NPS Form 10-900
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United States Department of the Interior
National Park Service

National Register of Historic Places Inventory—Nomination Form

For NPS use only
received OCT 9 1984
date entered

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

1. Name

historic North Canal Historic District

and/or common North Canal Historic District

2. Location

Roughly bounded by Merrimack and Spicket Rivers, North Canal, and Broadway

street & number See attached owner/property list N/A not for publication

city, town Lawrence N/A vicinity of

state Massachusetts code 025 county Essex code 009

3. Classification

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

4. Owner of Property

name See attached owner/property list

street & number

city, town N/A vicinity of state

5. Location of Legal Description

courthouse, registry of deeds, etc. North Essex Registry of Deeds

street & number 381 Common Street

city, town Lawrence state Massachusetts

6. Representation in Existing Surveys

title Historic American Engineering Record/ Inventory of the Historic Assets of the Commonwealth has this property been determined eligible? ___ yes X no

date 1976, 1978 X federal X state ___ county ___ local

depository for survey records Merrimack Valley Textile Museum; Massachusetts Historical Commission

city, town North Andover and Boston state Massachusetts

7. Description

North Canal Historic District, Lawrence, MA

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

Describe the present and original (if known) physical appearance

The North Canal Historic District is a 60-acre, mile-long complex of nineteenth and early twentieth century hydraulic structures bridges, textile mills, and related buildings on the north and south banks of the North Canal of the Merrimack River. Part of the development which began as a planned industrial venture of the Essex Company in 1845, the buildings are situated on dredged and partially filled land. The District contains approximately 100 buildings, most of which are used commercially or industrially; two ca. 1848 gatekeeper's houses and a boarding house are still used residentially. The district has only nine intrusions.

The Merrimack River enters Lawrence at the City's western edge and drains the city, flowing east to the convergence with the Spicket and Shawsheen Rivers. The North Canal is located along and parallel to the Merrimack as it runs through Lawrence. As part of the original town plan of 1844, which provided for industrial development, the Canal is the focus of the central city's major streets. The district is two blocks south of the main commercial area along Essex Street; Broadway is the western terminus; Union Street intersects at the center; Marston Street and the Spicket River are near the eastern edge. Canal and Island Streets run along portions of the Canal, and the district is bisected by numerous railroad tracks and spurs. Canal Street was both a residential street and an industrial route; double rows of elms once lined the street which was shared by boardinghouses and mills.

The earliest buildings of significance date from the founding of Lawrence in the 1840s; the latest date from the last phase of mill construction in the period 1910-1925. The district represents a chronology of the development of industrial architectural styles and technological advances. The earliest industrial buildings are pitched-gable-roofed structures of thick coursed granite rubble; the latest are of fireproof, reinforced concrete construction with acres of floorspace which could accommodate huge looms under their flat roofs. Most buildings in the district are relatively unaltered and in fair to good condition; rear additions or enclosures of corrugated metal or frame construction are common. The Russell-Champion International Paper Mill site at the eastern end of the district is in ruins.

The industrial activities of the district included cotton and woolen manufacture, paper manufacture, machinery and metal fabrication, and mill-related industries such as bobbin and shuttle manufacture. The first power source, the Great Stone Dam ca. 1848, is intact; penstocks and raceways along the Canal are still in use. Some nineteenth century machinery is also intact. Although the mill company sites have been rebuilt continually, the district still contains examples of every period of development and technological advance; later intrusions have not destroyed the relationships of the mill complexes to the Canal. Impressive changes in scale, from boarding house, to machine shop, to 300-foot-long mills are still highly visible and not obscured by infill building. Most important are the views of the canal and its buildings from the Broadway and Union Street Bridges.Among technological advances evident in mill design, are the change from water to steam power, the

introduction of wide looms, changes made in accordance with the requirements of fire-insurance companies, the installation of ventilation and humidification systems, and the introduction of electricity and reinforced concrete. Human environments changed as well as later mills evidenced greater sensitivity to the health and safety of workers.

The following description is organized geographically from west to east. Because of the razing and rebuilding of mill company sites, no orderly chronology is possible and early structures (1848-1853) are found across the entire length of the district. Buildings or structures representative of type, period, and use are described here; buildings or structures previously listed on the National Register of Historic Places are indicated. Intrusions and vacant lots are listed on the District Data Sheet.

"THE UPPER ISLAND": BROADWAY TO AMESBURY STREET

The Upper Island, between the Broadway and Central Bridges, is the site of the Great Stone Dam and related structures and portions of two large mill complexes. The extant buildings were constructed between 1845 and 1910 on the site of the city's earliest mills. A large portion of the island at the eastern edge, the Atlantic Mill site, is devoted to parking for the City of Lawrence. Along the southern edge of the canal, the Atlantic and Upper pacific Mills from a continuous brick facade. The view terminates in small-scale frame structures clustered near the dam. The Pacific Mill chimney stack is the major vertical accent of the area.

Running parallel to the Merrimack River, the North Canal (Map 1; Photo 1; NR 1975), was begun in 1845 and completed in 1848. It is 5330 feet in length and ranges in width from 100 feet at the gatehouse to 60 feet at the Spicket wasteway, were it empties. Water enters the canal from the Essex Company mill pond above the dam. The canal is 12 feet deep at the head and 13 feet at the wasteway. In section, the canal is trapezoidal, with 4-foot retaining walls of random coursed granite blocks throughout its length. The granite rubble bottom is sealed with clay puddle. Several mills continue to use the canal's water, which delivers an average of 4000 cubic feet per second of water. Running parallel to the canal and 80 feet to the south is a line of sheet pilings. A single navigation lock at the head of the canal has been removed, but the lock walls remain. A set of three navigation locks at the end of the canal have been filled in. The canal is still maintained by the Essex Company.

The Great Stone Dam (Map 2; Photo 2; NR 1977), was built between 1845 and 1848 at the site of Bodwell's Falls, where the Merrimack drops approximately five feet. Footed on a bluestone bedrock ridge, the dam was built to pond up approximately thirty feet of water. The dam face is constructed on a trench of 8-foot by 18-foot granite blocks, laid in hydraulic cement and dowelled to the riverbed and to each other. The dam varies in height between 30 feet and 41 feet and is 35 feet thick at the base and 13 feet at the top. With its wing walls of dressed granite, the total length of the dam is 1629 feet. A 900-foot section spans the river; a 405-foot north wing connects to the North Canal; 2 324-foot south wing connects to the South Canal which was built in 1865. A concrete fishway was constructed in 1917, and a hydroelectric plant begun in 1978, but the dam has not been otherwise altered or repaved since its completion in 1848.

The Gatehouse (Map 2; NR 1975, as part of North Canal), completed in 1848, has 24 gates which are now electrically operated and control the amount of water entering sluice-ways. The exterior of the wooden frame gatehouse is clapboard-clad, with seven windows along each side. The Greek Revival Style treatment of the exterior includes wide pilasters at the corners, returns at the eaves, and a glazed transom over the entry. The 1845 Gatekeeper's House (Map 3; Photo 3) completes the complex. This small, clapboard-clad, gable-roofed Greek Revival house has a three-bay facade with central entry. The building rests on a granite rubble foundation. The entry is enframed by pilasters and a four-paned glazed transom. A series of real ells are perpendicular to the main structure. A pitched-roofed clapboarded barn (ca. 1860) is located to the rear of the house.

Pacific Mills

Immediately to the east across Broadway is the flat-roofed five story #2 storehouse of the Pacific Mills Company. (Map 5; Photo 4). Built ca. 1860, it is the earliest remaining building of the once-extensive Pacific Mill Yard. The small, asymmetrically-placed windows with granite sills are characteristic of early warehouse construction. The upper story is articulated with heavy corbelling between small attic windows. The southern portion of this early storehouse has been demolished. Two fragments of the 1852 granite rubble-walled Pacific weaving mill remain to the east of the storehouse.

The brick cotton weaving mill of the Pacific Mills, built in 1890, runs its full 300-foot length along the canal (Map #4). Known as the Upper Pacific, the flat-roofed two-story building was among the last additions to the Pacific Mill complex. Large, segmental arch windows with brick voussoirs and granite sills have not been altered in a recent renovation of the building. A tall, octagonal chimney was constructed in 1873-74 to allow the Pacific Mills to add steam to their operation. This once-free-standing chimney, designed by Hiram F. Mills of the Essex Company, is now enclosed by the Upper Pacific weaving mill. Two enclosed penstock racks, which channeled water into the turbines, are still intact in the canal wall. The Pacific Mill Company office at the western end of the weaving mill was constructed in 1887 after plans by Boston architect George Moffette, Jr. The two-story office rests on a high dressed granite foundation; round-arched Renaissance windows distinguish it from the functional treatment of the attached weave shed. Two buttresses, decorated with vertical brick panels, are carried above the decorated brick cornice. The buttresses flank the now-altered entry.The Pacific Mills cotton complex, constructed across the canal in the 1890s, is largely intact. The Pacific Mills Cotton Spinning Mill, a six-story flat-roofed brick structure built during 1888-89 (Map 13, Photo 5), and the #6 storehouse, a seven-story brick structure built in 1896, are located across the canal between methuen and Canal Streets on a site formerly occupied by Pacific Mills boarding houses (Map 15, Photo 5). The adjacent #7 cotton yarn mill (Map 11), built in 1905, is distinguished by molded brick entry ways; both buildings are of otherwise functional slow-burning mill construction. The one-story storehouse (1896; Map 15) and a six-story worsted mill (1910; Map 14) were among the last additions to the Upper Pacific Complex. All are of standard,

flat-roofed, brick mill construction. A ca. 1920 "addition" to the complex was the "Jerry's Broadway 5 Diner," a steel-clad, streamlined Modern diner which abuts the #7 mill. (Map 11)

At the eastern edge of the Upper Island, the Atlantic Mill Company spinning mill stands on the former site of a large complex constructed by the Essex Company in 1846 for the Atlantic Mill Company, as the second mill to begin in operation in Lawrence (Map 9, Photo 6). All of the original Atlantic Mill buildings have been razed, many when the Central Bridge was built in 1918. The present two-story brick building was constructed between 1906 and 1910 as a weaving shed. Its flat roof, large-segmental-arch windows, and undecorated brick piers well exhibit functional mill design after the turn-of-the-century.

