NPS Form 10-900
(Rev. 10-90)

OMB No. 1024-0018

United States Department of the Interior
National Park Service

National Register of Historic Places Registration Form

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This form is for use in nominating or requesting determinations for individual properties and districts. See instructions in How to Complete the National Register of Historic Places Registration Form (National Register Bulletin 16A). Complete each item by marking "x" in the appropriate box or by entering the information requested. 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. Place additional entries and narrative items on continuation sheets (NPS Form 10-900a). Use a typewriter, word processor, or computer, to complete all items.

1. Name of Property

historic name LANCASTER MILLS

other names/site number

2. Location

street & number 1-55, 75, 99, 1-R, 3-R GREEN STREET, 20 CAMERON STREET ☐ not for publication

city or town CLINTON ☐ vicinity

state MASSACHUSETTS code MA county WORCESTER code 027 zip code 01510

3. State/Federal Agency Certification

As the designated authority under the National Historic Preservation Act of 1986, as amended, I hereby certify that this ☑ 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 ☑ meets ☐ does not meet the National Register Criteria. I recommend that this property be considered significant ☐ nationally ☐ statewide ☑ locally. (☐ See continuation sheet for additional comments.)

Brona Simon — December 22, 2009

Signature of certifying official/Title — Brona Simon, SHPO — Date

Massachusetts Historical Commission

State or Federal agency and bureau

In my opinion, the property ☐ meets ☐ does not meet the National Register criteria. (☐ See continuation sheet for additional Comments.)

Signature of certifying official/Title — Date

State or Federal agency and bureau

4. 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): _____

Signature of the Keeper — Date of Action

1/29/10

5. Classification

Ownership of Property
(Check as many boxes as apply)

- x private
- _ public-local
- _ public-State
- _ public-Federal

(Check only one box)

- _ building(s)
- x district
- _ site
- _ structure
- _ object

Number of Resources within Property
(Do not include previously listed resources in the count.)

Contributing	Noncontributing	
14	2	building
		sites
1		structures
		objects
14	3	Total

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

N/A

Number of contributing resources previously listed in the National Register

0

6. Function or Use

Historic Functions
(Enter categories from instructions)

INDUSTRY/manufacturing facility; industrial storage;
Communications facility

Current Functions
(Enter categories from instructions)

VACANT/NOT IN USE
AGRICULTURE/SUBSISTENCE/processing, storage
INDUSTRY/manufacturing facility, industrial storage

7. Description

Architectural Classification
(Enter categories from instructions)

19th and 20th CENTURY INDUSTRIAL
LATE VICTORIAN/Italianate

Materials
(Enter categories from instructions)

foundation BRICK; CONCRETE
walls BRICK;CONCRETE
roof ASPHALT; SLATE; TIN; RUBBER
other WOOD; STONE/granite (trim elements)
BRICK (chimneys)

Narrative Description
(Describe the historic and current condition of the property on one or more continuation sheets.)

NARRATIVE DESCRIPTION

The Lancaster Mills complex is located at the corner of Green Street and Route 70/Chestnut Street on the outskirts of Clinton's downtown. It stands at the head of the Wachusett Reservoir, which was created in 1901-1905 with the construction of the Clinton Dam and supplies the Boston area with water from western Massachusetts. The site is relatively level, sloping down toward the southeast toward the Nashua River. It is bounded to the south and west by the Nashua River (with the exception of Mill No. 2, which sits on the south side of the river), to the north and west by Green Street and to the east by open land and a residential neighborhood. Residential buildings constructed by the Lancaster Mills are located east of Mill No. 3 on either side of Green Street. The Lancaster Mills range in height from one to seven stories; they are primarily mill construction with red brick masonry load-bearing walls and interior heavy timber frames. Two of the later buildings are reinforced concrete structures. There are two noncontributing buildings. The building numbers used below are taken from the 1929 Sanborn Insurance Maps of Clinton, Massachusetts, sheets 25 and 26 (copies attached).

Mill Buildings

The main core of the buildings is connected in a large group, at the center of which is **Mill No. 1 – Weaving Mill** (1844-1849; 1879-1898). Due to its vast size, Mill No. 1 dominates the present mill complex despite its one-story height. The red-brick building is trapezoidal in shape and extends from the intersection of Green and Chestnut Streets northeast along Green Street. The north elevation facing Green Street has its bays delineated by deep pilasters, which sit on a granite base and taper as they rise toward the top of the wall, simulating buttresses. The eaves are enriched by a simple corbel table. Window openings consist of large, regularly spaced, segmental-arched openings, which have shallow brick drip molds and granite sills. Fixed aluminum windows were installed in the 1980s. The north elevation along Green Street originally featured a two-story castellated tower, which was replaced when the mill was expanded to the north (1879-1898) with the present two-story brick tower with a pyramidal roof (Photo #1). The entrance at the base of the tower is round arched and flanked by windows. The tower's second floor is lit by fixed metal sash in segmental-arched openings. Three pedimented dormers project from the slate roof, which has a slight flare at the cornice. The south elevation is mostly covered by other buildings. A small section of wall is exposed where Mill No. 11 used to be attached to the south elevation; and the wall at the east end of the south elevation is exposed. Here it is two stories over a raised basement. Built of red brick, the east section of the south elevation is 14 bays long; shallow pilasters frame the bays, and the windows have granite sills and brick segmental arches with shallow hoods over the windows. At each bay, the top of each recessed panel has delicate brick corbelling. A few stepped rows of brick run along the façade at the cornice.

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Although the roof appears flat, it is actually a series of extremely low gables running north-south with clerestory monitors rising from the ridges. Historic views of the building indicate that rows of individual skylights provided light through the roof. The original building was a long narrow structure that was almost immediately expanded (1844-1849) to a rectangular in plan, approximately 356 feet long by 174 feet wide. It was expanded a second time (between 1879 – 1898) toward Green Street by approximately two bays and to the northwest toward Chestnut Street with a triangular extension. The replacement of the original skylights with the long clerestory monitors most likely occurred during this second expansion. The monitors were installed by 1901.

The interior is typically open, with large areas subdivided by brick walls. The large weaving floor is lit by a series of twelve gable-roof monitors. There are rows of slender iron columns, which support the roof. The beams and the underside of the roof deck are exposed at the ceiling. Within the ceiling structure, one row of the framing for the former skylights is evident. The floors are wood, and in many locations they have been covered with lightweight concrete. The brick walls are exposed on the interior. (Photo #2)

The monitors are centered over the low ridges. In most instances, a tall row of columns runs down the center of the monitor, supporting low-pitched wooden beams, where they meet at the former roof ridge. The adjacent column rows on either side are set back from the sides of the monitor. Every other beam or two of every three original roof beams are cut at the edge of the monitor and are supported by an iron inverted support. In other cases, the monitor has a row of columns that supports the edge of the monitor on parallel beams that run on each side the length of the monitor. Another interesting feature is the flange that connects crossing beams. Two sides of the flange hold a straight beam that is parallel to the monitor and the center of the flange extends up to attach to the notched beam that sits on top, perpendicular to the monitor.

The floor is supported by a heavy timber frame. Charles Parrott, an architect with the National Park Service in Lowell, has noted that an unusual feature of the building is the independent support of the roof and floor by separate structural systems. Iron columns supporting the roof penetrate through the floor from the basement while the floor itself is supported on a heavy timber frame. In some structural bays, the floor beams are not continuous in one straight line but are offset, perhaps to avoid transmitting vibrations along the beam and through the length of the floor. Also visible at the basement is the underside of the floor decking, which has numerous holes cut to permit drive belts to run through the floor to power shafts that were located in the basement.

A two-story rectangular building, **Mill No. 4** (1844-1848; 1857-1879), is attached to the southwest corner of Mill No. 1 and appears to sit on the foundation of Bigelow's original long mill. It has similar fenestration to the south elevation of Mill No. 1 and an overhanging bracketed

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cornice. Mill No. 4 was originally one story and is identified in the 1848 Hoadley map as the Dye House, Office and Store Room, with a chimney at the center section. On the Thissel plan (1856) it is labeled the Repair Shop and Office. The present second story was added prior to 1879. The western nine bays were also added, most likely after 1879. The eastern portion has narrower window openings and slightly projecting brick arched window hoods. The western nine bays have shallow pilasters, wider windows, no projection at the window arches and a corbel cornice.

Mill No. 7 – Carding Mill, built between 1857 and 1870 and labeled in 1929 as Ring Spinning, is one of the most elaborately ornamented and also one of the tallest at four stories (five at its southern end due to a drop in the grade). Mill No. 7 provides an effective terminal for the northeastern end of Mill No. 1. The bays are articulated by wide, shallow pilasters, which are regularly spaced. Fixed metal sashes (1980s) fill the segmental-arched window openings and sit on granite sills. (Photo #7) The red brick walls rise to a corbelled cornice and shallow eaves at the flat roof. A six-story stairtower and the top story of Mill No. 7 were added ca. 1879–1898. The tower, rectangular in plan (two bays by two bays) with a pyramidal roof, is centered on the northwest elevation. (Photo # 8) It continues the shallow pilasters, segmental-arched windows and granite sills of the main building. (Photo #6) The sixth story of the tower steps in and has round arched openings with louvers. A brick cornice projects above the fifth story windows and a brick corbel table enriches the cornice under the eaves. At the base of the tower on the west elevation, the entrance is set within a wide segmental-arched opening containing a door flanked by windows and surmounted by a three-part transom. The words "Lancaster Mill" are carved in the wood panel above the door. The original ornamental wood panel set under the arch remains.

Connected to the northeast elevation of Mill No. 7 are several smaller brick buildings. From north to south, these are the one-story, gable-roofed **Building No. 36 – Store House (1848-1857)** with three later window openings in the east elevation; **Building No. 8 - Repair Shop (1879–1898)**, a three-story gable-roofed building with segmental-arched windows, a bracketed cornice, and a semicircular curved tower at its southeast corner; and **Building No. 10 - Wood Shop (1879–1898)**, a one-story gable-roofed building with a corbelled brick cornice and a gable-roof monitor. **Building No. 5 - Waste House (1879–1898),** a two-story rectangular brick building, is located immediately northeast of Building No. 8. Building No. 8 has a low gable roof and then a half gable suggesting the east section was added.

Several nearby buildings are part of the Lancaster Mills complex but are not connected to the main group. **Mill No. 2 -Weaving Mill (1879–1898)** is located across the Nashua River to the south of the main complex. An enclosed **Foot Bridge** that spans the river, linking Mill No. 2 – Weaving Mill to the main campus of the complex, is built of steel I-beams with metal panel siding and dates ca. 1990s according to the town planner. It is a noncontributing structure that replaces a former footbridge that had been located in this approximate location since 1879 and was rebuilt or reinforced once before the current bridge. Mill No. 2 is a four-story, red-brick mill, approximately square in plan with narrow pilasters marking the bays and terminating with a brick

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corbel cornice. Windows have granite sills and segmental brick arches with no more than one or two courses of brick between the top of the arch and the sill above. Brick buttresses support a couple of the pilasters on the south elevation. The mill is wrapped to the west by a low three-story building, and a four-story building is attached at the east corner. Additions to the Mill No. 2 date between 1975 and 1996. (Photo #10)

Mill Nos. 40, 41, and 43 are clustered together to the south of Mill No. 1. **Mill No. 40 - Storage and Winding Building** (1844-1848; 1879-1898; 1899) is a two-story building, red brick at the base with segmental-arched windows and granite sills. (Photo #11) The second story is stucco with a continuous band of tall, paired windows on the north elevation. A one-story boiler house had been located on this site from 1848 at least through 1904. The second story was added after that time and is not fireproof construction suitable for a boiler house. A two-story building noted as the Kier House appears on the 1901 insurance map attached to the east end of Mill No. 40. That section is four bays wide by one bay deep, built of red brick with a low gable roof. A large segmental-arched doorway on the east elevation has been infilled, but suggests that large equipment or vehicles entered this building. **Mill No. 41 – Dry House** (1844-1848; 1879-1901) is concealed by the surrounding buildings. The low gable roof rises slightly above its neighbors and runs north/south. The second story was added prior to 1901. **Mill No. 43 – Dye House** (1844-1848; 1879-1898; 1901-1904) was originally one story with a sawtooth monitor roof and is rectangular in plan. The east end was added between 1879 and 1898. The plan is now irregular, with an angled corner at the southeast. The second story was added between 1901 and 1904. It has segmental brick arches and deep wooden eaves supported on rafter ends. The bays are marked by narrow pilasters, and there are bold brackets at the overhanging eaves.

The one-story brick octagonal **Building No. 23 - Office Building** (1857-1870; 1918) first appears on the 1870 Beers atlas at the west corner of Mill No. 1. It was moved to the southwest corner of the site and connected to a small one-story ell between 1879 and 1898. In 1918, the rear addition was extended to a longer, rectangular, gable-roofed building designed by Lockwood, Green & Co. Both sections of the office building have round-arched window openings with granite sills set in recessed, round-arched panels. The front (northwest) polygonal section has a low-pitched roof surmounted by a delicate glass and copper cupola. (Photo #9) The classical main entrance portico has a door with a round-arched fanlight, which rises into a slightly projecting pediment supported by slender Tuscan columns. Paired quarter-round windows are located in the gable ends of the rectangular section. Oculi are located in two cross gables on the rear (southeast) elevation. The roof of the rectangular section is metal with a standing seam. The octagon roof is slate.

One of the last major additions to the original Lancaster Mills complex was **Mill No. 3 - Amory Mill** (1910), which is a five-story early 20th-century industrial building. (Photos #3, 4)) The reinforced concrete structure is 406 feet long by 125 feet wide with brick piers marking the bays, low concrete spandrel panels, and tall wooden windows set in groups of three. The projecting stair and elevator towers are also brick. (Photo #5) The main stairtower at the west corner has a

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granite date stone and the name "AMORY" carved in projecting granite letters set at the upper stories between floors. Windows are fixed with operable transoms. The use of wood windows in this type of construction is unusual; in other concrete industrial buildings of this scale and type, the windows are most often steel. It is connected to Mill No. 7 via a two-story elevated metal and glass-panel walkway, which was reclad in the 1980s. The 1910 drawings show a one-story bridge/connector to Mill No. 7 at the third story.

A seven-story concrete and brick warehouse, **Building No. 31 – Cotton Store House** was designed by Lockwood, Greene & Co. and built at the east end of the property ca. 1920-1922. The exposed reinforced-concrete structure with brick panels and steel windows provided fireproof storage for cotton. The building is square in plan with an elevator penthouse rising above the roof and a long, concrete loading platform on the north elevation, which originally sat alongside a rail spur.

The dam for the Lancaster Mills was located beneath the Chestnut Street Bridge where it crosses the Nashua River. The original feeding canal ran from the dam parallel to the south elevation of Mill No. 1 and beneath Mill No. 13 (demolished) where the water exited the building into the tailrace on the east side of Mill No. 13 running east parallel to the Nashua River. A remnant of a granite arch is evident beneath Building No. 23, but the feeding canal and tailrace have been filled.

In addition to the footbridge mentioned above, noncontributing elements include a concrete block warehouse building constructed in 1994 by Weetabix on the former site of Building Nos. 13 & 16-20 and a 2003 steel-frame warehouse (99 Green St.) with pre-finished metal walls attached to the west elevation of Building No. 31. The west end of the metal building may sit over a portion of the footprint of Building No. 37 – Boiler House, which was most likely demolished to build the metal structure

Archaeological Description

While no pre-Contact period Native American sites are known on the Lancaster Mills property, sites may be present. Fourteen sites are recorded in the general area (within one mile), most located in the vicinity of Clamshell Pond and Reubens Hill, approximately one-half mile south of the district. Environmental characteristics of the property represent locational criteria that are favorable for the presence of Native sites. Lancaster Mills is located on well drained, level to moderately sloping floodplain and riverine terrace landforms, in close proximity to wetlands. The Nashua River forms most of the southern and western boundary of the proposed district. Lancaster Mills are located in the Nashua/Merrimack River watershed. Detailed soil maps for the area classify the district as urban land consisting mainly of buildings, shopping centers, roads, and parking lots. More generalized soil maps, however, classify the area as containing excessively drained sandy soils on outwash plains. In spite of the above information, the

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potential for locating significant pre-Contact period Native American resources in the district is low. Potential pre-contact Native American resources in the district have been destroyed by construction of industrial facilities from the early 18th through 20th centuries.

There is a high potential for locating historic archaeological resources in the Lancaster Mills Historic District. The proposed district occupies one of the oldest industrial sites within the present Clinton town limits. Elias Sawyer first settled the area during the late 18th century, but met with little success. Little is known about Sawyer's venture other than the fact that he sold the remnants of a dam and unfinished building to James Pitts in 1810. Structural evidence of the unfinished mill and dam may survive in the present district. Similar evidence might also survive from power-related canals and other hydraulic resources related to the dam and mill. Occupational-related features (trash areas, privies, wells) may exist around the Sawyer mill.

Pitts first occupied the site in 1815. By 1816, Pitts operated a sawmill and gristmill on the property powered by a seven-foot waterfall. By 1820, cotton yarn was also produced at the Pitts mill. About the same time, a tannery, single mill, and comb shop were erected on the site. In 1831 each of these operations were converted to the manufacture of cotton yarn. After a fire in 1836, a new mill was erected for satinet warp manufacture. Structural evidence may survive from each of the Pitts mills listed above, although it is unclear at present which of the Pitts mills were new construction and which were rebuilt from earlier mills

In 1844, Lancaster Mills acquired the property and moved the wooden buildings that housed Pitt's activities to the Sidney Harris Comb Factory at 525 Water Street, outside the district, where they were later destroyed by fire in 1853. In 1848, the Hoadley Map of Clinton shows one Pitts mill still extant near the Nashua River within the district. The latter mill no longer exists in the district.

While some of the smaller buildings associated with Lancaster Mills have been lost, the larger mill buildings representing the main weaving mill and several ancillary functions of the textile manufacturing process survive. Structural evidence of the smaller mill buildings may survive although most have yet to be identified. Structural evidence may survive from an office building (Building No. 23) shown on the 1870 Beers Atlas at the west corner of the No. 1 Mill. The office Building was moved to the southwest corner of the district after 1898. Structural evidence from Erastus B. Bigelow's original Long Mill (1840s) may survive in the vicinity of Mill No. 4 that was reportedly built on the foundation of the Long Mill.

Structural evidence of hydraulic resources that supplied waterpower for Lancaster Mills may survive in the district, although these resources are also poorly documented. Hydraulic resources associated with the late 18th and early 19th century Sawyer and Pitts Mills have been discussed above. Mill No. 1 may have been powered by both waterpower and steam since its construction

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ca. 1844. At that time the dam was reconstructed to provide a fall of 13 feet, power canals were excavated, and three 26 foot-breastwheels installed to supply power. A steam engine was also installed to supplement waterpower. The dam may have been the same dam first built by Elias Sawyer, then rebuilt by Pitts. In 1867, the original wood damworks was replaced with stone. The dam has been rebuilt many times since 1867, most recently in 1930. Structural evidence may exist from each stage of dam rebuilding, headrace and tailrace construction, waterwheel construction, and wheel house construction. It has been reported but not verified that a portion of the engine and wheelhouse from the original mill remain.

Occupational-related features (trash areas, privies, wells) may survive that are associated with the existing Lancaster Mills and earlier mills that survive as archaeological resources.

(end)

Lancaster Mills
Name of Property

Worcester, MA
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.)

x **A** Property is associated with events that have made a significant contribution to the broad patterns of our history.

x **B** Property is associated with the lives of persons significant in our past.

x **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.)

Property is:

_ **A** owned by 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 of age or achieved significance within the past 50 years.

Areas of Significance
(Enter categories from instructions)

ARCHITECTURE
ENGINEERING
INDUSTRY
SOCIAL HISTORY

Period of Significance

1844-1931

Significant Dates

1844, 1860-1875, 1885, 1900, 1910, 1922

Significant Person
(Complete if Criterion B is marked above)

Erastus and Horatio Bigelow

Cultural Affiliation

N/A

Architect/Builder

William F. Merrifield; John C. Hoadley; Joshua Thissell; Knight C. Richmond; Lockwood, Greene & Co.

Narrative Statement of Significance
(Explain the significance of the property on one or more continuation sheets.)

9. Major Bibliographical References

(Cite the books, articles, and other sources used in preparing this form on one or more continuation sheets.)

