

13th Annual Conference

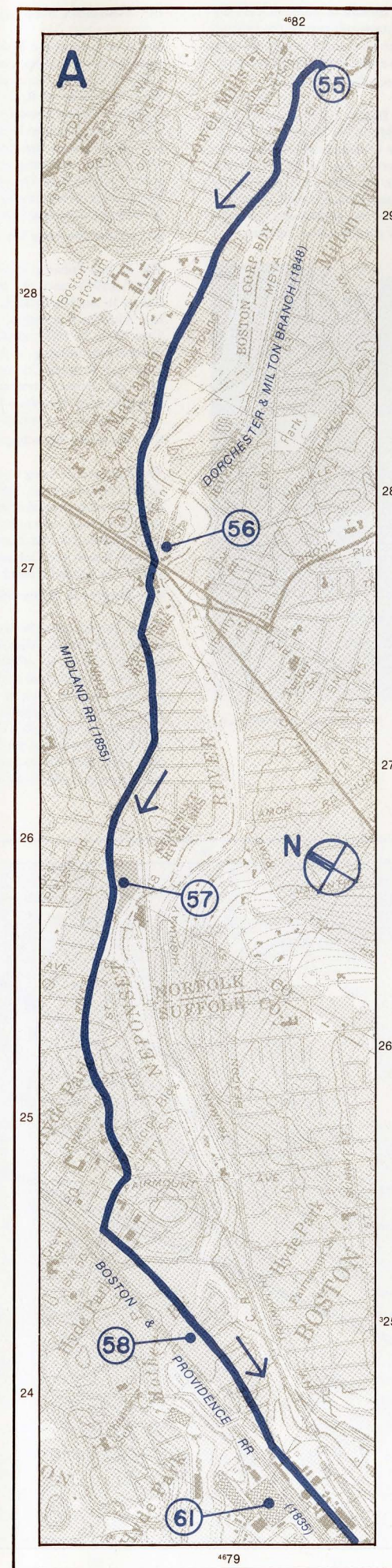
Society for Industrial Archeology
Boston 1984

Friday Afternoon Tour

June 15



Hyde Park
Dedham
Newton
Brighton



Dorchester Lower Mills—Copley Place: 27.4 miles
The afternoon tour, beginning at the head of tidewater on the Neponset River, crosses over to the Charles River via Mother Brook, the 17th-century power canal, and examines several river industries in each watershed. The tour returns to Boston by way of several water-supply features of 19th-century Boston.

56 Dorchester & Milton Branch RR: Mattapan Station
map grid ref.: 27.3, 481.4
The Dorchester & Milton Branch Railroad, chartered in 1848, was in part a response to the loss of river traffic to Port Norfolk, at the mouth of the Neponset. Organized the same year that the Old Colony Railroad opened between Boston and Plymouth, the new branch linked the Neponset River's mill villages, Upper and Lower Mills, with the Old Colony line at Port Norfolk. Among the railroad's chief incorporators were Amor Hollingsworth and Edmund Tileston, whose paper mills were at Upper Mills (now Mattapan), Milton, and Hyde Park, and together they owned much of the land in the area of Mattapan. The present Mattapan Station was constructed about 1922 after the old station had been removed to make way for the approach to the Blue Hills Parkway Bridge over the Neponset River. The design of the single-story station is attributed to architect Bradford Hamilton. In 1929, part of the line was acquired by the Boston Transit Department, which used the route for the high-speed trolley line. A reinforced-concrete platform shelter was constructed, and use of the old station was discontinued.

57 Tileston & Hollingsworth Company Paper Mill
240.784
The Neponset River was the location of the earliest paper mill in New England. By 1796 there were four mills along the river in Milton and Dorchester, and paper manufacturers were already expanding to Charles River locations in Newton, Waltham, and what is now Wellesley. The firm of Tileston & Hollingsworth was organized in 1801, although it was not until 1836 that they moved permanently to this location. Much of the existing one- and two-story brick complex extending for 800 feet along River Street on the Neponset was constructed in the last quarter of the 19th century and the first quarter of the 20th century when the company consolidated its operations with its other mills in the Boston area. The firm remained in continuous operation until 1967, when it was purchased by Diamond National, and it, in turn, by the James River Paper Company in 1983. Today it is the only paper mill within the limits of Boston, and one of the few in the country to operate within the corporate limits of a large American city. The mill is still an important producer of fine papers. Although the age of the mill is evident throughout the complex, changes and modernization have taken place in the arrangement of interior spaces and in the mill's complement of papermaking equipment, little of which is more than 30 years old.

