

United States Department of the Interior
National Park Service

National Register of Historic Places Registration Form

This form is for use in nominating or requesting determinations for individual properties and districts. See instructions in National Register Bulletin, *How to Complete the National Register of Historic Places Registration Form*. If any item does not apply to the property being documented, enter "N/A" for "not applicable." For functions, architectural classification, materials, and areas of significance, enter only categories and subcategories from the instructions.

1. Name of Property

Historic name: Andrews Mill Company Plant

Other names/site number: Uxbridge Worsted Company, Tupper Corporation Office

Name of related multiple property listing: N/A

(Enter "N/A" if property is not part of a multiple property listing)

2. Location

Street & number: 761 Great Road

City or town: North Smithfield State: RI County: Providence

Not For Publication: Vicinity:

3. State/Federal Agency Certification

As the designated authority under the National Historic Preservation Act, 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. I recommend that this property be considered significant at the following level(s) of significance:

___ national ___ statewide x local

Applicable National Register Criteria:

x A ___ B x C ___ D

| | |
|--|-------------------------------|
| <p>_____ Signature of certifying official/Title: <u>Rhode Island Historical Preservation & Heritage Commission</u> State or Federal agency/bureau or Tribal Government</p> | <p>_____ Date</p> |
|--|-------------------------------|

| | |
|--|--|
| <p>In my opinion, the property ___ meets ___ does not meet the National Register criteria.</p> | |
| <p>_____ Signature of commenting official:</p> | <p>_____ Date</p> |
| <p>_____ Title :</p> | <p>_____ State or Federal agency/bureau or Tribal Government</p> |

Andrews Mill Company Plant
Name of Property

Providence, Rhode Island
County and State

4. National Park Service Certification

I hereby certify that this property is:

- entered in the National Register
- determined eligible for the National Register
- determined not eligible for the National Register
- removed from the National Register
- other (explain:) _____

Signature of the Keeper

Date of Action

5. Classification

Ownership of Property

(Check as many boxes as apply.)

- Private:
- Public – Local
- Public – State
- Public – Federal

Category of Property

(Check only one box.)

- Building(s)
- District
- Site
- Structure
- Object

Andrews Mill Company Plant
Name of Property

Providence, Rhode Island
County and State

Number of Resources within Property

(Do not include previously listed resources in the count)

| Contributing | Noncontributing | |
|---------------|-----------------|------------|
| <u>3</u> | <u>3</u> | buildings |
| <u> </u> | <u> </u> | sites |
| <u>3</u> | <u>4</u> | structures |
| <u> </u> | <u> </u> | objects |
| <u>6</u> | <u>7</u> | Total |

Number of contributing resources previously listed in the National Register 0

6. Function or Use

Historic Functions

(Enter categories from instructions.)

INDUSTRY: manufacturing facility

Current Functions

(Enter categories from instructions.)

VACANT/NOT IN USE

Andrews Mill Company Plant
Name of Property

Providence, Rhode Island
County and State

7. Description

Architectural Classification

(Enter categories from instructions.)

OTHER: Early 20th-century Industrial

Materials: (enter categories from instructions.)

Principal exterior materials of the property: BRICK, WOOD, CONCRETE, SYNTHETICS

Narrative Description

(Describe the historic and current physical appearance and condition of the property. Describe contributing and noncontributing resources if applicable. Begin with a **summary paragraph** that briefly describes the general characteristics of the property, such as its location, type, style, method of construction, setting, size, and significant features. Indicate whether the property has historic integrity.)

Summary Paragraph

Sited along the Branch River on a 32-acre parcel in North Smithfield, Rhode Island, the Andrews Mill Company Plant comprises three contributing buildings and three contributing structures related to the period of active occupation of the Andrews Mill Company (1918-1925), a textile manufacturer. Contributing buildings include a Main Mill (1918 et seq.), attached Boiler House (1919), and a freestanding Machine Shop/Gate House (1919) at the river's edge. Contributing structures include a concrete headrace gate (1918, 1919) at the location of a former mill trench (part of the Andrews Mill waterpower system), a steel water tower (1919), and a stone masonry pump house (1919). The Andrews Mill Company Plant was built by the C.I. Bigney Construction Company.

From 1936 to 1954, the Andrews Mill Company Plant was occupied by the Uxbridge Worsted Company; early in its tenure that firm built a wood-frame pump house, and around 1950 a small brick incinerator was constructed. Both are considered non-contributing since they were built after the period of significance. The Main Mill was expanded in the 1960s and 1970s, while the property was owned by the Tupper Corporation (1955-1994), through the construction of a north (rear) extension, an addition on the west elevation, an enclosed loading dock at the northeast corner, and an addition supporting two cooling towers at the northwest corner. The additions, all

Andrews Mill Company Plant
Name of Property

Providence, Rhode Island
County and State

built after the period of significance, are considered non-contributing. The Tupper Corporation also built a two-story office building (1979) and two small, freestanding wastewater treatment buildings (ca. 1975), all of which are non-contributing. Two masonry walls, which pre-date the development of the Andrews Mill Company Plant, are also non-contributing.

Narrative Description

Contributing Buildings

Building 1

Main Mill (1918 et seq.)

The Main Mill at the Andrews Mill Company Plant is a single-story (plus partial basement), south-facing,¹ brick weave shed with a concrete foundation and a sawtooth roof over all but the two southernmost bays (see Figure 1). It was built for the weaving and finishing of worsted cloth. Because of the site's sloping topography, two full floors of the Main Mill are visible on the west elevation while on the south, north and east elevations only one floor is above-grade. As built in 1918, the building measured 146' across the facade by 215' to the rear. Granite trim throughout is molded, quarry-faced, or plain. Floors are concrete with interior columns of round-section timber in the original block. Later additions and alterations to this plan are described below. Built to employ both electrical and hydraulic power, the Andrews Mill utilized a power trench (filled in the 1940s) that drew water from above the nearby dam and returned it to the natural flow of the river about 200' downstream.² Typical of New England weave sheds, the orientation of the building is such that the glazed slope of the sawtooth roof faces north to direct diffused sunlight into the weave room below. The 14 sawtooth structures combine timber elements with steel I-beams. The entire sawtooth structure is now membrane-covered. The building's principal entrance is located in the center of the south façade, while industrial access, for shipping and operatives, was in the mill yard along the east elevation. Window openings are a combination of segmental-arch and rectangular; round windows are located in the sawtooth peaks. A concrete trench in the basement appears to be related to textile finishing operations, which are documented to have been carried out on site; the basement is the only likely place for finishing to have taken place.

South (principal) elevation: The south elevation of the Andrews Mill Company Main Mill is nineteen bays wide, with an entrance located in the center bay. In the mid-1960s then-owner

¹ The building does not face directly south but, rather, slightly toward the southwest. For ease of description, however, the primary façade will be described as facing south.

² This trench directed water to the Machine Shop/Gate House (Building 3), which housed a hydroelectric installation until ca. 1935. Spent water was returned to the flow of the Branch River by way of an outflow incorporated into the east wall of the building. SBPR Bridge Photo 108103 shows an opening in the east wall below the existing ground-level door that overlooks the river. This gate, which is depicted on the 1923 Sanborn drawing (see Figure 3), is in the location of the wheel house for the James Pitts mill (see Figure 2) and indicates that Andrews Mill Company Building 3 was sited primarily for its use in its power system. The neighboring Branch Village Dam was breached in a 1927 flood and never repaired (see Figure 5).

Andrews Mill Company Plant
Name of Property

Providence, Rhode Island
County and State

Tupper Corporation embarked on a modernization of the façade, sheathing it and the first two bays of the east and west elevations with metal panels. The metal sheathing, which is attached to the brick surface underneath with wooden nailers, extends from the beltcourse defining the raised basement to the roofline. The windows were reconfigured at this time, as well. Window openings measuring approximately 3'-wide by 6'-high had each originally housed a pair of narrow, wood-frame, 9/1, double-hung sash with fixed, six-light transoms. As part of this redesign, the original wood-frame window sash were removed and each window opening was filled with a plywood-covered frame in its upper half and modern aluminum sash (plate-glass above paired hopper sash) below, thereby reducing the height of the window openings to approximately 3.5'. The full original window openings in the brick wall remain unchanged under the metal sheathing.

The Tupper Corporation also redesigned the entry as part of its mid-1960s modernization effort. Originally comprised of paired frame doors flanked by sidelights and surmounted by three fixed sash (a central, 32-light sash flanked by smaller, 16-light sash), the entry now consists of a single aluminum-frame glass door flanked by fixed, aluminum-frame glass panels. A wide, flat canopy that extended out from between the doors and the transom was removed and replaced with one of metal and concrete supported by a single metal-sheathed steel column rising from a concrete landing. Brick piers on either side of the entry were sheathed in metal panels. The original concrete front walkway, which terminated in a single flight of steps at the entry, was replaced with the current configuration, which consists of three levels of walkway separated by intermediary steps and terminating in an entry landing.

In the original construction, granite trim included quarry-faced window sills, parapet coping and three beltcourses: a quarry-faced course separating the first floor from the partial basement; a molded course forming a continuous lintel; and a flat, bush-hammered course defining the base of a low, brick roof parapet. These details survive beneath the metal sheathing.

A 6'-wide below-grade walkway runs the full length of the front elevation, behind a retaining wall, allowing light into basement windows. Although the rectangular window openings of the basement level are unchanged from original construction, the window sash were replaced in the 1960s with the present 6-light, aluminum frame type.

East elevation: Although this elevation presents a ground floor and an exposed basement wall below, for simplicity's sake, it will be described as two-story. As noted above, the two southernmost, flat-roofed bays are sheathed in metal siding and original rectangular window openings have been partially covered by frame inserts and metal sheathing.

A loading dock is located at the southern end of the east elevation, at grade. It is comprised of at least two construction campaigns and is about 55' wide and 20' deep overall. As originally built, a 55'-long, single-story dock extended some 20 feet out from the east elevation and was sheltered under a flat roof (see Figure 6). The roof was substantially eliminated in the mid-20th century, rendering visible three original segmental-arch, frame shipping doors under a partial overhang. In the mid-20th century, a roughly 15'-square, shed-roof addition was made at the north end. This addition rests on a concrete foundation and is sheathed in plywood.

Andrews Mill Company Plant
Name of Property

Providence, Rhode Island
County and State

To the immediate north of this dock rises a two-story pavilion with a corbeled cornice and ceramic coping, extending 10' out from the building and measuring about 50' wide. It includes an entrance that is sheltered under a hip-roofed portico supported by paired wooden brackets. At the first floor, windows consist of paired, 12-light, wood-frame sash with fixed, 6-light transoms set within segmental arch openings. At the upper level, windows are paired, wood-frame, 9-light, fixed sash set within smaller segmental arch openings. Sills are quarry-faced granite. At the south end of this pavilion rises a flat-roofed, three-story elevator tower with matching corbelling.