Previous documentation on file (NPS): HPCA #23278

- _ 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:

- x State Historic Preservation Office
- _ Other State agency
- _ Federal agency
- x Local government
- _ University
- _ Other

Name of repository:

NARRATIVE STATEMENT OF SIGNIFICANCE

The Lancaster Mills, located in the town of Clinton, are significant for their association with revolutionary innovations in the production of gingham textiles that led to an expansion of the textile industry, with immigration and labor trends, and ultimately with the decline of New England's textile industry. In addition, the Lancaster Mills contributed to Clinton's founding in 1850 (Criterion A). The mill buildings are fine examples of late-19th and early 20th-century industrial architecture (Criterion C). In particular, Mill No. 1 - Weaving Mill dating from 1844-1849 & ca. 1879 - 1898 is significant as an early example of a large-scale industrial building designed to house a horizontal manufacturing process. It was designed for an unusual power system that had the shafts located below the weaving floor (in the basement); the belts ran up through the floor to the machines. The ingenuity of the mill's design has recently been noted by Charles Parrott, Architect, National Park Service, Lowell National Historical Park. According to Mr. Parrott, although not unusual today, the scale of the single-story 1840s Mill No. 1 designed for horizontal production was not commonly found in manufacturing plants in this country until more than 50 years later.

The Lancaster Mills complex is significant as one of the largest industrial complexes to expand along the Clinton portion of the Nashua River. Mill No. 1 - Weaving Mill is arguably the most significant building in the town. The Lancaster Mills complex was the site of the country's largest gingham manufactory. This building is a rare example and an extremely rare survivor of a large one-story weaving mill that exhibited an unusual skylit and monitor roof system. In 1899, the No. 1 Weaving Mill also became the first textile mill to be powered entirely by electric generators. While some of the smaller buildings of the complex have been lost, as a group the extant buildings of the Lancaster Mills represent the main weaving component and several ancillary functions of the textile manufacturing process. The complex retains integrity of location, design, setting, materials, and workmanship; its integrity of feeling and association are particularly strong. The complex is significant on the local level.

Erastus and Horatio Bigelow and the Origins of the Lancaster Mills

In the early 1840s Erastus Brigham Bigelow (1814-1879) developed a power loom to mechanize the production of fine cotton checked cloth. As a result of this invention, in 1844 Bigelow was contracted to outfit a large mill for the manufacture of the cloth. The new mill attracted backing from some of the Boston Associates (investors in the early textile industry in Waltham, MA), including members of the Appleton, Lawrence, and Lyman families. They invested in this venture, which was incorporated as the Lancaster Mills Company in January of 1844 (MHC 1983:7). The original Board of Directors consisted of Stephen Fairbanks, president; William Appleton, treasurer; and Erastus Bigelow, Henry Timmons, and Robert Appleton. Erastus' brother Horatio Nelson Bigelow (1812-1868) was the company's first agent (MHC 1982).

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Little is known about the earliest industrial development of the site on the banks of the Nashua River chosen for the Lancaster Mills operation. In 1810 Elias Sawyer sold the remnant of a dam and an incomplete building to James Pitts. Pitts, a millwright who had constructed cotton machinery for a mill in West Bridgewater, did not occupy the site until 1815. Powered by a seven-foot waterfall, his combined saw and grist mill was operating the following year (MHC 1982; Stone 1930:1895). In 1820, spinning machinery for cotton yarn was set up here, as well as a tannery, single mill, and comb shop. In 1831 these were converted to the manufacture of cotton yarn. After a fire in 1836, a new mill was erected for the production of satinet warp (MHC 1983:4).

The Lancaster Mills Company acquired the property in 1844 and hired William F. Merrifield (1807-1895), a Worcester contractor and carpenter, to oversee the construction of a new complex. (The wooden buildings from Pitts' mill were moved to the Sidney Harris Comb Factory at 525 Water Street and were destroyed by a fire in 1853.) John Hoadley and Joshua Thissell, civil engineers; Ezra Sawyer, bricklayer; and Oliver Stone, carpenter, were also involved with the project. The first building constructed on the site was 614 feet by 46 feet and ran parallel to Green Street near the river (MHC 1982). It was "one of the first mills to be built on the principle of a linear flow of goods and processes" (MHC 1983:7). It was intended that "all the processes should follow one another in order, from the carding room to the cloth room" (Ford 1896:221). Mill No. 4 appears to be located on the foundation of the south end of this building.

Before the first structure had been completed, the company decided to construct mills five times larger than initially planned, devoted exclusively to the production of ginghams (Stone 1930:1895). Between the first mill and Green Street, a second one-story, one-room mill, 356 feet 8 inches long by 174 feet four inches wide and lighted by skylights, was built (Mill No. 1 - Weaving Mill). This immense mill, along with a substantial portion of the first mill, was to be used for carding, spinning, and weaving. When completely finished, it contained 20,784 spindles and 550 looms, powered by a combination of steam and waterpower (Ford 1896:225). The dam was reconstructed to provide a fall of thirteen feet, and a canal was dug (MHC 1982). The original feeding canal and tailrace that ran parallel to the south side of Mill No. 1 and continued north parallel to the Nashua River still appeared on the 1904 insurance map. The tailrace was covered before 1919, but the feeding canal was still shown on the 1947 Sanborn map. Power supplied by three 26-foot breast wheels, each capable of producing 75 horsepower, was supplemented in times of drought by a 250-horsepower steam engine (MHC 1982). An 1849 image of the mills shows the "great square weaving room" in front of the original long, narrow building. The innovation and ingenuity Bigelow exhibited in his design of this building matched that found in his patents for looms and other machines.

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By late 1846, Bigelow's power looms in the Lancaster Mills were producing checked ginghams as well as more complex patterns. The expanding mills attracted immigrant workers, contributing to a tenfold increase in the population of the town. By 1850, the company was paying a 3percent dividend; the previous year, the Bigelow brothers had left to pursue another business venture in town, the Bigelow Carpet Company (MHC 1982).

Influence of Erastus and Horatio Bigelow on the development of the town of Clinton, MA

Major achievements of the Bigelow brothers

Erastus B. Bigelow was a "self-taught mechanical genius" who was responsible for inventing the first power-operated looms for the weaving of coach lace (1837), knotted counterpanes (1838), ginghams (1845), Brussels carpets (1847), and wire cloth (1857). Forty of the fifty patents Erastus Bigelow earned over his career were for improvements in looms. "The mechanization of these weaving operations, previously relegated to hand labor due to their complexity, helped revolutionize the American textile industry" (MHC 1982). His contribution to the development of the textile arts is said to be "greater than that of any other man" (Bigelow Society, Inc., 1996). Horatio N. Bigelow created three different manufacturing companies around Erastus' inventions: the Lancaster Mills (incorporated 1844); the Bigelow Carpet Company (incorporated 1854); and the Clinton Wire Cloth Company (incorporated 1855). Together the brothers, both natives of West Boylston, Massachusetts, who had grown up in their father's mills and managed textile mills in their late teens, made their mark on the landscape of Clinton, as well as on American textile manufacturing.

The brothers' first successful business venture, the Clinton Company, was organized in 1838 following Erastus Bigelow's invention of a power loom for the manufacture of an ornamental cloth bordering known as coach lace (MHC 1982). The company was reputedly named after the DeWitt Clinton Hotel in New York (Ingano 1996). Three years later, the Lancaster Quilt Company was founded, based on Bigelow's power loom for the weaving of counterpane. The Lancaster Mills Company was incorporated in 1844 for the manufacture of checked cottons (ginghams) using Bigelow's power looms. Through his experience of planning factories to accommodate his looms, Erastus became an accepted expert in mill design. At the same time as he was planning and equipping Lancaster Mills, the Lowell Manufacturing Company hired him to design, supervise construction of, and equip a mill to house 400 power carpet looms (MHC 1982).

Erastus Bigelow may be best known for his invention of the first machine for weaving carpets. By 1842 he had developed power looms for the Lowell Manufacturing Company for weaving in-grain carpeting. Starting in 1845, he turned his attention to the mass production of Brussels carpets, patenting the first power loom for this purpose in 1847, and then patenting a machine for

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weaving tapestry Brussels carpeting in 1850. Between 1851 and 1857, he obtained six patents for power looms for pile and cut-pile carpeting. These machines revolutionized the carpet industry, making carpets a household item rather than a luxury item. In 1849 Erastus joined with his brother Horatio in the firm of H.N. and E.B. Bigelow to manufacture Brussels carpeting on his newly developed looms. The firm took over a small one-story building in Clinton built by Horatio in 1847 as a real estate investment, and later incorporated under the name of the Bigelow Carpet Company (Jenkins 1978).

Bigelow's inventions outside the textile industry included a machine to crush ramie and other fibrous plants and a hay cart that converted to a box cart (MHC 1982). Six volumes of his English patents from the years 1837 to 1868 are preserved along with the original drawings by the Massachusetts Historical Society (Bigelow Society, Inc., 1996). He received honorary degrees from Yale, Harvard, Williams, Dartmouth, and Amherst for his achievements in the world of invention (MHC 1982).

In addition to his work as an inventor, Bigelow also contributed to the field of economics. He published two major works on the role of tariffs in the American economy, including The Tariff Policy of England and the United States Contrasted (1877), in which he advocated a protectionist policy. In 1860 he ran for Congress as a Democratic candidate but was defeated in a close contest (Bigelow Society, Inc., 1996). Bigelow's other publications include "The Self-Taught Stenographer," written while he was a teenager attempting to earn tuition money and published in Lancaster; "Remarks on the Depressed Condition of Manufactures in Massachusetts with Suggestions as to its Cause and Remedy" (1850); and "The Relations of Labor and Capital," *Atlantic Monthly*, October 1878. He was elected the first president of the National Association of Wool Manufacturers, founded in Springfield, Massachusetts, on November 30, 1864, to secure the cooperation of its members during the Civil War. The adoption of the Wool Tariff of 1867 was the result of lobbying efforts by the association, which also sponsored an exhibition of American woolen goods in New York in 1869, the first industrial show for an individual industry (MHC 1982).

Erastus Bigelow's interests also included education. He was one of the founding members of the Massachusetts Institute of Technology. He supported the Bigelow Mechanics Institute, which later became the Bigelow Free Public Library, and was a member of the American Academy of Arts and Sciences and a trustee of the Museum of Fine Arts. Horatio Bigelow also took an avid interest in civic affairs, both local and state. He was active in various town departments in Clinton and made significant donations to the town and other local organizations. At various times he held directorships on the boards of the City Bank of Worcester and the City National Bank, and from 1850 to 1853 he was elected representative to the General Court (MHC 1982).

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The Bigelow Brothers' Influence on the town of Clinton

The Bigelow brothers played a significant role in the establishment of the small community of Clinton, as a "pre-eminent place in the development and production of the American textile industry" (MHC 1982). The town's prosperity for more than eighty years was due to the four major manufacturing concerns established in Clinton by Erastus and Horatio that became the dominant producers in their respective industries. "The success of these two men in promoting industrial change spawned the economic and political growth that led to the founding of the town of Clinton" (MHC 1982).

Prior to the Bigelows' investment in the area, industrial development in the "factory village" of Lancaster included only two cotton mills and six comb shops employing fewer than twenty people (MHC 1982). From 1830 to 1870, Clinton grew from a small manufacturing village surrounded by woodlands and farms to an incorporated town and the fourth leading manufacturing center in Worcester County. Its population grew from fewer than 300 in the 1830s to nearly 7,000 in 1875. During the same period the amount of capital invested in manufacturing grew from about $100,000 to more than $2.4 million. "This tremendous growth and expansion was based primarily on the inventions, investments, and management of the Bigelow brothers" (MHC 1983:6).

Soon after the Bigelows founded the Clinton Company in 1838, the community assumed the name of its principal employer and became known as "Clintonville." Over the next decade, the town's industrial base expanded with the addition of two more Bigelow concerns, the Lancaster Quilt Company and the Lancaster Mills Company. Additional manufacturers, including a fulling mill on South Meadow Brook, took advantage of the waterpower sites and technical expertise developing in the area (MHC 1983:6). By 1850, five million yards of cloth were woven by 700 mill employees; in the following year, an additional two million yards of lace, tweed, and pant fabric were being turned out (MacGray). Clintonville, with "more than half the population and a majority of the wealth of Lancaster," required more public services and political needs than its parent town was willing to provide (MHC 1982). In 1850, after two years of negotiation, the manufacturing community of Clintonville was incorporated as the separate town of Clinton.

The decade of the 1850s saw the major transformation of the town into an urban-industrial complex. A grid street pattern with a focus on a central park was laid out soon after incorporation. The population at this time was 3,113, one of the largest in the county for that year (MHC 1983:5). Significant growth continued with the establishment of the Bigelow Carpet Company in 1854 and the Bigelow Wire Cloth Company in 1857, both constructing long, massive brick buildings that dominated the town's landscape. Ancillary industries such as foundries and

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machine shops sprang up to supply the thousands of machines needed by the continually expanding mills, and the lumber and building trades also prospered. In 1854, the Clinton Gas Light Company was established to serve the Bigelow and Lancaster mills as well as the town. Companion factories for making clothing, shoes, and boots were also established (MHC 1983:8).

The Bigelows also used their economic leverage for the civic improvement of the town: "libraries, schools, banks, churches, and patriotic endeavors radiated from the Lancaster Mills" (MHC 1982). Horatio Bigelow in particular, whose permanent home was in Clinton, contributed greatly to such ventures. He served on the school committee, represented the town in the General Court, donated land for the town common, hired an engineer (John Hoadley) to lay out the streets in the business and residential districts (Hoadley, also the architect for the Lancaster Mills and some of its worker housing, was a partner of the Bigelows in the Wire Cloth Company), supported the Bigelow Mechanics Institute (formed in 1846) and the Bigelow Library Association (formed in 1853), established the post office and served as first town postmaster, was president of the Clinton Savings Bank founded in 1851, and director and vice president of the First National Bank of Clinton founded in 1864 (MHC 1983:8). As a director of the Worcester and Nashua Railroad, he played a role in bringing the rail line through the town in 1848. He donated to the town's Baptist Society, served on numerous building committees, and acted as superintendent of the Sunday School.

During the last quarter of the nineteenth century, Clinton's three major industries—carpets, cotton gingham, and wire cloth—grew into state, national, and world leaders. Also during this period, the town's population doubled and its commercial and residential areas expanded (MHC 1983:11). Thus, from the early decisions of Erastus and Horatio to locate their factories in the town to their considerable investment in its continued welfare, the Bigelow brothers were a driving force behind the town's growth and prosperity in the 19th century.

Franklin Forbes

When Erastus and Horatio Bigelow ceased their involvement in the management of Lancaster Mills in 1849, Franklin Forbes (1811-1877), a civil engineer with the Locks and Canal Company in Lowell, became the company agent. Under his direction, the company first began to show a profit and continued to do so until his death. Like his predecessors, Forbes was also very active in the affairs of the community. He was one of the original incorporators of the Clinton Savings Bank and served as its vice president from 1851 to 1877. He was also one of the original directors of the First National Bank of Clinton. He was a leading organizer of the Clinton Gas Light Company and served as its president from 1854 to 1877. In addition, he served on the Board of Directors of the Gibbs Loom and Harness and Reed Company. He was elected to the State Legislature in 1864, with only one opposing vote. He was a member of the Clinton Finance Committee and was chief engineer of the fire department from 1851 to 1859 and again in 1865.

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His biggest contribution in this area was to the School Committee: he served for more than 25 years from 1850 to 1875; over half of this time was spent as chairman. Forbes was instrumental in the formation of the Unitarian Society in Clinton and was always an active member of the congregation. He was also president of the Bigelow Library Association from 1852 to 1873, at which time the association was disbanded and the Bigelow Free Public Library came into being (MHC 1982).

In 1861 Forbes, along with two others, formed Clinton's Recruiting Committee for the Civil War effort. At the Lancaster Mills, Forbes offered his employees a monetary bonus for joining the Army. He also told all who enlisted that their jobs would be waiting for them when they returned from the War. He was the president of the Soldier's Aid Society, which did much to help the families the fighting men had left behind. Just prior to the war, he had set up schools for mill employees to keep them active during periods of reduced work activity (MHC 1982). The mill had a large supply of cotton on hand when the Civil War began; Forbes kept the mill running at least part time throughout the war.

Under Forbes' management between 1863 and 1877, many capital improvements were undertaken, and the company's profitability, output, and efficiency increased. Carding and packing mills (including **Mill No. 7,** which dates prior to 1870) were erected in the later 1860s and the early 1870s. The original wooden damworks were replaced with stone in 1867 (these have been rebuilt and strengthened many times since) (MHC 1982). By 1877, more than 1,500 looms were in operation at the Lancaster Mills, employing 1,115 operatives and producing more than 15 million yards of cloth (MHC 1983:11).

Lancaster Mills at the End of the 19th Century

The next fifteen years marked the greatest expansion for the company. By 1893 the number of looms in operation increased to 3,500 and the number of employees to 2,000 (MHC 1983:11). The Irish represented the largest portion of Clinton's population in the last quarter of the 19th century, while German, Scots, English, Italian, Poles and Canadians among others also immigrated here to work in the mills. As part of the mill expansion, the Lancaster Mills Company had erected more than 200 tenements, including several brick rowhouses on Grove Street and apartment blocks and two-family houses on the north side of Green Street across from the mills and east of the Lancaster Mills on Green Street by 1900 (MHC 1983:12). It was also during this time that Mill No. 1 – Weaving Mill was expanded. Notably, the innovation of keeping the power distribution in the lower level was retained; the 1901-1904 insurance map confirms that the shafting was still located in the basement of Mill No. 1. Despite certain years of prosperity, Lancaster Mills was affected by the economic slowdowns and consequent labor-management conflicts that marked the 1880s and1890s. Layoffs and reductions of wages in 1895 led to two strikes by weavers and 2,600 operatives (MHC 1983:12).

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When plans for the Wachusett Reservoir called for the disruption of the company's waterpower in 1897, two Cooper-Corliss steam engines were installed to power electrical generators, producing 2,900 kilowatts of electricity and driving about one half of the plant. By 1899, the entire plant was driven by electricity, the first textile plant in New England to be fully powered by electricity from generators directly connected to reciprocating engines (previous to this, electric generators supplying current to motors in textile plants either had been driven by waterwheels or had been operated from steam engines by means of belts or ropes) (MHC 1983:11, Stone 1930:1896).

The well-known engineering firm of Lockwood, Greene & Co., specifically Stephen Greene, was responsible for the installation of the equipment in the power plant (Bldg. No. 37, demolished), which was approximately square in plan with a two-story engine room, a tall one-story boiler room, and a tall chimney. Handwritten notes on the plan indicate that the boiler room held eleven 250-horsepower Cahill Boilers and a later addition held two 500-horsepower B&N Boilers. Originally located east of Mill No. 1 – Weaving Mill, this building is not visible today

Twentieth Century

A major 1912 strike at Lancaster Mills, a spinoff from the Lawrence Bread and Roses Strike that year, attracted national union organizers from the IWW (International Workers of the World) and involved mass meetings, picketing, and rioting. Despite these setbacks, the company's growth continued into the early 20th century. Production value was more than $8 million, with 2,250 employees. It was during this period that the **Amory Mill (Mill No. 3)** was constructed (1910). Designed by Knight C. Richmond, an engineer from Providence, Rhode Island, the building showed a traditional vertical pattern of industrial use from that era, with various functions on separate floors. The rectangular plan with large windows permitted extensive light into the building, which would have had mostly open floors. This mill functioned in the production of yarn for weaving. The Amory name was long associated with the Lancaster Mills. From 1847 to the early 1880s, James S. Amory was treasurer; in 1849-1850, he was credited with raising badly needed investment capital during a difficult period of depressed stock prices. By the late 1880s, Harcourt Amory was listed as clerk, director and treasurer of the Lancaster Mills. A graduate of Harvard, Harcourt Amory was at the same time a director in several manufacturing companies as well as the State Street Trust Co. His office and residence were both in Boston. While Harcourt Amory was associated with Lancaster Mills at the time the Amory Mill was constructed, it may have been the family's long association that prompted the use of the family name on the new mill.

In the early years of the 20th century, Lancaster Mills responded to changing fashions by adding the manufacture of rayon and cotton-blend fabrics, drapery and upholstery fabric, slipcovers, and shirtings to their original gingham production (MHC 1983:14). However, continued slowdowns occurred throughout the 1920s; the mills were frequently closed entirely or operated on part-time schedules or with large wage reductions (*Clinton Centennial Volume*). In 1928, 1,000 employees

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were turning out 17.5 million yards of fabric, approximately half the mills' capacity; by the following year, only 720 employees remained, with a production value of around $2 million (MHC 1983:14, Stone 1930:1896). Another adaptation in response to changes in the market, the Lancaster Mills stopped producing yarn in 1928 and the Amory Mill (Mill No. 3) was turned to the purpose of spinning processes (Stone 1930:1896).