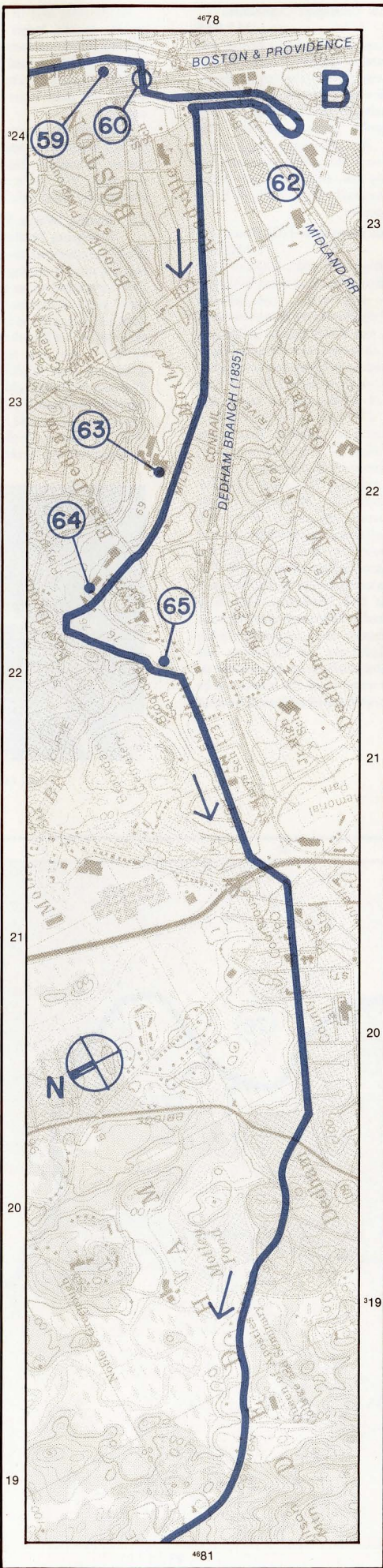
58 American Tool and Machine Co.
245.795
The American Tool and Machine had its origins in 1843 in the small Boston machine shop of George H. Fow. In the 1850s the company developed many new machines on which its later reputation was based, among them a centrifugal hydro-extractor for the sugar refining industry, and a belt-knife leather-splitting machine developed by company superintendent Benjamin Radford. Incorporated as the American Tool and Machine Company in 1864, the firm moved to Hyde Park in 1872. At first only a foundry was erected; a machine department followed in 1879. The earliest portion of the existing complex was constructed in 1881—a large, three-story brick machine shop, 143x63 feet, with a four-story tower in the rear. On the exterior, window bays were articulated by three-story blind arcades; a fourth-story monitor roof ran the length of the building parallel to the street. These architectural features were consciously repeated in 1899-1900, when the building was expanded with two three-story additions perpendicular to the original block. In 1906 the Hyde Park plant employed 350 men and the company's fame was "world wide on their special machines for the use of sugar refiners, rubber and leather manufacturers, and other industries." American Tool and Machine closed about 1957.

59 E. C. Morris Safe Co./G. W. Stafford Co.
240.784
The E. C. Morris Safe Company was founded in Boston by Edward C. Morris about 1888. Its president was Robert Bleakie of Hyde Park, head of the Hyde Park Woolen Mills. He was probably instrumental in the decision to move to Hyde Park Avenue in May of 1893, when the company completed seven one-story brick buildings with a two-story office tower. An unusual feature was that all machines and the entire system of overhead shafting were operated by electricity. The company wrote in 1893 that they were "the only plant anywhere in this section having the entire power furnished by electricity." The safe company closed in 1896, however.

Between 1898 and 1902, the complex housed a series of loom manufacturers, whose manager was Henry I. Harriman, inventor of an automatic loom which enabled a weaver to operate sixteen looms rather than the eight that had been the maximum previous to this time. In 1902 Harriman became the manager of the new George W. Stafford Company. The "Ideal" Automatic Loom was one of the company's most successful products; "mills equipped with these looms," the company claimed in 1911, "are making the widest range and most perfect goods ever made on automatic looms." In 1913, the firm erected its own foundry on land immediately to the north. The company was liquidated in 1931.