The remainder of the east elevation of the Main Mill is characterized by the sawtooth roof that extends to the rear of the original construction. Each sawtooth section rises over an original rectangular, horizontal window opening. These openings are filled with a combination of original steel frame and modern aluminum inserts. The original steel frame windows are grouped in threes and each sash is 25-light (five rows of five lights). Mid-20th-century aluminum replacements provide three large, fixed upper lights and three operable horizontal sash below. At the gable end of each sawtooth there is a 4-light oculus (panes are painted opaque white on this elevation and unpainted on the west). Below these windows, extending up approximately 16' from grade to just below the window openings, is a solid wall of undifferentiated concrete; this concrete work is original to the building.

West elevation: As noted above, the two southernmost, flat-roofed bays of the west elevation are sheathed in metal siding and original rectangular window openings have been partially covered by frame inserts and metal sheathing. As originally built, this elevation presented a near-continuous, fenestrated brick wall below the sawtooth roof with a small, brick bumpout providing a side entrance to the building. Around 1960, Tupper Corporation added a narrow, brick, one-story addition (non-contributing) extending from this bumpout to the northern end of the building. The original west exterior wall is now located within the building, and remains visible as an interior wall. In order to facilitate communication between the original mill and the west addition, brickwork was removed below the two southernmost window bays, thus creating interior passages. Otherwise, original rectangular window openings on this wall are intact. Original sash were removed at the time of the alteration. Around 1970 Tupper Corporation extended this addition to the north with a 40' by 46' concrete-block and poured concrete extension from which rise two metal-clad, roughly 25'-high cooling towers (also non-contributing).

North (rear) elevation: As built, the north wall was wood frame, unlike the brick of the other elevations. This was a common cost-saving practice for mills intending to expand in the near future.³ This expansion was never carried out by the Andrews Mill Company or Uxbridge Worsted, but ca. 1960 Tupper Corporation built a flat-roofed, 178' by 20' frame and concrete-block addition (non-contributing) across the length of this elevation. A series of steel columns now marks the location of the original frame rear wall. About a decade later, Tupper Corporation

³ Examples of mills that erected original temporary walls with a view to expansion include the Lymansville Mill in North Providence (NR-listed, 2012), the Naushon Mill in Cumberland (NR-listed, 2016), the Greenwich Mills in Warwick (NR-listed 2006) and the Bernon Worsted Mill in Woonsocket (NR-listed 2005).

Andrews Mill Company Plant
Name of Property

Providence, Rhode Island
County and State

built a concrete loading dock (non-contributing) in a 75' by 36' gabled, frame enclosure. The loading dock is vinyl-sheathed and has an asphalt-shingled roof.

Building 2

Boiler House (1919 et seq.)

The Boiler House is a 34'-square, high-ceilinged, one-story brick building attached to the east elevation of the Main Mill, near its northern end. The raised foundation is concrete. Steel I-beams support a heavy plank, flat roof with a rectangular, wood-frame monitor. This roughly 5'-high, shallow-gabled structure contains a total of eight 12-light fixed sash (four each on the monitor's east and west sides) and two 9-light fixed sash (on its north side); two south-facing windows were removed and infilled with wood. As originally built, the Boiler House, as shown on the 1923 Sanborn drawing, measured 25' wide along the east elevation of the Main Mill by 40' deep,⁴ placing its northeast corner at the edge of the power trench, now filled. The present-day dimensions of this building represent alterations likely carried out during the occupation of Uxbridge Worsted Company (1936-1954). A roughly 48'-high, 24"-diameter steel smoke stack rests on a concrete pad a short distance from the north elevation of the Boiler House.

The sole windows on this building are a pair of wood-frame 49-light fixed sash on the building's east wall. On this wall there is visual evidence of a southerly enlargement of the original building: a brick seam marks the 25' of the original width. The abovementioned windows are centered on this original dimension. This east wall is the only elevation with brick corbeling. On the east and north elevations, a low brick parapet is topped by hemispheric ceramic coping. The main industrial entrance to the building is a large freight opening on the south elevation (there is no door). The 1923 Sanborn drawing shows the south wall as a frame structure with tin cladding. This would suggest Andrews Mill Company's intention to increase the size of the Boiler House, and the steam capacity in the near future. There are two smaller segmental arch door openings on the north elevation: one is filled with a louvered panel; the other is open (no door). Although differentiation in the surface of the concrete floor indicates machine and equipment beds, no equipment survives.

Building 3

Machine Shop/Gate House (1919)

Sited on the banks of the Branch River, the Machine Shop/Gate House is a west-facing, single-story, two-bay-by-seven-bay, brick, flat-roofed building measuring 75' by 23' and set on a raised

⁴ An early imprecision on the part of the Sanborn cartographers may have caused a longstanding, incorrect rendering of the dimensions of this building. Long after the Boiler House acquired its current near-square dimensions (likely ca. 1940), it continued to be depicted as the 25' x 40' building shown on the 1923 Sanborn drawing. It is worth noting that the 1940 Sanborn drawing (during the occupation of Uxbridge Worsted) noted that admittance had been refused to the Sanborn cartographers, a relatively common practice among mill owners.

Andrews Mill Company Plant
Name of Property

Providence, Rhode Island
County and State

concrete foundation. Concrete beams support a concrete slab roof.⁵ Four courses of brick corbelling support the overhang of the concrete roof. Rising above this corbelling is a low parapet with ceramic coping. A central doorway on the west elevation opens into a clear-span single chamber (the door itself has been removed). Paired frame doors on the east elevation, likely of original construction, open toward the river. A wide door opening on the south wall, which once held paired frame doors, has been framed and sheathed with plywood; a modern metal door is installed in this framing. Rectangular window openings on the west (main), east and north elevations are filled with steel 25-light or 20-light sash that include 6-light hoppers. There are no windows on the south elevation. Although this building presents as a relatively low single story when viewed from the mill yard, from the east (water) side, this building presents a roughly 24' height because of the high concrete foundation and the low elevation of the river. A two-tiered concrete platform, apparently related to the power trench and former power and fire prevention functions of the building, extends about 6' from the west (front) elevation.

Contributing Structures

Andrews Mill Company Gate Structure (1918, 1919)

This is a concrete structure that controlled the flow of water into the Andrews Mill Company power trench and, subsequently, into the Machine Shop/Gate House (Building 3). Elements of the wooden gate and its rack-and-pinion mechanism survived a 1927 flood that washed out the Branch River Dam. The structure measures 5' x 12' at the base and is about 6'-high. The structure includes concrete retaining walls extending back toward Great Road and northerly in the direction of the former power trench. When the Rhode Island State Board of Public Roads built the Branch River Bridge (RIDOT No. 108) in 1919,⁶ the project included significant repair to and upgrading of the abutments. The bridge construction work included extending the concrete retaining wall and steel railing at the northwest corner of the bridge into the entrance to the Andrews mill yard. This work survives and is integral with the gate structure.

Andrews Mill Company Water Tower (1919)

This is an approximately 50'-high steel tower that sits atop a roughly 80' ridge to the west of the Main Mill. It is comprised of a 36'-high support structure of built-up steel elements, angle iron and 1"-diameter tension rods and a 12'-high by 20' in diameter, steel-sheathed reservoir with a

⁵ This roof appears to be of the concrete T-beam type in which beams and ceiling (deck) were formed in a single pour.

⁶ This bridge replaced a late 19th-century metal Warren Pony Truss bridge on granite ashlar abutments (Figure 5). These abutments were retained for the replacement structure, a reinforced concrete bridge of the Modified Spandrel type, and are contiguous with the abovementioned concrete work extending into the mill yard. SBPR photo 108006 (on file, RIDOT) shows the metal bridge and abutments before demolition. Photo 108036, taken in September 1928, shows the ashlar west abutment integrated into the concrete approach/retaining walls as well as the damaged gate structure as it appeared after the 1927 flood.

Andrews Mill Company Plant
Name of Property

Providence, Rhode Island
County and State

low conical roof. The reservoir is accessed by a steel ladder leading to an octagonal platform around its base. This platform has a two-bar steel railing. Originally bearing the painted sign *Andrews Mill Company*, the water tower was used for fire protection and likely served in the provision of water to the mill tenements owned by the company until the mid-1920s.

Stone Pump House (1919)

Built by the Andrews Mill Company, this is a single-story, hip-roofed, random ashlar and rubble building measuring 12'-square. The foundation is concrete. A single door on the south (tower-facing) elevation is a late 20th-century replacement. Square window openings on the remaining three elevations are plywood-filled. Sills are concrete. The roof has exposed rafter ends. No historical pumping equipment survives.

Non-Contributing Resources

Frame Pump House (ca. 1930s)

This is a single-story, shed-roofed, frame utility building likely built by Uxbridge Worsted in the 1930s. It measures approximately 6' by 8' and is sheathed in novelty (shiplap) siding.

Incinerator (ca. 1950)

This is a 10'-square, firebrick-lined, brick incinerator on a concrete pad. The access door to the inner chamber is steel plate. A truncated chimney rises a few feet above the body of the incinerator. Visual evidence and its location on the alignment of the original power trench (filled in during the 1940s) indicates a likely mid-20th-century construction date.

Wastewater Treatment Buildings (ca. 1975)

Located along the Branch River north of the Machine Shop/Gate House are two shed-roofed, T-1-11-clad, wastewater treatment buildings built during the Tupper Corporation occupancy. One is square plan and 18'-high with a low north extension; the other is rectangular in plan and 8'-high. They are partly enclosed by a chain link fence.

Office Building (1979)

Located along Great Road southwest of the Andrews Main Mill, this is a 48' by 62' two-story, flat-roofed concrete office building on a raised basement and concrete foundation. The principal

Andrews Mill Company Plant
Name of Property

Providence, Rhode Island
County and State

elevation faces east with a central concrete stair leading to a glass-and-aluminum main entrance. Windows are steel framed, grouped in threes.

Masonry walls (ca. 19th century)

There are two significant examples of masonry wall that predate the Andrews Mill operation. A retaining wall likely dates to the Pitts Shoddy Mill operation (ca. 1870 to 1913). A right-angled fragment of drylaid rubble may date to earlier industrial use. Although they have significance in their own right as artifacts of earlier industrial activity, they are considered to be non-contributing resources because they predate the period of significance.

Riverfront foundation wall

Along the west bank of the Branch River, a short distance north of the Machine Shop/Gate House, is a right-angled corner of rubble masonry strongly suggestive of a former riverfront foundation for an industrial building. This masonry measures about 8' along the river and 3' back toward the mill yard. Because this foundation fragment does not correlate to any building depicted on the 1911 Sanborn drawing of the Pitts operation, it may relate to the late 18th-and 19th-century scythe works or the cotton spinning mill built on this site ca. 1805.