The index at Harvard Business School's Baker Library of the collection of the Lancaster Mills papers indicates that G. Harold Greene was the president of the Lancaster Mills from 1914–1925. It is most likely that this refers to S. Harold Greene, which is confirmed from other sources. This reflects the deep long-term involvement of Lockwood, Greene & Co. with the Lancaster Mills. Their role over the years included the installation of General Electric generators and Cooper-Corliss engines in the Power Plant (Bldg. No. 37, demolished) in 1897 and 1899, designs for some residential buildings on Green Street, the office addition (Bldg. No. 23; 1918) and Bldg. No. 31 (Cotton Store House, 1920) as well as management of the mills. The Lockwood, Greene & Co. drawings for the No. 31 Cotton Store house were dated December 1919, which suggests that it was built the following year.

As was common and well known in Lowell, many women were employed at the Lancaster Mills through the various departments in the 19th and 20th centuries. Despite its tradition of adapting to new products, Clinton was not spared in the Great Depression and as a result, the Lancaster Mills closed ca. 1931 and the Bigelow Carpet Mills also closed. It is reported that many of Clinton's Polish families left following the closing of the Lancaster Mills; undoubtedly, they were joined by many of the other immigrant families that came to Clinton to work in the mills. The Clinton Wire Cloth Company merged in the 1920s with several other wire companies in central Massachusetts forming the Wickwire-Spencer Steel Corporation. With this strength, this mill continued to operate during the Depression of the 1930s.

For several decades after the 1930s, the principal owner of the Lancaster Mills complex was the Colonial Press, which had been characterized as "the world's largest book bindery under one roof" (MHC 1982). The mill therefore remained an important employer for skilled labor until the Colonial Press closed operations entirely in 1977. Lancaster Mills was vacant and unused until 1981, when the complex was purchased by NIUNA Corporation, a Massachusetts-based real estate development corporation that rehabilitated many of the buildings (MHC 1982). Since then, the property has changed hands several times and has been divided into multiple lots. A number of buildings on the south and east parts of the complex are owned by Weetabix and are used for warehousing and production. Mill No. 1 – Weaving Mill and the attached structures have been acquired by Clinton Millworks LLC for rehabilitation into residential and commercial space. The Clinton Wire Cloth Company Mills, another Bigelow company, were occupied starting early in

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the 1940s by the Van Brode Milling Co., which made cereal, plastic figurines, and a combined spoon and fork utensil known as a "spork." Continuing the connection with the Bigelows' former mills, Weetabix had contracted with Van Brode to make cereal for them and Weetabix now occupies part of the Bigelows' former Lancaster Mills (M. L. Cohen, "Weetabix Limited," International Directory of Company Histories 61 (1990).

John Chipman Hoadley

John Chipman Hoadley (1818-1886), the civil engineer responsible for the construction of many early buildings in the Lancaster Mills complex, was born and educated in New York. He studied algebra, geometry, and surveying at Utica Academy and in May 1836 became assistant engineer on the Erie Canal enlargement. Privately, he studied mechanics, hydraulics, French, German, Latin, and Greek; he was a founder of the American Society of Mechanical Engineers and an original trustee of the Massachusetts Institute of Technology. In 1844 he moved to Clinton, where he joined the Bigelow brothers in building and equipping their cotton mills. He also worked with the Bigelows to organize the Clinton Wire Cloth Company, the last of the Bigelow business ventures. In 1852 Hoadley became superintendent of the Lawrence machine shops. Among other achievements, he invented the Hoadley portable engine, a high-speed engine manufactured until 1873. Hoadley's second wife, Catherine, was the sister of the author Herman Melville (Robert L. Gale, A Herman Melville Encyclopedia. Westport, CT: Greenwood Press, 1995).

Lockwood, Greene & Co.

Lockwood, Greene & Co. was a successor firm to an early industrial engineering consulting firm that began in Maine and later as Lockwood, Greene & Co. expanded throughout the eastern United States. David Whitman of Rhode Island (1799-1858) was considered the pioneer mill engineer of his time. Founding his company in 1832, he was a traveling consultant known as "the mill doctor" for his consulting work in Maine for large mills powered by water.

Amos Lockwood (1811-1884), a Connecticut engineer and businessman, became the head of the company upon Whitman's death in 1858 and completed Whitman's work at Lewiston, Maine, staying twelve years before moving on to Boston and Providence, as an independent consultant, and establishing a practice in Boston in 1871. In Providence, he partnered with Stephen Greene (1851-1901) and the company became Lockwood, Greene & Co. in 1882. His prior investment in manufacturing firms, including the Saco Water Power Machine Company, secured his family's financial future.

Lockwood died in 1884 and Greene died in 1901 at the age of only fifty. The eldest of his four sons, Edwin Farnham Greene, became president and moved the company forward with an

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emphasis on mill ownership, management and engineering, establishing several companies under the umbrella of the parent organization. While a depression in textile manufacturing affected that share of the business, the engineering, management and later the architecture department (1918) ensured the continued prosperity of the company.

Stephen Harold Greene (1881- 1937), the second eldest son, joined Lockwood, Greene & Co. as a partner in 1911 after training at Brown University and Philadelphia Textile School and having served as treasurer of Lawton Mills in Plainfield, Connecticut. In his career he was a director in various mill organizations including Lawton, Lancaster Mills, Winnsboro Mills and International Cotton Mills. 'S. Harold,' as he was known, served as Director, Chairman and President of Lockwood, Greene & Co. Managers from 1916-1926, resigning from the company in 1928.

To sustain its reputation for high quality cloth, Lancaster Mills sought out management improvement in 1913, at which time Lockwood, Greene & Co. took on the contract and increased its share of stock. S. Harold Greene was president of Lancaster Mills from 1914-1925.

Specializing in steam and electrical engineering, design of textile plants, financial advice, appraisal and valuation and plant reorganization, these are among the achievements of Lockwood, Greene:

- pioneer in water-powered plants for cotton mills
- first in development of engine-driven mill with rope drive
- first mill driven electrically from water power (Columbia Cotton Mills, South Carolina, 1892-93)
- first mill driven electrically by steam (Lancaster Mills, 1844, installed 1897 and 1899)
- first cotton mill of reinforced concrete (Maverick cotton Mills, East Boston, 1910)

Conclusion

The Lancaster Mills are associated with several aspects of technical, engineering, manufacturing and architectural innovation and retain most of the significant structures associated with the production of ginghams, for which the mill was established. It is reported to be the first mill where gingham cloth was woven by power looms, as well as the country's largest gingham factory, and it is an early example of a manufacturing process conducted on a single level at a large scale. Charles Parrott, Architect at the National Park Service in Lowell, has researched and evaluated Mill No. 1 at the Lancaster Mills and presented his research in his paper "The Proto-Modern American Factory: Erastus Bigelow's Clinton and Lowell Weave Sheds in 1840s Massachusetts," May 30, 2009. According to Mr. Parrott, although not unusual today, the scale of the single-story Mill No. 1 intended for horizontal production was not commonly found in

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manufacturing plants in this country until the late 19th century, more than 50 years after the Bigelows' mill. This, along with the basement-level power shafts and gears that transmitted power by belts running through the floor, the separate structure for the roof and floor of this building, and the use of roof skylights to light the manufacturing floor make this an exceptional example of innovation in a manufacturing building. While the Bigelows left to pursue the manufacture of carpets and wire cloth, the Lancaster Mills continued to use Erastus Bigelow's original concept in Mill No. 1 and were successful until the decline brought on by the Great Depression.

Archaeological Significance

Historic archaeological resources described above may contribute important information related to the early settlement of one of the oldest industrial sites within the Clinton town limits. Historical research, combined with archaeological survey and testing, may locate structural evidence and related archaeological features from the Elias Sawyer dam and mill, believed to be the first industrial venture in the district. Detailed analysis of these structures and the contents of occupational-related features may contribute important evidence of the earliest industrial construction in the district, the architectural details of the Sawyer mill and dam, what, if anything was ever produced in the Sawyer Mill, and why the enterprise was sold before the mill construction was completed. The importance of archaeological resources related to the Sawyer Mill is attested by the fact that little information survives about the construction and function of the mill.

The Sawyer enterprise was sold to James Pitts in 1810. By 1816, Pitts operated a sawmill and gristmill, presumably in the now finished mill he purchased from Elias Sawyer. By 1820, cotton yarn was also produced at the Pitts Mill. By ca. 1820, Pitts also built a tannery, shingle mill, and comb shop that were all converted to cotton yarn manufacture by 1831. After a fire in 1836, a new mill was built for the manufacture of satinet warp. Archaeological testing, combined with detailed analysis of structural remains from the mills and the contents of occupational-related features, may contribute evidence of the location of the Pitts mills, their architectural characteristics, construction, technology, and products manufactured.

Historical and archaeological research at the Sawyer and Pitts mills may be especially important because they represent the period when the district's and town's economy was changing from the needs of an early settlement and agricultural production to limited agriculture combined with light manufacturing and the growth of textile manufacturing. Important evidence may survive that can identify patterns of early textile technology and patterns of adaptive reuse as mill power systems and production facilities were altered for textile production instead of sawmill, gristmill, tannery, shingle, and comb manufacture.

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While most of the larger mill buildings associated with the Lancaster Mills survive, historical and archaeological research may contribute important information relating to the location and function of smaller buildings known to have been lost. Identification and mapping of these buildings may contribute information relating to the internal configuration of manufacturing facilities and aspects of maintenance and manufacturing within the Lancaster Mills facility.

Information relating to patterns of reuse of industrial facilities may also be available from archaeological resources associated with the Lancaster Mills. Archaeological testing in the vicinity of the Mill No. 4 foundation may indicate whether structural evidence of Bigelow's Long Mill survive. Similar research may also indicate what portions of the Long Mill were reused during the Mill No. 4 and Mill No. 1 construction.

The identification, mapping, and description of hydraulic resources associated with Lancaster Mills may be one of the more important and needed areas of historical and archaeological research in the district. Every major occupant of the district, from Elias Sawyer to James Pitts to Lancaster Mills, either built and/or modified existing hydraulic resources. Additional historical research, combined with archaeological survey and testing, may locate structural evidence of the dam associated with the Sawyer, Pitts, and Lancaster Mills periods of occupancy of the district. Similar research and testing may also locate portions of the dam that was rebuilt from an earlier period of occupancy.

Archaeological testing may also locate evidence of power canals in the district. Unless a mill was constructed on the riverbank where sufficient water with force was available to turn a waterwheel, power canals had to be constructed to bring water from the river to the mill, then back to the river. Power canals may have been present for both the Sawyer and Pitts Mills. Power canals were reportedly excavated for Lancaster Mills in ca. 1844. The canals are documented on the 1848 Hoadley Map of Clinton that shows a Feeding Canal and Tail Race roughly parallel with the Nashua River between Mill No. 16 and No. 4. The canals are also illustrated on the 1929 Sanborn Insurance Map, corrected to 1947, and still exist in the district today. Additional historical research, combined with archaeological survey and testing, may determine whether additional power canals exist in the district. Archaeological testing may also identify the structural characteristics of the canals and building techniques used in their construction. Archaeological research may identify additional hydraulic resources including structural evidence of canal gates, wheelhouses, and waterpower-related machinery (water wheel fragments, gears, shafts). Historical and archaeological research may identify additional functions in the manufacturing process for waterpower canals after their power generating function had ended. New functions for waterpower canals may include cooling, washing, and various stages in the textile manufacturing process, such as dyeing

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Historical and archaeological research of the district's waterpower related resources might also contribute important information related to the evolution of power systems in the district and region. The district's mills span the period from the exclusive use of waterpower to the exclusive use of electrical power. Historical and archaeological research may contribute important evidence of the evolution from one form of power generation to the other, and the transitional period between them. Pitts installed a steam engine in 1844 to supplement waterpower. Important evidence may exist that identifies environmental, technological, or manufacturing reasons why supplemental power was needed. By 1899, the entire Lancaster Mills was powered by electricity. Previously, electrical power was driven by water wheels or had been generated by steam engines. Additional historical and archaeological research may determine whether the sequence of power generation described above represents the entire sequence of waterpower evolution or whether additional forms of power generation, such as turbines, were used.

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Correspondence

Charles Parrott to Chris Starr, 18 February 2009.

Richard O'Connor to Chris Starr, 13 February 2009.

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10. Geographical Data

Acreage of Property 29.1 acres

UTM References See continuation sheet.
(Place additional UTM references on a continuation sheet)

1.	19 Zone	279340 Easting	4698880 Northing	3.	19 Zone	279780 Easting	4698900 Northing
2.	19 Zone	279500 Easting	4698960 Northing	4.	19 Zone	279500 Easting	4698580 Northing

x See continuation sheet

Verbal Boundary Description
(Describe the boundaries of the property on a continuation sheet.)

Boundary Justification
(Explain why the boundaries were selected on a continuation sheet.)

11. Form Prepared By

name/title Leslie Donovan, Laura J. Kline, Tremont Preservation Services, with Betsy Friedberg, NR Director, MHC

organization Massachusetts Historical Commission date December 2009

street & number 220 Morrissey Boulevard telephone 617-727-8470

city or town Boston state MA zip code 02125

Additional Documentation

Submit the following items with the completed form:

Continuation Sheets

Maps
A **USGS map** (7.5 or 15 minute series) indicating the property's location.
A **sketch map** for historic districts and properties having large acreage or numerous resources.

Photographs
Representative **black and white photographs** of the property.

Additional items (Check with the SHPO or FPO for any additional items)

Property Owner

(Complete this item at the request of the SHPO or FPO.)

name multiple

street & number _____ telephone _____

city or town _____ state _____ zip code _____

UTMs (continued)

5.	19	279280	4698600

VERBAL BOUNDARY DESCRIPTION

Generally, the nominated property includes the remaining buildings of the Lancaster Mills. It includes parcel numbers 2001, 2013, 2014, 2015, 2017,and 4017 on the Town of Clinton Assessor's map no. 93 & 94.

VERBAL BOUNDARY JUSTIFICATION

The nominated property includes the original Mill No. 1 - Weaving Mill of the Lancaster Mills and the thirteen other remaining buildings from that mill dating from 1844 through 1920 and comprising a group of 19th and 20th-century industrial buildings associated with the ingenuity in textile production and mill planning represented by the Lancaster Mills. The site of the dam, under Chestnut Street Bridge crossing the Nashua River, is separated from the mill complex by vacant lots and a modern convenience store and is not included in the present nomination.

(end)

PHOTOGRAPHS

(black and white)
Leslie Donovan photos

1. Mill #1
2. Interior, Mill #1
3. Mill #3, Amory Mill
4. Mill #3, Amory Mill
5. Mill #7
6. Mill #7
7. Interior, Mill #7
8. Interior, stairway, Mill #7
9. Building #23
10. Mill #2
11. Buildings # 40 and 41

(color supplementary photos, nominated buildings, keyed to map)

1. Building #23 (facing SE)
2. Mill #1 (facing NW)
3. Mill #1 (facing SE)
5. Mill #1 (facing NE)
6. Building #5 (facing E)
7. Building #5 (facing NW)
8. Building #10 (facing S)
10. Building #10 (facing SE)
11. Buildings #10 and 8 (facing W)
12. Building #4 (facing NW)
13. Building #4 (facing N)
14. Mill #1 (facing N)
15. general view (facing S)

(color supplementary photos, boundary justification, keyed to map)

1. Building #8 (facing NE)
3. facing N
4. facing N
5. facing S
6. facing N
7. facing S

8. facing SE
9. facing NE
10. facing NW
12. facing NW
13. facing N
14. facing SW
15. Building #36 (facing NW)

Historic Maps

1. *Map of Clinton*, John C. Hoadley, 1848
2. *Map of Clinton*, Joshua Thissell, 1857
3. *Lancaster Mills, Clinton, Mass., No. 5840*, Barlow's Insurance Surveys, July 10, 1879
4. *Atlas of Worcester County, Plan of Clinton, Town of Clinton*, F.W. Beers & Co., 1870
5. *Worcester County Atlas, Part of the Town of Clinton*, L.J. Richards, 1898
6. *Lancaster Mills (Cotton Mills), Clinton, Mass. 1901* [corrected to 1904], Mutual Risk Insurance [?] (blueprint)
7. *Insurance Maps of Worcester County, Clinton, Mass.* Sanborn Fire Insurance Company, 1919, plate 26
8. *Insurance Maps of Worcester County, Clinton, Mass.* Sanborn Fire Insurance Company, 1919, plate 25
9. *Insurance Maps of Worcester County, Clinton, Mass.* Sanborn Fire Insurance Company, 1926, plate 26
10. *Insurance Maps of Worcester County, Clinton, Mass.* Sanborn Fire Insurance Company, 1926, plate 25
11. *Insurance Maps of Worcester County, Clinton, Mass.* Sanborn Fire Insurance Company, 1929 [corrected to 1947], plate 26
12. *Insurance Maps of Worcester County, Clinton, Mass.* Sanborn Fire Insurance Company, 1929 [corrected to 1947], plate 25

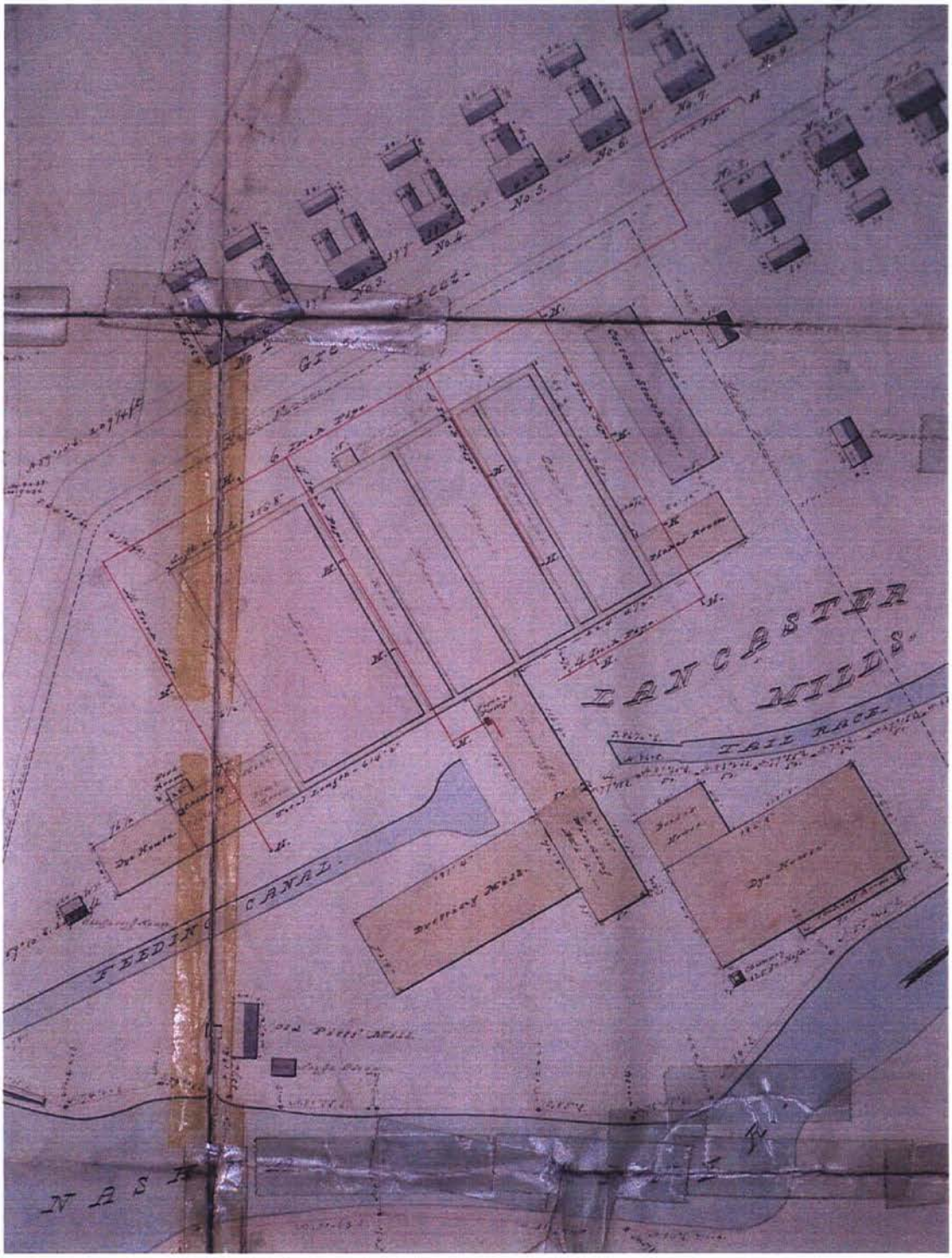
Historic Illustrations

1. *Other Industries of New England* (State Street Bank ,1924), p. 32
2. *History of Massachusetts Industries*, Vol. II (Stone, 1930), p. 1897
3. *Lancaster Mills, Clinton, Mass.* (n.d.)
4. *A River Through Time* (Clinton Historical Society, n.d.)
5. *Steam Power Plants* (Meyer, 1912), fig, 18, p. 54.