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Situated between the Upper Pacific and Atlantic Mills, the extant Upper Pacific Bridge, designed by Thomas W.H. Moseley, was constructed in 1864 to replace an earlier bridge on the same site (Map 10, Photo 7). The five-panel, 18-foot wide bowstring truss has a 100-foot span. It is the earliest extant Truss Bridge along the Canal.

At the intersection of Canal and Amesbury Streets is the Atlantic Cotton Mills boarding house (Map 17, Photo 8). Built in 1847, the boarding house was originally part of an extensive complex of company-owned housing along Canal Street and is one of only two boarding houses to survive in the district. The seven-bay, pitch-roofed red brick structure rests on a granite rubble foundation. Five pedimented dormers light the attic; six original chimneys are intact. Rectangular windows have six panes and double-hung sash, with granite sills and lintels. The building is currently in commercial and residential use. One bay of the ground floor was remodelled into commercial space ca. 1928; a concrete block, two-story addition abuts the boarding house on the west.

The Middle Islands: Amesbury to Union Streets

The Middle Island, between the Central and Union Street Bridges, is the site of the Bay State Mills, the first mills to go into operation in the city. The Middle Island contains an early Bay State boardinghouse and railroad shed from the 1870s and extensive complexes of the Lower Pacific and Washington-American Woolen Company mills and their related powerhouses and boilers. The Pemberton Mill, a nearly unaltered mill from the 1860s, is among the outstanding architectural examples of the Middle Island. As the district is configured, the northern boundary runs to Essex Street, encompassing the Essex Company offices, a public school, and a stable. This area has most of its land

area devoted to industrial structures, and is compactly built at both the Merrimack River and North Canal edges. Many structures abut each other, creating continuous facades which incorporate several periods of mill development.

Lower Pacific Mills

Situated near the Central Bridge, the Lower Pacific Mill was built in 1864 on the so-called Central Mill Site of the Essex Company (Map 20, Photo 9). Originally two stories high, the worsted woolen mill was enlarged in 1877 with the addition of two stories and a mansard roof. It retains its original triple-sash windows, but the mansard roofs have since been removed. The building was again enlarged in 1908 to its present 150 by 350-foot size. The original east and west elevation fenestration of double windows recessed in prominent bays has been altered by the blocking of many windows; the Canal facade has had few alterations to the projecting six-bay central pavilion with its tall segmental-arch windows; office entries are distinguished in prominent brick arches carried by brick piers. The Lower Pacific complex includes a brick one-story engine house with a hipped roof which terminates in a monitor (Map 21, Photo 9). Built in 1885 after plans by mill architect Charles Main, the original octagonal stack is intact, and three water turbines dating from 1914-1923 are still in use. To the west of the engine house is a portion of the 1883 brick Lower Pacific cotton mill (Map 19). A portion of the west wall of the earlier Pacific Mills on this site is visible at the west of the mill yard.

The brick five-story, 100 by 275-foot Lower Pacific finishing mill and dye house, built ca. 1911, is connected to the worsted mill by a bridge, and abuts the Washington Mills-American Woolen Company complex at the west (Map 22). Across the canal, the brick, flat-roofed, two-story-plus-basement Lower Pacific weaving mill, built ca. 1895, has an irregular rectangular plan and utilitarian, large window elevations (Map 24). At Appleton Street and Canal Street is the 1870-1875 Lower Pacific Bridge (Map 25). The Pratt-Style truss, eight-panel bridge has a span of 90 feet and is 20 feet wide. The vertical members are stamped "Phoenix Iron Works, Philadelphia."

The 1882 five-story brick Lower Pacific finishing and packing building is identified by "Lower Pacific Mills," set in granite on the north wall of the bell tower (Map 23, Photo 10). The prominent buttressed bell tower/stair tower has a pyramidal roof with weathervane which covers an open belfry. Ornamental ironwork is set into the opening; granite stringcourses and thick lintels over narrow, glazed windows enhance the fortress-like appearance of the tower. The main office entry leads to an elaborate stair; the hall immediately after the entry has a coffered ceiling and woodwork which contrasts with the functional treatment of the mill spaces beyond.

Bay State-Washington Mills-American Woolen Company

The Washington Mill Company mills (after 1899, part of the American Woolen Company) and related structures occupy the site of the Bay State Woolen Mills, which were begun in 1846. The 1886 worsted mill of the Washington Mill Company is a five-story plus basement, flat-roofed structure with uniform rows of segmental arched windows built over

a portion of an 1848 mill which remains fragmentarily as a storehouse (Map 27, Photo 11). "1886" is set in granite under the open belfry of the stair/bell tower below a granite stringcourse. The stair tower is differentiated from the mill's uniform fenestration by paired round-arched windows. A six-story extension of reinforced concrete and brick was constructed between 1909 and 1925 after designs by Charles T. Main (Map 28, Photo 11). To the south of this building is the flat-roofed 1886-87 River Mill, a 475- by 93-foot seven-story brick building of functional design and exterior treatment (Map 32). A single stair tower breaks the uniform facade of segmental-arch windows between brick piers. A 100- by 233-foot, one-story steel frame brick-faced addition was constructed at the north in 1953. The 1886-87 rebuilding was supervised by the Lockwood-Breene Company of Boston, leading mill engineers with a national practice. The two-story Renaissance Revival powerhouse, built in 1923 for the American Woolen Company, is situated to the north of the River mill. The upper story of the powerhouse has been altered; large round-arched windows with granite keystones and sills are intact (Map 40).

Across the canal is the ten-story American Woolen Company storehouse #10, built in 1919 of brick and reinforced concrete after designs by Charles T. Main (Map 29, Photo 10). This building replaced earlier storehouses and boardinghouses of the Washington Mill Company, which was absorbed by the American Woolen Company in 1899. The Georgian Revival-inspired Washington Mills office was built in 1900 on the former site of Bay State Woolen Mill Company boardinghouses (Map 31, Photo 12). A distinctive entry with its two splayed engated and two free standing rusticated columns is centered against the rusticated first story. Its prominent voussoirs and keystones of brick and stone over the rectangular windows make it one of the most style-conscious buildings in the district.

To the east, the American Woolen Company storehouse, built in 1900, is credited to Charles T. Main. The six-story, 160- by 170-foot building has staggered small windows with granite sills (Map 34). A low pitched mill roof flanks a central stair tower.

Among the earliest buildings in the entire district is the 1848 Bay State Woolen Company railroad shed (Map 41, Photo 13). The brick, pitched-roofed building with a buttressed north end rests on a rubble granite foundation. Measuring 227 by 37 feet, the building is the only remaining Bay State industrial building. Across the canal, the Bay State Woolen Company boarding house, built ca. 1847 after designs by Phineas Stevens, is a pitched-roofed brick structure which rests on a rubble granite foundation (Map 30, Photo 14). The eleven-bay facade has rectangular windows trimmed with granite sills. Six-paned, double-hung sash is intact. The surrounding Bay State boarding houses have been demolished. The building is currently in use as a warehouse.

Among the most architecturally distinguished of the remaining nineteenth century mills is the Pemberton Manufacturing Company main mill, built in 1860-61 after the design of German-trained architect Theodore Voelkers (Map 42, Photo 15). The five-story woolen mill has a trap door monitor in the pitched roof; the prominent stair towers have gambrel roofs. The crenellated cornice and traceried Romanesque windows are evocative of Voelkers' work at the Andover Town Hall. A portion of the foundation of the 1853 mill which collapsed on this site in 1860 is still in place.

A three-story, flat-roofed Pemberton Company storehouse (Map 35), built ca. 1890, is situated immediately opposite the mill and was connected to the main mill by a railroad bridge. A ca. 1880 square, flat-roofed brick Pemberton Manufacturing Company stable is immediately east of the Pemberton warehouse. Although the Methuen Street facade has been altered, the large rear entry and details, such as prominent brick hood moldings at the east elevation, are intact (Map 37).

Lawrence Duck Mills

The 200- by 40-foot Lawrence Duck Company mill is a brick structure dating primarily from 1906 when there was an extensive rebuilding of the original 1853 mill complex. Charles T. Main is credited with the rebuilding (Map 44).

Walton School

At the northern edge of the District between Newbury and Essex Streets is the pitched-roofed Queen Anne style brick Walton School (Map 36, Photo 15A). Built ca. 1890 by the City of Lawrence, the Walton has most ornamental detail confined to a raised panel pattern which terminates in a fanlight at the west elevation. Ornamental iron cresting has been removed from the hip-roofed pavilion; a prominent round-arched entry with brick hood molding and corbel stops is an unaltered original feature.

Essex Company Office and Yard

The Essex Company Office and Yard, which includes five red brick, flat-roofed structures dating from 1883-84, is an intact complex of utilitarian buildings (Map 39, NR 1979). Although austere, the buildings, which were designed by Hiram Mills, chief engineer of the Essex Company, have corbelled cornices and granite trim. The Essex Company Offices and Yard have been in continuous use since their construction. The complex includes an office, carpenters' shop, foundry, garage, and storage building, and is surrounded by a red brick wall which was constructed at the same time as the buildings were.

The "Lower Island": Union Street to Marston Street

The Lower Island, between the Union Bridge and the Marston Street entrance to Canal Street, is the site of the locks and wasteway of the North Canal, where the canal waters rejoin the Spicket and the Merrimack Rivers. The Lower Island is also the site of the Essex Company's Lawrence Machine Shop (1848), a sanitation plant, paper mills, foundries, and the woolen and cotton mills built by the Everett and Kuhnhardt Mill Companies.

Because of the length of the Everett Mills and the size of the paper mill site to the east, the district continues north to General Street, and runs south along the Spicket River. Across the canal along Island Street, the smaller-scale structures occupy an asphalt paved surface, while the land at the eastern tip of the island is largely river grass and brush, in great contrast to the intensively used turf of the preceding mile along the canal.