Retaining wall

A short distance from the east wall of the Main Mill at its juncture with the northwest corner of the Boiler House is a wetlaid rubblestone retaining wall measuring 30' in length with a height tapering from 6' nearest the Main Mill to 12' at its northern end. A comparison of the 1911 Sanborn drawing of the Pitts Shoddy Mill operation and that of the 1923 Andrews Mill indicates that this could be a foundation remnant of the Pitts Store House No. 3.

Andrews Mill Company Plant
Name of Property

Providence, Rhode Island
County and State

8. Statement of Significance

Applicable National Register Criteria

(Mark "x" in one or more boxes for the criteria qualifying the property for National Register listing.)

- A. Property is associated with events that have made a significant contribution to the broad patterns of our history.
- B. Property is associated with the lives of persons significant in our past.
- C. Property embodies the distinctive characteristics of a type, period, or method of construction or represents the work of a master, or possesses high artistic values, or represents a significant and distinguishable entity whose components lack individual distinction.
- D. Property has yielded, or is likely to yield, information important in prehistory or history.

Criteria Considerations

(Mark "x" in all the boxes that apply.)

- A. Owned by a religious institution or used for religious purposes
- B. Removed from its original location
- C. A birthplace or grave
- D. A cemetery
- E. A reconstructed building, object, or structure
- F. A commemorative property
- G. Less than 50 years old or achieving significance within the past 50 years

Andrews Mill Company Plant
Name of Property

Providence, Rhode Island
County and State

Areas of Significance

(Enter categories from instructions.)

INDUSTRY

ARCHITECTURE

Period of Significance

1918 – 1925

Significant Dates

1918

Significant Person

(Complete only if Criterion B is marked above.)

Cultural Affiliation

Architect/Builder

C.I. Bigney Construction Company

Statement of Significance Summary Paragraph (Provide a summary paragraph that includes level of significance, applicable criteria, justification for the period of significance, and any applicable criteria considerations.)

The Andrews Mill Company Plant is significant at the local level under **Criterion A** in the area of industry, for its association with the French worsted industry in northern Rhode Island. Numerous “French system” mills, which differed from English system mills in their spinning methods,⁷ were established in Rhode Island in the late 19th and early 20th centuries, involving

⁷ The English or “Bradford” system involved sorting wool fibers by length, oiling the fibers, heating and twisting the fibers during combing, and spinning the yarn on a wood frame. The French system involved sorting wool fibers by

Andrews Mill Company Plant
Name of Property

Providence, Rhode Island
County and State

millions of dollars in investment and leading to what is sometimes referred to as the state's "second industrial revolution." French and Belgian concerns were actively encouraged to open manufacturing facilities in Rhode Island by Aram Pothier (1854-1928), who served as Governor from 1909-1915 and again from 1925-1928; companies could skirt the McKinley Tariff if they had manufacturing facilities in the United States and northern Rhode Island offered a significant French-speaking workforce. The Andrews Mill Company Plant, built as part of this effort and occupied between 1918 and 1925, is a relatively rare and intact example of this remarkable period of predominantly northern Rhode Island worsted manufacture.

The Andrews Mill Company Plant is also significant under **Criterion C** in the area of architecture, as an example of early-20th-century industrial architecture in New England. The weave shed (see Figure 4) features a series of glazed, sawtooth roof structures that allowed diffused northern light for manufacture and close inspection of woven cloth. This architectural form emerged in England in the mid- to late 19th century and was embraced by architects and engineers in the United States in the 1890s. Use of the sawtooth form declined with the expansion of the electrical grid and widespread adoption of industrial electrical lighting in the period from 1910 to 1920. The sawtooth roof of the Andrews Mill Company Main Mill (Building 1, 1918), which is supported by round-section wood columns and incorporates rolled-steel I-beams, is a relatively late example of this roof form.

The period of significance of the property is 1918 to 1925, corresponding to the period of occupation by the plant's original developers, the Andrews Mill Company.

Narrative Statement of Significance (Provide at least **one** paragraph for each area of significance.)

From its headwaters in Burrillville, Rhode Island, the Branch River flows ten miles to its confluence with the Blackstone River in North Smithfield, Rhode Island. Along this route the Branch River falls some 140 feet, its flow and fall providing water power for industrial enterprises from the late 18th to the early 20th centuries. During this period, entrepreneurs erected a succession of dams along the river from Harrisville (Burrillville) to Branch Village (North Smithfield) for mill privileges large and small. Among these was a site at Branch Village, a few miles downstream of a major privilege at Slatersville. Along a meandering route, the Branch River descended about 25 feet from Slatersville to a point along the colonial-era Great Road where the river powered the forge and scythe works of Elisha Bartlett (1742-1804) as early as 1795. By the early 19th century, a small mill spun cotton yarn beside the scythe works. The

fineness rather than length, combing the fibers with unheated rollers or pins without oil, and spinning the yarn on mule spinners. This system resulted in soft, smooth, elastic yarn that was suitable for wool blends with cotton or silk, such as underwear, hosiery and dress goods. The yarn was initially used for high quality women's wear, but gradually became the yarn of choice for almost all woolen or worsted cloth produced in the United States. Mira Wilkins, *The History of Foreign Investment in the United States to 1914* (Cambridge, MA: Harvard University Press, 1989):358.

Andrews Mill Company Plant
Name of Property

Providence, Rhode Island
County and State

industrial village that grew around this confluence of this colonial highway and the Branch River came to be known as Branch Village.

The scythe works continued to operate into the mid-19th century. In 1858, the property and water privilege was purchased by the Blackstone Manufacturing Company, a producer of both cotton and woolen products. James Pitts (1811-1895) and Robert Aldrich began leasing the site ca. 1870, for the manufacture of shoddy and flock.⁸ The Aldrich-Pitts partnership appears to have ended by 1878 when a fire destroyed the plant. Upon the rebuilding of the mill, Frederick James Pitts (1858-1913), son of James, became a partner in the operation, the company renamed James Pitts and Son. By the turn of the century, the Pitts Shoddy Mill had become a substantial operation of about 60 acres, comprising a two-story frame mill, a dye house, several storage buildings, a 10' dam, a substantial impoundment of the Branch River (see Figure 5), and about a dozen units of worker housing. The main Pitts mill was built directly over a power trench that brought water from the high side of the Branch River dam to a wheel house on the mill's east wall, where spent water was discharged back to the river. (See Figure 2). Shoddy manufacturing continued on site, by Frederick James Pitts until his death in 1913 and then by William Ambach until October 1915, when much of the mill was destroyed by fire.⁹ The property remained unused until 1918 when the Pitts family sold the mill estate to the Andrews Mill Company of Frankford (part of the municipality of Philadelphia), Pennsylvania.¹⁰

The Andrews Mill Company, established in 1902 and incorporated four years later, was a subsidiary of Demetre, Sault & Ciriez, a woolen and worsted firm based in Roubaix, France, and headed by André and Jules Demetre. In Philadelphia, the firm first erected a plant for woolen and worsted dress goods, later adding a finishing plant. By 1908, André (later anglicized to Andrew) Demetre had joined the Manhattan firm of textile selling agents, King, Beals and Company.

The Demetre, Sault & Ciriez plant in Roubaix was badly damaged by a campaign of German bombing on the French-Belgian border upon the outbreak of World War I in 1914 (it was rebuilt in the early 1920s). Addressing this cessation in production, the parent firm sought to expand its American production capacity. By early 1917, King, Beals and Company was dissolved and a new company formed, Demetre Brothers and Beals, with Andrew Demetre as partner. A year later, the Andrews Mill Company announced the purchase of the 60-acre former Pitts Mill estate in North Smithfield, a town neighboring the thriving industrial city of Woonsocket, Rhode Island.

A May 23, 1918 page one headline in the *Woonsocket Call* heralded the purchase: "Andrews Mill Company Buys Branch Village."¹¹ The article anticipated the construction of a new plant on

⁸ Shoddy is a low grade of woolen cloth made from scrap yarn or fabric, reduced to fiber by machinery, and rewoven into cloth. Flock is woolen or cotton waste, old rags, etc. reduced to a degree of fineness by machinery and used for stuffing. Source: *Callaway Textile Dictionary* (1947 edition).

⁹ "North Smithfield Shoddy Mill Burns." *Providence Journal* (30 October 1915): 14.

¹⁰ Clara Pitts to Andrews Mill Company. North Smithfield Land Evidence Books 16: 182 and 345 and 19: 352 (1918).

¹¹ "Andrews Mill Co. Buys Branch Village." *Woonsocket Call* (23 May 1918): 1.

Andrews Mill Company Plant

Name of Property

Providence, Rhode Island

County and State

the site of the former Pitts Mill and several hundred new jobs in the weaving of dress goods. The plant would also provide dyeing, bleaching and finishing. Noted in the article as significant factors in the Andrews investment was the hope of receiving a ten-year tax exemption from the Town of North Smithfield as well as maintenance of a five-cent trolley fare zone from downtown Woonsocket to the Branch River Bridge, “a stone’s throw of the mill site,” and a guarantor of skilled workers from Woonsocket’s labor force.¹² The Town of North Smithfield granted the anticipated ten-year exemption at its June 1918 meeting.¹³ Andrews would be taxed on the \$50,000 valuation of the property at the time of purchase, with an exemption on the \$200,000 of new construction. The *Woonsocket Call* article also included an effusive letter of thanks from Jules Demetre to Aram Pothier, former Governor of Rhode Island:

We wish to extend to you our sincere thanks for the impartial assistance you have given us in this undertaking. You have made our research easier and smoothed all difficulties with your usual tenacity and great amiability.¹⁴

Aram Pothier (1854-1928) emigrated from Quebec to Woonsocket in 1870, where he began a successful career in the banking field. He used this, as well as his fluency as a native French speaker, as a stepping stone to political office in the heavily French-Canadian city, serving as a state representative (1887-1888), Mayor of Woonsocket (1894-1895), Lieutenant Governor (1897-1898) and two-term Governor of Rhode Island (1909-1915, 1925-1928). He was chosen to represent Rhode Island as a delegate to the Paris Trade Expositions of 1889 and 1900, tasked with attracting foreign investment to Woonsocket. While in Europe Pothier visited the major centers of worsted wool production along the Franco-Belgian border, enticing firms with three selling points: foreign firms with manufacturing facilities in the United States could avoid the McKinley Tariff (1897), Woonsocket had a significant French-speaking workforce, and the City was willing to offer substantial tax incentives to textile manufacturers. Pothier’s efforts were enormously effective; Woonsocket saw a massive infusion of foreign investment in worsted spinning and weaving, often called Rhode Island’s “Second Industrial Revolution,” in the late 19th and early 20th centuries. Pothier continued to advocate successfully for the establishment of woolen and worsted industries in Rhode Island in later years, including facilitating the expansion of the Andrews Mill Company to North Smithfield.