Data Sheet October 2009
Lancaster Mills
Green Street and Cameron Street
Clinton, MA

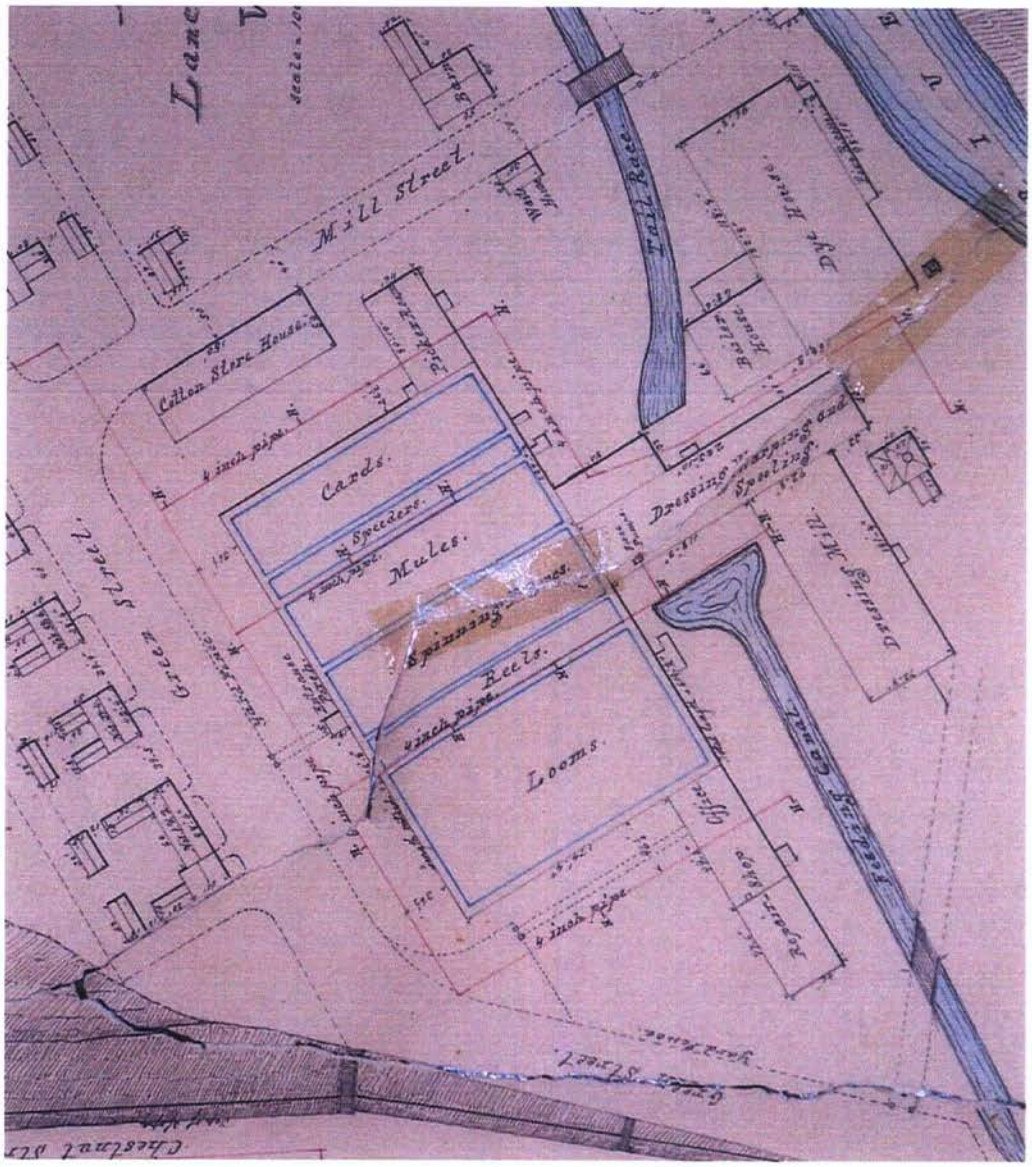
Construction Dates	Use shown on 1929 Insurance Map	Exterior Walls	Style
1844-1849; 1879-1898	No. 1 Weaving Mill	Brick	Italianate
1891	No. 2 Weaving Mill	Brick	Late 19th c Industrial
1910	Amory Mill: Carding & Opening Basement; Carding & Drawing 1st; Fly Frames & Drawing 2nd; Fly Frames 3rd; Ring Spinning 4th	Glass, concrete, and brick	Early 20th c Industrial
1844-1848; 1857-1879	Pattern & Weaving Bldg	Brick	Italianate
1870-1879	Waste House	Brick	19th c Industrial
1857 -1870; 1879 -1898	Ring Spinning	Brick	Italianate
1857-1870	Repair Shop	Brick	19th c Industrial
1879-1898	Wood Shop	Brick	19th c Industrial
1857- 1870; 1918	Office	Brick	Italianate
1920	Cotton Storage	Concrete & Brick	20th c Industrial
1844-1848	Store House	Brick	19th c Industrial
1844-1848; 1879-1898	Storage 1st; Winding 2nd	Brick & Stucco	Italianate
1844-1848;	Dyeing 1st; Drying 2nd	Brick	19th c Industrial
1844-1848; 1879-1898; 1901-1904	Dyeing 1st; Warping 2nd	Brick	Italianate
1994	1R Green Street/Parcel 4025	Concrete block	No Style
2003	99 Green Street/Parcel 3139	metal	No Style
ca. 1990s	Foot Bridge across Nashua River to No. 2 Weaving Mill	metal	No Style

MAP 1



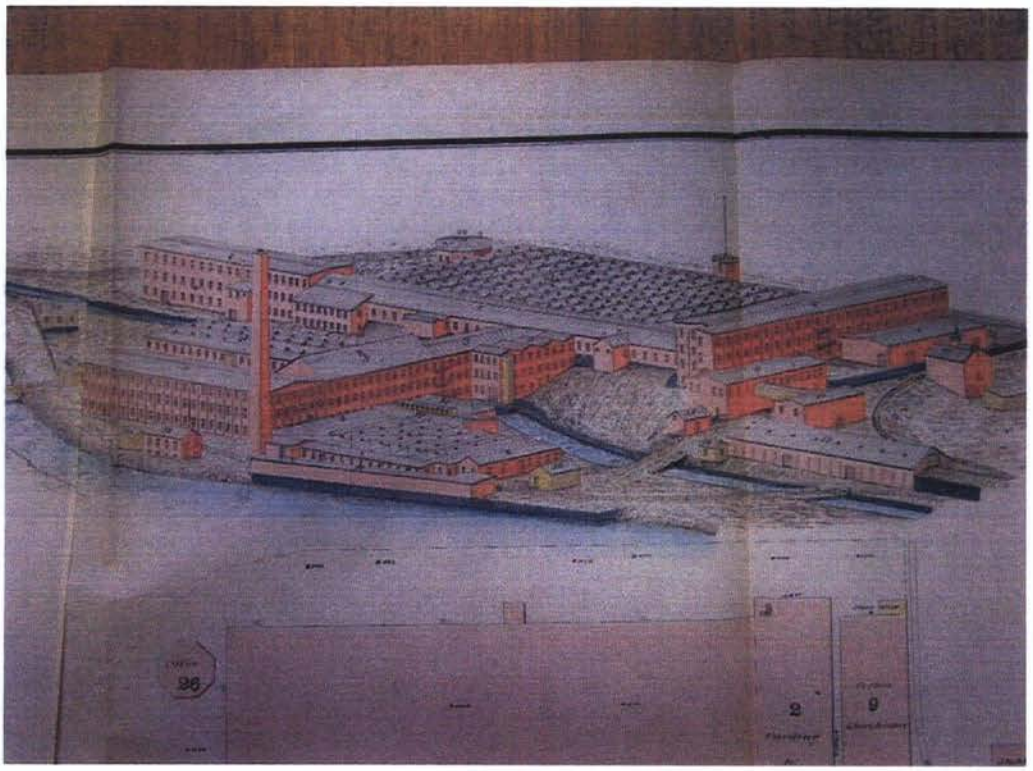
. *Map of Clinton*. John C. Hoadley. 1848.

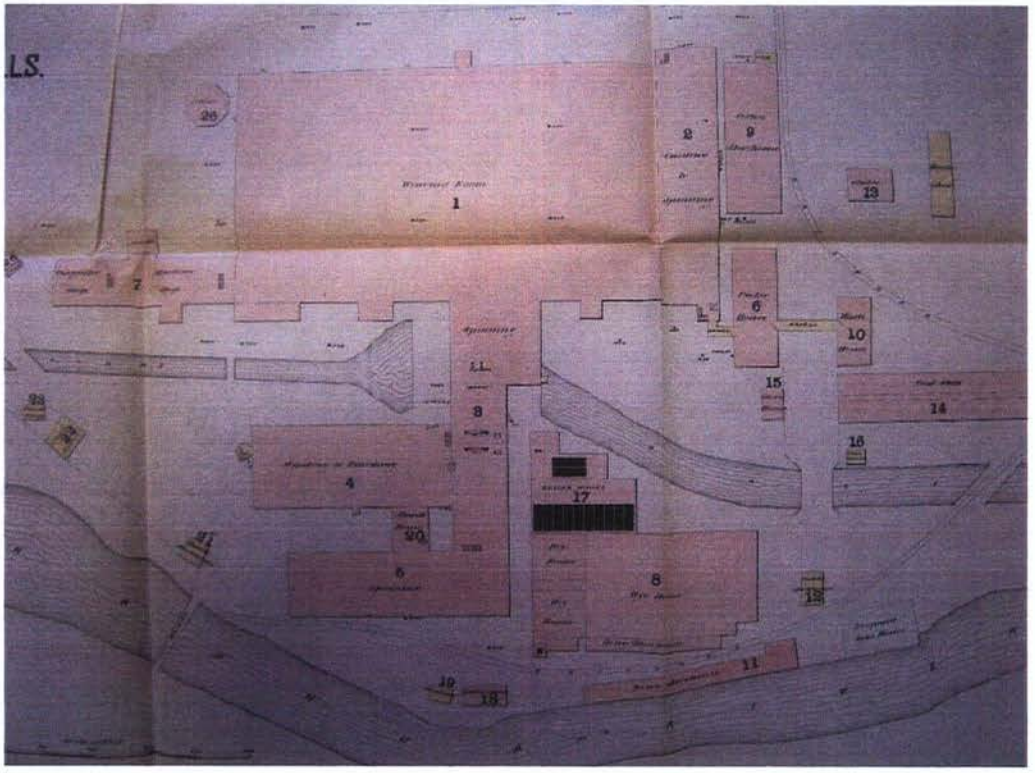
MAP 2



Map of Clinton, Joshua Thissell.1857.

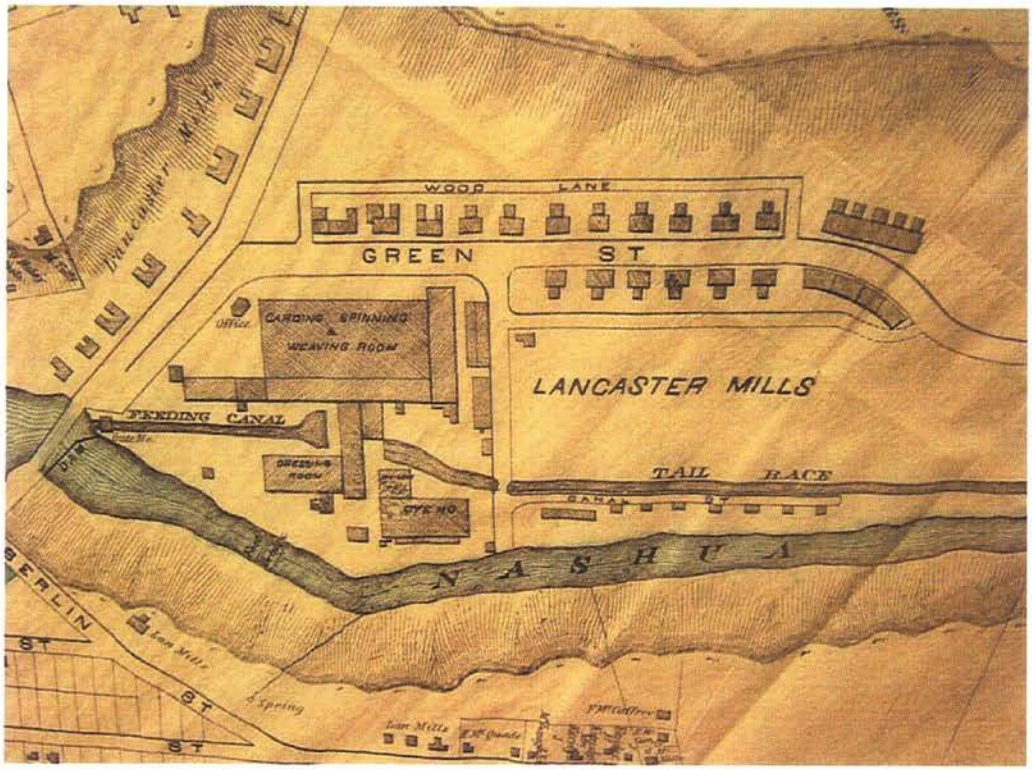
MAP 4, 3



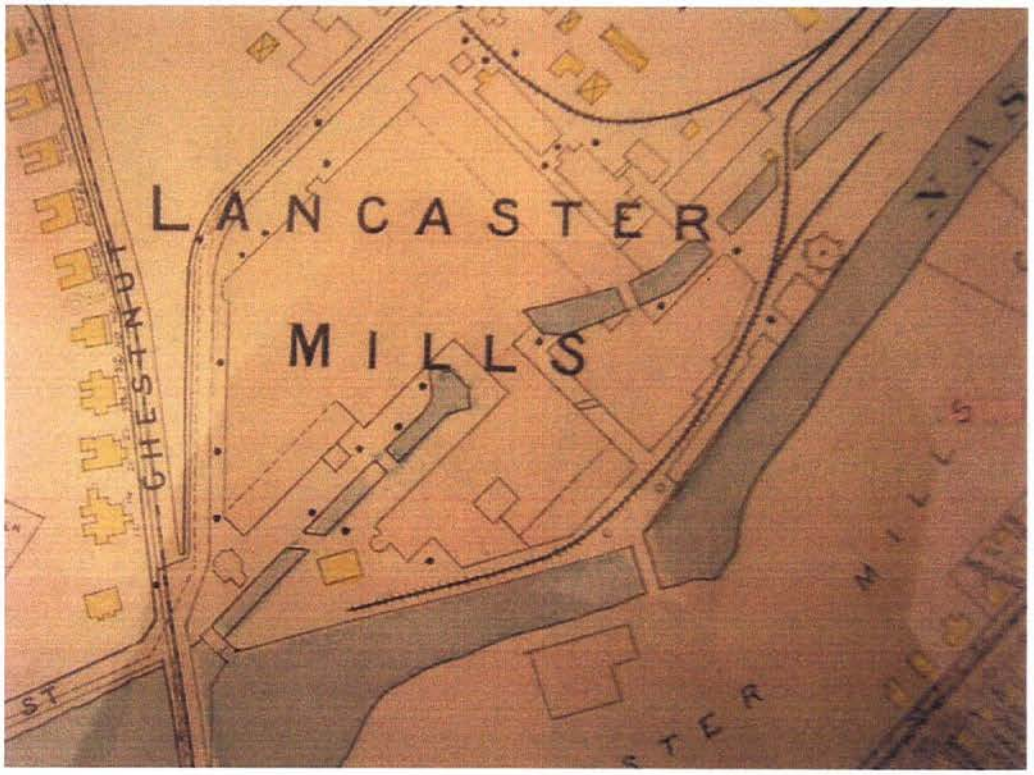


Barlow's Insurance Surveys, NY, NY. *Lancaster Mills, Clinton, Mass. No. 5840.* July 10, 1879.

MAP 5

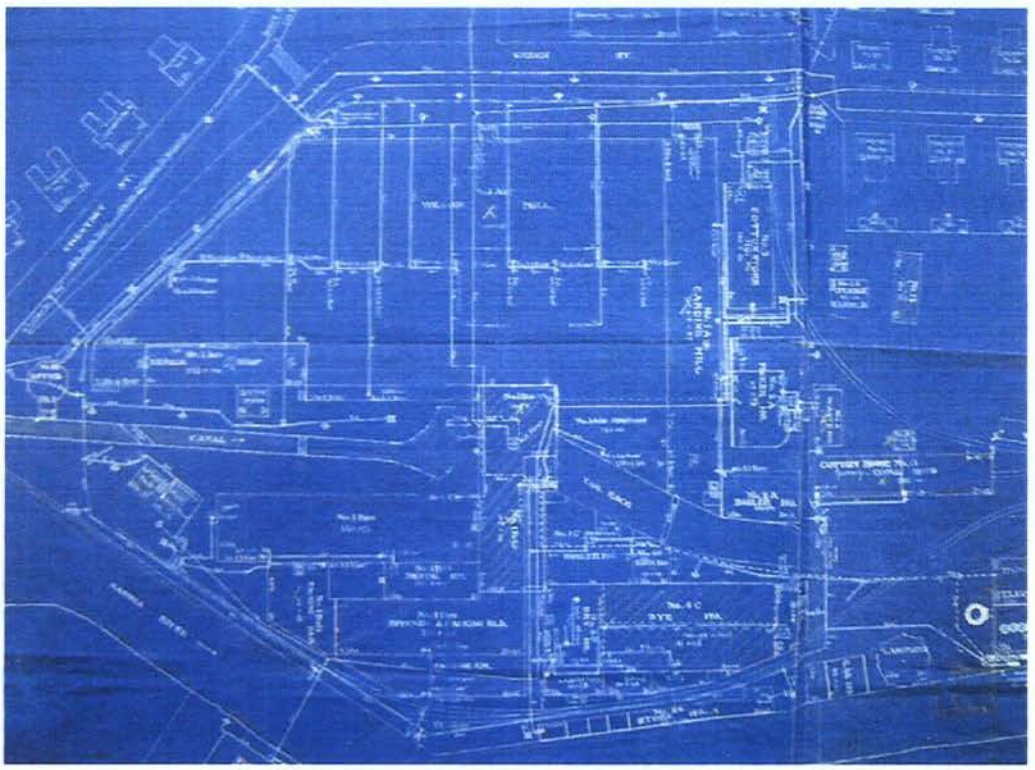


Beers, F. W. & Co., *Atlas of Worcester County, Plan of Clinton, Town of Clinton.* 1870.