Everett Cotton Mills

When built in 1909, the main mill of the Everett Mills company was the largest cotton mill in existence (Map 46, Photo 16). Twelve acres of floorspace are contained in the six-story, 780-foot flat roofed building. The Everett mill is actually two buildings joined by a central pavilion: the north structure is 460 by 100 feet, and the south is 32- by 75. The segmental-arched, multi-paned windows are recessed between unbroken brick piers which terminate in a corbelled cornice. The central pavilion is composed of ashlar granite piers which carry a four-story, round-arched entry flanked by granite capped piers with deep recesses. A granite trimmed, Roman numeral clock is centered over the arcade. "Everett Mills" is set in granite over the prominent voussoirs of the entry. The original Everett Company doors, which provide entry to the mill and to the former machine shop buildings in the rear yard, are intact. The first floor interior of the Everett mills is relatively unaltered. The payroll office, watchman's office, and vault are in nearly the same condition as when the mill ceased operation in 1929. Dado panelling and other finishes are in near-original condition.

Essex Company Machine Shop (later Everett Cotton mills)

Behind the main Everett mill is the Essex Company Machine Shop (Map 48, Photo 17, NR 1972), built in 1846-48 for the manufacture of tools, water turbines, and textile and other machinery. Sold to the Everett Mills Corporation in 1857 for use as a cotton mill and substantially added to, the original buildings are distinguished by their ochre-colored walls of granite rubble. The four-story 405- by 65-foot building is covered by a steep gable roof, interrupted by skylights. Three stairtowers are evenly spaced along the west facade. Notable features are two globe windows in the gables of the north end and central stair tower. A two-story forge shop, 43 by 225 feet with a pitched roof, is east of the machine shop. The L-shaped foundry has been altered by the addition of extra stories. A boiler house is attached to the foundry. The 125-foot circular chimney, constructed entirely of granite, is an intact original feature of the 1846-48 complex. To the south, the brick cloth room of 1850 was used as a storehouse between 1889 and 1929 (Map 51). Although the power mill has been removed and the original wooden windows replaced by steel, the corbelled cornice of the original design is intact.

The #6 storehouse of the Everett Mill Company was built immediately to the south of the cloth room in 1863 as a weaving mill (Map 52, Photo 18). Originally a two-story building with pitched roof, clerestory windows on the south side, and dormers on the north, the third story was added in 1946. Among later additions to the original complex are the 237- by 107-foot, four-story brick Everett mill storehouse built in 1892 (Map 49). The structure has a flat roof and a prominent stair and water tower at the west elevation. A seven-story brick storehouse measuring 150 by 50 feet was constructed along the Spicket in 1905 (Map 53).

George E. Kuhnhardt Corporation

The six buildings of the George E. Kuhnhardt Woolen Mills were built between 1880 and 1916 on the site of the earlier Lawrence Mills. The earliest extant buildings, ca. 1890, are brick. The three-story flat-roofed main mill and office has a prominent corner tower with an open belfry. The adjoining mill #2 and freestanding two-story wool shop are executed in red pressed brick (Map 56, Photo 19).

Hamblet Foundry

The Hamblet Foundry complex includes an 1859 wood-frame section built by the Webster-Dustin Machine Company, manufacturers of millwork (Map 60). The Hamblet Company purchased the buildings in 1899; numerous alterations were made after a fire in 1902. The hip-roofed office portion fronting on Island Street was added in 1925. The Hamblet Company manufactured paper mill machinery.

Lockkeeper's House

The Greek Revival style Essex Company Lockkeeper's House, ca. 1848, is a three-bay, central entry two-story frame building which rests on a granite rubble foundation. The original clapboard siding has been replaced, but the returns at the eaves and cornice are original clapboard siding has been replaced, but the returns at the eaves and cornice are original features. Late-nineteenth century turned posts have been added to the shallow porch of the small structure (Map 65, Photo 20).

Experimental Sanitation Station

The Lawrence Experimental Sanitation Station is on a site first developed in 1889 and subsequently re-engineered. The existing laboratory and office structures were built in 1950-1952, partially covering the original filter beds of the original installation. (Map 64).

Russell Paper Company

The Russell Paper Company storehouse was built about 1853 of granite rubble (map 68, Photo 21). Picturesquely situated along the natural incline of the riverbank, the storehouse has exposed reinforcing rods and brick voussoirs and sills over the segmental arch windows. The adjoining storehouse dates from ca. 1875 and is of asbestos-covered wood-frame construction (Map 67).

The Spicket Penstock (map 69; Photo 22), below the Prospect Street Bridge (1855; Map 70), was built in 1855 to provide water from the canal for the turbines of the paper mills on the east bank of the Spicket. The original wooden penstock has been replaced with the current steel and concrete system.

8. Significance North Canal Historic District, Lawrence, MA

Period	Areas of Significance—Check and justify below				
___ prehistoric	___ archeology-prehistoric	X community planning	___ landscape architecture	___ religion
___ 1400–1499	X archeology-historic	___ conservation	___ law	___ science
___ 1500–1599	___ agriculture	___ economics	___ literature	___ sculpture
___ 1600–1699	X architecture	___ education	___ military	X social/ humanitarian
___ 1700–1799	___ art	X engineering	___ music	___ theater
X 1800–1899	X commerce	___ exploration/settlement	___ philosophy	___ transportation
X 1900–1925	___ communications	X industry	___ politics/government	___ other (specify)
		X invention		

Specific dates See Text **Builder/Architect** See Continuation Sheet

Statement of Significance (in one paragraph)

The North Canal Historic District possesses integrity of location, design, setting, materials, and workmanship. The mills, factories boardinghouses, locks, dams, and bridges are significant for their association with the nineteenth century development of Lawrence as one of America's leading planned textile centers. Nationally and locally important businessmen, inventors, architects, and engineers are connected with the development of the mills over an 80 year period. The area embodies the distinctive characteristics of mid-nineteenth to early-twentieth century industrial architecture and represents a distinguishable entity from that period. The North Canal Historic District thus meets criteria A, B and C of the National Register of Historic Places. The District is architecturally and historically important at local, state & national levels.

Led by Abbott Lawrence, the first phase of development of the City began with the incorporation of the Essex Company in 1845 for the "purpose of constructing one or more locks and canals in connection with said dam.. and to create a water power to use, or sell, or lease to other persons or corporations for use for manufacturing and mechanical purposes..." The North Canal thus became the industrial focus of the town.

Led by the same financiers and manufacturers who developed Lowell as a textile center, the Essex Company was formed for the purpose of developing the water power ten miles below Lowell, below Bodwell's Falls on the Merrimack River. The Company purchased 4,313 acres of land north and south of the river from Methuen and Haverhill landowners and laid out the area in accordance with the plans of Essex Company engineer, Charles S. Storrow. The Essex Company secured the right to develop and lease the water power of the river and canal. Between 1845 and 1855, the company made most of the major improvements in Lawrence, including construction of the dam, locks and canal, lumber dock, machine shop, mechanics tenements, the Atlantic, Pacific, Pemberton and Duck Mills, and a paper mill. Storrow's plan for Lawrence oriented a grid of approximately 60 square blocks to the river and the mill island formed by the construction of the North Canal. The system of functional zoning established by Storrow is evident today: company housing was concentrated on the first two blocks across the canal from the industrial zone; a commercial district was assigned to Essex Street; and a civic district was planned to focus on the Lawrence Common. Lots for institutional and residential use were platted throughout the rest of the Essex Company lands and sold at auctions in 1846, 1847, and 1855. Deed restrictions specified building height and construction relative to the area and the use of the building.

As the focus of Lawrence's early industrial development, the first textile mills, factories, and boarding houses were located on the canal sites leased or purchased from the Essex Company. The land between Methuen Street and the canal and along the canal island between Broadway (the Essex Turnpike (1804)) and the Spicket River was built with a succession of mills which replaced obsolete structures. Along the North Canal of the Merrimack, newly-developing textile-manufacturing technology came together with favorable market conditions, a large supply of labor, and large-scale industrial investment. The area was well serviced: a sewer system and a reservoir were provided by the Essex Company; gas light was introduced in 1848; regular passenger train service on the Boston and Maine Railroad was established in 1848.

9. Major Bibliographical References

Dorgan, Maurice, Lawrence Yesterday and Today, 1918.
Dorgan, Maurice, History of Lawrence, MA. Cambridge: Murray Printing Co., 1924.
Molloy, Peter M. "Nineteenth Century Hydropower: Design and Construction of Lawrence Dam, 1845-1848." Winterthur Portfolio, Vol. 15, No. 4 Winter 1980, pp. 315-343
(Continued)

10. Geographical Data

Acreage of nominated property 60 acres
Quadrangle name Lawrence **Quadrangle scale** 1:25000

UTM References

	Zone	Easting	Northing
A	19	323750	4730600
B	19	324250	4730240
C	19	323620	4729900
D	19	323060	4729860
E	19	322560	4729500
F	19	322320	4730130
G			
H			

Verbal boundary description and justification This District includes all industrial structures, water power facilities, and residential/institutional structures associated with the North Canal and included within the boundaries indicated by a heavy red line on the map entitled, "North Canal Historic District" Scale 1"=720 feet.

List all states and counties for properties overlapping state or county boundaries

state	N/A	code	county	code
state		code	county	code

11. Form Prepared By

name/title Mari L. Myer, Program Assistant with Carole Zellie

organization Massachusetts Historical Commission **date** July, 1984

street & number 294 Washington Street **telephone** (617) 727-8470

city or town Boston **state** Massachusetts

12. State Historic Preservation Officer Certification

The evaluated significance of this property within the state is:

X national X state X local

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

State Historic Preservation Officer signature Valerie A. Talmage

title State Historic Preservation Officer, Massachusetts Historical Commission **date** September 27, 1984

For NPS use only

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

for Carlos Byers — Entered in the National Register **date** 11-13-84

Keeper of the National Register

Attest: **date**

Chief of Registration

GPO 894-785

1845 - 1860

Between 1845 and 1848, water power engineer and Essex Company treasurer, Charles Storrow (1809-1904), laid out the plans for the dam, canal, and town. Engineer Charles Bigelow, supervised the construction. The engineering of the North Canal and Lawrence (or "Great Stone") Dam exploited the latest American, French, and English technologies, and developed ideas tested at the earlier Merrimack Valley industrial towns. A notable advance over the previous twenty years of mill-city building was the incorporation of railroad spurs in the original plan. The water power created by the dam was enhanced by the development of water turbines, which improved the technology of the earlier breast wheels. Steam power would begin to be widely utilized by the 1860s, however, dictating changes in mill design. The gatehouse, gatekeeper's house, and lockkeeper's house, which were constructed with the dam and canal, are significant markers of the terminal points of the canal. The gatekeeper's house, (Map 3) with its Greek Revival entry, and the gatehouse, (Map 2) with its simple but thorough Greek Revival treatment, are of particular interest. The site of the gatekeeper's house is quite intact, with a variety of original landscape details such as granite walls and steps.