The Andrews Mill Company managed to construct a new facility in North Smithfield despite restrictions on new construction during the ongoing hostilities of World War I. A short-lived War Industries Board had been established in the fall of 1917, several months after the U.S. entry into the European conflict, to oversee and control the exploitation of material resources and direct them to the war effort. As noted in a September 1918 article in *Providence Magazine*, “[The] War Industries Board has the power to check details of building materials and to hold up all operations that are not essential to the prosecution of the war.”¹⁵ To date no records have been

¹² “Andrews Mill Co. Buys Branch Village.” *Woonsocket Call* (23 May 1918): 3.

¹³ *North Smithfield Town Meeting Records*, Book 2: 67 (June 10, 1918).

¹⁴ Letter dated May 23, 1918, reprinted in “Andrews Mill Co. Buys Branch Village.” This is an excerpt from the full letter.

¹⁵ “No unnecessary building work.” *Providence Magazine* 30 (September 1918): 473.

Andrews Mill Company Plant

Name of Property

Providence, Rhode Island

County and State

found indicating that the Andrews Mill Company's plans for Branch Village had been subjected to this oversight. The sole reference to Andrews Mill Company's participation in the war effort is found in the May 23 letter from Demetre to Pothier in which the mill is described as "a branch which will enable it to increase its production for the government."¹⁶ Considering that the letter was written before ground had been broken for the Rhode Island plant, it is assumed that the home plant in Philadelphia had fulfilled military contracts for textiles and that the company had expectations that its Rhode Island subsidiary would enjoy the same government largesse. These war contracts never materialized; the armistice was signed in November 1918, months before the mill was in operation.¹⁷

In June 1918, Andrews Mill Company hired the C.I. Bigney Construction Company (Providence) to demolish the remains of the former Pitts Mill and commence construction of a \$200,000 plant with combined sawtooth weave shed, finishing plant and office (see Figure 1), as well as an attached Boiler House and a freestanding Machine Shop/Gatehouse sited along the banks of the Branch River (see Figure 3). Sawtooth weave sheds were relatively common in New England textile plants from the 1890s to the early 1920s. In this roof form, a series of sawtooth-shaped, glazed roof structures faces north, where diffused, non-glare light permits close inspection of woven material. Sawtooth roofs became less common as electrical lighting became more widespread. The plant also included a steel water tower with stone pump house and an improved, concrete headrace gate.

A note on C.I. Bigney Construction Company

The C.I. Bigney Construction Company commenced operations when Charles Ira Bigney (1881-1977), an immigrant from Nova Scotia, assumed full ownership of his older brother's Providence-based construction firm, E.H. Bigney and Company, in 1913. Although entering into contracts for a range of building types, soon the company established a specialty in industrial buildings and complete plants, constructing a number of them into the 1920s. In 1917 Bigney, through the efforts of Aram Pothier, was hired to design and build a sawtooth-roofed weave shed for the Greenwich Mills in Warwick, Rhode Island (NR-listed, 2006). Formed by S. Granville Beals, Greenwich Mills also sold its goods through the sales agency of Demetre Brothers and Beals in New York. Beals had worked for Demetre Brothers from 1912 to 1917.

Andrews Mill Company at Branch Village

At the time of the Andrews purchase, Branch Village (the 60-acre Pitts Mill estate) included a 19th-century dam and impoundment and approximately twelve units of worker housing arrayed along both sides of Great Road. The Pitts operation also provided water and electricity to the mill village, a community numbering about 200 people. Andrews Mill Company not only maintained operation of this factory village, it immediately set out to improve and expand it. The project was ambitious.

¹⁶ "Andrews Mill Co. Buys Branch Village." *Woonsocket Call* (23 May 1918): 3.

¹⁷ The War Industries Board was dissolved shortly after the signing of the armistice.

Andrews Mill Company Plant

Name of Property

Providence, Rhode Island

County and State

A September 1918 item in the trade journal *Electrical World* noted that the Andrews Mill Company had awarded the C.I. Bigney Construction Company a contract for erection of "...a two-story weave shed, 174 ft. by 220 feet.; a boiler house, 24 ft. by 36 ft.; power house, 45 ft. by 60 ft., and recreation building, 45 ft. by 75 ft.; also a concrete dam, 80 ft. long by 18 ft. high across Branch River, to come to a cost about \$265,000."¹⁸ Shortly after, Andrews Mill Company announced the intention to build a separate worsted finishing plant and sought bids for the design and construction of ten two-story double houses to be built along a new road to be called Andrews Terrace.¹⁹ Contemporaneous with this effort, Andrews' upgraded the mill village's water supply. This included a 350'-deep well, a 90,000-gallon concrete reservoir, and a pumping system permitting consumption of 15,000 gallons/day.²⁰ In early 1919²¹ Andrews contracted with Stone and Webster, a Boston-based electrical engineering firm and specialist in hydroelectric installations, to construct a 150 KW generating system to power the mill's machinery and lighting system and to provide electricity to its company housing.

Despite these ambitious proposals, in actual practice Andrews Mill Company scaled down the improvements substantially: the size of the plant was reduced to 146' wide by 215' deep; the separate finishing plant was not built (dyeing and finishing operations were carried out in the basement of the Main Mill); the recreation building and store house were eliminated; the planned ten units of new worker housing were reduced to four; and a planned 18'-high concrete dam across the Branch River never materialized.²² These setbacks notwithstanding, by 1920 the plant employed 200 operatives tending 168 broadlooms in the production of worsted dress goods.

As built for the Andrews Mill Company, the southernmost third of the ground floor of the Main Mill housed the company office and space for mending and sewing of worsted fabric. The remaining 2/3 of the floor served as a weave shed. Warping and winding were carried out in the southernmost section of the partial basement, the northernmost section of which was used for dyeing, bleaching and finishing.

Originally, the Andrews Mill Company powered the mill by electricity generated on a hybrid steam and hydraulic system.²³ *Davison's Blue Book* entries from 1919 to the end of the Andrews

¹⁸ Item, *Electrical World* 72 (21 September 1918): 582.

¹⁹ These dwellings are not a part of this nomination. Designed by the Providence architectural firm of Jenks and Ballou and now under private ownership, these double houses survive as numbers 2, 6, 10 and 12 Andrews Terrace, across Great Road and southeast of the mill. A January 1920 trade journal item noted that Jenks and Ballou architects were seeking bids for "building ten 2-story 24 x38 houses for workmen. Timber, rock and concrete foundations for Andrews Mill Company, Branch Village." Source: *Engineering News-Record* 84 (29 January 1920): 75. Andrews Mill Company sold the four double houses in 1925.

²⁰ This consumption was divided evenly between the mill and the factory tenements. Source: "Description of Public Water Supplies of Rhode Island," *Journal of the New England Water Works Association* 40 (June 1926). The concrete reservoir noted above survives on the ridge overlooking the Andrews plant. The integrity of this below-ground, covered structure, apparently unused for many decades, cannot be determined and, for reasons of safety, is not included in this nomination as a contributing or non-contributing structure.

²¹ Source: Item in *Stone and Webster Journal* 24 (15 January 1919): 142. *Annual Reports of the Commissioner of Dams and Reservoirs* (1927-1928) also noted the generation of electricity for the mill and company housing.

²² The plant's new hydroelectric system utilized the historical 9.5' head of the earlier Pitts water privilege.

²³ The Pitts Mill had also used steam to supplement its waterpower during periods of low flow on the Branch River.

Andrews Mill Company Plant

Name of Property

Providence, Rhode Island

County and State

occupation report that “steam and one water wheel” provided the plant’s power. Many New England mills of the 1920s took advantage of existing water power to install hydroelectric systems.²⁴ In many cases, this allowed for conversion from group drive of machinery to individual drive using locally-mounted electric motors.

The “water wheel” noted in *Davison’s Blue Book* was a turbine installed below grade in the Machine Shop/Gate House (Building 3) fed by pressurized water from the power trench and coupled to an electrical generator. Electricity thus generated was routed by wire to the mill and along street poles to company housing. Although little evidence remains of this system, an investigation below-grade within this building may yield evidence of its operation.

Trouble loomed for the Andrews operation in the early 1920s, however. In the spring of 1923 the plant was closed for about six weeks due to a walkout. Citing “poor business conditions,” the Philadelphia owners closed the North Smithfield operation in late May. Among these conditions was anticipated war production that never materialized, a post-World War I national recession that lasted from 1920 to 1921, a general decline in New England textile manufacture, and a sharp increase in production costs due to a global shortage of raw wool. Despite strong public denials by a company official that the Andrews Mill Company was undergoing reorganization, in June 1923 F. B. Motte, a spinning company of Roubaix, France, purchased the American concern. Jules Demetre, brother of Andrew, was made president of the reorganized company.²⁵

The Andrews Mill, reopened under the new ownership the same year, maintained employment at about 200 operatives until 1925, when the mill was shuttered.²⁶ Had a return to profitably been possible, nature intervened. In the month of November 1927, 6.7” of rain was recorded at Woonsocket, Rhode Island. This caused massive flooding along the Branch River and a washout of the 19th-century dam built by the Pitts Mill and retained for use by the Andrews Mill Company. Although the 1928 *Annual Report of the Commissioner of Dams and Reservoirs* noted Andrews Mill Company’s intention to carry out temporary repairs and to build a new concrete dam, the report said that the plant was idle at the time of the writing. Despite the inactivity of the mill, the request for permission to make repairs to the old dam was based on their intention to continue providing electrical service to the residents of the mill village.²⁷

²⁴ Although mills commonly exploited existing waterpower, this was limited by the high variability of flow during the course of the year. For example, The 1928 *Annual Report of the Commissioner of Dams and Reservoirs* reported that waterpower at the Andrews site was reliable for only eight months of the year.

²⁵ “Andrews Mill Co. Shakeup Denied,” *Providence Journal* (26 May 1923): 16 and “French Spinners Buy Andrews Mill,” *Providence Journal* (14 June 1923): 4.

²⁶ It should also be noted that Andrews’ 10-year tax exemption was set to expire in 1927.

²⁷ *Annual Report of the Commissioner of Dams and Reservoirs* (1928). The report the following year added some detail to the story of the events related to the flood. There is, however, a transcription error in the 1929 *Annual Report* which noted: “...permission was granted to the owners to erect a temporary fill of loose rock for the purpose of diverting a portion of the electric current for the mill village might be carried on.” It is evident that part of this sentence was left out. The author suggests that the missing phrase addressed a “diverting of a portion of the [flow of the river in order that the provision of] electric current for the mill village might be carried on.”