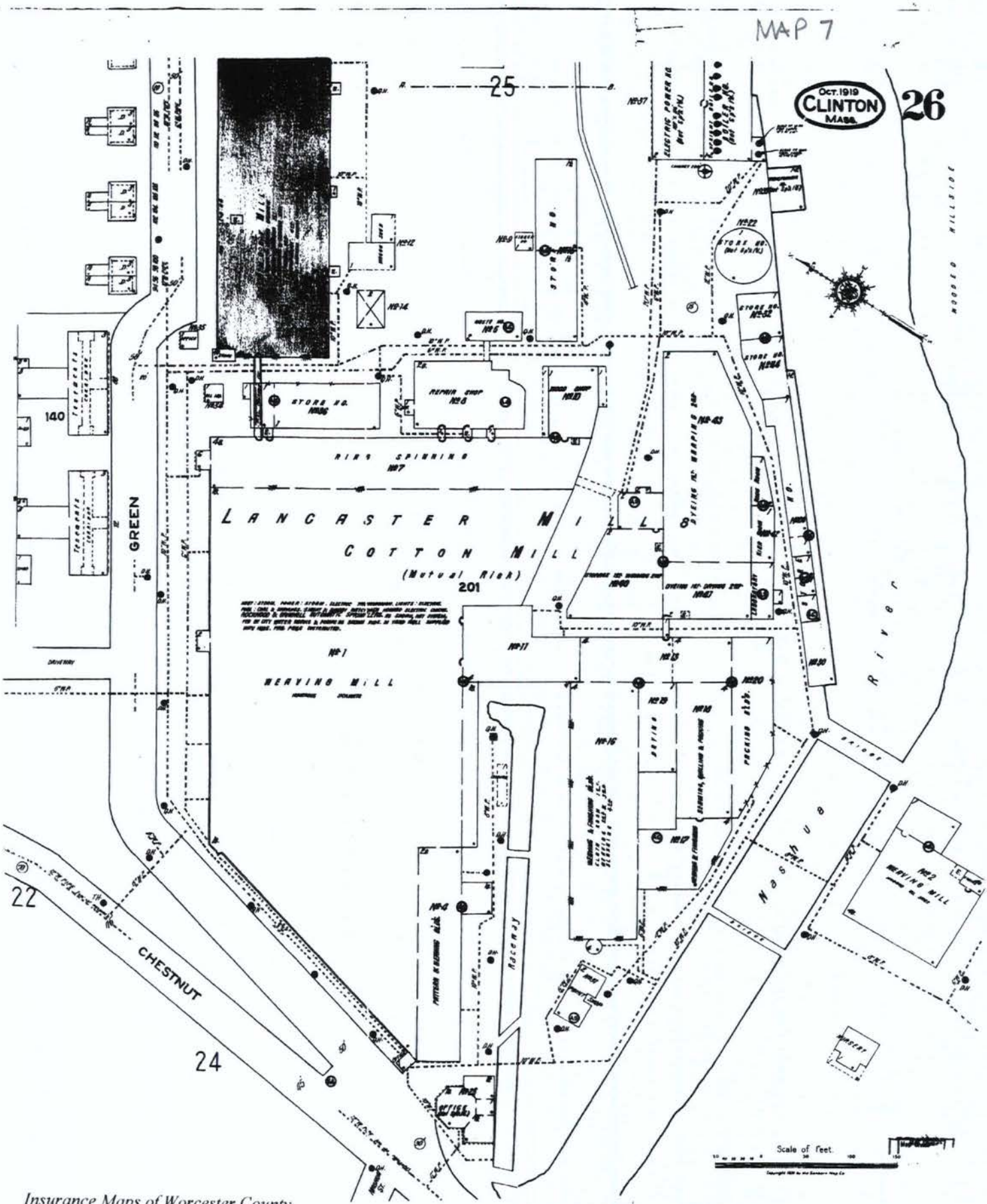
Richards, L.J. *Worcester County Atlas, Part of the Town of Clinton, Worcester County, Mass.* 1898.

MAP 6

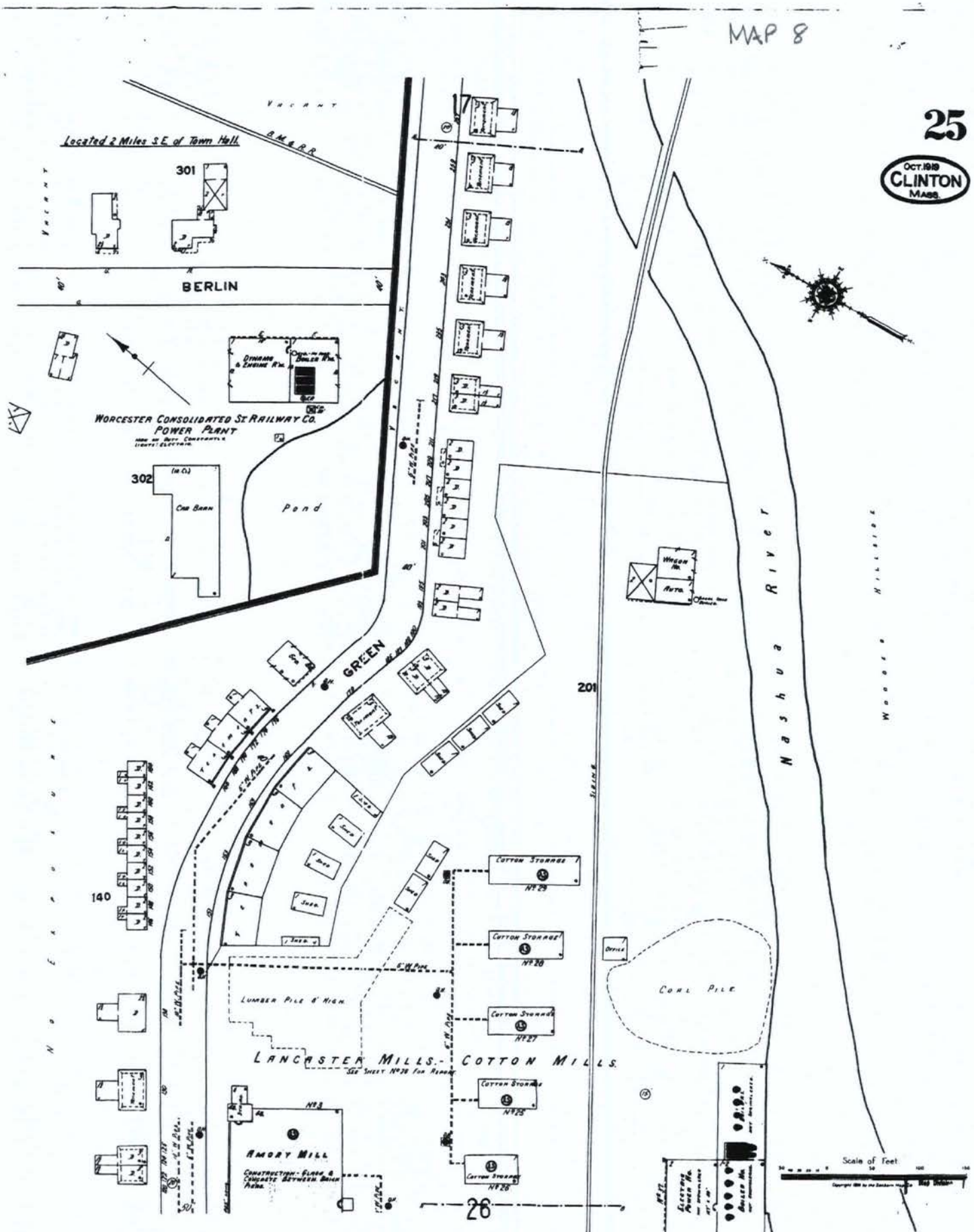


N

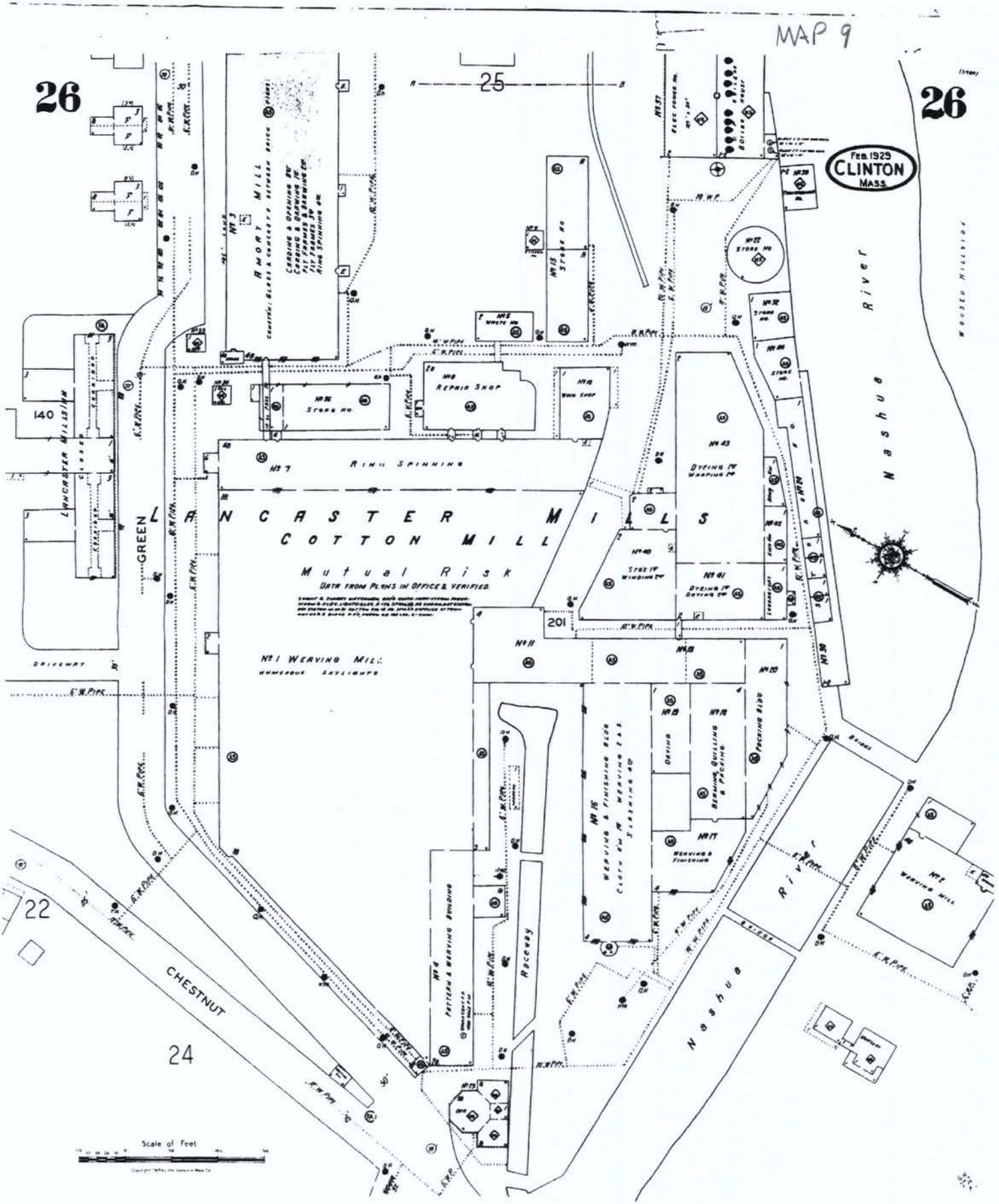
Lancaster Mills (Cotton Mills), Clinton, Mass. 1901 (corrected to 1904). Thought to be drawn by Mutual Risk Insurance. Located in the collections of the American Textile Museum in Lowell.



Insurance Maps of Worcester County, Clinton, Mass. Sanborn Fire Insurance Company. 1919. Plate 26

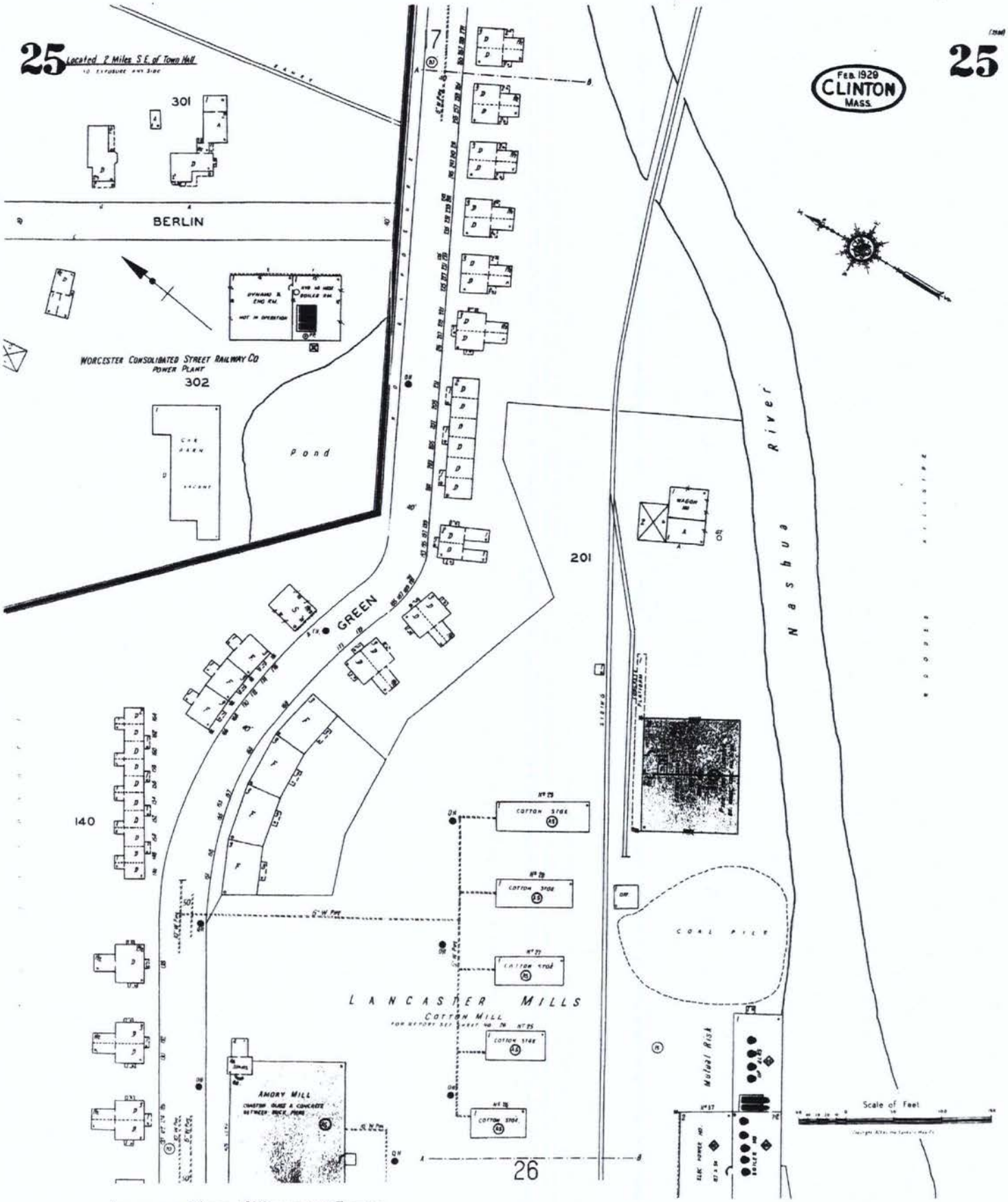


Insurance Maps of Worcester County, Clinton, Mass. Sanborn Fire Insurance Company. 1919. Plate 25

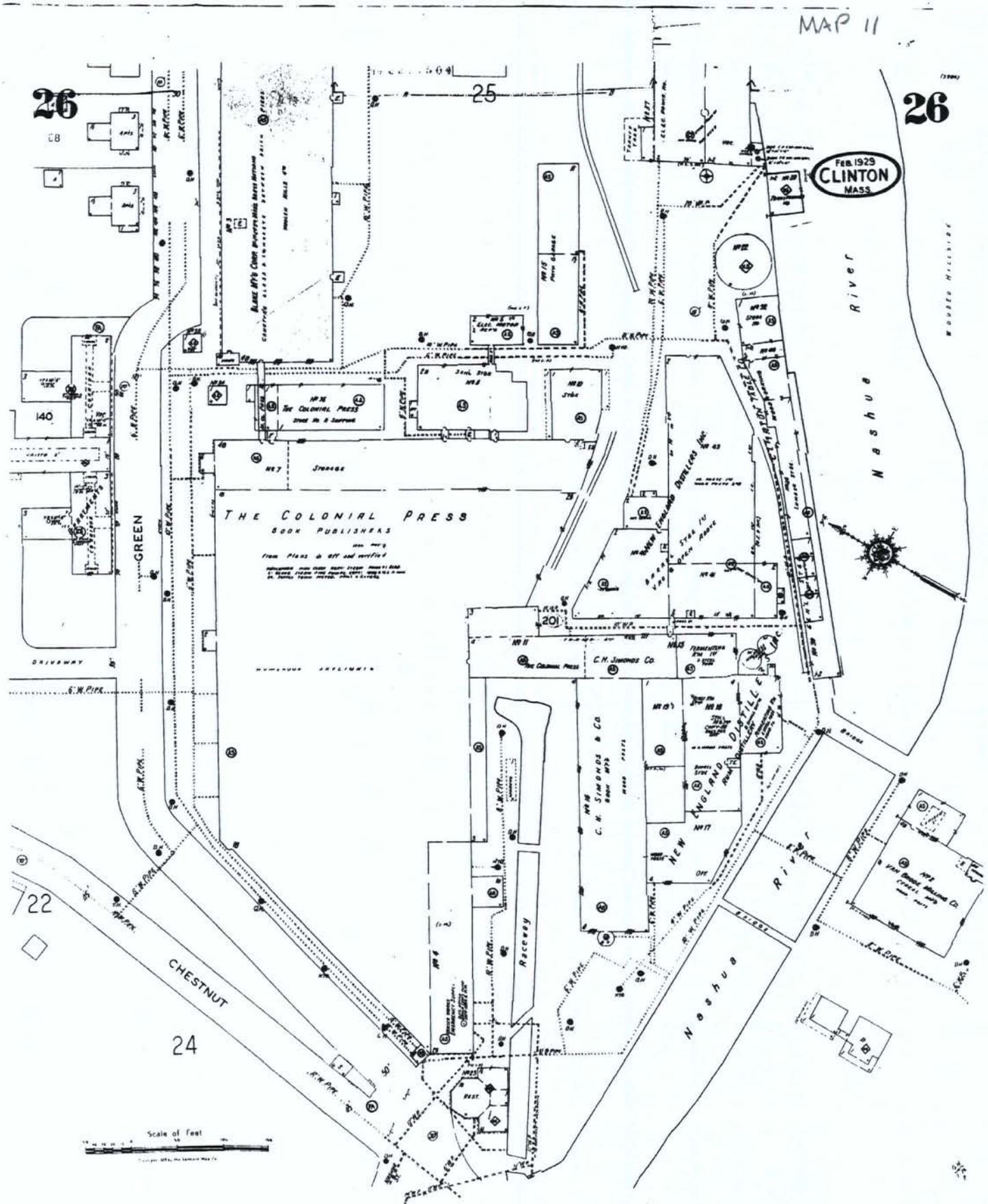


Insurance Maps of Worcester County, Clinton, Mass. Sanborn Fire Insurance Company. 1929. Plate 26.

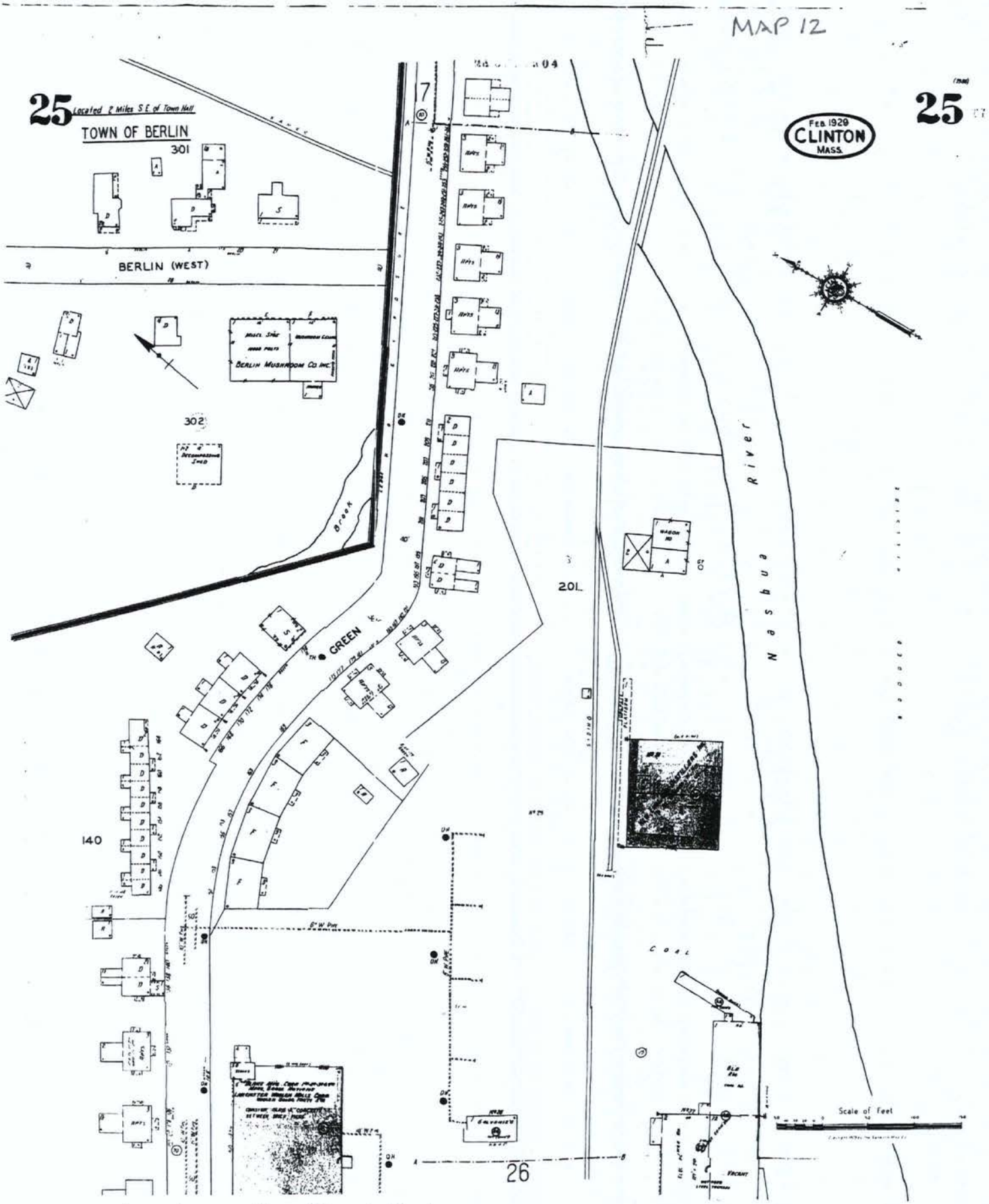
MAP 10



Insurance Maps of Worcester County, Clinton, Mass. Sanborn Fire Insurance Company. 1929. Plate 25.