On the zoned plan created by Charles Storrow, the groundwork was laid for the later development of North Canal industries between 1845 and 1860. In contrast to the engineering advances evident in the construction of the canal, which permitted later adaptation as technology improved, the first generation of tall, narrow, brick and stone mills was made obsolete by large fireproof buildings of the later nineteenth century. Despite tension between Yankee management and irish immigrant workers, this early period saw manufacturers' accommodation to workers in the institution of the boardinghouse, and the extension of benefits to operants within the workplace.

The first substantial building to be constructed along the Canal was the Essex Company Machine Shop, built by the Essex Company in 1846 (Map 48). The four-story factory of granite rubble was part of a complex which included a forge, a foundary, and a boiler house. The factory provided a variety of machinery and goods, including locomotives, Hoadley engines, and millwork. Although utilitarian in purposes and overall appearance, the Machine Shop is ditinguished by its ochre-colored granite rubble walls and globe windows set into the gable ends of the pitched roof. Fire regulations would soon prohibit the use of such stone construction and pitched roofs.

In 1846, the Bay State Mills and Atlantic Cotton Mills corporations were formed and mill sites and mill power rights purchased from the Essex Company. Both developments were planned as large-scale endeavors: the Bay State Mill Company buildings, erected at cost by the Essex Company and supervised by Colonel Phineas Stevens, included three pitched-roofed brick woolen mills surrounded by a row of three-to five-story buildings. Four blocks of brick boarding houses were built across the canal between Jackson and Newbury Streets; each block accommodated about 36 boarders. It is interesting to note that, unlike the situation in nearby Lowell, the Lawrence boardinghouses were not gender-segregated.

In 1846, at the "Upper Island," the Atlantic Cotton Mill built two of four planned mills; a third was added in 1852. machinery was supplied by the Lawrence Mechanics

Shop; Charles Bigelow, Essex Company Engineer, supervised the construction of mills and associated water power structures, wheel pits, and waterways. Atlantic workers were housed in six blocks of boardinghouses located on Canal and Methuen Streets, between Hampshire and Lawrence Streets. The first opened in 1847 and was reportedly the first brick dwelling erected in the city. With these two early narrow, multi-story textile mills and their boardinghouses, the architectural character of Lawrence's mill complexes and its nearby housing was established. The surviving boardinghouses are relatively unaltered and show the conservatism of the early builders. Simple details, evocative of the brick neoclassical architecture of Charles Bulfinch, are evident in the gable returns with corbel tables and rectangular, granite-trimmed window and door openings. With their conservative exterior treatment and silhouettes echoing the nearby mills, they are representative of the early "corporate style" used in Lowell and Manchester. The small scale of the surviving Bay State boardinghouse (Map 30) and Atlantic Cotton Mills boardinghouse (map 17) contrasts sharply with the later mill developments around them.

In 1852-53, the Essex Company, under the supervision of Charles Bigelow, constructed a six-story mill for the Pacific Mill Company. The six-story mill of coursed granite rubble was designed for the production of ladies' cotton and woolen dress goods. A continuous row of two- and three-story buildings enclosed the mill; no workers' housing is documented, but is probably existed. An early producer of worsted goods, the Pacific would develop into the largest and most important of the mill complexes, producing 65,000,000 yards of cotton and worsted goods by 1877. The Pemberton Mill, designed to produce cotton and woolen goods, was built by the Essex Company in 1853; workers' housing was constructed opposite the mill across the canal. In 1860, a disastrous collapse and fire killed 88 operatives; the Pemberton Manufacturing Company mill was rebuilt in the same year on the original site (Map 42). The Romanesque design of the mill, among the most style conscious in the district, is executed with the corbel table in the gable end; the five-story pitched-roofed building has mansard-roofed stairtowers at the east and west elevations and a trap-door monitor; the north and south facades are broken by round arched windows. Immediately to the east, the Lawrence Duck Mill was built in 1853-54 by the Essex Company (map 44). The Everett Mill Company purchased the bankrupt Essex Company Machine Shop (Map 48) in 1857 and converted it to a cotton mill with the addition of several new structures.

The Bay State Mills, known for their "Bay State Shawls," were closed by the Panic of 1857; they reopened in 1859 under the ownership of the Washington Mills. A variety of innovations would be associated with the skill-solvent Pacific Mills, including introduction of ring spinning spindles and the Wade bobbin holder. The Pacific Mills management established a library for employees and were pioneers in the establishment of a Relief Fund for operatives. In 1869, under the leadership of E.R. Mudge, the Washington Mills installed worsted machinery imported from France, which allowed it to become the first provider of all-woolen worsted goods in the United States.
Textile manufacture was the main endeavor of the "New City," or "Merrimack," as it was briefly called. Paper and textile manufacturing machinery and paper manufacture along the canal also began during the early period. The earliest industries showed the diversification between cotton and wool and worsted wool that would be a key to the

long-term success of the city through the many business failures and depressions, the first of which occurred in 1857. As noted in an early historical account, "profits were prospective" during the first decades. Experimentation with cotton and worsted manufacturing techniques and machinery aided the long-term success of the first companies.

The financial Panic of 1857 and the Civil War mark the end of the first major period of growth, in which the population rose from approximately 150 (1845) to 17,639 (1860). Lawrence was established in the same year as the Irish potato famine; Irish workers accounted for 33 percent of the work force in 1848, and 40 percent by 1860. Women and children made up a substantial portion of the work force throughout the nineteenth century.

1860-1912

The period between 1860 and 1912 is significant for its tremendous increase in size - of the workforce, mill buildings, and company structures. Extant buildings along the canal evidence the impact of new fire regulations, new forms of power, including electricity, and larger manufacturing equipment. By the turn of the centry, conglomerates dominated the once-decentralized ownership of the mills. As the companies expanded, development jumped across the canal, and boardinghouses were razed for the construction of new weave sheds and storehouses. The demolition of the boardinghouses altered the carefully-zoned plan instituted by the Essex Company in 1845. The ca. 1860 Walton School was constructed at the beginning of an era which required public schools for a large boardinghouse population (Map 36).

Between 1860 and the Strike of 1912, Lawrence's population grew from 17,639 to 34,916 in 1875, to 85,892 by 1910. In 1910, there were 41,319 foreign-born, representing 51 countries; 6,693 Italians, 4,336 Russians, and 2,077 Turks were the latest additions to the previous Irish, French Canadian, English, Scotch, and German populations. By 1905, Lawrence had the highest percentage of foreign-born citizens in Massachusetts (46.08%).

Encouraged by the protective tariffs on imported cloth, new technological developments, mass-market potential, and an initial Civil War demand, Lawrence became the world's leading center of worsted woolen goods. The emphasis on long-fiber worsted goods began in the 1860s; the Pacific Mills were the largest producer prior to the Civil War. Imported machinery from French and England assisted in the growth of worsted production. Worsted and cotton production remained steady during the Civil War; diversification sustained the textile industries through the post-Civil War era and through periods of fluctuating demand until the depression of 1893. In 1893, all mills temporarily ceased production with the Gorman-Wilson Tariff and the reduction of protective tariffs, and the appearance of imported goods. Recovery over the following years saw a peak of wages and output in 1909 and the appearance of conglomerate firms, notably the American Woolen Company.

By 1860, slow-burning or fire-resistant construction, consisting of plank design, flat-roofed, heavy-timber-framed masonry-clad construction replaced the previous

methods, particularly the pitched-roof, stone-walled mill. The wider mills (typically 100 by 125 feet), accommodating new, heavier machinery of the post-1880 period, replaced the narrow structures of the previous decades. The wider buildings required larger windows for improved light and advanced heating systems to compensate for heat loss. Better light and ventilation also served the operatives, who gained improved working conditions during this period. Long working hours prevailed, however, Motive power changed almost entirely from water power to coal fired steam power by 1880. Electricity was introduced in the mid-1880s and the introduction of reinforced concrete to mill design at the turn of the century marked sixty years of evolution of "modern" mill construction. Fire insurance companies were partially responsible for the change in mill construction standards, encouraging the adoption of floors and flat roofs of heavy plank and the elimination of concealed spaces within the mill. Sprinkler systems were introduced in 1875.

During the last half of the nineteenth century, new mill sites were developed and old ones rebuilt. Boardinghouses north of Canal Street were razed for the construction of new mills and storehouses, and mill operatives found housing farther from the workplace. The ubiquitous three-decker appeared in Lawrence at the turn of the century; larger tenements of four or more units absorbed the growing population. Lawrence struggled with a high death rate and numerous public health problems, including overcrowding, during this period.

Although the North Canal remained the center of Lawrence's textile and paper industry, the construction of the South Canal in 1865 and subsequent development of the mammoth Wood (1905-1906), Ayer (1908-1909), and Prospect Mills (1909) south of the Merrimack, Coupled with the development of the Arlington Mills along the Spicket, diffused the previous concentration of North Canal land use.

In 1864, the Pacific Mills built the two-story Lower Pacific Worsted Mill (Map 20) on the central mill site, the last major mill site to be developed along the North Canal. Also known as the Central Pacific Mill, the 450-foot long building (with a 1908 150-foot addition) accommodated new power driven jacquard looms. The four-story mill (enlarged by two stories in 1877) was the first of a series of new buildings and improvements on the Pacific Site, and is representative of the architectural treatment of a large post-Civil War mill. The windows for the first two stories have heavy segmental arch lintels; the 1877 expansion did not repeat this treatment but allowed a corbelled cornice. Other improvements to the Pacific site included the 1882 finishing/packing building (Map 23); an 1895 worsted mill (Map 24); and a 1911 finishing mill (Map 22). The engine house (Map 21) was built in 1885 after the designs of superintendent Charles T. Main, who would become Lawrence's leading mill architect and president of the American Society of Mechanical Engineers.

