon Mill survives. Rhode Island Lace Works, Barrington's third textile-related industry, was established in West Barrington in 1904 at a site just west of O'Bannon Mill on Bay Spring Avenue. It operated until it closed in 1990, and the building stands vacant.

The earliest history of the O'Bannon Mill property is not entirely clear, and the first deed located dates from 1887. In that year, the land on which the O'Bannon Mill stands, located south of Bay Spring Avenue, was sold by James Dennis, Jr. to Bristol County Creamery (Bristol County Deeds 11/17/1887; Bk 13:549). Bristol County Creamery then sold the same land in 1889 to John Henry Luther (Bristol County Deeds 12/2/1889; Bk 13:742), who immediately transferred it to Charles F. Anthony (Bristol County Deeds 12/10/1889; Bk 13:743). Anthony's residence was close by to the south on Alfred Drowne Road (1895 Everts & Richards map). By 1895, an L-shape building had been constructed, presumably by Anthony, on the O'Bannon Mill property adjacent to the railroad and south of Bay Spring Avenue, approximately in the location of the present mill. It housed a "knitting mill," and was set back from Bay Spring Avenue (Ibid.). A search of the Annual Reports of the Commissioner of Dams and Reservoirs from 1884 to 1912 revealed no mention of a dam on Annawomscutt Brook/Bay Spring Creek. In 1897, at about the same time that the south mill lot was developed, the Annawomscutt Mill on the north side of Bay Spring Avenue at the railroad tracks was incorporated with a capital of \$1,000,000 to produce dyed and finished cotton cloth for book covers (N. Gizzarelli Sr. notes, Barrington Historical Society). The history of this property is linked to that of the O'Bannon Mill.

In 1903, George B. Frost of Barrington purchased the two properties adjacent to both Annawomscutt Brook and the PW&B Railroad on the south and north sides of Bay Spring Avenue. The Frost Finishing Company (FFC) of West Barrington was incorporated November 21, 1905 by George B. Frost, John J. Bishop, and Frederick G. Annison, who purchased the property, with the improvements and machinery thereon, in December 1905 (Bristol County Deed 12/18/1905, Bk 19:263-264). The appearance of the mill is documented in a

United States Department of the Interior
National Park Service

National Register of Historic Places Continuation Sheet

Property name O'Bannon Mill, Bristol County, Rhode Island

Section number 8

Page 29

small sketch dated 1903 (Figure 1, Bowen-O'Bannon Collection). A Providence Journal article of 12/3/1905 states that the newly incorporated FFC planned to erect a new brick mill, one-story for the present, measuring 50 by 150 feet, on the west side of the tracks, just south of Bay Spring for its business of "bleaching, dyeing, and finishing cottons and other fabrics, with some specialties besides." The mill would be located south of the old mill then leased by Rhode Island Lace Works as a finishing room. This would have been the "knitting mill" shown on the 1895 map. This building was the property of the new firm and would have a 1½-story, brick extension measuring 20 by 26 feet and extending west to Bay Spring Creek. Bridges were to connect the old and new buildings for the purpose of transferring material, and other smaller buildings on the site were to be used by the company. The construction was to be completed and machinery purchased, to begin manufacturing employing about 100 hands, by February 1, 1906 (Providence Journal 12/3/1905). A later news article noted that FFC began the manufacture of imitation leather here in March 1906 (Providence Board of Trade Journal June 1911). The waters of Annawomscutt Brook would have been used for the dyeing and finishing processes. The appearance of this 1905 mill is documented in sketches, floor plans, and historic photographs dating from 1912 (Bowen-O'Bannon Collection) and is described in Section 7 of this nomination.

In the fall of 1906 FFC continued its growth by purchasing new equipment to manufacture absorbent linen in the 2-story, wood-frame Annawomscutt Mill on the north side of Bay Spring Avenue. This linen may have been intended for the imitation leather backing or for rubber coated cloth, which was being or about to be produced in the Annawomscutt Mill. In 1909, the company expanded operations and bought Meers Imitation Leather Company of West Nutley, Acquackanonck Township, Passaic County, New Jersey. The American Textile Directory of 1910 lists the Frost Finishing Co. as having assets of \$69,000 as manufactures and dyers of imitation leather, using steam power. Geo. B. Frost was president and buyer, and John W. O'Bannon was treasurer (American Textile Directory 1910:352). This connection between Frost and O'Bannon was instrumental in projecting the company to another plane of industrial operations, from local/regional to national in scope.