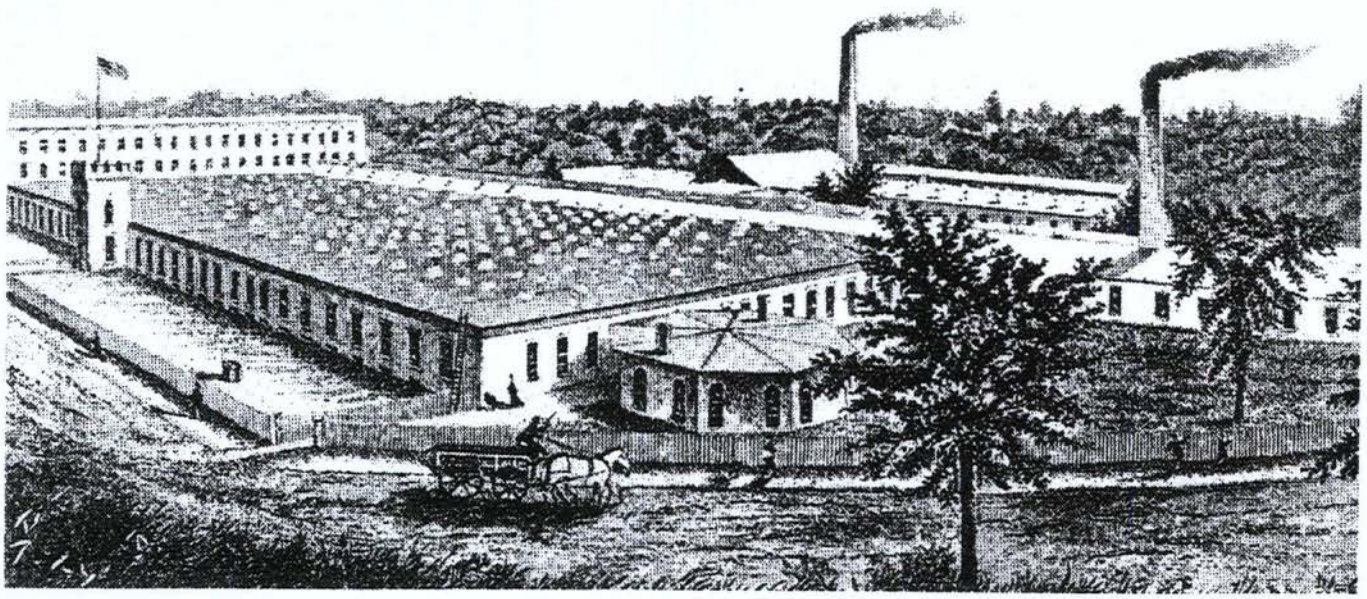


Insurance Maps of Worcester County, Clinton, Mass. Sanborn Fire Insurance Company. 1929 corrected to 1947. Plate 26.



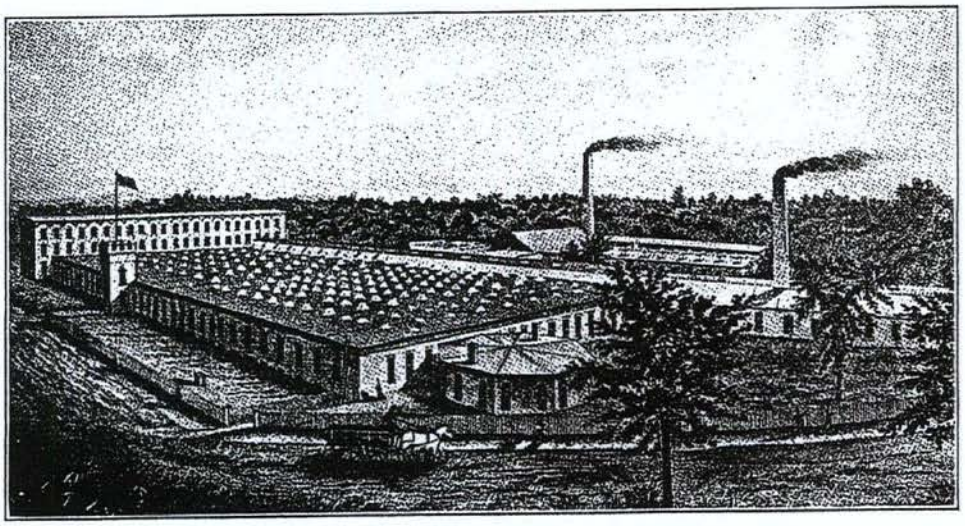
Insurance Maps of Worcester County, Clinton, Mass. Sanborn Fire Insurance Company. 1929 corrected to 1947. Plate 25.

ILL. 1

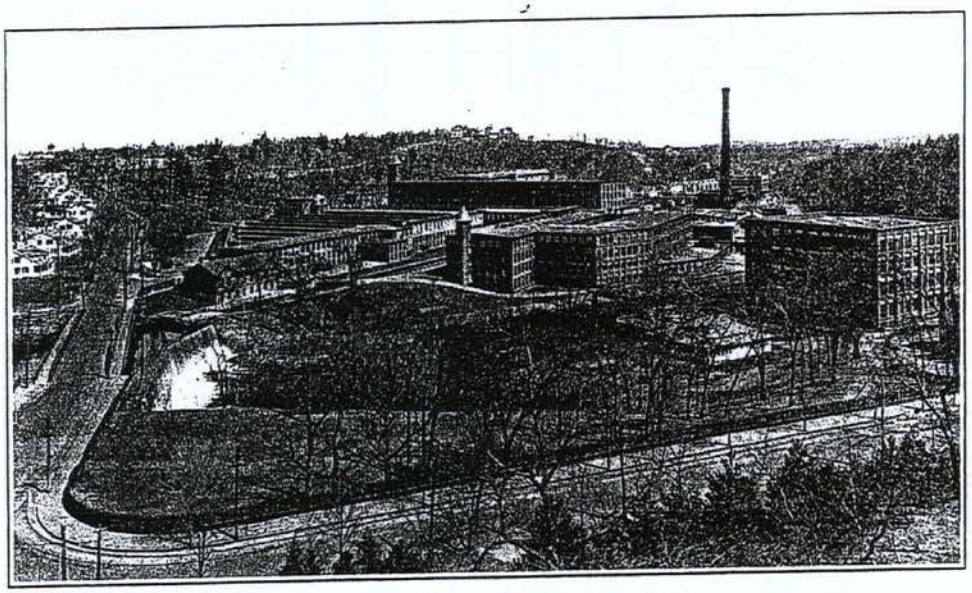


Other Industries of New England.
Boston: State Street Trust Co., 1924. P.
32.

ILL. 2

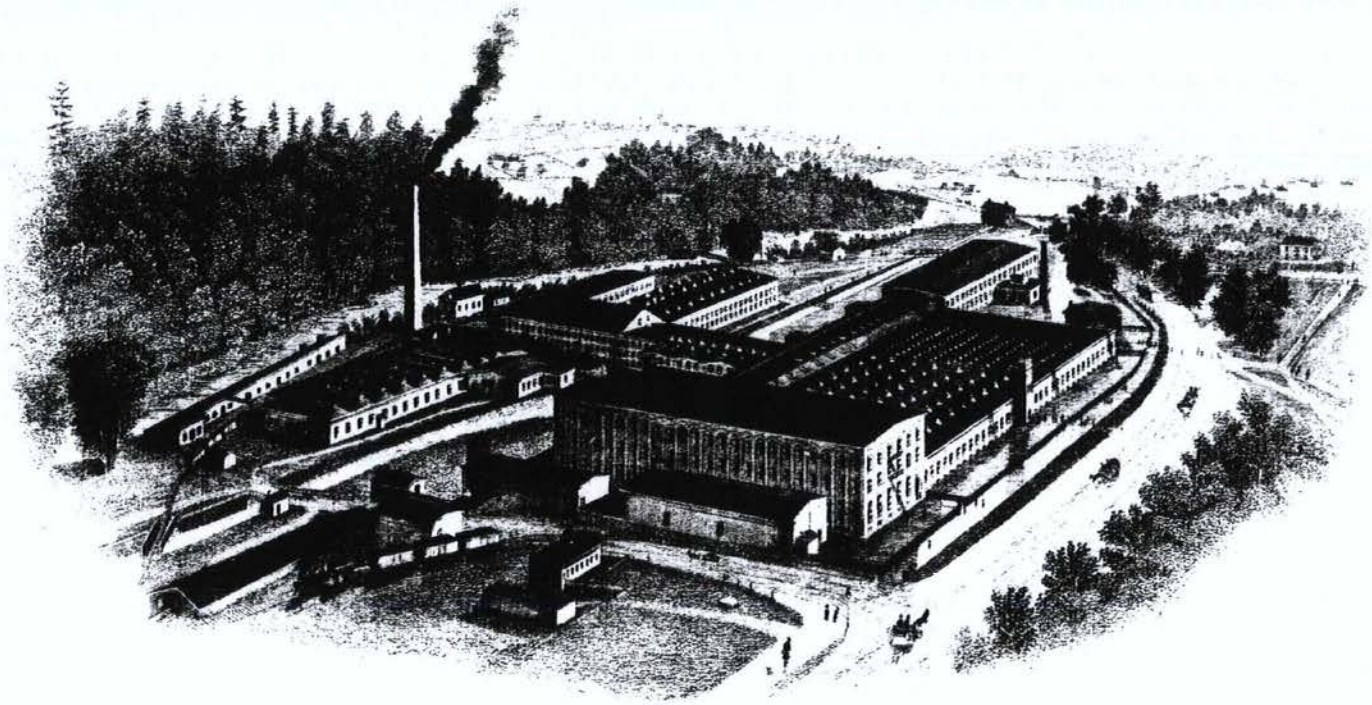


LANCASTER MILLS, CLINTON, IN THE '60s



LANCASTER MILLS, CLINTON, 1928

History of Massachusetts Industries, Vol. II. Orra Stone. Boston: S.J. Clarke Publishing Co., 1930. p. 1897



Lancaster Mills, Clinton, Mass.
Collections of the American Textile Museum.

ILL. 3

ILL. 4

a River Through Time. Clinton Historical Society, Clinton, MA.

ENGINEERING RECORD SERIES

STEAM POWER PLANTS

THEIR DESIGN AND CONSTRUCTION

BY

HENRY C. MEYER, JR., M.E.

Consulting and Mechanical Engineer

THIRD EDITION

ENTIRELY REWRITTEN AND ENLARGED

McGRAW-HILL BOOK COMPANY
239 WEST 39TH STREET, NEW YORK
6 BOUVERIE STREET, LONDON, E. C.
1912

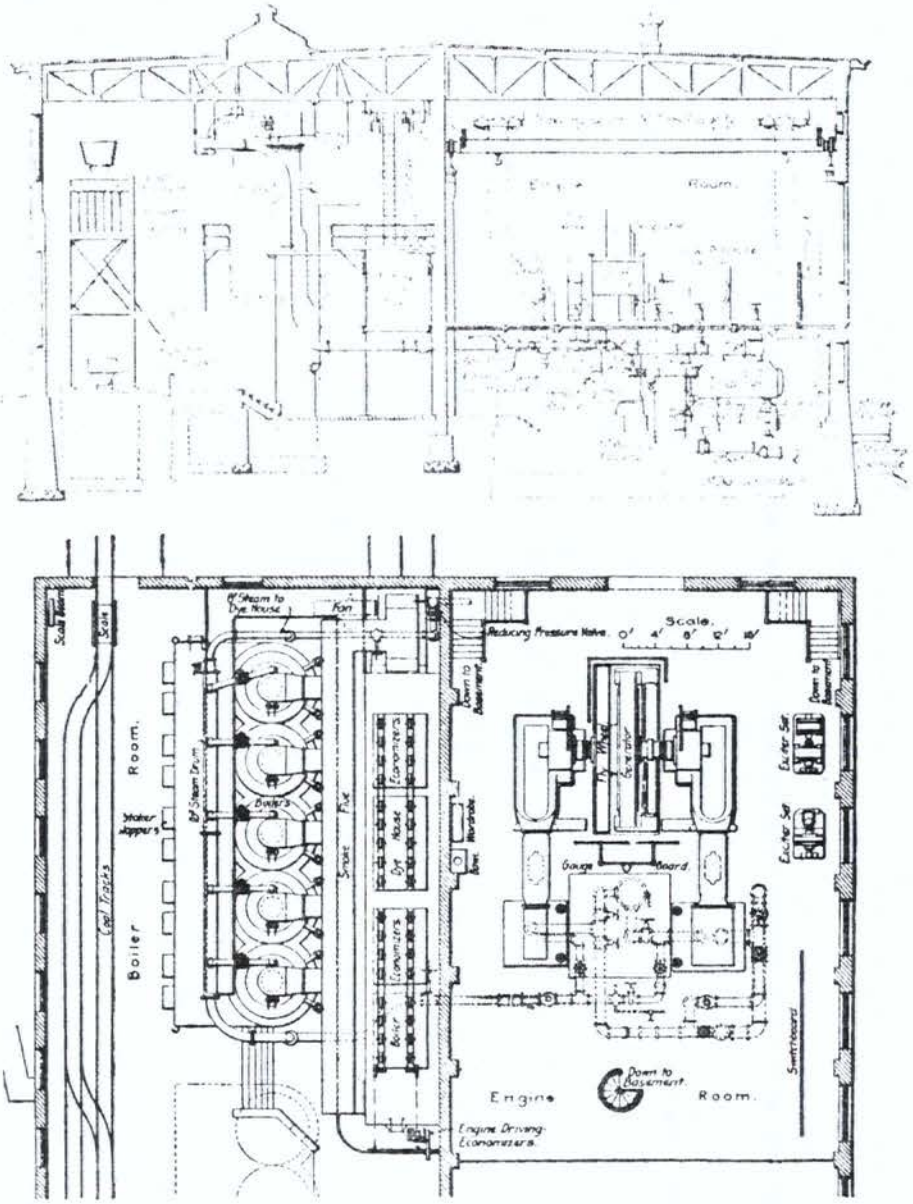


Fig. 18. Power Plant, Lancaster Mills, Clinton, Mass.
(Lockwood, Greene & Co., Engineers.)

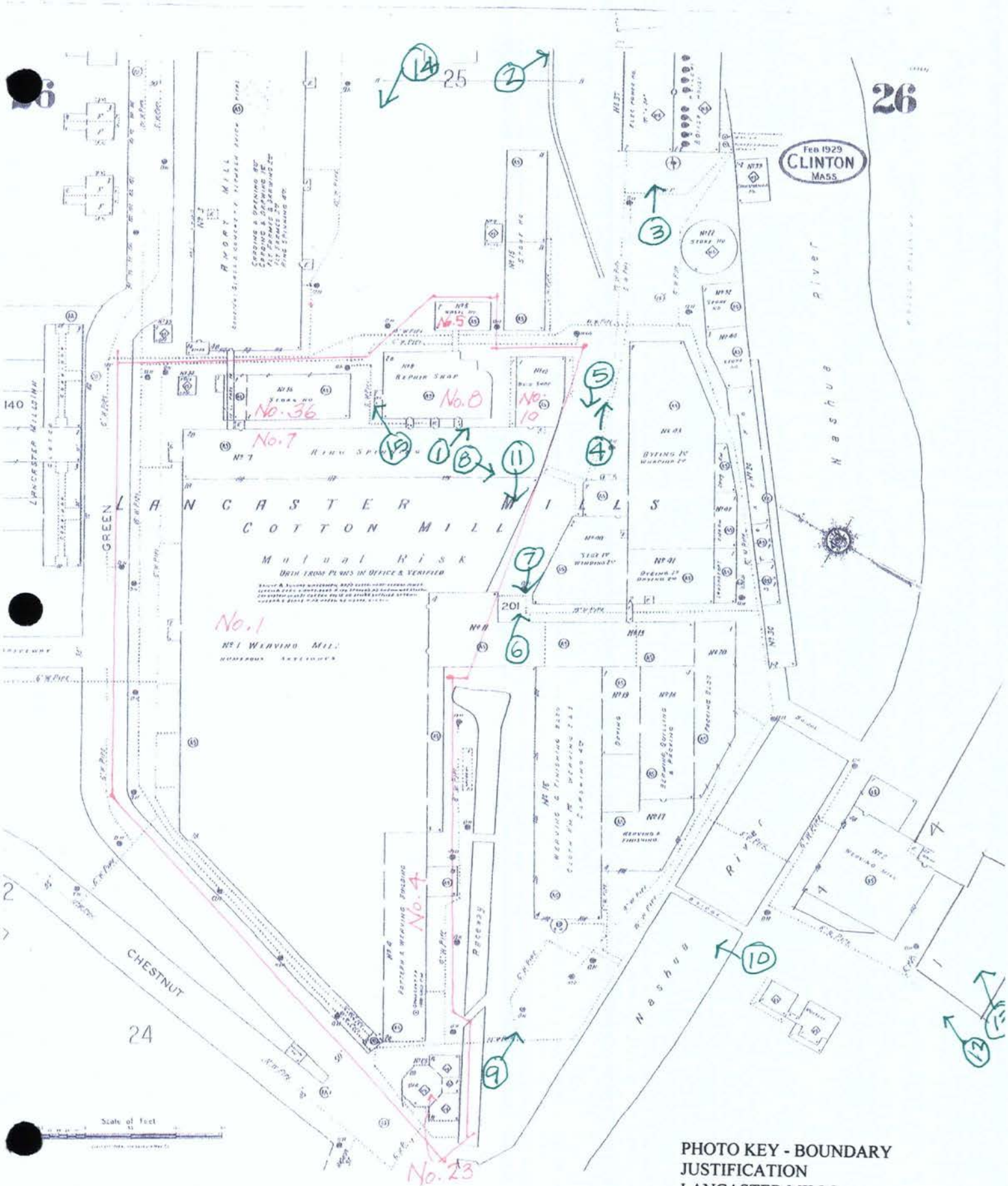


PHOTO KEY - BOUNDARY JUSTIFICATION
LANCASTER MILLS
1 & 75 Green Street
Clinton, MA