In the 1880s and 1890s, there was increasing development of fire-retardant methods of construction. Greater reliance on steel framing, rather than the earlier cast iron and timber, allowed large wall areas to be given to windows. The attention to architectural detail evident in the earlier Pemberton Mill (Map 42) was generally abandoned in the functional mills of the period from 1880 to 1925. The flat-roofed, large-windowed weaving sheds and storehouses of the late 19th century have uniform facades of

segmental-arched or rectangular windows deep set between undecorated brick piers or pilasters. Representative of the large brick mills and related structures of the period is the 1882 Lower Pacific finishing mill (Map 23). The five-story mill has a corbelled cornice, and a uniform window treatment. The outstanding architectural feature is the corner bell tower with its ornamental ironwork and corbelled opening, and final-topped pyramidal roof. Along with the Kuhnhardt woolen mill tower of ca. 1890, this is one of the visual landmarks of the canal district (Map 55).

The Pacific Mills were of pressed red brick in the flat-roofed, utilitarian style encouraged by the fire insurance companies. At the Pacific Mills Upper Canal Site, the new Renaissance Revival office of 1886-87 and the utilitarian weave shed of 1890 were part of development which eventually moved across the canal to raze boarding houses for new spinning and storehouse structures. The Pacific Mills of the last decade of the 19th century were supplied with the "plenum" ventilation, heating, and humidification system developed by B. F. Sturtevant of Boston. Vertical brick flues were built on top of exterior brick piers, carrying warmed air through the mill. Heaters and blowers were located in the basement.

In 1886-87, the Washington Mills rebuilt the original Bay State Woolen Mill site with the three-building complex designed and construction concern in the United States (Map 26,.27, 32). the chimney was constructed in 1886. At 250 feet, with a ten-foot flue, it was the second tallest chimney in New England. Two of the mills were 104 feet wide and 400 feet long; they were then considered to be "too" wide, but soon were exceeded in width. the Washington Mills were the largest woolen mill in the United States until the 1890s, when manufacture shifted to worsteds.

When the conglomerate American Woolen Company, headed by William M. Wood, absorbed the Washington Mills in 1899, a substantial building campaign commenced, introducing new building heights and materials to the North Canal. Between 1909 and 1925, the company built a reinforced concrete addition to the Washington Worsted mill (Map 28). This was among the first large-scale applications of reinforced concrete along the canal. The new material offered fire protection, durability, lightness, freedom from vibration, and lower insurance rates. Steel provided the tensile strength, and allowed greater areas to be devoted to windows. The expansion allowed the Washington Mills to increase production of men's wear: by 1920, the company employed 6,500 persons, and the parent American Woolen Company owned 50 mills and employed 35,000 persons.

The Pemberton and Lawrence Duck Mills remained smaller-scale operations, but added to their physical plants. The Pemberton Mills constructed two storehouses on Canal Street opposite the main mill, including the ca. 1900 storehouse adjacent to the Everett main mill (Map 47). Until their closing, the Duck Mills continued their specialty of cotton duck, particularly for use in sails.

In the 1890s, the Everett Cotton Mills began a series of improvements on the former Essex Company Machine Shop yard. The 1892 #4 mill, 1900 boilerhouse, and 1905 storehouse preceded the 1909 construction of the monumental six-story, 650- by 75-foot cotton mill, which was then the world's largest (Map 46, 49-52). Twelve acres of floorspace are contained under the flat roof of the six-story, heavily-buttressed brick

building (Map 46). The Everett Mill retains its original integrity, with the unbroken vertical members which flank the granite-trimmed central pavilion and clock. The Everett was the last of the large-scale brick mills to be constructed along the Canal.

Paper manufacture in Lawrence was dominated by the William Russell Company, which expanded from a Prospect Street site to the property east of the Everett Mills. With the introduction of Christian and Henry Voelker's patent to manufacture paper from wood pulp, the firm became a leading manufacture of coated papers used in periodical and book production. The Champion International Paper Company purchased the Russell firm in 1900. The extensive, one-and-one-half-acre complex is now in ruins (Map 71).

The growth of Lawrence as an industrial center was accompanied by a scientific interest in understanding the impact of industrialization and urban growth on public health. The Lawrence Experimental Station, located on Island Street (Map 64), began operating in 1886 in quarters lent to the Massachusetts State Board of Health by the Essex Company. The Station was under the direction of Hiram F. Mills (1836-1921), referred to as the "Father of American Sanitary Engineering." The surviving structure was built in 1916 and served as the laboratory for water sanitation and sewerage treatment experiments until a new complex was built in South Lawrence in 1953. The Lawrence Experimental Station was the first research facility of its kind in the United States.

1912-1945

After 1912, the North Canal mirrored the economic changes which were occurring throughout the New England textile industry. The conglomerates struggled with the demands of workers over wages and benefits, and large-scale expansion declined sharply between the wars.

The wool industry had been characterized by a low level of union activity during the previous decades. the first strike occurred in 1881 over the issue of wage reduction. The important 1912 Lawrence strike was precipitated by the 54-hour work law passed by the Massachusetts General Court, which had the effect of reducing work hours for men as well as the intended group of women and children. The strike activities, including violent demonstrations, lasted from January 10 to March 14 and affected 27,000 operatives. Lawrence's newest immigrant workers, including Italians and Syrians, were identified as the greatest supporters of the strike. The strike resulted in a general wage increase from large conglomerate manufacturers and drew national attention to child labor and poor living conditions in Lawrence.

The first two decades of the twentieth century were marked by steep fluctuations in the textile manufacturing industry and the beginning of permanent decline. The Atlantic Cotton Mills, whose spinning machinery first went into operation in 1849, were bought at an auction by the Pacific Mills in 1913.

During World War I, wages increased and work hours were reduced. A strike in 1919 resulted in the adoption of a 48-hour work week and a 10 percent increase in pay. Strikes in 1922, 1925, and 1931 were only marginally successful.

The period between 1918 and 1923 was marked by increased production in Lawrence's textile mills because of the post-war demand for worsted goods. A wartime construction ban was lifted in 1923, but the resulting expansion of textile mills did not concentrate along the Canal. Expansion consisted primarily of the construction of storehouses by the American Woolen Company after designs by Charles T. Main. Reinforced concrete and glass were the exterior materials of the flat-roofed, ten-story storehouse built by the American Woolen Company in 1919, the last large mill building to be constructed along the Canal (Map 29).

Through the 1920s, worsted woolen goods remained the leading industry, followed by cotton goods. The late twenties, however, were marked by the closing of the Atlantic Cotton Mills (1925-26) and the Everett Cotton Mills (1929). Southern competition--with its tax subsidies, lower-priced land, lack of labor laws, cheap, abundant labor, and proximity to some raw materials--was the primary cause. Some smaller firms, such as Lawrence Duck, however, remained in business until the mid-forties, and the wartime demand for military fabrics sustained a few manufacturers.

Paper manufacture continued as a flourishing business along the North Canal at the Russell-Champion International site. One of a half-dozen Lawrence firms to make paper-making machinery, an important subsidiary industry, was the Hamblet Machine Company on Island Street (Map 60).

1945-1982

The last major closing of a Lawrence textile concern was in 1957, when the Pacific mills closed. A post-war recession, declining population, competition from other markets, and deteriorating buildings were among the reasons for the final outcome of the once-flourishing textile industry in New England, in Lawrence, and along the North Canal. The aging buildings lacked trucking facilities, and the multi-story nature of the buildings was considered disadvantageous by potential new tenants. Many new uses, however, do exist. The replacement industries which currently use the mills are producers of electrical machinery, apparel and finished goods, machinery, textile mill products, and leather and leather products. Recently-arrived immigrant groups, including individuals from seventeen Latin American countries and Indochina, are among employees of the new industries. Some mill yards, particularly the Atlantic mill site, have been cleared of all buildings. Fire has ruined the Russell-Champion International Paper Mill site.

The North Canal is traversed daily by thousands of automobiles and trucks crossing the canal into or from central Lawrence, but the area is devoid of the intense activity which characterized it fifty years ago.

Historians' interest in the New England textile industry has made the North Canal an important focus of scholarly investigation. Many buildings have been surveyed by the Historic American Engineering Record and by the Lawrence Community Development Department. Company records are preserved at the Merrimack Valley Textile Museum. A State Heritage Park is planned for the Pacific and Atlantic mill sites near the dam on the upper island; the Bay State boarding house is to become a Park Visitor Center.

Bridges

Within the North Canal Historic District, fifteen bridges cross the North Canal and the Merrimack River. In addition to nine metal-truss bridges, there are three concrete or steel beam bridges, one stone arch, and one open-spandrel concrete arch.
The nine truss bridges present an unusual collection of truss types, including some of the earliest experiments in patented truss design, the Moseley and lenticular trusses. The collection also spans the transition between pin-connected and riveted construction--a change that for most companies in Massachusetts appeared in the late 1880s. The earliest of these bridges, the Upper Pacific Bridge (1864, Map 10) is the only known extant example of a Moseley truss in the United States, a form invented by the midwestern engineer T. H. W. Moseley. (Another example in Lawrence, Massachusetts, cited by HAER, has been replaced.) Another pin-connected truss from the period is the railroad bridge over the Merrimack, a six-span Pratt deck truss built by the Manchester & Lawrence Railroad in 1871. The form is virtually identical to the B & M's Eastern Division railroad bridge built over the Merrimack River at Newburyport in 1888. A remarkable contrast to the pin-connected railroad bridge is the Union, or Duck Bridge (Map 54), built in 1888 to the designs of well-known civil engineer George Leonard Vose (1831-1910). Of the many bridges constructed by the Boston Bridge Works, the five-span through Warren-truss design is one of the earliest to replaced pinned connections with riveted gusset plates and flanges. Also from the same period is an unusual hybrid pin-connected lenticular pony truss, probably the 85-foot span noted in the 1886 catalogue of the Berlin Iron Bridge Company.

Of the 20th-century bridges in the district, the most significant is the 1500-foot open-spandrel concrete arch Central Bridge built across the Merrimack in 1918 (Map 18). Designed by New York consulting engineer Benjamin H. Davis (1883-1927), the bridge is one of only eight open-spandrel examples known in the state, according to Massachusetts Historical Commission and Massachusetts Department of Public Works bridge records. At its opening, twenty-six lamp posts lined the parapet walls. "As a 'White Way,'" Maurice Dorgan write in 1918 (Lawrence Yesterday and Today), "The bridge is unsurpassed by anything of that nature to be seen in this locality." The parapet walls and lamp standards were removed in 1972.