Andrews Mill Company Plant

Name of Property

Providence, Rhode Island

County and State

Highly unstable financial and market conditions for the company are indicated by the fact that in February 1929, the parent company (Andrews Mill Company of Pennsylvania) reorganized as the “Andrews Mill Company of Delaware.” This action was followed in July of the same year by reorganization as “Andrews Mill Company of Rhode Island.”²⁸ The *Articles of Association* for this new corporation made no reference to textile manufacture. It was established “To use, hold, sell convey, exchange real property, improved or unimproved, and to rent and lease same.”²⁹ Late that year the Great Depression set in. The mill remained shuttered until Uxbridge Worsted Company leased the plant from Andrews Mill Company of Rhode Island in 1934. Two years later Uxbridge Worsted Company purchased the North Smithfield plant.³⁰

Uxbridge Worsted Company

The Uxbridge Worsted Company was formed in 1908 by Charles A. Root and Louis Bachmann for production of worsted cloth.³¹ By the 1920s the company, based in Uxbridge, Massachusetts, owned mills in Woonsocket and Burrillville, Rhode Island as well as in Lowell, Massachusetts. Upon purchase of the Andrews Mill in 1936, Uxbridge Worsted moved its looms from the former Alice Mill in Woonsocket into the North Smithfield plant. By the fall of that year, Uxbridge Worsted employed 250 operatives in Branch Village solely in the manufacture of worsted cloth for dress goods, the same line of work carried out during the Andrews ownership. Directory listings indicate that the new owner eliminated all textile finishing processes.

The most significant physical changes to the Andrews plant carried out during the Uxbridge Worsted ownership were the filling-in of the old Pitts-era power trench and the widening of the Andrews Mill Company Boiler House (Building 2), which no longer served power functions and was utilized solely as a heating plant. The Machine Shop/Gate House (Building 3), no longer associated with hydroelectric power, served as a machine shop and maintenance building with pumping facilities for the plant’s process water and fire prevention.

In 1947 Uxbridge Worsted merged with the Louis Bachmann Company to form Bachmann-Uxbridge Worsted. The following year the merged company introduced “auto cloth” to their line of men’s and women’s worsted wear. Bachmann-Uxbridge Worsted conveyed the former Andrews Mill Company plant to the Industrial Development Foundation of Greater Woonsocket in 1955.³² In the same year the Foundation, established to facilitate the sale and reuse of vacant or distressed industrial properties, leased the former Andrews plant to the Tupper Corporation, makers of Tupperware, to house its corporate office and laboratory. Tupper Corporation purchased the plant outright in 1958.

²⁸ See North Smithfield Land Evidence Book 33: 1, *Andrews Mill Company of Pennsylvania to Andrews Mill Company of Delaware* (2 February 1929) and 33: 7, *Andrews Mill Company of Delaware to Andrews Mill Company of Rhode Island* (7 July 1929).

²⁹ *Records of Original Articles of Association of Business Corporations* (1929): 631.

³⁰ North Smithfield Land Evidence Book 36: 377 (14 May 1936), *Andrews Mill Company of Rhode Island to Uxbridge Worsted*.

³¹ Uxbridge Worsted Company used the English system of spinning, not the French.

³² North Smithfield Land Evidence Book 56: 498.

Andrews Mill Company Plant
Name of Property

Providence, Rhode Island
County and State

The Tupper Corporation

Earl S. Tupper (1907-1983) established a mail order company in Massachusetts in the mid-1930s selling toothbrushes and combs. By 1937 he had raised enough money to set up a factory for manufacture of plastic products in Grafton, Massachusetts. He began the manufacture of the product line that came to be known as Tupperware in 1942. Within five years the company's net receipts were \$5 million. As noted in his obituary:

The essence of Tupperware is a flexible, unbreakable and heat-resistant blend of plastic that Mr. Tupper invented and called poly-T. His first line of products consisted of 25 pastel-colored items, including drinking glasses and a double-walled ice-cube bowl. Some of his bowls had tops that made the containers airtight.³³

In 1955 Tupper Corporation purchased the main Blackstone Manufacturing Company plant, located in North Smithfield,³⁴ and opened a laboratory and offices in the former Andrews Mill Company plant, a short distance to the south. In the 1960s the company redesigned the principal elevation with application of blue and white metal paneling, a new glass and aluminum front entrance, and reduction of the original window openings to the size visible today. As noted in Section 7, these original window openings themselves are unchanged. Around 1960 Tupper Corporation also built the addition across the north elevation of the Main Mill as well as a one-story addition along the west elevation, terminating in a concrete structure supporting two cooling towers. The company built the large enclosed loading dock at the rear of the building ca. 1970 and the two wastewater treatment buildings along the Branch River ca. 1975.

Shortly after the move to North Smithfield and Blackstone, Earl Tupper sold the corporation (including the Andrews plant) to Rexall Drug Company in 1958,³⁵ but remained as Chairman of the Board until his retirement in 1973. Dart Industries, successor to Rexall Drug, operated the Andrews Mill locally under the trade name Tupperware, until it sold the property to a real estate firm in 1994. Dart Industries was the likely builder of the 1979 two-story office building at the southwest corner of the parcel. The most recent tenant, now in receivership, was a recycling firm. The plant has been vacant for more than a decade and is now under consideration for adaptive reuse.

A note on the Andrews Mill Company's power system

As noted above, the Andrews Mill was powered by a 150 KW hydroelectric system installed in Building 3 and drawing its power from the improved Pitts-era power trench (filled in the 1940s). This system was likely dismantled during the Uxbridge Worsted occupation (1934-1954) when the mill was tied in to the public power grid. The 1928 *Annual Report of the Commissioner of Dams and Reservoirs* made reference to the Pitts-era water privilege and its ability to produce 70

³³ Joseph B. Treaster, "Earl Tupper, father of Tupperware, dies." *New York Times* (7 October 1983).

³⁴ The mill village associated with this plant is located just over the state line, in Blackstone, Massachusetts. It is listed in the National Register as the Blackstone Manufacturing Company Historic District (NR-listed 1995).

³⁵ North Smithfield Land Evidence Book 64: 257.

Andrews Mill Company Plant

Name of Property

Providence, Rhode Island

County and State

mechanical horsepower under a fall of 9.5'. The report observed, however, that the system could produce reliable power for only eight months of the year because of low flow conditions on the Branch River. The Pitts operation supplemented its water power with steam and Andrews Mill Company supplemented its hydroelectric generation also with steam. *Davison's Blue Book* entries from 1919 to the end of Andrews' active occupation report hybrid power, utilizing a "water wheel" (a common term for a turbine), boilers, and electricity.

Andrews' original intention to build a new Branch River Dam at a height of 18' would have increased dramatically their electrical output.³⁶ Assuming similarly variable flow rates on the Branch River, a near doubling of the height of the 19th-century dam could have produced 130 mechanical HP under the right conditions of flow. This, in turn, could have produced approximately 100 KW of electricity under these conditions. Andrews Mills Company's decision to maintain the 9.5' of fall of the Pitts-era water privilege and the 70 HP cited above allowed approximate generation of 50 KW of electricity under similar conditions of flow. It is likely that the 150 KW capacity of the Stone and Webster hydroelectric installation was engineered under the assumption that the dam would be raised to 18'.³⁷

³⁶ The RI State Board of Public Roads (SBPR) replaced the 19th-century Branch River Bridge in 1919 with a concrete arch bridge providing a clearance of 11.5' to the underside of the arch at normal water levels (Source: RI Historic Bridge Inventory form for Branch River Bridge 108). Although no correspondence to this effect has been located to date, raising the dam to 18' might have placed Andrews Mill Company in conflict with SBPR bridge plans as well as upstream mill owners. As noted in correspondence with the author, industrial historian Patrick Malone observed that Andrews Mill Company could not have built an 18'-high dam without wiping out waterpower at the upstream Forestdale mill privilege. Correspondence April 25, 2018.

³⁷ These calculations are necessarily approximate because of the variable efficiency of turbines, generators and motors; the high variability of flow on the Branch River; and losses in transmission. The types of turbine and generator used at the Andrews Mill are unknown at this writing. USGS flow rate data for the Branch River at Forestdale (.5 miles upstream of the Andrews water privilege) are: minimum flow 14 cubic feet/second (cfs) (recorded in 1955); median flow 207 cfs; mean flow 260 cfs; and maximum flow 940 cfs (recorded in 1969) Source: https://waterdata.usgs.gov/ri/nwis/uv?site_no=01111500) accessed April 24, 2018). The formula used by the writer for calculation of mechanical horsepower is: $HP = \text{flow rate} \times \text{head} / 8.8$. The rough rule-of-thumb for conversion of mechanical horsepower to electrical energy is 1 HP = 746 watts. The flow rate used for above HP and KW calculations was derived from the 1928 *Commissioner of Dams and Reservoirs Annual Report*. The 70 HP capability noted at the Pitts privilege in this document would have required 64 cfs of flow under the described head of 9.5'. This is a modest flow rate when compared to the mean and median rates posted by USGS. Using current median flow rates (and not correcting for efficiency or loss in transmission), a flow rate of 207 cfs under 9.5' of head could yield approximately 225 mechanical HP and, by extension, 167 KW of electricity.

Andrews Mill Company Plant
Name of Property

Providence, Rhode Island
County and State

9. Major Bibliographical References

Bibliography

Books

Bayles, Richard M., ed. *History of Providence County*, Vol. II. New York: W.W. Preston and Co., 1891.

Bicknell, Thomas W. *The History of the State of Rhode Island and Providence Plantations*. New York: The American Historical Society, 1920.

Blue Book Textile Directory of the United States and Canada. New York: Davison Publishing Company (1905 et seq.).

Carroll, Charles. *Rhode Island: Three Centuries of Democracy*. New York: Lewis Historical Publishing Company, 1932.

Cutter, William R. *American Biography: A New Cyclopaedia*, Vol. VI. New York: American Historical Society, Inc., 1919.

History of American Textiles. Boston: American Wool and Cotton Reporter, 1922.

Lamb's Textile Industries of the United States, Vol. I. Boston: James H. Lamb, 1916.

Radford, William A., ed. *Framing*. Chicago: Radford Architectural Company, 1917.

Wilkins, Mira. *The History of Foreign Investment in the United States to 1914*. Cambridge, MA: Harvard University Press, 1989.

Articles

"Andrews Mill Co. Buys Branch Village." *Woonsocket Call* (23 May 1918): 1.

"Andrews Mill Co. Shake-up Denied." *Providence Journal* (26 May 1923): 16.

Clewell, C.E. "Application of Motors to the Textile Industry." *Electrical World* 71 (16 February 1918): 354.

"Description of Public Water Works in Rhode Island." *Journal of the New England Water Works Association* 40 (June 1926).

Andrews Mill Company Plant
Name of Property

Providence, Rhode Island
County and State

“Employees’ Reinstatement by Andrews Mill Sought.” *Providence Journal* (13 June 1923): 13.