John W. O'Bannon of New York was an entrepreneur and self-made businessman who made his fortune principally in nitrocellulose industries, specifically guncotton and imitation leather. A photograph of Mr. O'Bannon is contained in the Bowen-O'Bannon Collection. To paraphrase O'Bannon's words, he ran away from home at age 14 and began his career as an office boy. He saved \$30,000 from salaries and commissions, invented a substitute for leather,

United States Department of the Interior
National Park Service

National Register of Historic Places Continuation Sheet

Property name O'Bannon Mill, Bristol County, Rhode Island

Section number 8

Page 30

and marketed it through the O'Bannon Corporation to the Ford Motor Company and other customers (New York Times 7/15/1923).

By 1911 the Providence Board of Trade Journal noted that the two Rhode Island and New Jersey plants under FFC together employed 150 people and "jointly constitute the largest imitation leather manufactories in the country." The article is accompanied by an illustration of the West Barrington plant as it appeared in 1911 (Providence Board of Trade Journal June 1911). The company's assets had increased to from \$69,000 to \$100,000 (American Textile Directory 1911).

In June 1911, the O'Bannon Corporation was incorporated in Massachusetts with directors from New York (John W. O'Bannon and Louis Siegbert) and Boston (John P. Reynolds, Charles Walcott, William Almy, William B. Simpson, and George W. Bourne) to manufacture coated fabrics with an authorized capital stock of \$1,750,000, in shares of preferred and common stock with a par value of \$100 (Mass. Sec. of State Archives). The real estate and manufacturing assets of FFC, all located in West Barrington, Rhode Island and West Nutley, New Jersey, were purchased by the O'Bannon Corporation in June 1911.

The O'Bannon Corporation immediately sold its stock and undertook a major expansion of the plant between May and October of 1912, consolidating the FFC West Nutley, New Jersey operations into the West Barrington plant. This construction episode resulted in an entirely new mill, purpose built for the manufacture of imitation leather. The changes are fully documented in an album of photographs of building floor plans and elevations (Bowen-O'Bannon Collection), which are discussed in Section 7 of this nomination. The 1890s and 1905 brick mills on the south side of Bay Spring Avenue, east of Annawomscutt Brook and west of the PW&B Railroad, were enlarged in all four directions, presumably allowing manufacturing to continue through much of the construction period. The new one- to three-story, low-pitch gable-roof, red brick building with a new boiler house, boilers and stack, engine room, and a bleachery and dye house, was reported to contain over 60,000 sq. ft. It incorporated only a portion (less than 6,000 sq. ft.) of the old building, most of which was demolished. The design of the building, relatively unchanged today, documents the requirements of process sequences, machinery, power, and layout of imitation leather in the earliest period of major bulk production. The design also embodies fire insurance company construction requirements at the turn of the century, including masonry (brick) exterior walls, few stories, slow burning timber framing, and low pitch gable roof. Further research into the relationship

United States Department of the Interior
National Park Service

National Register of Historic Places Continuation Sheet

Property name O'Bannon Mill, Bristol County, Rhode Island

Section number 8

Page 31

between the mill's physical characteristics and the manufacturing process can be fruitfully explored in the future through the extensive primary archival materials associated with the mill's history (Bowen-O'Bannon Collection).

In addition to the main mill and power plant, various laboratory, storage, and processing buildings were erected west of the brook and main mill. Due to explosive danger, construction west of the brook was heavily fire retardant, consisting of small discrete buildings constructed primarily of tile and galvanized corrugated iron over wood frame. The brook, which was stone lined as part of the construction program, acted as a fire safety break between the cellulose nitrate chemical processes occurring to the west and the coating and embossing processes in the main mill east of the brook. Only one small structure west of the brook is extant, but the site remains undeveloped and exists as an archaeological site. By 1914, a new third story section was added to the mid section of the main mill building.