Machinery

Among machinery still in place are two 39-inch vertical Hercules turbines (1891) and one 43-inch Leffel turbine which was installed in 1921 in the Pemberton Mill. At the Upper Pacific mill site, early turbines are housed in two stone wheelhouses dating from the 1850s. At the 1864 Lower Pacific Mill engine house (1885), three water turbines remain which were installed between 1914 and 1923. Three Hercules type-D vertical turines with umbrella generators were installed in the original wheelpits of the Lawrence Machine Shop in 1920. The Lawrence Machine Shop retains its original 125-foot granite-walled circular chimney; several chimneys are of note including the 250-foot brick chimney built by the Lockwood-Greene Company at the Washington Mills in 1886, then the second tallest chimney in new England.

An intact wooden rack housing for the Washington Mills is extant near Mill Street and the north Canal. (Map 28-1)

Archaeology

Despite often extensive disturbances, it is likely that the district contains significant archaeological potential. Among the issues which archaeological data can assist in documenting are: the physical evolution of the technological and industrial systems within the district; and the changing social and ethnic composition of the mill community. Archaeological potential should be considered greatest around those buildings, especially boarding houses, where minimal disturbances has occurred. Some potential for prehistoric archaeological sites also remains in spite of the radial altering of the landscape during the 19th century. One site has been recorded by the Massachusetts Historical Commission adjacent to the district.

Continuation Section 9 Major Bibliographical References

City Atlas of Lawrence, 1875, 1896, 1906, MVTM Collections

Continuation Section 8 Builder/Architect

Charles S. Storrow, James B. Francis, Chalres Bigelow, George L. Vose, George Moffette, Jr., Thomas H.W. Moseley, Benjamin H. Davis, Hiriam F. Mills, Charles T. Main, Phineas Stevens, Theodore Voelkers, Benjamin Coolidge, Lockwood-Greene Company (Engineers).

NORTH CANAL/DISTRICT DATA SHEET

Map#	NAME (designer-builder)	ADDRESS	OWNER/MAILING ADDRESS	DATE
1	NRHP North Canal (Charles Storrow)	along Canal Street	Essex Company, 6 Essex Street, Lawrence	1848
2	NRHP Great Stone Dam and Gatehouse (Charles Storrow)	Broadway at Canal St.	Essex Company, 6 Essex Street, Lawrence	1848
3	NRHP North Canal gatekeeper's house and barn and outbuildings	Broadway	Essex Company	1848
4	Upper Pacific Cotton Mill and Office	468 Canal Street	Ornsteen, Alan Al & RC Bass	ca.1890 (office 1887)
4-1	Pacific Cotton Mill-fragments (possible turbine houses)	468 Canal Street	Ornsteen, Alan Al & RC Bass	1852
5	Upper Pacific Storehouse #2 (Charles Bigelow?)	0 Broadway	Robert Goldstein 17 Bateson Drive Andover, MA 01810	ca. 1860
6*	Merrimack Valley United Fund	430 N. Canal Street	Merrimack Valley United Fund	1950s
7*	Merrimack Valley United Fund	430 N. Canal Street	Merrimack Valley United Fund	1950s
8*	No Information	444 Canal Street	Atlantic Enterprises	1950s
9	Atlantic-Middle Pacific Cotton Mill	400 Canal Street	Robert Goldstein 17 Bateson Drive Andover, MA 01810	ca. 1906
10	Upper Pacific Bridge between Hampshire and Franklin Streets (Moseley Truss)			1864
11	Upper Pacific Cotton Yarn Mill (#7) includes "Jerry's Broadway 5 Diner"	(144-23 Lot)	Assessor's Map 144 No Information	1902
12*	Garage- former Goodyear Store	? Broadway	Assessor's Map 144-22, Lot No Information	

*Intrusion

MAP #	NAME (designer-builder)	ADDRESS	OWNER	DATE
13	Upper Pacific Cotton Spinning Mill	Methuen Street	Map 144, 22 Lot	ca. 1888-89
14	Upper Pacific Worsted Mill	Methuen Street		ca. 1910
15	Upper Pacific Storehouse #6	2 Franklin Street		1896
16*	New England Telephone	433 Canal Street	New England Telephone/ 433 Canal St., Lawrence 185 Franklin St., Boston, MA 02107	
17	Atlantic Cotton Mills boarding house	401-403 Canal St.	Robert Gauthier, 320 Sutton St., North Andover, and Louis J. Goquen, 7 Mason Dr., Salem,NH 03079	ca. 1847
18	Central Bridge (Benjamin Davis, NYC)	foot of Amesbury St		1918
19	Lower Pacific Cotton Mill	300 Canal Street	B.A. Rowland/300 Canal St.	1883
19-1	Pacific Cotton Mill- fragment of well			1852-1880 (?)
20	Lower Pacific Worsted Mill (weaving)	300 Canal Street	B.A. Rowland/300 Canal St.	1864-1877-1908
21	Lower Pacific Engine House (Charles T. Main)	300 Canal Street	B.A. Rowland/300 Canal St.	1885
22	Lower Pacific Finishing Mill	300 Canal Street	B.A. Rowland/300 Canal St.	1911
23	Lower Pacific Finishing Mill	300 Canal Street	B.A. Rowland/300 Canal St.	1882
24	Lower Pacific Worsted Weaving Mill	361 Canal Street	JoGal Shoe Company J & B Realty Trust 5 Lawrence Street	1895
25	Lower Pacific Bridge (Pratt Truss-Phoenix Iron Works)	Appleton & Canal Sts.		1870-75

*Intrusion

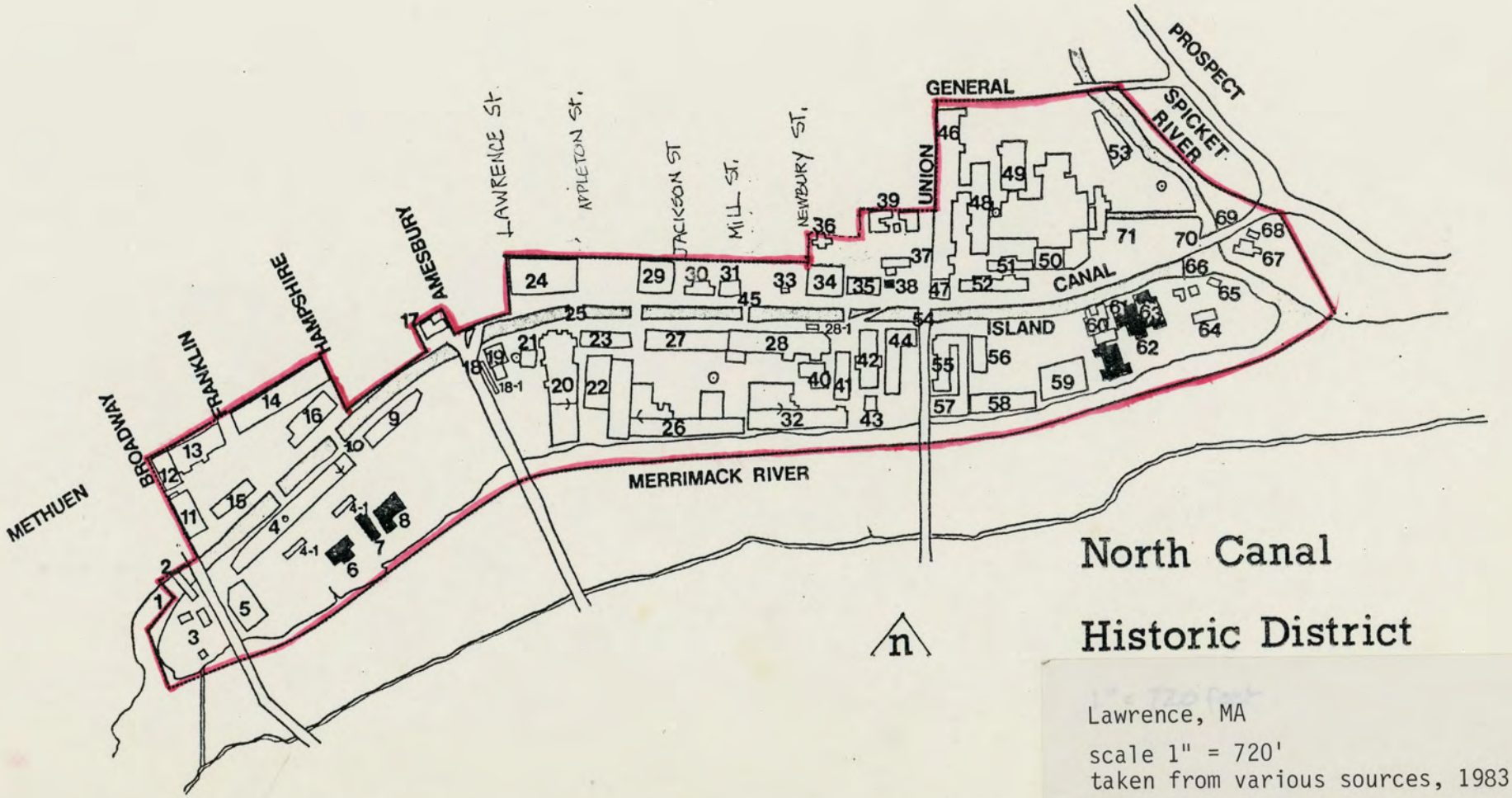
MAP #	NAME (designer-builder)	ADDRESS	OWNER	DATE
26	American Woolen Company (Lockwood-Greene)	Canal Street		1887 1886-87
27	Washington Mills (Lockwood-Greene)	250 Canal Street	Andrea Realty Trust	1886-87
28 28-1	American Woolen Co. Extension (Charles T. Main)	250 Canal Street	Robert Gauthier, 330 Sutton St. No. Andovewr	1909-25
29	American Woolen Co. Storehouse (Charles T. Main)	Jackson & Canal Streets	Vincent P. Morton, Inc., 93 Bridge St., Lowell 01852	1919
30	Bay State Woolen Mills Boarding house	1 Jackson Street	Angelo & Agatha Fisichella 175 Haverhill St.,Lawrence 01841	1847
31	American Woolen Office	1 Mill Street	Robert Gauthier, 330 Sutton St. No. Andover	1900
32	Washington Mill Co. "River Mill"	250 Canal street	Andrea Realty Trust, 250 Canal St.	1887
33	Pemberton Powerhouse			
34	American Woolen Co. Storehouse	2 Newbury St.	Freda Rozen, 214 Holt Rd. Andover 01810	1900 ca. 1890
35	Pemberton Co. Storehouse	246 Canal St.	Andrea Realty Trust 246 Canal St. (Harold Glassman: Trustee)	ca. 1890
36	Walton School	Methuen Street		ca. 1860
37	Pemberton Co. Stable	6 Methuen St.	Gaetano Pappalardo	ca. 1880
38*	Pemberton Stable addition	6 Methuen st.	7 Campo Seco St. Lawrence, MA	ca. 1960
39	NRHP Essex Co. Offices (Hiram Mills)	6 Essex St.	Essex Company (see above)	1886
40	American Woolen Co. Power Plant	250 Canal St.	Andrea Realty Trust (see above)	1923
41	Bay State Mills Railroad Shed	250 Canal Street	Andrea Realty Trust (see above)	1848