60 Hyde Park Avenue Bridge
240.781
The abolition of grade crossings on the old Boston and Providence line between Boston and Readville was undertaken by the New York, New Haven & Hartford Railroad between 1896 and 1900. In Readville the work was particularly complicated by the crossing of two New Haven divisions (the former Boston and Providence and the New York and New England—formerly the Midland), by the Dedham Branch, and by the intersection at grade of three highways: Milton and Sprague streets and Hyde Park Avenue. The largest single element of the work was the rerouting of Hyde Park Avenue beneath the tracks of the Midland Division. The stone arch, of 78-foot span and 165 feet long, was constructed to carry nine tracks. Two arched stairway openings, each eight feet wide, were constructed passing from the street through the southern haunch of the arch, leading up to the platform between the Midland Division passenger tracks. Nearby, Sprague Street was carried over the Dedham Branch and the Midland Division by two spans of a through, pin-connected steel Baltimore truss, each span being 223 feet long. The Midland Division was carried over the old Boston and Providence line by a new five-track, pin-connected through steel Baltimore truss, of 129-foot span. A passenger station constructed here at this time burned in June 1983.

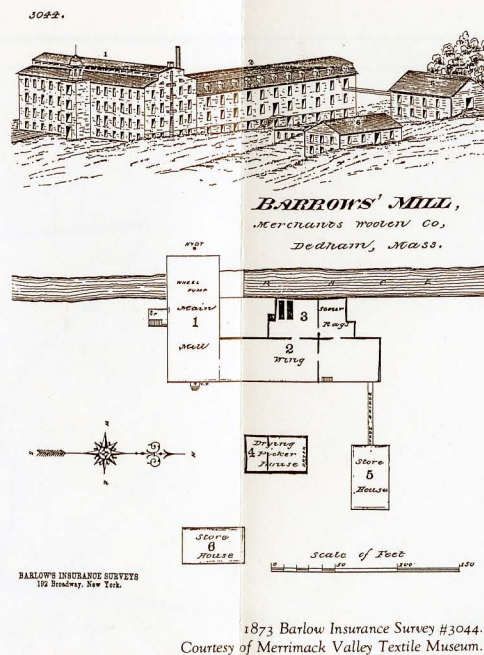
61 B. F. Sturtevant Blower Works
241.789
The largest employer in Hyde Park and one of the few surviving examples of heavy industry still active in Boston is the factory completed in 1903 for the B. F. Sturtevant Company. The company's founder, Benjamin Franklin Sturtevant (1833-1890), began building blowers in 1864, erecting in 1878 a large factory in Jamaica Plain. With his death in 1890, Eugene Foss, Sturtevant's son-in-law and later state governor, assumed direction of the company. Foss had already acquired control of a large milling machine company in Hyde Park and the proximity of other machine tool builders provided a strong inducement to locate here. The existing complex, designed by the mill engineers Lockwood, Greene & Co. and completed about 1903, included a foundry, machine shop, fan and heater shop, electrical and testing building, and a four-story Georgian-Revival style office block. In 1906 the plant employed nearly 1,500 men and women. The company produced all varieties of ventilating and draft fans, engines, generators, and motors. In 1926-27 they produced the ventilating equipment for New York's Holland Tunnel, the first successful attempt to solve the problem of ventilating a long automobile tunnel. In 1945 the company was acquired by the Westinghouse Electric Corp. and since then it has been operated as the Sturtevant Division. Since the 1940s foundry work has been contracted for with outside firms, and today the old foundry building is the plant's heavy fabrication shop, expanded to the north in 1953 to accommodate the larger size power blowers being built for utility companies. In this field the company is today one of only about seven such manufacturers in the country.



62 NY, NH & H RR: Readville Shops
233.779
Shortly after the abolition of grade crossings, the railroad began another Readville project: the construction of new car shops, in the angle between the Midland Division and the Dedham Branch lines. Until 1901, the New Haven operated 2,060 miles of track, much of it made up of short lines, each having previously operated its own shop equipment. In that year it was decided to concentrate all the company's heavy car work in one place, and Readville, nine miles south of Boston, was selected for its convenience. When it opened about 1902, 1,000 men were employed. These facilities were expanded in 1907 with the construction of a large locomotive shop, located on the opposite side of the embankment carrying the Midland Division. The Readville shops were the railroad's largest shop facilities and remained in operation until the mid 1960s, when the bankruptcy of the corporation forced the closure of the works. Since then, although the locomotive shop remains in use as a shoe warehouse, the area of the car shops has been much altered, with several sections razed. The principal buildings remaining are the paint shop, wheel machine shop, and power house.