Several panoramic photographs and an artist's rendering depict the plant shortly after completion of construction in 1912 and 1914, and a Plant Appraisal, O'Bannon Corporation, December 31, 1914 contains 56 handwritten pages of inventory data describing the buildings and their contents (Bowen-O'Bannon Collection).

Within the main mill, equipment in the embossing room included 14 embossing calenders of various size and type, plus one embossing press. One entry references a "Meers Machine." The coating rooms contained 10 coating machines and four embossing presses, with copper-face embossing plates for 37 leather grain types, including large walrus, rhino, elephant, pig, baby alligator, sea lion, buffalo, and seal. In the color room were color mixers and grinders, and a castor oil sink. The jelly and castor oil storage room contained in-ground tanks, while the filling room held air compressor and receiver, measuring, and mixing machines, and related equipment. The appraisal also calls out the grey goods room with inspecting machines and ventilating system; napping room with napping and sewing machines; box shop; machine shop; dye house with jiggs, cradles, and water mangle; bleach house with scutcher, squeezers, washing machine, and reels; boiler room with three boilers and pumps; engine room with steel stacks, fly wheels, generator, exciter, and switch board. The building also had underground sprinkler mains, hydrants, and alarm valves. (Bowen-O'Bannon Collection, Appraisal 1914:5-29).

United States Department of the Interior
National Park Service

National Register of Historic Places Continuation Sheet

Property name O'Bannon Mill, Bristol County, Rhode Island

Section number 8

Page 32

The power system, as inventoried in 1914, indicates that the plant was manufacturing steam for necessary processing heat in three Bigelow Manning vertical boilers of 185 horsepower each and also economically used the steam to electrically power the machinery via one 50 kilowatt Westinghouse alternating current generator and one General Electric continuous (direct) current motor used as an excitor. A second direct current motor, manufactured by Thompson Houston Electric Co., was in place but not in use (Appraisal 1914:27,28). The presence of the abandoned DC motor, which may have been a holdover from the 1905 mill, suggests the industrial transition from DC to AC power at this time.

The Providence Board of Trade Journal of 1913 again reported that the plant, now under the O'Bannon Corporation "is the largest manufacturer of imitation leather in the world, and the West Barrington plant is the largest, most modern and best equipped in the country....The concern will employ a high grade of labor, and the greater part of the help will be local people." (Providence Board of Trade Journal Jan. 1913). The American Textile Directory of 1916 valued the West Barrington company at \$1,494,400 in the manufacture of imitation or imitation leather, using dyeing and bleaching processes and steam power. J.W. O'Bannon was president, John P. Reynolds treasurer, and Richard LeBaron Bowen general manager. The company had offices at 30 State Street, Boston and 200 Fifth Avenue, New York.

Thus through the injection of nearly one and three-quarters of a million dollars in stock and the investment in a major plant expansion campaign at West Barrington, the O'Bannon Corporation increased its capital assets nearly 15 times, from \$100,000 in 1911 to nearly \$1.5 million in 1916. This sequence documents substantial growth and indicates, that although the West Barrington mill, at 60,000 square feet, was relatively small for an industrial plant, it represents the beginnings and rapid growth of a new industry. Development of the new industry took place, in Rhode Island, at the most advanced plant in the world under an innovative company at the forefront of the industry. In 1920, the company had grown another five fold, when the New York Times reported the assets of the O'Bannon Corporation at \$5,305,279 (New York Times 5/26/1920).

New England played an important part in the early development of the automobile. The Stanley Steamer, built in Waltham, Massachusetts, is the most well-known of the steam-powered cars that were developed at the turn of the century. In 1896 automotive inventors Henry Ford and Charles B. King constructed experimental gasoline-powered cars in Michigan, and in the same year the first thirteen truly successful gasoline engine-powered

United States Department of the Interior
National Park Service

National Register of Historic Places Continuation Sheet

Property name O'Bannon Mill, Bristol County, Rhode Island

Section number 8

Page 33

automobiles were sold by the Stevens-Duryea Company of Springfield, Massachusetts. In 1900 automobile manufacturing was listed separately in the U.S. Census of Manufactures for the first time; 4,192 cars were built that year, only 396 of them gasoline-powered. After the turn of the century, gasoline engine propulsion rapidly dominated automotive technology. At this time automobiles were hand-built and production was rooted in a carriage-work mentality. There were several limited attempts at mass production as early as 1897, including the Olds Motor Works, later to become the Oldsmobile Division of The General Motors Corporation (Ross and Lee 1951:806-807).