*Intrusion

MAP #	NAME (designer-builder)	ADDRESS	OWNER	DATE
42	Pemberton Mill (Theodore Voelkers)	216 Canal St.	Bernard Stainman 72 Sargeant Rd., Swampscott	1860-61
43	Powerhouse - Pemberton Mill			
44	Lawrence Duck Company Mill (original, Charles Bigelow; later, Charles T. Main)	4 Union Street	Joseph Ippolito, 4 Union St.	1853-1880-1906
45	Washington Mills Canal Bridge (Pratt Truss)	Jackson and Canal Streets		1886
46	Everett Mills (South end is Pemberton Warehouse)	15 Union Street	Everett Mill Properties	1909
47	Pemberton Warehouse			1900
48	NRHP Essex Company Machine Shop (Charles Bigelow)	70 General Street	Bolta Division, General Tire & Rubber, Akron, Ohio 44329	1846-48
49	Everett Mill Co. Mill #4	"	"	1892
50	Everett Mill Co. Picker House and Extension	"	"	
51	Everett Mill Co. Cloth Room	"	"	
52	Everett Mill Storehouse #6 (original cotton weaving house)	183 Canal Street	Grieco Bros., Inc. 183 Canal St., Lawrence, MA	1863-1946 (third floor)
53	Everett Mills Storehouse			1905
54	Union (Duck) Bridge (Warren Truss-George L. Vose-Boston Bridge Works)	Between Union and South Union Streets		
55	George Kuhnhardt Woolen Mill No. 1 and Office-Mill No. 2 connected by annex. #56 includes boiler house	Island Street	Island St. Realty Trust 50 R William St, Andover 01810	ca. 1890

MAP #	NAME (designer-builder)	ADDRESS	OWNER	DATE
56	George Kuhnhardt Woolen Shop	Island Street		ca.1896
57,58	George Kuhnhardt Woolen Mills	50 Island Street)	Island Street Realty Trust 50 R William St., Andover 01810	
59	George Kuhnhardt Warehouse	50 Island Street)		1896-1899
60	Webster-Dustin, later Hamblet Foundry	30 Island Street)		1859-1926
61*	Ferrous Technology	30 Island Street)	A & J Realty Trust P.O. Box 1106 Lawrence 01842	1960
62*	Ferrous Technology	30 Island Street)		1978
63*	Ferrous Technology	30 Island STreet)		1940
64*	State Dept. of Public Health Experiment Station	Island Street	Greater Lawrence Sanitary no information	1886 (original) 1950-52
65	North Canal Lockkeeper's house	Island Street	Essex Company 6 Essex St., Lawrence 01840	ca. 1848
66	Locks and wasteway			1845
67	Russell Paper Storehouse	1 Marston St.)	PEP Lawrence Inc. c/o Victor L. Hatem	ca.1875
68	Russell Paper Storehouse	1 Marston St.)	307 Dorchester Ave. Boston, 02127	ca.1853
69	Spicket Penstock (Charles Storrow)	Below Prospect St. Bridge	Essex Company) 6 Essex St. Lawrence 01840	ca.1855/rebuilt 1899/1913
70	Prospect Street Bridge (Charles Storrow)	Near Spicket wasteway	Essex Company)	ca.1855
71	Russell, later Champion International Paper Stie	21 Canal Street (at Spicket River)	Exec. Leasing & Rental c/o James Halloran 95 Lawrence Street Lawrence, MA 01840	1870 - in ruin

*Intrusion



North Canal Historic District

Lawrence, MA

scale 1" = 720'
taken from various sources, 1983

= Intrusions

WASO Form - 177
("R" June 1984)

UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

NATIONAL REGISTER OF HISTORIC PLACES
EVALUATION/RETURN SHEET

North Canal Historic District
Essex County
MASSACHUSETTS

Working No. OCT 9 1984
Fed. Reg. Date: 2/4/86
Date Due: 11/8/84 — 11/23/84
Action: ✓ ACCEPT 11-13-84
___ RETURN
___ REJECT
Federal Agency: _____

Entered in the
National Register

☐ resubmission
☐ nomination by person or local government
☐ owner objection
☐ appeal

Substantive Review: ☐ sample ☐ request ☐ appeal ☐ NR decision

Reviewer's comments:

Recom./Criteria _____
Reviewer _____
Discipline _____
Date _____
_____ see continuation sheet

Nomination returned for: _____ technical corrections cited below
_____ substantive reasons discussed below

1. Name

2. Location

3. Classification

Category	Ownership	Status	Present Use
	Public Acquisition	Accessible	

4. Owner of Property

5. Location of Legal Description

6. Representation in Existing Surveys

Has this property been determined eligible? ☐ yes ☐ no

7. Description

Condition
☐ excellent ☐ deteriorated
☐ good ☐ ruins
☐ fair ☐ unexposed

Check one
☐ unaltered
☐ altered

Check one
☐ original site
☐ moved date _____

Describe the present and original (if known) physical appearance

☐ summary paragraph
☐ completeness
☐ clarity
☐ alterations/integrity
☐ dates
☐ boundary selection

8. Significance

Period Areas of Significance—Check and justify below

Specific dates Builder/Architect

Statement of Significance *(in one paragraph)*

- ☐ summary paragraph
- ☐ completeness
- ☐ clarity
- ☐ applicable criteria
- ☐ justification of areas checked
- ☐ relating significance to the resource
- ☐ context
- ☐ relationship of integrity to significance
- ☐ justification of exception
- ☐ other

9. Major Bibliographical References

10. Geographical Data

Acreage of nominated property _____

Quadrangle name _____

UTM References

Verbal boundary description and justification

11. Form Prepared By

12. State Historic Preservation Officer Certification

The evaluated significance of this property within the state is:

____ national ____ state ____ local

State Historic Preservation Officer signature

title date

13. Other

- ☐ Maps
- ☐ Photographs
- ☐ Other

Questions concerning this nomination may be directed to _____

Signed _____ Date _____ Phone: _____

Comments for any item may be continued on an attached sheet

Photo 1
North Canal, looking east
from Broadway
North Canal Historic
District
Lawrence, MA

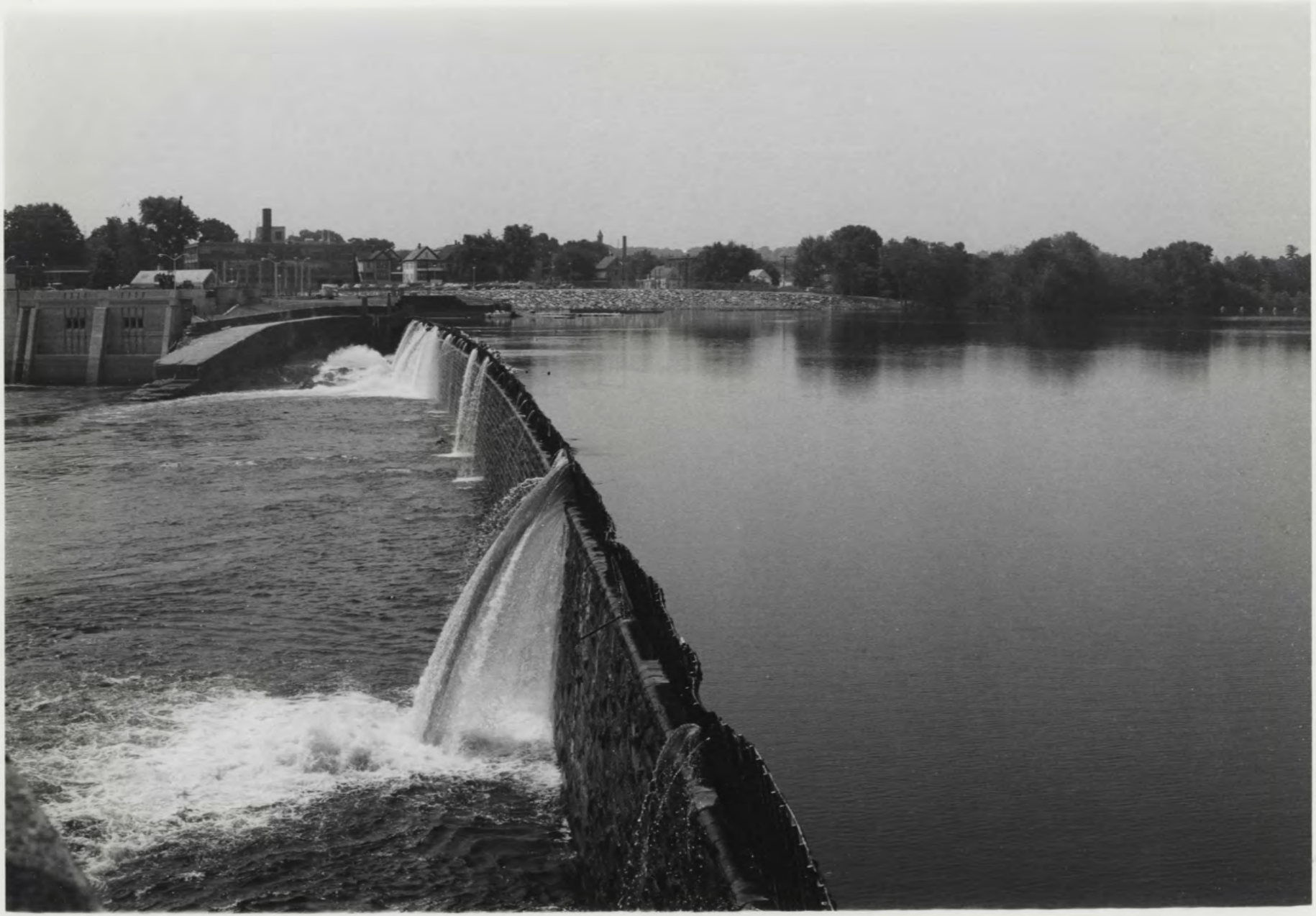


Photo 2
Great Stone Dam
looking south from
Broadway
North Canal Historic
District
Lawrence, MA