“North Smithfield Shoddy Mill Burns.” *Providence Journal* (30 October 1915): 14.

Parrott, Charles. “The Weave Sheds of New Bedford and Their Place in Industrial Architecture.” *IA* 40 (2014).

“Philadelphia Firm Buys Branch Village Property.” *Providence Journal* (24 May 1918): 2.

Staelen, Jacques. “Gov. Aram Pothier is remembered as a man of great vision.” *Woonsocket Call* (19 August 1998): A-6.

Treaster, Joseph B. “Earl Tupper, the Father of Tupperware, dies.” *New York Times* (7 October 1983).

Government publications

Annual Report of the Commissioner of Dams and Reservoirs (1927-1929). Typescripts on file, Rhode Island State Archives, Providence, RI.

Annual Report of the Factory Inspector (1922-1937). Typescripts on file, Rhode Island State Archives, Providence, RI.

Branch River Bride No. 108. Rhode Island Historic Bridge Inventory (2004).

Town of North Smithfield Land Evidence Records.

Town of North Smithfield Tax Books (1918-1960).

Unpublished material

Dam inspection file for Branch Village Dam No. 550. R.I. Department of Environmental Management, Office of Compliance and Inspection, Providence, RI.

Maps and Engineering Drawings, in chronological order

1847 J.M. Bufford’s Lithography, Boston. *Route of the Providence and Worcester Rail Road*.

1870 D.G. Beers and Company. *Atlas of the State of Rhode Island*.

1886 USGS Blackstone (MA) Quadrangle Map.

Andrews Mill Company Plant
Name of Property

Providence, Rhode Island
County and State

- 1895 Everts and Richards. *New Topographical Atlas of Surveys, Providence County, Rhode Island.*
- 1911 Sanborn Fire Insurance drawing (also 1923, 1940, 1944, 1955).
- 1919 R.I. State Board of Public Roads. *Location Plan*, Branch River Bridge No. 108.
- 1928 R.I. State Board of Public Roads. Field notes, Branch River Bridge No. 108. Field cards 108020 and 108026.
- 1944 USGS Georgiaville (RI) Quadrangle Map.

Photographic collections

Clarence L. Hussey Photo Collection, R.I. State Board of Public Roads Bridge Department. On file, R.I. Department of Transportation, Cultural Resources Unit, Providence, RI.

Note: This collection includes a number of original photographs taken during the construction and widening of Branch River Bridge No. 108 (1919-1931), located at the southeast corner of the mill property. Many of these photos show parts of the south and east elevations of the Andrews Mill.

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 # _____
- recorded by Historic American Landscape Survey # _____

Primary location of additional data:

- State Historic Preservation Office
- Other State agency
- Federal agency
- Local government
- University
- Other
- Name of repository: _____

Historic Resources Survey Number (if assigned): _____

Andrews Mill Company Plant
Name of Property

Providence, Rhode Island
County and State

10. Geographical Data

Acreage of Property: 32.38 acres

Use either the UTM system or latitude/longitude coordinates

Latitude/Longitude Coordinates

Datum if other than WGS84: _____
(enter coordinates to 6 decimal places)

- | | |
|-------------------------|------------------------|
| 1. Latitude: 42.004802° | Longitude: -71.552587° |
| 2. Latitude: 42.002600° | Longitude: -71.550294° |
| 3. Latitude: 41.999965° | Longitude: -71.552821° |
| 4. Latitude: 42.000228° | Longitude: -71.555121° |
| 5. Latitude: 42.002310° | Longitude: -71.555158° |

Or

UTM References

Datum (indicated on USGS map):

NAD 1927 or NAD 1983

- | | | |
|----------|----------|-----------|
| 1. Zone: | Easting: | Northing: |
| 2. Zone: | Easting: | Northing: |
| 3. Zone: | Easting: | Northing: |
| 4. Zone: | Easting: | Northing: |
| 5. Zone: | Easting: | Northing: |

Andrews Mill Company Plant
Name of Property

Providence, Rhode Island
County and State

Verbal Boundary Description (Describe the boundaries of the property.)

The boundaries of the Andrews Mill are contiguous with those of North Smithfield, RI Assessors Map 5, Lot 29 (see Figure 7).

Boundary Justification (Explain why the boundaries were selected.)

These boundaries represent the parcel containing the Andrews Mill Company plant as subdivided after the sale of 28 acres of land on the south side of Great Road and east of the Branch River. All contributing and non-contributing resources are located on this 32-acre parcel.

11. Form Prepared By

name/title: Edward Connors
organization: Edward Connors and Associates
street & number: 39 Dyer Avenue
city or town: Riverside state: RI zip code: 02915
telephone: 401 595-0699
date: July 2018

Additional Documentation

Submit the following items with the completed form:

- **Maps:** A **USGS map** or equivalent (7.5 or 15 minute series) indicating the property's location.
- **Sketch map** for historic districts and properties having large acreage or numerous resources. Key all photographs to this map.
- **Additional items:** (Check with the SHPO, TPO, or FPO for any additional items.)

Andrews Mill Company Plant
Name of Property

Providence, Rhode Island
County and State

Additional Information



Figure 1

Andrews Mill Company Main Mill as built.
Half-tone from *History of American Textiles* article on C.I. Bigney
showing Great Road elevation and main entrance (photo published 1922).



Figure 2

Detail from 1911 Sanborn Fire Insurance drawing showing
James Pitts and Son Flock Mill. Note power trench, Branch River Dam (breached 1927)
and industrial impoundment on both sides of Great Road.

Andrews Mill Company Plant
Name of Property

Providence, Rhode Island
County and State

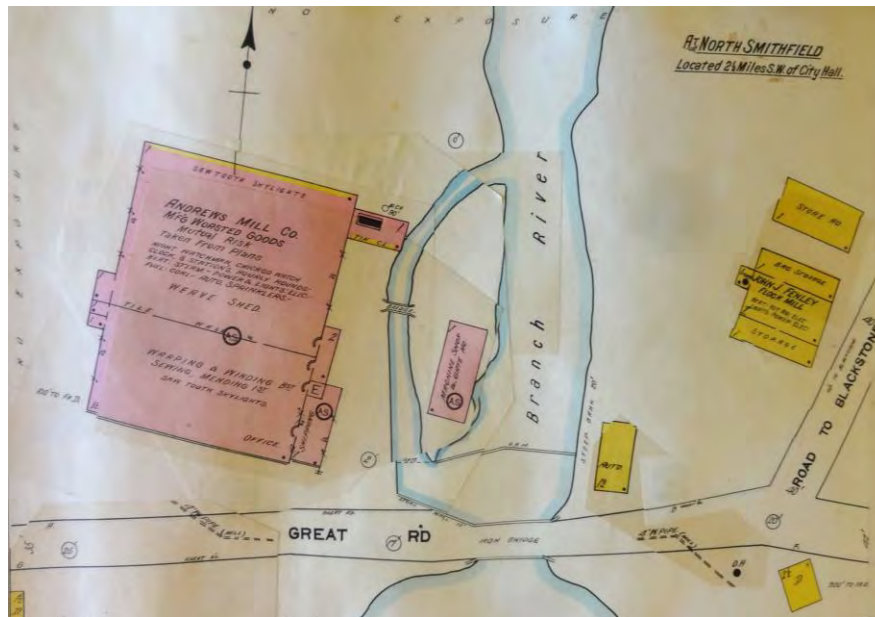


Figure 3

Detail from 1923 Sanborn Fire Insurance drawing showing Andrews Mill Company Main Mill, dam, headrace gate, Pitts-era power trench as retained by Andrews, and Machine Shop/Gate House with outflow to Branch River.

Note: "Iron Bridge" label is incorrect. The State Board of Public Roads replaced the iron bridge with a concrete arch bridge in 1919.

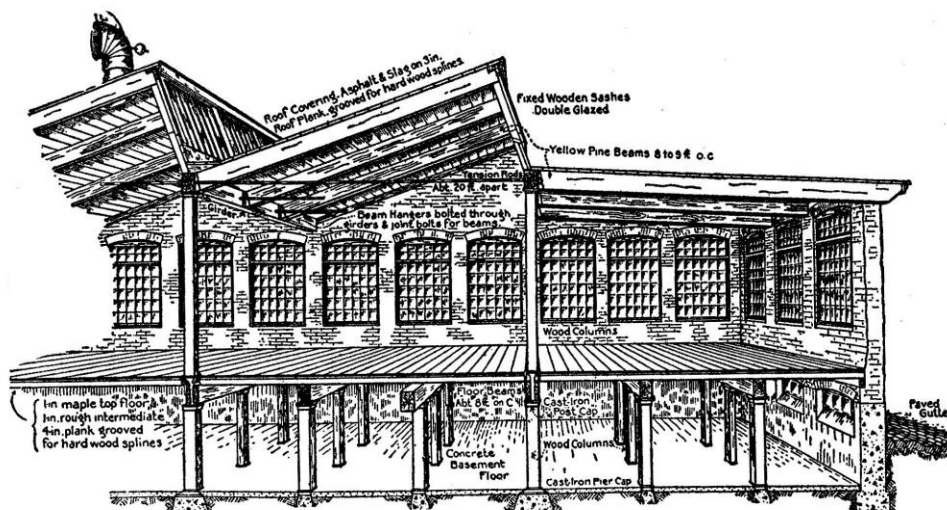


Fig. 158. Textile Weave Shed—Standard Mill Construction with Saw-Tooth Roof.

Figure 4

Cutaway view of a sawtooth-roofed textile weave shed from *Framing*, William A. Radford, ed. (1917)

Andrews Mill Company Plant
Name of Property

Providence, Rhode Island
County and State

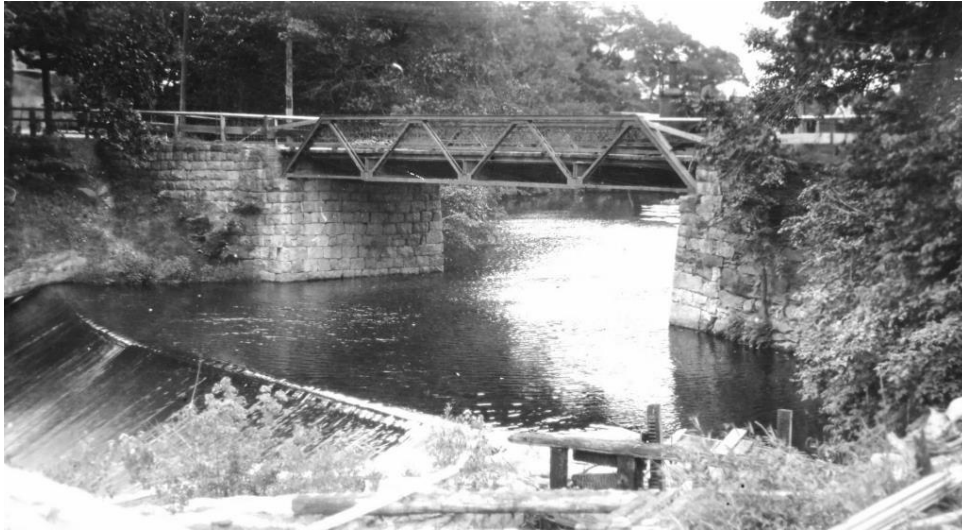


Figure 5
RI SBPR photo 108006 (June 26, 1919) showing
19th-century metal pony truss bridge spanning Branch River before demolition,
Pitts-era impoundment, Branch River Dam (breached 1927)
and partial view of headrace gate.