True mass automobile production is associated with the Ford Motor Company, founded by Henry Ford in 1903. In 1907 The Ford Motor Company implemented assembly-line production for their Model T automobile, a method further developed at their Highland Park Plant in 1913. Incorporating the principles of division of labor, and interchangeable parts, Ford produced an unprecedented 10,000 cars in 1908 (Ross and Lee 1951:807). The U.S. auto industry was originally concentrated around the Great Lakes, particularly in the Detroit, Michigan area. During the first decade of this century, U.S. automotive manufacturers consumed hundreds of types of metals and materials. The Society of Automotive Engineers was formed in 1905, and their Standards Committee in 1910, to promote standardization of parts and materials within the auto industry (Ross and Lee 1951: 810-811). Shortly before World War One, auto makers began to build branch assembly plants near major metropolitan U.S. markets in order to reduce transportation costs associated with centralized manufacturing. (Ross and Lee 1951:818). In this period, the Ford supply system was one of out-sourcing to individual manufacturers to provide materials and components of the Ford cars. This system appears to have functioned on a regional basis whereby local and regional producers supplied the satellite assembly plants in order to lower costs and reduce reliance on sole suppliers. Eventually, by the 1930s, Ford's desire for control and freedom from heavy dependence on outside suppliers lead to vertical integration that encompassed extraction of raw material in South America, through manufacture of nearly all parts, and ownership of rail lines (Gordon and Malone 1994:336).

An undated advertisement broadside describes the "O'Bannon Artificial Leather" product as "Moleskin Quality, The Superior Leather Substitute" with "other qualities suitable for all trimming purposed" (Bowen-O'Bannon Collection). O'Bannon Corporation's imitation leather product was destined primarily for the automobile industry in a period when small, early car makers were still in existence, such as Maxwell Briscoe Motor Company in

United States Department of the Interior
National Park Service

National Register of Historic Places Continuation Sheet

Property name O'Bannon Mill, Bristol County, Rhode Island

Section number 8

Page 34

Providence (1909-1914), and when Ford Motor Company was enlarging and nationalizing its scope. The Ford Motor Company experienced exponential growth during the period that the O'Bannon Corporation was in existence. Ford opened its first Boston area branch plant in Cambridge in 1914; the plant moved to Somerville in 1926 (Zellie 1990:79). In 1920, the New York Times stated that O'Bannon had marketed his leather substitute to Henry Ford, who had given the company a "big impetus" by adopting its product over leather (New York Times 5/26/1920). The company is reported to have made the upholstery for all Ford cars for several years (New York Times 7/15/1923).

A preliminary research inquiry to the Henry Ford Museum Research Center, Dearborn, MI, indicates that no specific references to O'Bannon Corporation are found in the main collection catalogue. However, a search of the archive's general correspondence may suggest future avenues of inquiry. The O'Bannon Mill's connection with the Ford Motor Company thus has been neither confirmed nor denied by research to date. It is highly likely, however, based on trends in the industry, that the mill did manufacture substantial quantities of imitation leather for the Ford Motor Company as O'Bannon claimed, and that this material was consumed by New England or Northeast-region Ford plants. This connection brings another layer of industrial significance to the mill in its role in the early-twentieth-century convergence of the auto and textile industries. Textiles were used in tire, belting, hosing, and other car components, in addition to seat upholstery and car tops. Additional research is necessary to firmly connect O'Bannon and Ford, but it is likely that O'Bannon was a regional provider of imitation leather for upholstery and rubberized fabrics for car tops.