63 Norfolk Mfg. Co. Cotton Mill/"Barrows Mill"
225.790
The oldest of Dedham's mill structures is the 1835 granite cotton mill built on Mother Brook's fourth mill privilege by Ezra Taft (1800-1885), a Blackstone-Valley cotton manufacturer. 140x40 feet in site and three stories in height, the granite mill was built under the supervision of Mr. Kingsley of Fall River, a town where granite mills were then becoming popular. The new cotton mill was equipped with machinery from the Pettee Machine Works in Newton (#69). The company prospered, but like many cotton mills, it closed during the Civil War. In 1863, the property was sold to Thomas Barrows (1795-1880), who had been the agent of the nearby Merchants Woolen Company. Barrows converted the mills to woolen production, constructing the existing three-story stone wing the same year. The wing originally featured a slate mansard roof lined with dormer windows. In 1872, Barrows sold the mill to his old employer, the Merchants Woolen Company, who in the 1890s, as production expanded, built much of the brick complex surrounding the mill. In April 1911, a fire gutted the stone mill, whose present flat-topped roofs date to the mill's reconstruction that year. Since 1937, the mill has been used by the United Waste Company to manufacture reprocessed wool and mixed fiber shoddies and batting.

64 Merchants Woolen Co. Mill No. 2
221.795
Mill No. 2 is all that remains of the chief Dedham mill complex of the Merchants Woolen Company, originally only a small part of a much larger complex which stood to the rear of this mill. Probably constructed about 1870, the building was used exclusively for "jack-spinning" when an insurance inspector visited the company in 1873. For several decades beginning in 1809, the mill was used by the Hodges Finishing Co. to finish New Bedford cotton goods before they were shipped to New York and points west.



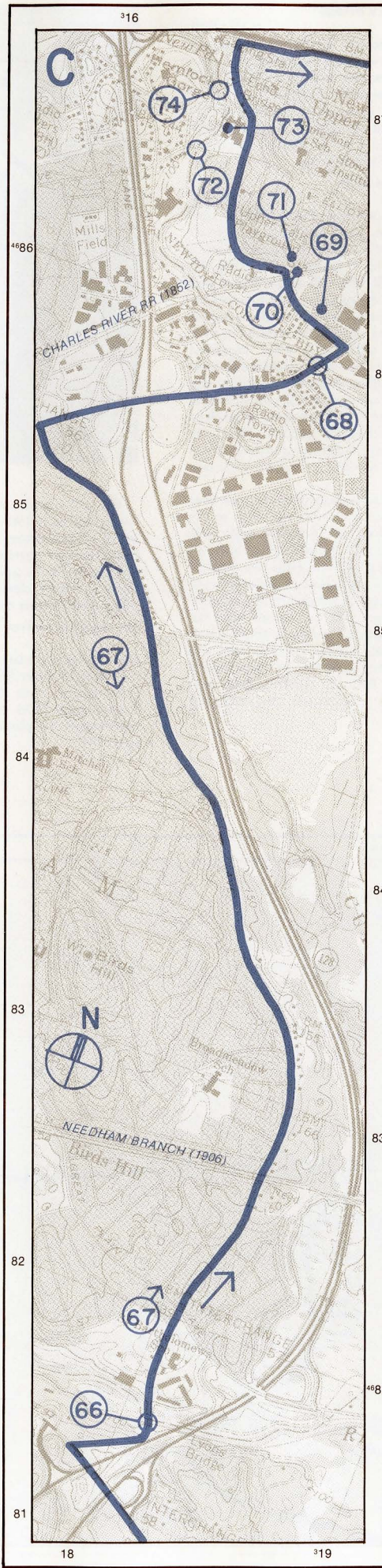
65 Merchants Woolen Company; Maverick Street Mill
217.793
The first, or upper privilege on Mother Brook, was the site in 1807 of one of the earliest cotton spinning mills in the state. Its successor in the 1820s, the Dedham Woolen Mills, was founded by Boston merchant-turned-gentleman-farmer, Benjamin Bussey (1757-1842), who was among the first to introduce merino sheep into New England. Here in the late 1820s the inventor John Goulding installed the first water-powered woolen broadlooms. The earliest of the existing buildings probably dates to the 1890s when the Merchants Woolen Company used the complex for a dye works. Most of the rest of the complex was probably constructed by the Dedham Finishing Company, after it purchased the complex in 1915.