Figure 6
RI SBPR photo 108091 showing widening of Branch River Bridge No. 108 (December 1930).
Former Andrews Mill office, weave shed and loading dock in background.
The 2½-story residence in the rear left was a Pitts Mill worker tenement (demolished after 1949).

Andrews Mill Company Plant
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Providence, Rhode Island
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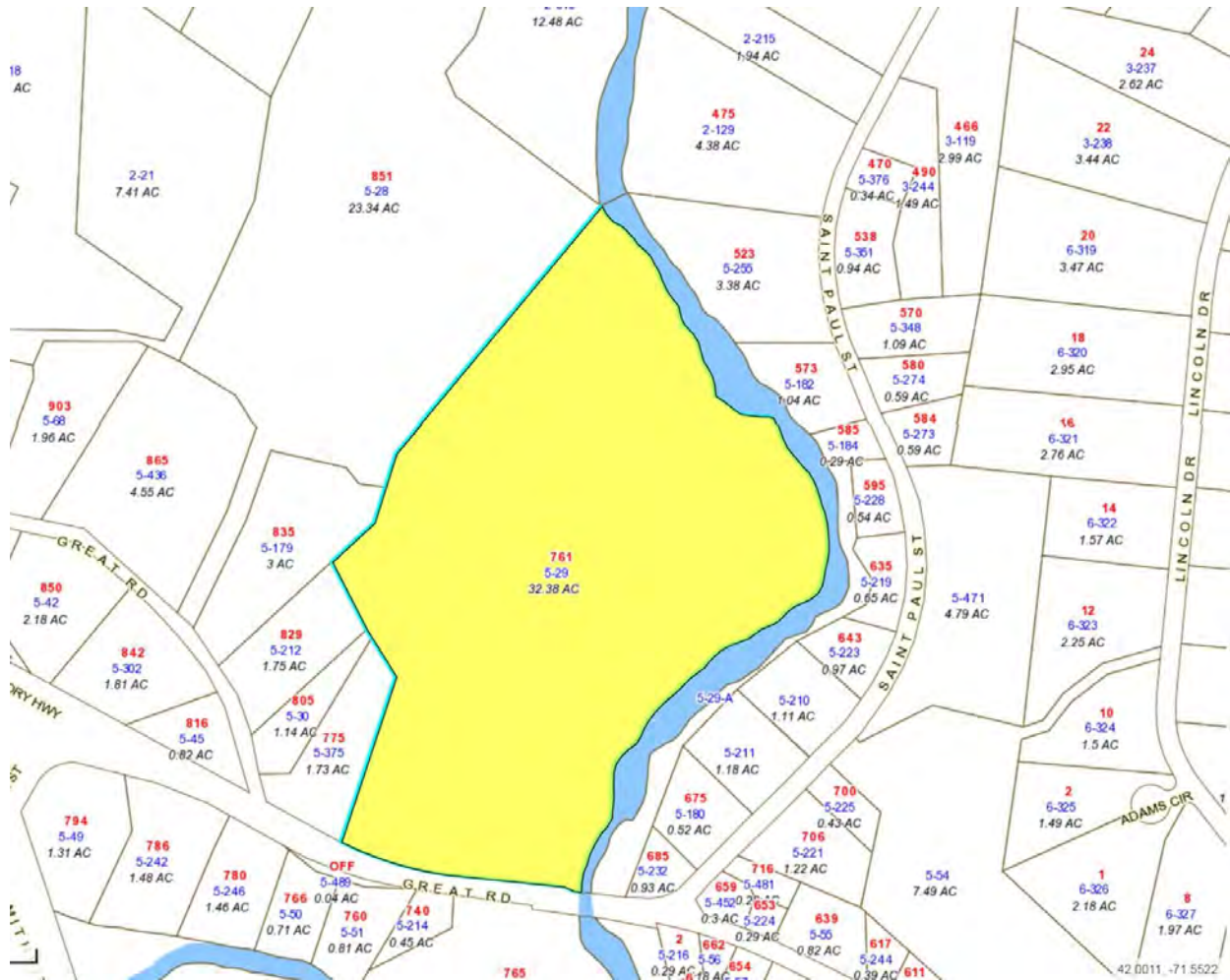


Figure 7
Detail from Town of North Smithfield, RI assessor's map
with the nominated property at 761 Great Road (Map 5, Lot 29) highlighted

Andrews Mill Company Plant
Name of Property

Providence, Rhode Island
County and State

Photographs

Submit clear and descriptive photographs. The size of each image must be 1600x1200 pixels (minimum), 3000x2000 preferred, at 300 ppi (pixels per inch) or larger. Key all photographs to the sketch map. Each photograph must be numbered and that number must correspond to the photograph number on the photo log. For simplicity, the name of the photographer, photo date, etc. may be listed once on the photograph log and doesn't need to be labeled on every photograph.

Photo Log

Name of Property: Andrews Mill Company Plant
City or Vicinity: North Smithfield
County: Providence
State: Rhode Island
Name of Photographer: Edward Connors
Date of Photographs: March 2017 (Photos 20, 23)
April 2017 (Photos 12, 15, 19, 21-22, 24-29)
July 2017 (Photos 2-3, 14, 16-17)
July 2018 (Photos 1, 4-11, 13, 18)
Location of Original Digital Files: Rhode Island Historical Preservation and Heritage
Commission, 150 Benefit Street, Providence, RI 02903
Number of Photographs: 29

Photo #1

Main Mill, view looking northeast showing south (front) and west elevations.

Photo #2

Main Mill, view looking north showing principal entrance and west half of south (front) elevation.

Photo #3

Main Mill, view looking north showing principal entrance on south (front) elevation.

Photo #4

Main Mill, view looking west showing east end of below-grade walkway that runs along south (front) elevation and the south elevation of the loading dock.

Photo #5

Main Mill, view looking northwest showing east elevation.

Photo #6

Main Mill, view looking northwest showing east elevation, including side entrance and sawtooth roof.

Andrews Mill Company Plant
Name of Property

Providence, Rhode Island
County and State

Photo #7

Main Mill, view looking southwest showing east elevation, with attached Boiler House in foreground.

Photo #8

Main Mill, view looking northeast showing west elevation, including side entrance, and south elevation of ca. 1960 addition.

Photo #9

Main Mill, view looking northeast showing south and west elevations of ca. 1960 addition.

Photo #10

Main Mill, view looking east showing roof of ca. 1960 addition in foreground and sawtooth roof of weave shed in background.

Photo #11

Main Mill, view looking south showing north (rear) elevation, including (left to right) enclosed loading dock (ca. 1970), rear extension of Main Mill (ca. 1960), and cooling towers (ca. 1970).

Photo #12

Main Mill interior, view looking northwest showing office area.

Photo #13

Main Mill interior, view looking southeast showing original (1918) west exterior wall now enclosed within building.

Photo #14

Main Mill interior, view looking northwest showing weave shed, including sawtooth roof.

Photo#15

Main Mill interior, view looking northeast showing east wall of weave shed.

Photo #16

Main Mill interior, view looking east showing sawtooth roof.

Photo #17

Main Mill interior, view looking northwest showing framing.

Photo #18

Boiler House, view looking northwest showing south and east elevations.

Andrews Mill Company Plant
Name of Property

Providence, Rhode Island
County and State

Photo #19

Boiler House, view looking southwest showing east and north elevations.

Photo #20

Boiler House, view looking northeast showing roof monitor.

Photo #21

Boiler House interior, view looking southeast.

Photo #22

Boiler House interior, view looking northwest.

Photo #23

Machine Shop/Gate House, view looking southeast showing west (front) and north elevations.

Photo #24

Machine Shop/Gate House, view looking southwest showing east elevation along Branch River, breached dam at left.

Photo #25

Machine Shop/Gate House interior, view looking north.

Photo #26

Machine Shop/Gate House interior, view looking south.

Photo #27

Gate Structure, view looking southwest.

Photo #28

Water Tower, view looking west.