The work force of the O'Bannon Mill was most likely made up of skilled and unskilled local residents. In 1917, the O'Bannon Corporation employed about 1,200 persons at its several Rhode Island plants (Providence Journal 1/20/1917). The social fabric of Barrington changed in the last decades of the nineteenth century with a large influx of Italian immigrants, many of whom were employed in the Narragansett Brick Works. Another immigrant group, French Canadians, also came to Barrington at the turn of the century and were employed at the Rhode Island Lace Works, located west on Bay Spring Avenue. It is likely that these ethnic groups were also represented in the work force of the O'Bannon Mill. The O'Bannon Mill thus embodies important aspects of local Barrington history, specifically its industrial and ethnic heritage, which merit recognition and documentation.

United States Department of the Interior
National Park Service

National Register of Historic Places Continuation Sheet

Property name O'Bannon Mill, Bristol County, Rhode Island

Section number 8

Page 35

The manager of the O'Bannon Mill and the other O'Bannon Corporation plants was Richard LeBaron Bowen (1878-1969), of 110 Waterman Avenue, Providence, Rhode Island (Rufus Waterman House, 1877, National Register listed) and Danforth Street, Rehoboth, Massachusetts, was a prominent manufacturer and historian, as well as a descendent of early Barrington settlers. A graduate of Rhode Island School of Design and a student at Brown University, he wrote a four-volume history of Rehoboth and numerous other works and served as the president of the Rhode Island Historical Society. He would have been in his late 30s and early 40s during his tenure at the O'Bannon Corporation. He spent his manufacturing career in coated textiles, finally serving as president of Coated Textile Mills of Pawtucket before his retirement (Providence Journal 8/11/1969:39; Providence Blue Book 1932:15; Sanderson and Woodward 1986:235). Richard LeBaron Bowen, Jr., son of Mr. Bowen, a Barrington resident, and an antiquarian, retains an extensive collection of materials relating to the O'Bannon Mill and kindly made the collection available for this nomination (Bowen-O'Bannon Collection).

The O'Bannon Corporation's development involved, on a small scale, vertical and horizontal integration through diversification within the corporation in the period between 1913 and about 1920. The company grew to encompass four plants or divisions, each manufacturing different, but related products. An undated, ca. 1920 display view of artist's renderings from this period shows the company owning four plants: Leather Division, West Barrington [O'Bannon]; Rubber Division, West Barrington [O'Bannon]; Dyeing and Bleaching Division, Phillipsdale [Nonnabo]; and Oil Cloth Division, Taunton, Massachusetts [no other information known] (Bowen-O'Bannon Collection).

The International Rubber Cloth Company (IRCC), located across from the Leather Division on the north side of Bay Spring Avenue in the old Annawomscutt Mill, was part of the O'Bannon Corporation holdings. Referred to as the Rubber Division, it manufactured rubberized cloth for automobile tops, thus expanding the company's hold in the auto supply industry. It was in operation by 1913 or 1914 and was incorporated in Massachusetts on January 16, 1917 with Directors W.B. Simpson, G.K. Gardner, and L.C. Goodhue (Mass. Sect. of State Archives). The company had acquired the old Annawomscutt Mill on the north side of Bay Spring Avenue, presumably from the O'Bannon Corporation (which had bought it from FFC in 1911) and was most likely under O'Bannon control.

United States Department of the Interior
National Park Service

National Register of Historic Places Continuation Sheet

Property name O'Bannon Mill, Bristol County, Rhode Island

Section number 8

Page 36

A 1917 deed from Arkwright-Interlaken Mill of Crompton (Coventry), Rhode Island, a major producer of book cloth and window shades from 1883 into the twentieth century, released the mill from a previous restriction on the manufacture of imitation leather, although a restriction on the manufacture of plain or embossed filled goods specially made for book covers or window shades still applied (Bristol County Deed 1/17/1917, Bk 25:358). Certain types of book cloth were pyroxylin coated fabrics, or imitation leather. This action by Arkwright-Interlaken defines an industry distinction in competitions and end users of the products. Several months later, IRCC sold its property and all assets to the O'Bannon Corporation (Bristol County Deed 4/30/1917, Bk 25:436). An advertisement broadside for "O'Bannon Coated Fabrics" describes patented "Duxrane, Single Texture Top Fabrics" as "light weight and very tough" and encourages one to "Give it the Scrub Test" (Bowen-O'Bannon Collection). Industrial processes in this mill and a fly wheel accident in 1919 are documented in historic photographs (Bowen-O'Bannon Collection). This mill burned in 1995.