66 Lyons Bridge
181.815
The 54-foot span of Lyons Bridge is probably the longest of any masonry-arch highway bridge over the Charles River. The bridge was constructed in 1876-77 by the towns of Needham and Dedham to replace a narrow wooden bridge. The original designs for the bridge were prepared by Hiram Blaisdell and William Wheeler, two young civil engineers from Concord, both just starting out in their careers. The bridge was given its present 40-foot width in 1931 by the addition of a reinforced-concrete arch of the same span as the original arch. The new concrete addition was faced with granite voussoirs and traprock. The downstream face of the bridge still shows the original keystone with the date "1876." Lyons Bridge marks the southernmost evidence of the original route of the "Circumferential Highway," Route 128. The changes in 1931 mark the first construction done for this model highway.

67 Circumferential Highway
181.815
Although the modern Route 128 was largely constructed in the 1960s, the route has an important place in the development of regional planning and highway construction. The "Circumferential Highway," or "Boston By-Pass" as it sometimes was known, was one of the earliest metropolitan beltways in the country. Before the introduction of numbered routes in Massachusetts in the mid 1920s, "the Circumferential" was simply an interconnected series of local roads. When route numbering was introduced, this sequence of highways was identified as route 128. This 234-mile section of road beginning at Lyons Bridge is one of the few surviving sections of the original route. The widening of this road in 1931 was part of a region-wide program including the improvement of the old turnpike routes to Concord (Route 2), Worcester (Route 9), and Providence (U.S. Route 1). The DPW Project engineer responsible for this program was Franklin C. Pillsbury (1869-1937).

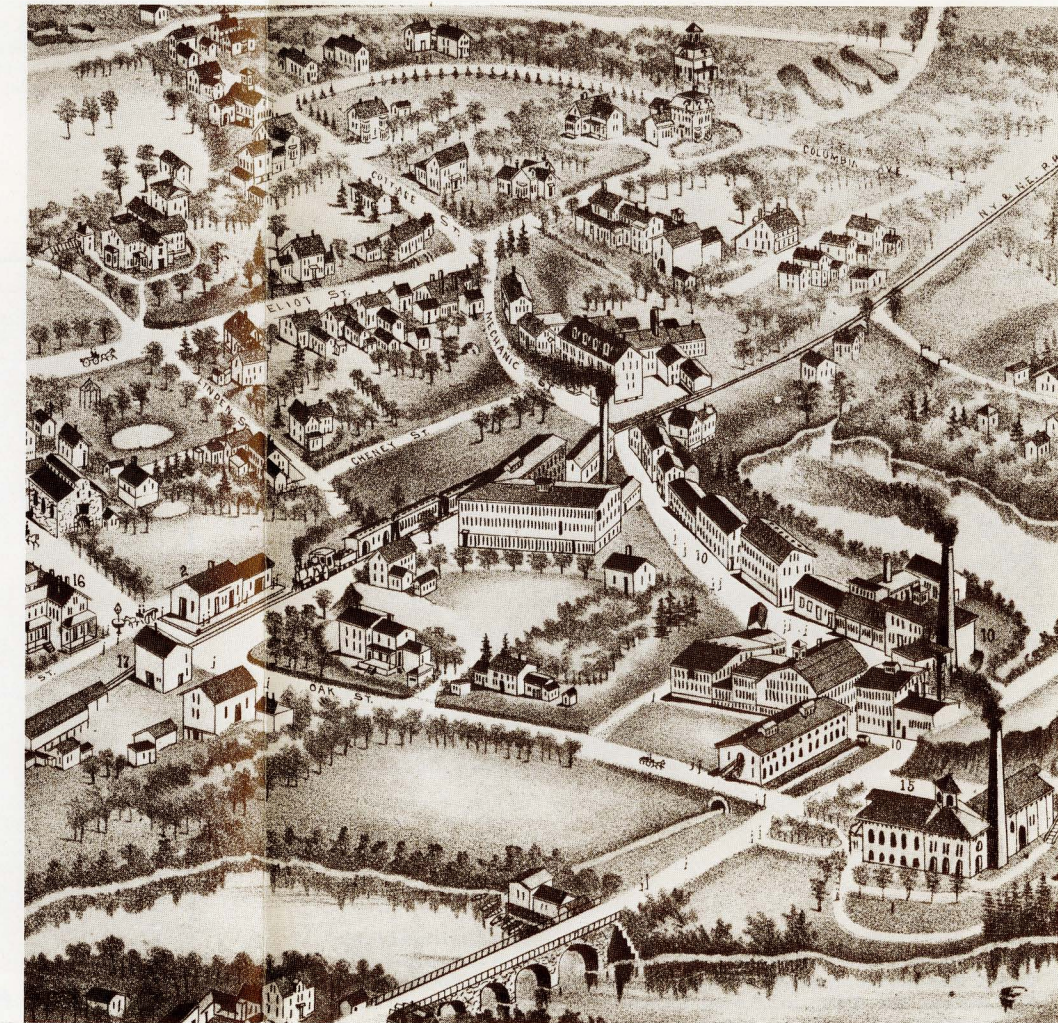
68 Highland Avenue Bridge
172.859
Both the stone bridge and the road which crosses it between Needham and Newton were built in 1875. The overall 95-foot length of the bridge is supported by three elliptical stone arches each with a 26-foot span. In the center of the downstream side is carved the date, "A.D. 1875." The 30-foot two-lane roadway of the bridge now carries the heaviest burden of traffic of any of the town's bridges, and there is local pressure on the Massachusetts DPW to widen the bridge to four lanes.