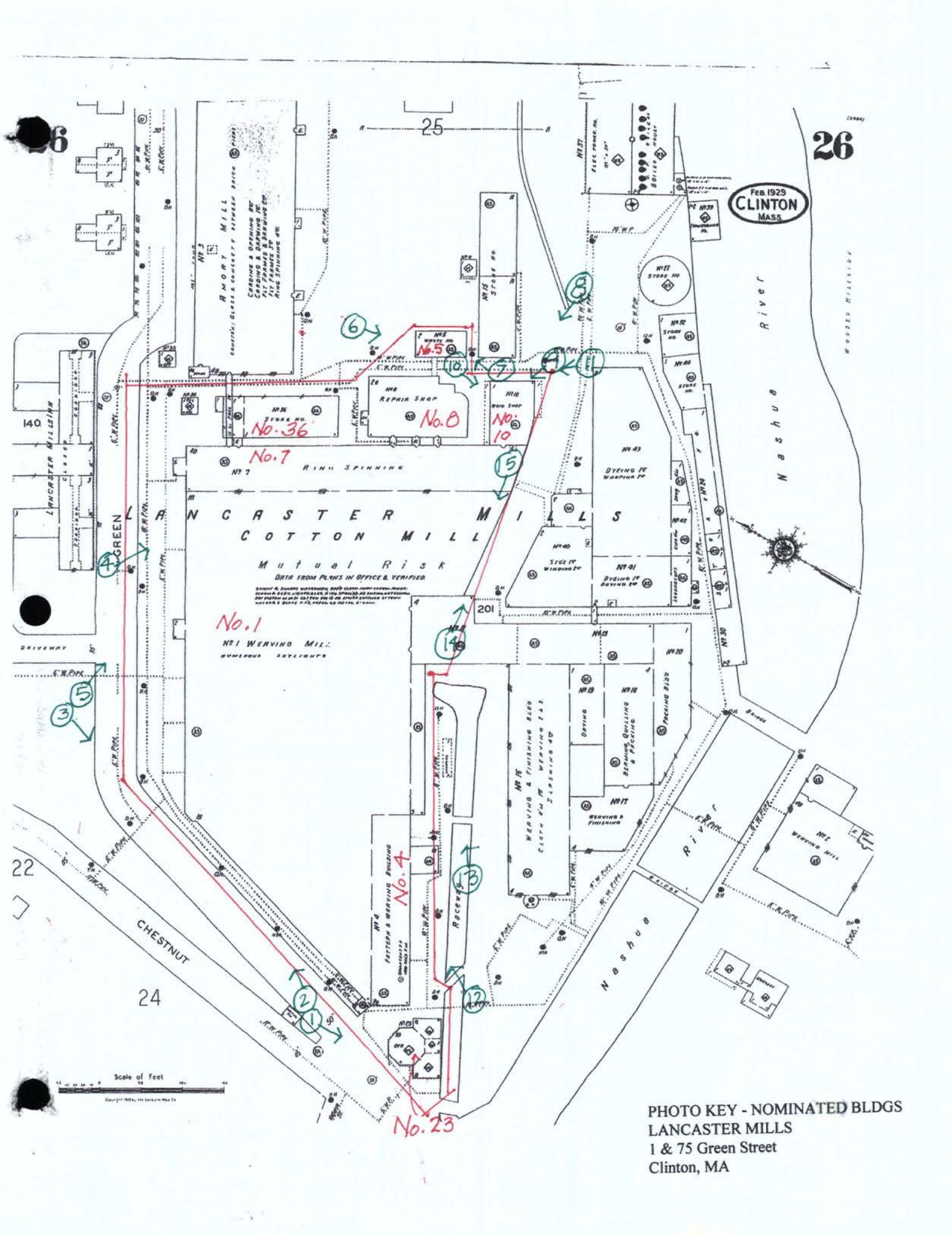


PHOTO KEY - NOMINATED BLDGS
LANCASTER MILLS
1 & 75 Green Street
Clinton, MA

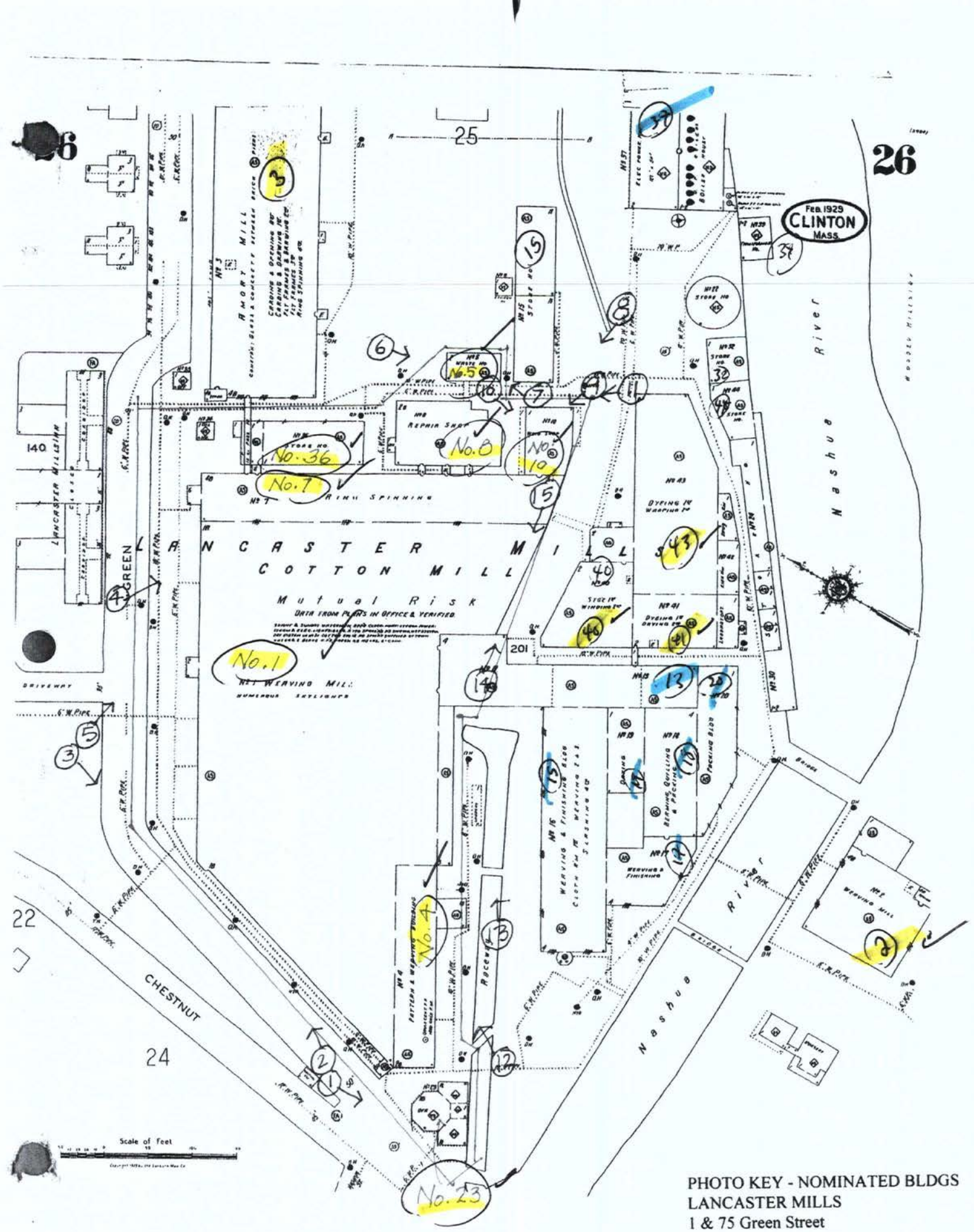
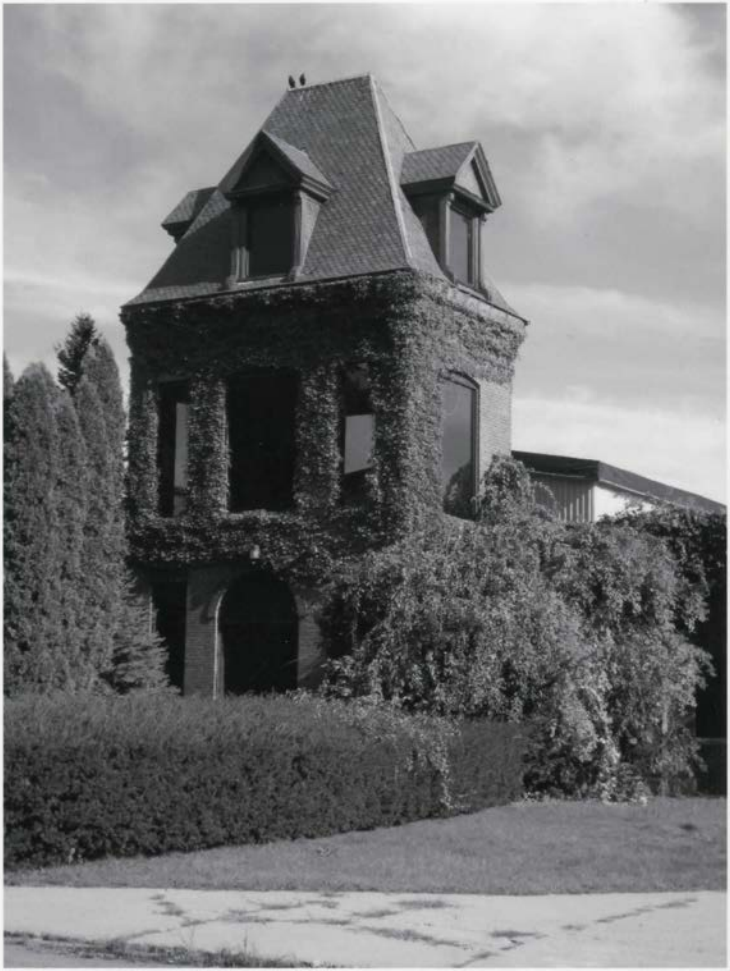


PHOTO KEY - NOMINATED BLDGS
LANCASTER MILLS
1 & 75 Green Street
Clinton, MA



Lancaster Mills, Clinton

Photo 1

Lancaster Mills
Mill #1
Clinton, MA

Photo 2

Lancaster Mills
Mill #1
Clinton, MA

PHOTO 3

Lancaster Mills
Mill #3, Amory Mill
Clinton, MA

PHOTO 4

Lancaster Mills
Mill #3, Amory Mill
Clinton, MA

Photos

Lancaster Mills
Mill #7
Clinton, MA

PHOTO 6

Lancaster Mills
Mill #7
Clinton, MA

PHOTO 7

Lancaster Mills
Mill #7
Clinton, MA

PHOTO 8

Lancaster Mills
Mill #7
Clinton, MA

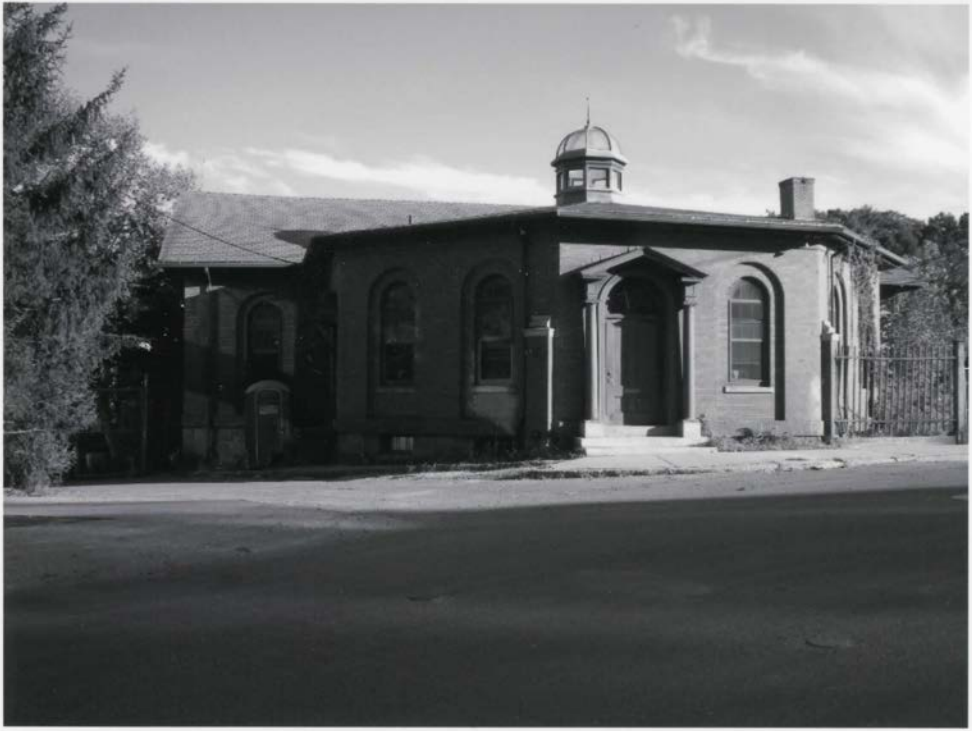


Photo 9

Lancaster Mills
Building #23
Clinton, MA

PHOTO 10

Lancaster Mills
Mill #2
Clinton, MA

PHOTO 11

Lancaster Mills
Mills 40 + 41
Clinton, MA

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s.CARRIERS

Lancaster Mills, Clinton

Amory Mill

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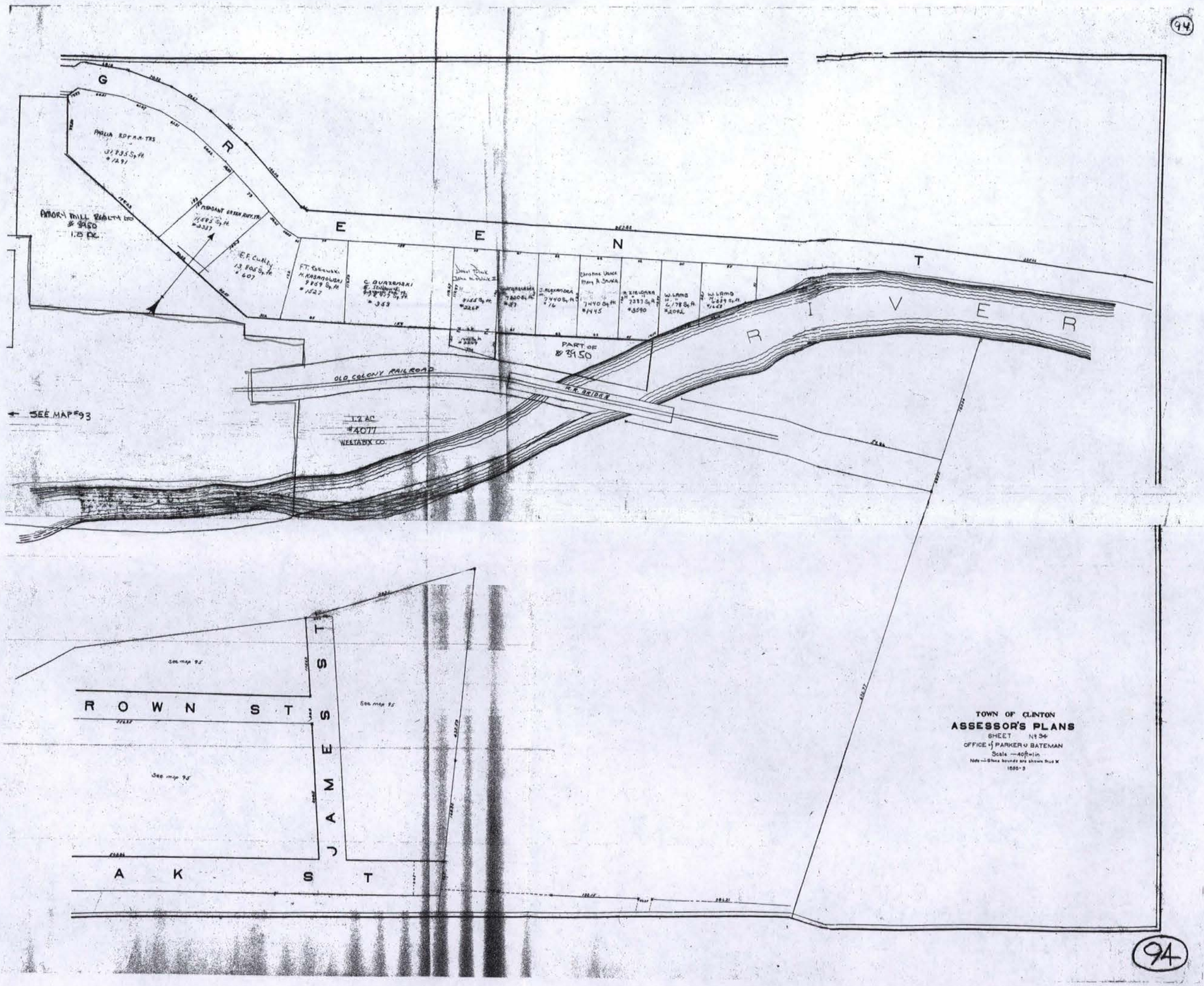
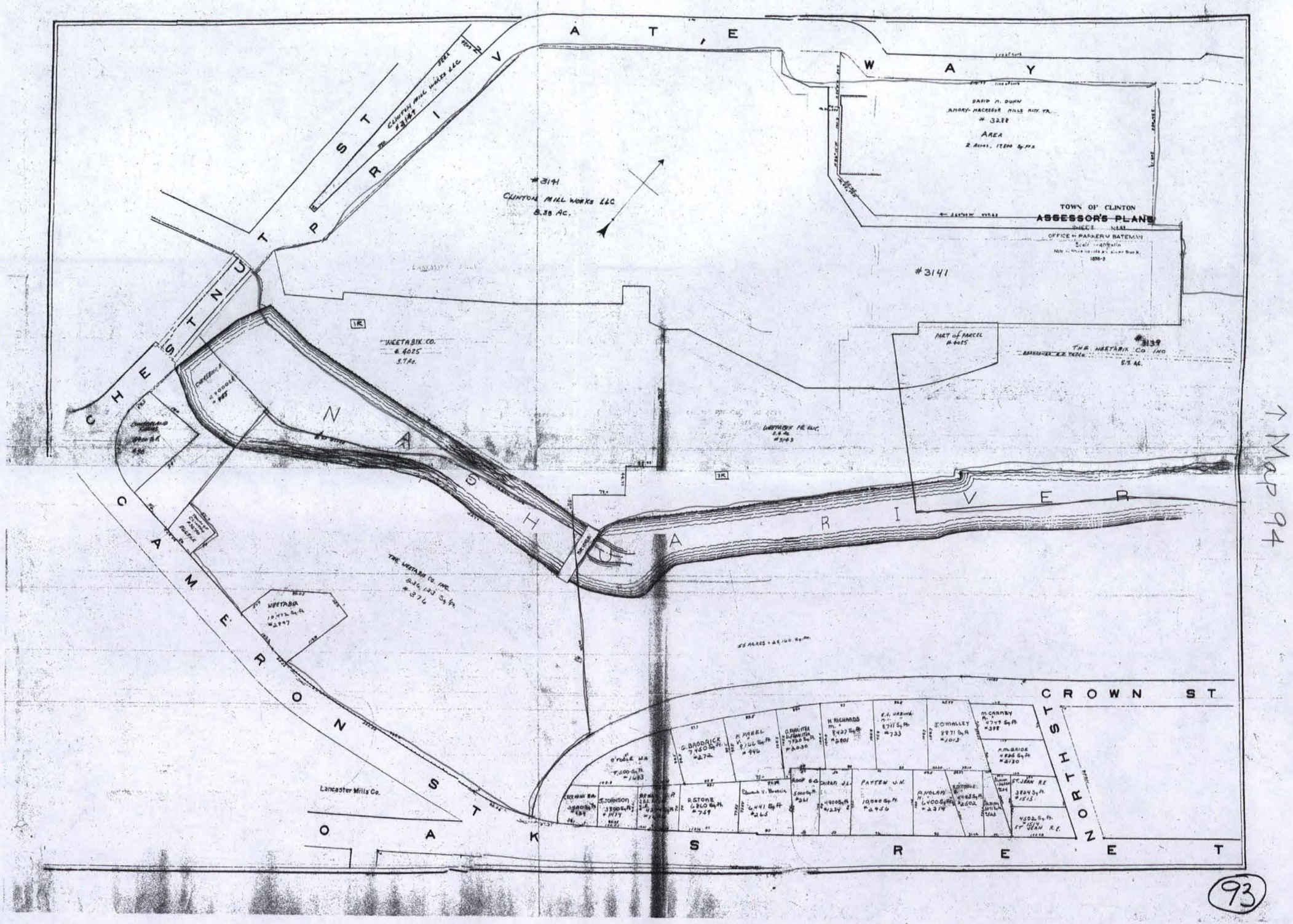
Lancaster Mills
Clinton, MA



Lancaster Mills
Clinton, MA



HUDSON, MASSACHUSETTS

7.5 X 15 MINUTE SERIES (TOPOGRAPHIC)

LANCASTER MICLS

Hudson
MASSACHUSETTS

CLINTON (WORCESTER) MA

1:25 000-scale *metric* topographic map

7.5 X 15 MINUTE QUADRANGLE SHOWING

- Contours and elevations in meters
- Highways, roads and other manmade structures
- Water features
- Woodland areas
- Geographic names

GEOLOGICAL SURVEY

1997

Produced by the United States Geological Survey

Derived from imagery taken 1980 and other sources. Photoinspected using imagery dated 1997; no major culture or drainage changes observed. Survey control current as of 1981
Boundaries, other than corporate, revised 1998

North American Datum of 1927 (NAD 27). Projection and 1000-meter grid: Universal Transverse Mercator, zone 19
10 000-foot ticks: Massachusetts coordinate system, mainland zone