By about 1920, O'Bannon Corporation had also acquired an Oil Cloth Division in Taunton, Massachusetts. A ca. 1920 rendering shows a large plant (Bowen-O'Bannon Collection). More research is needed to determine the history of this manufacturing plant and whether it still survives.

Supplementing its automobile-related concerns, in about 1914 O'Bannon Corporation branched out into the munitions and explosives field in anticipation of international supply opportunities created by World War One. An industrial process related to imitation leather produced guncotton, an explosive, high-nitrated cellulose used in smokeless gun powder. Maxim Munitions of New York, founded in 1914 with \$10,000,000 in assets by Hudson Maxim, reorganized by 1916 with O'Bannon as Chairman of the Board. O'Bannon also sat on the board of a closely related New York import/export company, Gaston, Williams and Wigmore, Inc. The Maxim Munitions plants were located in New Haven and Derby, Connecticut and were negotiating with the Russian, American, and European governments to supply a new machine gun. O'Bannon Corporation was also working on Russian contracts for guncottons (New York Times 10/19/1915; 11/21/1915; 12/15/1915; 3/3/1916; 5/26/1916).

This guncotton was supplied from the Nonnabo (O'Bannon spelled backwards) Chemical Company plant, an offshoot of O'Bannon Corporation, in the Phillipsdale section of East Providence and authorized from the main office in West Barrington. In 1915, Nonnabo Chemical Company purchased land on the south side of Omega Pond on Dexter Street in Phillipsdale (Providence

United States Department of the Interior
National Park Service

National Register of Historic Places Continuation Sheet

Property name O'Bannon Mill, Bristol County, Rhode Island

Section number 8

Page 37

County Deeds 3/3/1915, Bk 72:69). The company was apparently created exclusively to make guncotton and appears to have remained an independent company under O'Bannon Corporation control. Historic photographs in the Bowen-O'Bannon Collection indicate that a large guncotton manufacturing plant stood west of Dexter Street, with three one-story, wood-and-metal warehouses on the east side of Dexter Street. Other historic photographs document the industrial processes that took place at the plant. The plant was clearly in operation in 1915 but did not incorporate until 1917, when it was formed in Massachusetts. John P. Reynolds, Jr., treasurer of Nonnabo, was also treasurer of the O'Bannon Corporation.

The O'Bannon Corporation and Nonnabo Chemical provided over \$1 million of product to the Russian government between 1915 and 1917, paid for in a series of three checks drawn on the National City Bank (of New York) and signed by the Russian Military Attaché. Photographs show trains of 20 to 50 cars loaded with guncotton leaving Nonnabo destined for Russia in 1915 and 1916 (Bowen-O'Bannon Collection).

In 1919, the O'Bannon Corporation, West Barrington, received a Certificate of Merit from the War Department for its war work (Bowen-O'Bannon Collection).

Historic photographs indicate that the Nonnabo Chemical plant may have been destroyed by fire before about 1920 (Bowen-O'Bannon Collection). By about 1920, a two-story brick dyeing and finishing building had been constructed north of the three remaining warehouses on the east side of Dexter Street. An examination of historic photographs and a site visit (May 1996) confirm that the three warehouses still exist.

Just eight years after the O'Bannon Corporation's major expansion of the O'Bannon Mill, and only three years after the company's formal corporate expansion in 1917, the personal affairs of John W. O'Bannon collapsed, and his manufacturing interests in Rhode Island began a decline that ended in bankruptcy by 1925 or 1926. The abrupt loss of the Russian market for guncotton, which adversely affected many supply industries, may also have contributed to the company's demise. In 1920, John W. O'Bannon was declared incompetent and committed to Dr. F.J. Packer's Rivercrest sanitarium, Riverdale, NY. At that time his personal fortune of \$15,000,000 dissipated in payment of debts and he died, penniless, in 1923 (New York Times 5/26/1920; 7/15/1923).