RAIL
ROAD
CROSSING

Photo 3
Gatekeeper's House
[west elevation]
North Canal Historic
District
Lawrence, MA

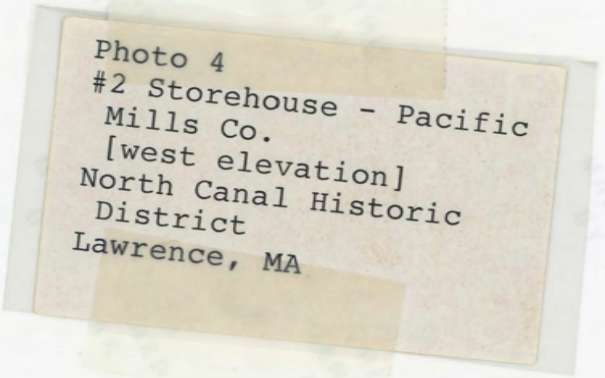


Photo 4
#2 Storehouse - Pacific
Mills Co.
[west elevation]
North Canal Historic
District
Lawrence, MA


H. BERGER PAPER CO.

Photo 5
Pacific Mills Cotton Yarn
Mill (right)
Storehouse #6 (left)
View from Canal Street,
looking north
Lawrence, MA

Photo 6
Atlantic Spinning Mill
[northwest elevation]
North Canal Historic
District
Lawrence, MA

Photo 7
Upper Pacific Bridge:
Moseley Truss Between
Hampshire and Franklin
Streets, view from
south, looking north
North Canal Historic
District
Lawrence, MA


ONE WAY
P

Photo 8
Atlantic Cotton Mills
Boarding House
[southeast elevation]
North Canal Historic
District
Lawrence, MA

Photo 9
Lower Pacific Mill(center)
1984, Engine House(right)
[northwest elevation
from Canal]
North Canal Historic
District
Lawrence, MA

Photo 10
Lower Pacific Finishing
and Packing(right center)
American Woolen Co.
Storehouse #10 (left)
Bay State Boarding House
(left center)
Lawrence, MA

Photo 11
Washington Mill Company Mills, 1886 Mill (foreground) 1905-25 Mill (rear), [North elevation, from Appleton Street]
North Canal Historic District
Lawrence, MA


CETA

Photo 12
Washington Mills Office
Main Facade (east) from
Jackson Street
North Canal Historic
District
Lawrence, MA

Photo 13
Bay State Woolen Company Railroad Shed, [north elevation, from Canal Street]
North Canal Historic District
Lawrence, MA


FISI SALES CO
WHOLESALE
GENERAL MERCHANDISE
NOVELTIES
NOTIONS
CANDY
TOYS
CARNIVAL GOODS
PAPER PRODUCTS
HOUSEHOLD
CHAINSTORE ITEMS
TOILET ART
STATIONER

Photo 14
Bay State Boarding House
[northeast elevation]
North Canal Historic
District
Lawrence, MA


PEERLESS
PLUMB
HEATING
ELECTRICAL
SUPPLIES
216

Photo 15
Pemberton Manufacturing Company [north and west elevations]
North Canal Historic District
Lawrence, MA

Photo 15A
Walton School
[south elevation]
North Canal Historic
District
Lawrence, MA


ncoln
foods

Photo 16
Everett Cotton Mill
North Canal Historic
District
Lawrence, MA

Photo 17
~~Lawrence~~ Essex Company Machine Shop,
west facade
North Canal Historic
District
Lawrence, MA


ERETT MILL PROPERTIES

Photo 18
Everett Cotton Mill,
#6 Storehouse
[south elevation]
North Canal Historic
District
Lawrence, MA


FOR SALE EXCLUSIVELY
LandVest
617-723-1800
LABELL
furniture
Milton's

Photo 19
George E. Kunhart
Woolen Mills Mill
Office and Main Mill
Boiler in Foregroung
[from Union Street,
looking north]
North Canal Historic
District, Lawrence, MA

Photo 20
Essex Company Lock-
keeper's House
[north elevation, from
Canal Street]
North Canal Historic
District
Lawrence, MA


W. ENTRANCE

Photo 21
Russell Paper Company
Storehouse
North Canal Historic District
Lawrence, MA

Photo 22
Spicket Penstock
Location, Russell/International Paper site
in ruin (right)
North Canal Historic
District
Lawrence, MA

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

COMMONWEALTH OF MASSACHUSETTS
DEPARTMENT OF PUBLIC WORKS

LAWRENCE QUADRANGLE
MASSACHUSETTS—NEW HAMPSHIRE
7.5 MINUTE SERIES (TOPOGRAPHIC)

6769 I SE (HAVERHILL)

6769 I SW (WINDHAM)

392

North Canal Historic Dist.
Lawrence, MA

UTMs:
A. 19/323750/4730600
B. 19/324250/4730240

C. 19/323620/4729900
D. 19/323060/4729860
E. 19/322560/4729500
F. 19/322320/4730130

Feet	Meters
1	.3048
2	.6096
3	.9144
4	1.2192
5	1.5240
6	1.8288
7	2.1336
8	2.4384
9	2.7432
10	3.0480

To convert feet to meters multiply by .3048

To convert meters to feet multiply by 3.2808

Mapped, edited, and published by the Geological Survey

Control by USGS, USC&GS, and Massachusetts Geodetic Survey

Topography by planetable surveys 1941 and 1942. Revised 1966

Polyconic projection. 1927 North American datum
10,000-foot grids based on Massachusetts coordinate system, mainland zone, and New Hampshire coordinate system
1000-meter Universal Transverse Mercator grid, zone 19

Red tint indicates areas in which only landmark buildings are shown

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

Revisions shown in purple compiled in cooperation with State of Massachusetts agencies from aerial photographs taken 1977 and other source data. This information not field checked. Map edited 1979

UTM GRID AND 1979 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

SCALE 1:25 000

CONTOUR INTERVAL 10 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1929

THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS
FOR SALE BY U. S. GEOLOGICAL SURVEY, RESTON, VIRGINIA 22092
A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

QUADRANGLE LOCATION

ROAD CLASSIFICATION
Heavy-duty — Light-duty
Medium-duty — Unimproved dirt
Interstate Route — State Route

LAWRENCE, MASS.—N. H.
N4237.5—W7107.5/7.5

1966
PHOTOREVISED 1979
AMS 6769 II NW—SERIES V814

North Canal Historic District
Lawrence, MA

UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

NATIONAL REGISTER OF HISTORIC PLACES
EVALUATION/RETURN SHEET

REQUESTED ACTION: ADDITIONAL DOCUMENTATION

PROPERTY NAME: North Canal Historic District

MULTIPLE NAME:

STATE & COUNTY: MASSACHUSETTS, Essex

DATE RECEIVED: 8/17/98 DATE OF PENDING LIST:
DATE OF 16TH DAY: DATE OF 45TH DAY: 10/01/98
DATE OF WEEKLY LIST:

REFERENCE NUMBER: 84000417

NOMINATOR: STATE

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 9.15.98 DATE

ABSTRACT/SUMMARY COMMENTS:

RECOM./CRITERIA Accept

REVIEWER Edson Beall DISCIPLINE Historian

TELEPHONE _____ DATE 9.15.98

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

7. DESCRIPTION (technical amendment)

The approaches to the Casey Bridge (NR, 1984) along Amesbury Street, also known as the North and South Canal Bridges, were essentially built as extensions of the larger Casey Bridge over the Merrimack River. The open-spandrel concrete-arch Casey Bridge was completed in 1918; the two canal bridges were designed by the same consulting engineer, Benjamin H. Davis, are were built under separate contracts after the river bridge was completed. The original intent in building the Casey Bridge and its two approaches seems to have been to create a major north-south axis through downtown Lawrence, linking the commercial spine of Essex Street to a proposed union railroad station in South Lawrence.

The three bridges were each designed with 56' roadways and two 12' sidewalks, matching the dimensions of those on Essex Street.

The North Canal Bridge is a single-span, reinforced-concrete T-beam varient bridge. Abutments appear to be 1919 concrete down to at least the canal mudline.

(end)

84000417

The Commonwealth of Massachusetts

William Francis Galvin, Secretary of the Commonwealth
Massachusetts Historical Commission

August 11, 1998

Ms. Carol Shull
National Register of Historic Places
National Park Service
Department of the Interior
Mail Stop 2280, Suite 400
1849 C Street, NW
Washington, DC 20240

Dear Ms. Shull:

Please accept the enclosed technical amendment to the North Canal National Register District, Lawrence (Essex Co.), Massachusetts, originally listed November 13, 1984.

The district, as presently constituted, includes the Central Bridge over the Canal. The Massachusetts Historical Commission wishes to amend the district to include a separate approach bridge on Amesbury Street, identified by the Massachusetts Highway Department as bridge L-4-5. The bridge falls within the boundaries of the listed district, but was not included in the district documentation. A photograph of the bridge is enclosed. The bridge, erected in 1919, contributes to the district's significance. Enclosed is a National Register continuation sheet concerning the bridge and its historical significance.

Thank you for your attention in this matter.

Betsy Friedberg

Betsy Friedberg
National Register Director
Massachusetts Historical Commission

enclosure

cc: Lawrence Historical Commission
Steven Roper, Massachusetts Highway Department

220 Morrissey Boulevard, Boston, Massachusetts 02125 · (617) 727-8470
Fax: (617) 727-5128 TDD: 1-800-392-6090
Website: www.magnet.state.ma.us/sec/mhc