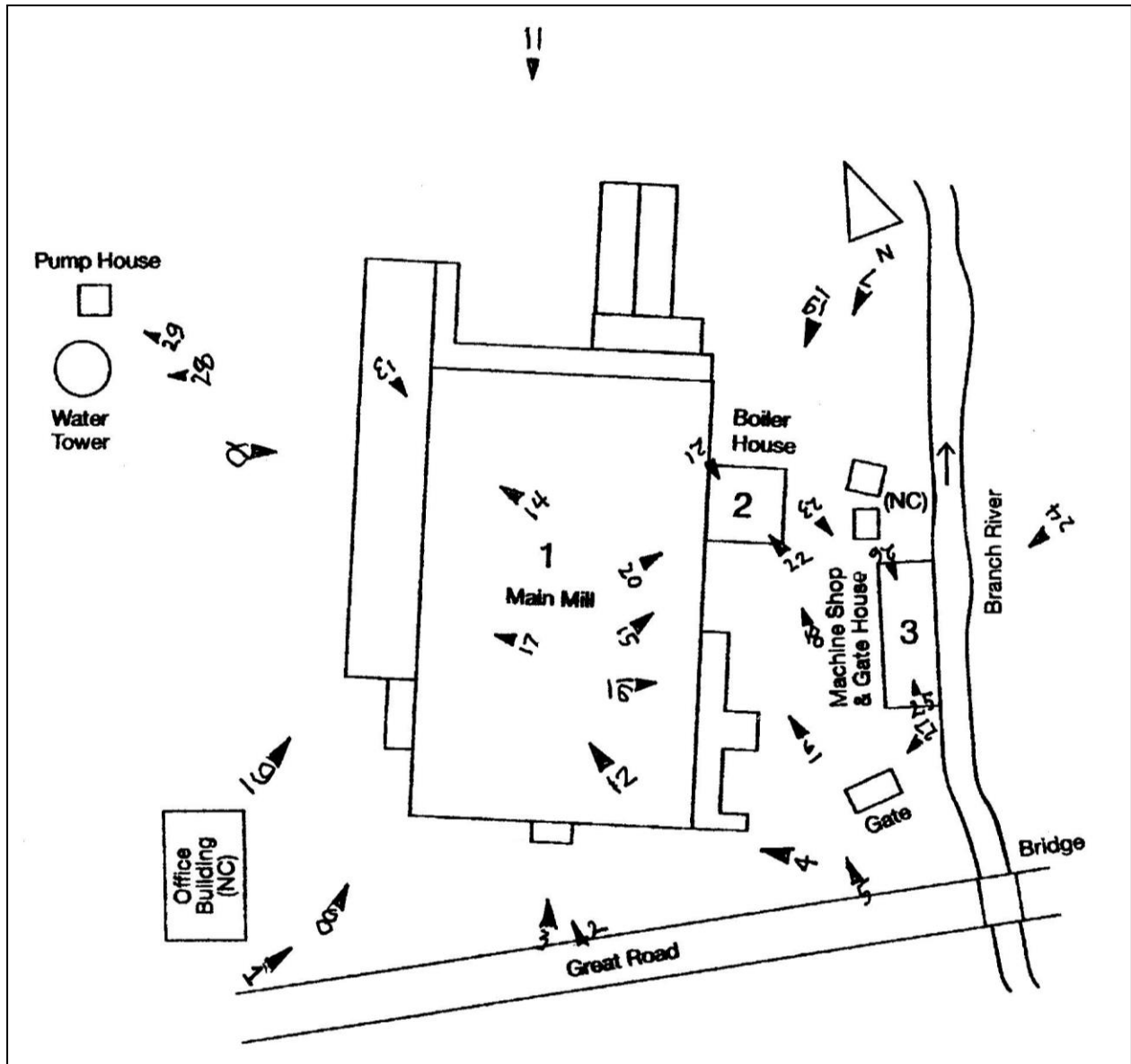
Photo #29

Stone Pump House, view looking northwest.

Andrews Mill Company Plant
Name of Property

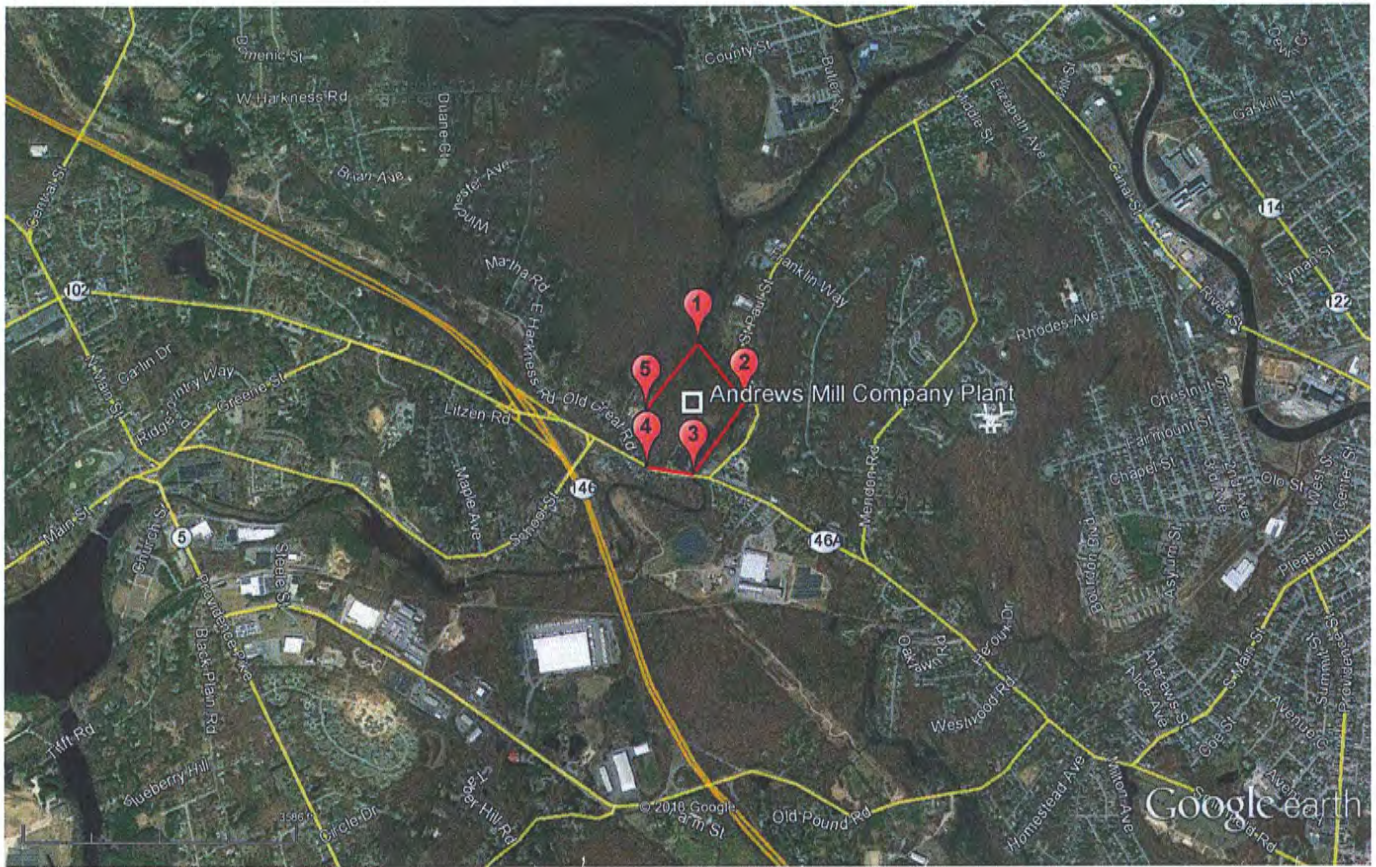
Providence, Rhode Island
County and State

Photo Key



Paperwork Reduction Act Statement: This information is being collected for applications to the National Register of Historic Places to nominate properties for listing or determine eligibility for listing, to list properties, and to amend existing listings. Response to this request is required to obtain a benefit in accordance with the National Historic Preservation Act, as amended (16 U.S.C.460 et seq.).

Estimated Burden Statement: Public reporting burden for this form is estimated to average 100 hours per response including time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding this burden estimate or any aspect of this form to the Office of Planning and Performance Management, U.S. Dept. of the Interior, 1849 C. Street, NW, Washington, DC.



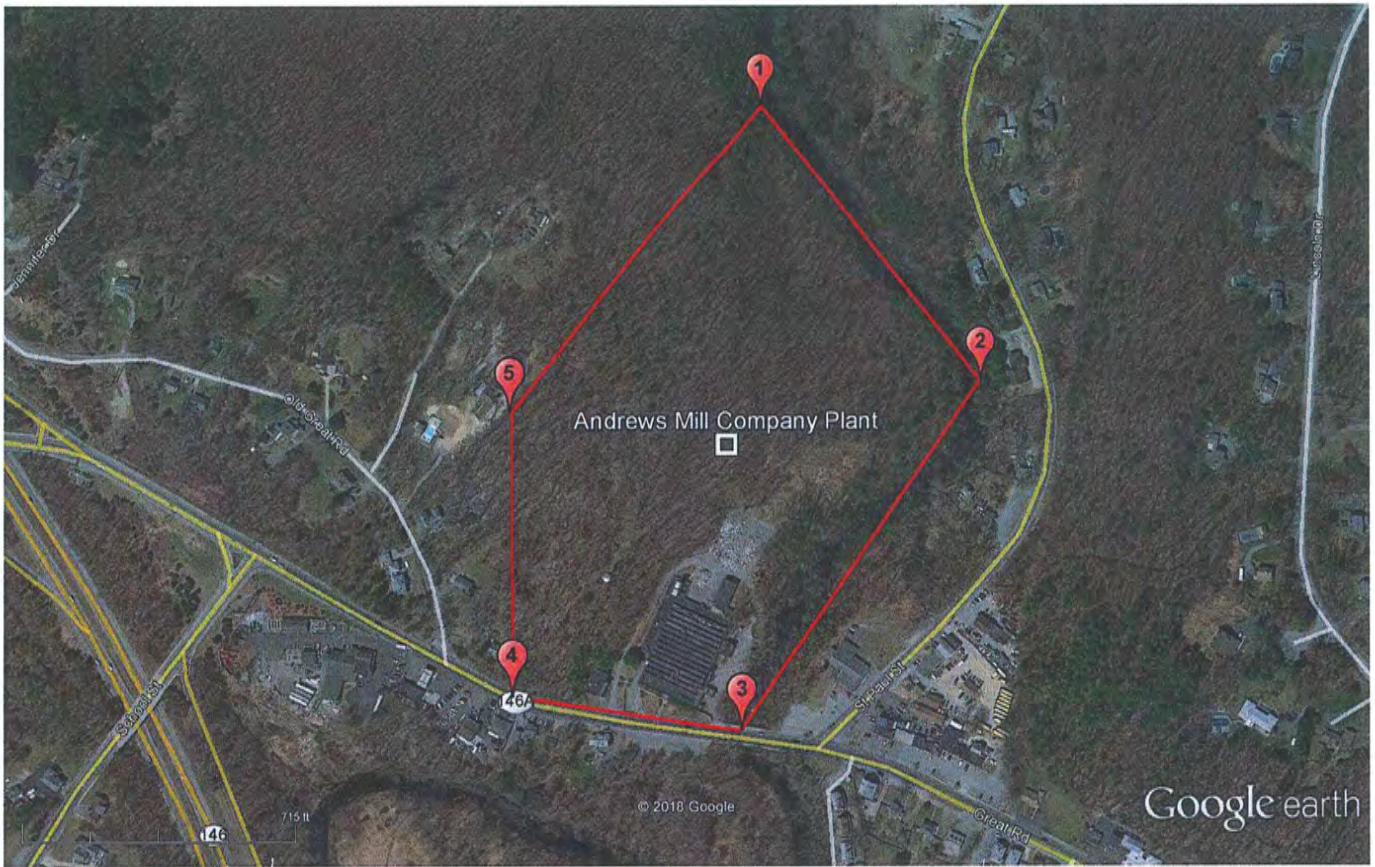
Google earth



**Andrews Mill Company Plant
North Smithfield, Providence County, Rhode Island**

Coordinates

- | | |
|-------------------------|------------------------|
| 1) Latitude: 42.004802° | Longitude: -71.552587° |
| 2) Latitude: 42.002600° | Longitude: -71.550294° |
| 3) Latitude: 41.999965° | Longitude: -71.552821° |
| 4) Latitude: 42.000228° | Longitude: -71.555121° |
| 5) Latitude: 42.002310° | Longitude: -71.555158° |



Google earth



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North Smithfield, Providence County, Rhode Island**

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NO PARKING
EXCEPT
FOR
LOADING
UNLOADING















NO
PARKING
FIRE
LANE



DANGER
PRIVATE PROPERTY





























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