United States Department of the Interior
National Park Service

National Register of Historic Places Continuation Sheet

Property name O'Bannon Mill, Bristol County, Rhode Island

Section number 8

Page 38

The Davison's Textile Directory for 1920, lists the O'Bannon Corporation with P.M. Reynolds president, J.P. Reynolds treasurer, W.B. Simpson secretary, and Richard LeBaron Bowen general manager. The products and processes noted are bleach and finish, oil cloth, and rubber carriage cloth (Davison's Textile Directory 1920:430). During this period, the O'Bannon Corporation's fortune waned, and by 1926 the company apparently had declared bankruptcy. A search for bankruptcy papers was made, but none were found.

In 1925, Nonnabo Chemical Company sold off all its Phillipsdale property. Its dye house, pump house, and other buildings and improvements went to Sayles Finishing Plants, Inc., the large consolidated bleaching, dyeing, and finishing company that was a leader in industrial research and production of finishes for natural and synthetic fibers. One of the company's numerous plants was in Phillipsdale, and they are known to have produced cotton linters at their Valley Falls, Cumberland plant (not extant). At the time of sale G.C. Clough was president, and Andrew F. Carter was treasurer, of Nonnabo (Providence County Deeds 6/15/1925, Bk 96:323; 9/9/1925, Bk 96:394). No other link between the two companies has been identified (Rhode Island Historical Society, Sayles Finishing Plants, Inc. Collection).

One year later in 1926, the Leather Division (O'Bannon Mill, south of Bay Spring Avenue) and Rubber Division (old Annawomscutt Mill, north of Bay Spring Avenue) were sold to Cranston Worsted Mills, apparently for storage space. In 1927 Cranston Worsted and the West Barrington properties were absorbed by Collins & Aikman Corporation of Bristol, an important producer of auto upholstery. Collins & Aikman operated the mills for 32 years, manufacturing fine worsted and automotive upholstery yarns. In the World War II period, the plant operated 24 hours a day. During these years, most of the ancillary buildings erected by O'Bannon Corporation were removed. Sanborn maps (1928, 1950) indicate that the main yarn mill was housed in the structures north of Bay Spring Avenue, while the O'Bannon Mill south of the street was used for offices, storage, and shipping. By 1959, when the Barrington plant closed, it was the town's largest employer, with 325 workers producing worsted and blend yarns for the Collins & Aikman Bristol plant.

After 1959, the O'Bannon Mill passed through several owners, including American Luggage Works (American Tourister) and Pilling Chain. The mill on the north side of Bay Spring Avenue was destroyed by fire in 1995; only a water tower remains.

United States Department of the Interior
National Park Service

National Register of Historic Places Continuation Sheet

Property name O'Bannon Mill, Bristol County, Rhode Island

Section number 9

Page 39

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Commonwealth of Massachusetts

United States Department of the Interior
National Park Service

National Register of Historic Places Continuation Sheet

Property name O'Bannon Mill, Bristol County, Rhode Island

Section number 9

Page 40

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United States Department of the Interior
National Park Service

National Register of Historic Places
Continuation Sheet

Property name O'Bannon Mill, Bristol County, Rhode Island

Section number 9

Page 41

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United States Department of the Interior
National Park Service

National Register of Historic Places
Continuation Sheet

Property name O'Bannon Mill, Bristol County, Rhode Island

Section number 9

Page 42

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United States Department of the Interior
National Park Service

National Register of Historic Places
Continuation Sheet

Property name O'Bannon Mill, Bristol County, Rhode Island

Section number 9

Page 43

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United States Department of the Interior
National Park Service

National Register of Historic Places
Continuation Sheet

Property name O'Bannon Mill, Bristol County, Rhode Island

Section number 9

Page 44

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United States Department of the Interior
National Park Service

National Register of Historic Places Continuation Sheet

Property name O'Bannon Mill, Bristol County, Rhode Island

Section number 9

Page 45

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United States Department of the Interior
National Park Service

National Register of Historic Places Continuation Sheet

Property name O'Bannon Mill, Bristol County, Rhode Island

Section number 10

Page 46

Geographical Data

Verbal Boundary Description:

The nominated property boundaries are defined as Parcel 2 of Barrington Assessor's Plat 2, Lot 12, as delineated by the attached site plan.

Boundary Justification:

The boundaries conform to the mill building and its immediate setting.