North American Datum of 1983 (NAD 83) is shown by dashed corner ticks. The values of the shift between NAD 27 and NAD 83 for 7.5-minute intersections are obtainable from National Geodetic Survey NADCON software

There may be private inholdings within the boundaries of the National or State reservations shown on this map

CONTOUR INTERVAL 3 METERS
NATIONAL GEODETIC VERTICAL DATUM OF 1929
CONTROL ELEVATIONS SHOWN TO THE NEAREST 0.1 METER
OTHER ELEVATIONS SHOWN TO THE NEAREST 0.5 METER

THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS

CONVERSION TABLE

Meters	Feet
1	3.2808
2	6.5617
3	9.8425
4	13.1234
5	16.4042
6	19.6850
7	22.9659
8	26.2467
9	29.5276
10	32.8084

To convert meters to feet multiply by 3.2808

To convert feet to meters multiply by 0.3048

DECLINATION DIAGRAM

UTM grid convergence (GN) and 1986 magnetic declination (MN) at center of map
Diagram is approximate

ADJOINING MAPS

1	2	3
4		5
6	7	8

1 Fitchburg
2 Ayer
3 Billerica
4 Sterling
5 Maynard
6 Worchester North
7 Marlborough
8 Framingham

ISBN 0-607-89585-3

Topographic Map Symbols

Primary highway, hard surface
Secondary highway, hard surface
Light-duty road, hard or improved surface
Unimproved road; trail
Route marker: Interstate; U. S.; State
Railroad: standard gage; narrow gage
Bridge; drawbridge
Footbridge; overpass; underpass
Built-up area: only selected landmark buildings shown
House; barn; church; school; large structure
Boundary:
- National, with monument
- State
- County, parish
- Civil township, precinct, district
- Incorporated city, village, town
- National or State reservation; small park
- Land grant with monument; found section corner
- U. S. public lands survey: range, township; section
- Range, township; section line: location approximate

Fence or field line
Power transmission line, located tower
Dam; dam with lock
Cemetery; grave
Campground; picnic area; U. S. location monument
Windmill; water well; spring
Mine shaft; prospect; adit or cave
Control: horizontal station; vertical station; spot elevation
Contours: index; intermediate; supplementary; depression
Distorted surface: strip mine, lava; sand
Sounding; depth curve
Perennial lake and stream; intermittent lake and stream
Rapids, large and small; falls, large and small
Swamp; marsh
Submerged marsh; land subject to controlled inundation
Woodland; scattered trees
Scrub; mangrove
Orchard; vineyard

A pamphlet describing topographic maps is available on request

FOR SALE BY U.S. GEOLOGICAL SURVEY
P.O. BOX 25286, DENVER, COLORADO 80225

Grid 19
1. 279340 4698800
2. 279500 4698960
3. 279760 4698900
4. 279500 4698580
5. 279280 4698600

SCALE 1:25 000
1 CENTIMETER ON THE MAP REPRESENTS 250 METERS ON THE GROUND
CONTOUR INTERVAL 3 METERS

KILOMETERS 1 .5 0 1 2 3 4
MILES 1 .5 0 1 2
500 0 1000 2000 3000 4000 5000 METERS
1000 0 2000 4000 6000 8000 10 000 12 000 14 000 16 000 FEET

HUDSON, MASSACHUSETTS
1997

19/4696220/288620
HUDSON TOWN HALL
Main Street, Hudson MA

National Register of Historic Places

Note to the record

Additional Documentation: 2014

UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

NATIONAL REGISTER OF HISTORIC PLACES
EVALUATION/RETURN SHEET

REQUESTED ACTION: ADDITIONAL DOCUMENTATION

PROPERTY NAME: Lancaster Mills

MULTIPLE NAME:

STATE & COUNTY: MASSACHUSETTS, Worcester

DATE RECEIVED: 11/19/13 DATE OF PENDING LIST:
DATE OF 16TH DAY: DATE OF 45TH DAY: 1/05/14
DATE OF WEEKLY LIST:

REFERENCE NUMBER: 10000005

REASONS FOR REVIEW:

APPEAL:	N	DATA PROBLEM:	N	LANDSCAPE:	N	LESS THAN 50 YEARS:	N
OTHER:	N	PDIL:	N	PERIOD:	N	PROGRAM UNAPPROVED:	N
REQUEST:	N	SAMPLE:	N	SLR DRAFT:	N	NATIONAL:	N

COMMENT WAIVER: N

___ACCEPT ___RETURN ___REJECT _____DATE

ABSTRACT/SUMMARY COMMENTS:

Additional Documentation Approved

RECOM./CRITERIA Accept

REVIEWER Edson Beall DISCIPLINE History

TELEPHONE _____ DATE 1-3-14

DOCUMENTATION see attached comments Y/N see attached SLR Y/N

If a nomination is returned to the nominating authority, the nomination is no longer under consideration by the NPS.

Data Sheet

Lancaster Mills

Green and Cameron Streets, Clinton, MA

MHC No.	Building no. on 1929 Sanborn Insurance Map	Construction Dates	Use shown on 1929 Insurance Map	Exterior Walls	Style	Contributing/ Non-contributing
136	1	1844-1849; 1879-1898	No. 1 Weaving Mill	Brick	Italianate	C/B
165	2	1879-1898; 1975, 1996	No. 2 Weaving Mill	Brick	Late 19th c Industrial	C/B
166	3	1910	Amory Mill: Carding & Opening Basement; Carding & Drawing 1st; Fly Frames & Drawing 2nd; Fly Frames 3rd; Ring Spinning 4th	Glass, concrete, and brick	Early 20th c Industrial	C/B
167	4	1844-1848; 1857-1879	Pattern & Weaving Bldg	Brick	Italianate	C/B
168	5	1879-1898	Waste House	Brick	19th c Industrial	C/B
169	7	1857 -1870; 1879 -1898	Ring Spinning *[former Carding Mill]*	Brick	Italianate	C/B
170	8	1879-1898	Repair Shop	Brick	19th c Industrial	C/B
171	10	1879-1898	Wood Shop	Brick	19th c Industrial	C/B
172	23	1857- 1870; 1918	Office	Brick	Italianate	C/B
173	31	1920-1922	Cotton Storage	Concrete & Brick	20th c Industrial	C/B
174	36	1848-1857	Store House	Brick	19th c Industrial	C/B
175	40	1844-1848; 1879-1898; 1899	Storage 1st; Winding 2nd	Brick & Stucco	Italianate	C/B
176	41	1844-1848; 1879-1901	Dyeing 1st; Drying 2nd	Brick	19th c Industrial	C/B
177	43	1844-1848; 1879-1898; 1901-1904	Dyeing 1st; Warping 2nd	Brick	Italianate	C/B
178	No Number	1994	1R Green Street/Parcel 4025	Concrete block	No Style	NC/B
179	No Number	2003	99 Green Street/Parcel 3139	metal	No Style	NC/B
915	No Number	ca. 1990s	Foot Bridge across Nashua River to No. 2 Weaving Mill	metal	No Style	NC/St

revision April 2010

National Register of Historic Places
Memo to File

Correspondence

The Correspondence consists of communications from (and possibly to) the nominating authority, notes from the staff of the National Register of Historic Places, and/or other material the National Register of Historic Places received associated with the property.
Correspondence may also include information from other sources, drafts of the nomination, letters of support or objection, memorandums, and ephemera which document the efforts to recognize the property.

UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

NATIONAL REGISTER OF HISTORIC PLACES
EVALUATION/RETURN SHEET

REQUESTED ACTION: NOMINATION

PROPERTY NAME: Lancaster Mills

MULTIPLE NAME:

STATE & COUNTY: MASSACHUSETTS, Worcester

DATE RECEIVED: 12/30/09 DATE OF PENDING LIST: 1/20/10
DATE OF 16TH DAY: DATE OF 45TH DAY: 2/13/10

DATE OF WEEKLY LIST:

REFERENCE NUMBER: 10000005

REASONS FOR REVIEW:

APPEAL:	N	DATA PROBLEM:	N	LANDSCAPE:	N	LESS THAN 50 YEARS:	N
OTHER:	N	PDIL:	N	PERIOD:	N	PROGRAM UNAPPROVED:	N
REQUEST:	Y	SAMPLE:	N	SLR DRAFT:	Y	NATIONAL:	N

COMMENT WAIVER:N

✓ ACCEPT ___RETURN ___REJECT_____DATE

ABSTRACT/SUMMARY COMMENTS:

RECOM./CRITERIA_____

REVIEWER_____ DISCIPLINE_____

TELEPHONE_____ DATE_____

DOCUMENTATION see attached comments Y/N see attached SLR Y/N

If a nomination is returned to the nominating authority, the nomination is no longer under consideration by the National Park Service.

United States Department of the Interior

NATIONAL PARK SERVICE
1849 C Street, N.W.
Washington, D.C. 20240

IN REPLY REFER TO:

HABS/HAER/HALS/CRGIS (2270)

13 February 2009

Chris Starr
Manager, Clinton Millworks LLC
C/O Starr Development Partners LLC
90 Concord Avenue
Belmont, MA 02478

Leslie Donovan
Tremont Preservation Services
374 Congress Street, Suite 301
Boston, MA 02210

Dear Mr. Starr and Ms. Donovan:

I am writing to support the nomination of the Lancaster Mills buildings in Clinton, MA, to the National Register of Historic Places.

The existing complex represents an important industrial site in the evolution of both weaving technology and factory architecture. As the site of the first mechanized production of gingham cloth, Lancaster Mills housed Erastus Bigelow's newly patented (1845) looms that overcame the difficulties of weaving the very basic, rough plaid cloth that became a staple of nineteenth century common wear and household fabrics. The factory attracted a variety of highly skilled tradesmen and production workers to the region, leading to the founding of Clinton, Massachusetts.

Equally as important, the buildings represent a departure from American textile mill construction of the period in roof configuration and power transmission system. Lighting multi-story structures was usually accomplished with ample windows, but attic or top floor lighting, as well as lighting single story buildings and sheds, often utilized clerestory lanterns. The Lancaster Mills single story weave shed appears to have a very different type of roof system, one that resembles a cross between an early saw-tooth shape and a monitor system placement – a discrete saw-tooth (as opposed to the continuous saw-tooth of the later nineteenth century). The same rare qualities pertain to the under-floor power transmission system. In nearly all the nineteenth century sites documented by the HAER program, power has been transmitted to shafting hung near the ceiling with belts running down to drive the machinery. At the Lancaster Mills, the unique natural lighting provided by the discrete saw-tooth roof and the absence of

literally hundreds of flapping belts between the floor and ceiling would have provided a well-lit and substantially safer workspace than contemporary textile mills.

Again, in my opinion, the technological importance of the first mechanized gingham production, a unique roof system, and a rare under-floor power transmission system, should make this structure a good candidate for nomination to the National Register of Historic Places.

I am currently Acting Manager of the Historic American Engineering Record (HAER), a program of the National Park Service that has been documenting historic engineering and industrial works for forty years. The study that led to its formation was a survey of New England textile mills. The HAER collection currently has documentation in the forms of written reports, measured drawings, and large-format photographs, on over 8,200 sites throughout the United States, available to the public through the Library of Congress' American Memory website. Please note that I am not associated with the National Register of Historic Places and am not involved in decisions involving properties nominated for listing on the Register.

If I can be of further assistance, please do not hesitate to contact me.

Sincerely,

Richard O'Connor, Ph.D., Chief
Heritage Documentation Programs
(HABS/HAER/HALS/CRGIS)
phone: 202-354-2186
fax: 202-371-6473
e-mail: richard_o'connor@nps.gov

The Commonwealth of Massachusetts

William Francis Galvin, Secretary of the Commonwealth
Massachusetts Historical Commission

December 22, 2009

Mr. J. Paul Loether
National Register of Historic Places
Department of the Interior
National Park Service
1201 Eye Street, NW, 8th floor
Washington, DC 20005

Dear Mr. Loether:

Enclosed please find the following nomination form:

Lancaster Mills, Clinton (Worcester), MA

The nomination has been voted eligible by the State Review Board and has been signed by the State Historic Preservation Officer. The owners of the properties were notified of pending State Review Board consideration 30 to 45 days before the meeting and were afforded the opportunity to comment.

One letter of support has been received.

We request an expedited review of this nomination.

Sincerely,

Betsy Friedberg

Betsy Friedberg
National Register Director
Massachusetts Historical Commission

enclosure

cc: Leslie Donovan, Laura Kline, consultants
Chris Starr, Clinton Millworks LLC
David Dunn, McGregor Mills LLC
Weetabix Co., Inc.
Christine Quirk, Clinton Historical Commission
Kevin Haley, Clinton Board of Selectmen
Chair, Clinton Planning Board

220 Morrissey Boulevard, Boston, Massachusetts 02125
(617) 727-8470 • Fax: (617) 727-5128
www.sec.state.ma.us/mhc

The Commonwealth of Massachusetts
William Francis Galvin, Secretary of the Commonwealth
Massachusetts Historical Commission

January 5, 2010

Mr. J. Paul Loether
National Register of Historic Places
Department of the Interior
National Park Service
1201 Eye Street, NW, 8th floor
Washington, DC 20005

Dear Mr. Loether:

I am writing to follow up on our December 22, 2009, transmittal of the National Register nomination for the Lancaster Mills, Clinton (Worcester County), Massachusetts. In our cover letter, we had requested expedited review of the nomination. To clarify, I request that the review of this nomination be expedited by shortening the Federal Register review period.

Thank you.

Sincerely,

Brona Simon

Brona Simon
State Historic Preservation Officer
Executive Director
Massachusetts Historical Commission

220 Morrissey Boulevard, Boston, Massachusetts 02125
(617) 727-8470 • Fax: (617) 727-5128
www.sec.state.ma.us/mhc

Chris Starr
<cstarr@starrdev.com>
01/19/2010 12:02 PM

To "Patrick Andrus (patrick_andrus@nps.gov)" <patrick_andrus@nps.gov>
cc
bcc
Subject Lancaster Mill Clinton MA NR District

Hi Patrick,

Attached please find a letter of support for the above referenced proposed NR District.

Chris

Chris Starr
Starr Development Partners LLC
90 Concord Avenue
Belmont, MA 02478
office: 617-484-8686
email: cstarr@starrdev.com
web: www.starrdev.com

nr support letter.pdf

Clinton Millworks LLC
C/O Starr Development Partners LLC
90 Concord Avenue
Belmont, Mass 02478
617-484-8686

January 18, 2010

Mr. Patrick Andrus
National Park Service – National Register of Historic Places
1201 I Street, NW
Washington, DC 20005

Re: Lancaster Mills National Register Historic District

Dear Mr. Andrus

As one of the three property owners within the proposed Lancaster Mills Historic District in Clinton, Massachusetts, I am writing to express my complete support for the proposed District. Over the last 18 months we have worked closely and diligently with the Town of Clinton, neighbors and the State Historic Preservation Office in Massachusetts (Massachusetts Historic Commission) to create a District. At a meeting of the MHC Board on September 9, 2009, the Board voted unanimously in favor of the creation of such District. The nomination was forwarded to the National Park Service on December 22, 2009.

The Lancaster Mills complex is a unique and significant structure. Built in phases starting in 1844, it was the country's largest gingham cloth factory. The complex is an exceptional example of innovation in manufacturing buildings not only given its size but its technological innovations as well. It was the first textile mill powered entirely by electric generators and is an extremely rare survivor of a one-story weaving mill that exhibited an unusual skylight and monitor roof system. The Lancaster Mills contributed to Clinton's founding in 1850. The complex retains integrity of location, design, setting, materials, and workmanship.

A National Register District will make possible the renovation of our portion of the Mill complex. The proposed rehabilitation represents not only the historic preservation of a unique part of our history, but also plays an important role in revitalizing a significant, currently unused asset in the Town of Clinton. With new life as 132 housing units, plus commercial space, Lancaster Mills will preserve its heritage, provide economic benefit to the Town of Clinton, and create a new community of residents.

Sincerely,

Chris Starr

bookdr@aol.com
01/20/2010 05:49 AM

To patrick_andrus@nps.gov
cc
bcc
Subject Lancaster Mills National Historic Register consideration

Good morning Mr. Andrus,

The attached letter is in full support of the application for the creation of the Lancaster Mills Historic District in Clinton Massachusetts.

Thank you for your consideration.

Dave Dunn, Trustee
Macgregor Mills
75 Green St.
Clinton, MA. 01510

MacMills 1-20-10 Historic ltr.pdf

Macgregor Mills LLC

75 Green Street
Clinton Massachusetts

January 19, 2010

Mr. Patrick Andrus
National Park Service – National Register of Historic Places
Washington, DC

Re: Lancaster Mills National Register Historic District

Dear Mr. Anders,

As one of the property owners within the proposed Lancaster Mills Historic District in Clinton, Massachusetts, I am writing to express my full support for the proposed District.

This recognition is significant to our nation, to identify and preserve our heritage. Lancaster Mills was one of the birthplaces of modern America and helped develop our great nation from a home-based farm society to an industrial based nation. History needs to be preserved for future generations to look back and see from where we have come. Our building was one of the latest Lancaster Mills Buildings and celebrates its 100th birthday in 2010. This proposed district is significant and we do fully support its creation.

The Lancaster Mills complex is a unique and significant structure. Built in phases starting in 1844, it was the country's largest gingham cloth factory. Our building, The Amory Spinning Mill, was the first explosion reduced cotton mill in America. It is a fine example of direct bearing steel and reinforced concrete. Pictures from its early days show a workforce mostly made up of children, a reminder of just how far we have come in just a decade. It was the first textile mill powered entirely by electric generators and is an extremely rare survivor of a one-story weaving mill that exhibited an unusual skylight and monitor roof system. The Lancaster Mills contributed to Clinton's founding in 1850. The complex retains integrity of location, design, setting, materials, and workmanship.

I am the seventh generation Clintonian to be employed in the Mills of Clinton, my children are the eighth and my grandchildren are the ninth. And I am the first to own one of these fine old mill buildings

We ask for your help in the creation of the Lancaster Mills Historic District and its listing on the National Register of Historic Places.

Sincerely,

Dave Dunn, Trustee

"Leslie Donovan"
<donovanl@erols.com>
03/18/2010 04:10 PM

To <Roger_Reed@nps.gov>
cc
bcc
Subject RE: Lancaster Mills

History: This message has been replied to.

Roger,

I just spoke to Kate Richards at the NR about using the digital files from my 35mm images. Although the b & w are large enough files, the color are not (which I just discovered). So, I agreed to go back to the site and take them at a higher resolution with my digital camera, so that they will meet the NR requirements.

Not sure how to take the interiors without a large flash, but I'll see how it goes.

Leslie

-----Original Message-----
From: Roger_Reed@nps.gov [mailto:Roger_Reed@nps.gov]
Sent: Tuesday, March 16, 2010 8:47 AM
To: donovanl@erols.com
Subject: Lancaster Mills

Leslie,

How are things going on the Part II? We never received the photo disc for the Lancaster Mill images at the correct resolution: 1200x1600 pixels. What was sent was at 800x1000.

Thanks

Roger

Roger G. Reed
Historian
National Register of Historic Places
1201 Eye Street
Eighth Floor
Washington, DC 20005
202-354-2278

The Commonwealth of Massachusetts

William Francis Galvin, Secretary of the Commonwealth
Massachusetts Historical Commission

September 17, 2013

J. Paul Loether
National Park Service 2280, 8th Floor
National Register of Historic Places
1201 I (eye) Street, NW
Washington, D.C. 20005

Dear Mr. Loether:

Re: Technical Amendments

We are enclosing revised district data sheets for the following National Register Districts:

- Lancaster Mills, Clinton (Worcester County)—listed 1/29/2010 (Data sheet revised April 2010 to clarify building uses at the request of Roger Reed, Historian, National Register and National Historic Landmarks, who was reviewing a Federal historic preservation certification application.) 10000005

- Winthrop Center/Metcalf Square Historic District, Winthrop (Suffolk County)—listed 3/23/2010 (Data sheet revised April 2010 to correct several Historic Resources Survey Numbers/MHC #s) 10000098

In both cases, the number of contributing and noncontributing resources remains as it was when the properties were listed.

Please let me know if you need additional information to update your files.

Sincerely,

Betsy Friedberg

Betsy Friedberg
National Register Director
Massachusetts Historical Commission

Enclosure
CC: Clinton Historical Commission
Winthrop Historical Commission

220 Morrissey Boulevard, Boston, Massachusetts 02125
(617) 727-8470 • Fax: (617) 727-5128
www.state.ma.us/sec/mhc