69 Pettee Machine Works
172.861
Oris Pettee (1795-1853) first came to Newton in 1823 to oversee the construction of the Elliot Manufacturing Co. and then to take charge of its machine shop (see #73). Less than twenty years later he had not only formed his own machine works, but had purchased the mill of his former employer. Trained as a blacksmith, Pettee had always shown an aptitude for mechanics and had a particular interest in textile machinery. When engaged by the Elliot Manufacturing Co., he was operating a thread mill in his native Foxboro. Once the mill in Newton was completed and equipped with machinery, made in large part in its basement machine shop, Pettee turned his attention to filling machinery orders for other mills in the region. This business proved so successful that in 1831 he decided to start his own machine shop. Pettee bought twelve acres of land and the water privilege on a tributary of the Charles River, a half mile upstream from the Elliot Manufacturing Co., where he built a 25-foot dam, a shop, and a forge. His original equipment was purchased from his old employer, as the company discontinued machine building after Pettee's departure. The business expanded rapidly, as contracts were filled for several New England mills, as well as for a number of mills in Mexico. This success was the result of the many inventions and innovations which Pettee made in textile machinery.



In 1882, Pettee's son-in-law, Henry Billings, bought out Pettee's sons and formed the Pettee Machine Works. In this period the company had a great deal of success manufacturing the English revolving flat card and began to specialize in its construction. The earliest of the surviving buildings date from the firm's expansion in the 1890s: in 1893, a new brick foundry was built to replace the frame one, and two years later an additional three-story brick mill was erected. Through its merger with the Saco Water Power Machine Shop of Lowell in 1897, the company could completely equip a mill with everything but the looms, though carding machines remained the speciality of the Newton plant. The works at Upper Falls were closed in 1931, when the company was further consolidated at the works in Maine. Today a paper company, a dance studio, and other concerns occupy the old machine works.

70 Charles River Railroad: Upper Falls Station
169.862
In order to improve transportation to his machine works, Pettee wanted a railroad routed through Newton Upper Falls, and in 1852 he became president of the Charles River Railroad. During the next two years the line was completed from Brookline to Needham, with a stop in close proximity to Pettee's factory. Although Pettee died shortly before the line's completion in 1853, his goal of improved transportation for both freight and passengers was achieved; it also opened up the southern portion of Newton for residential development, as well as attracting more industries to the Upper Falls area. One of the line's most important functions was its part in the filling in of Boston's Back Bay: for more than ten years, 35-car trains left the Needham area every 45 minutes, day and night, carrying gravel fill to Boston. The Upper Falls Station, built in 1854, is the oldest in Newton; the wood-clapboard structure has recently been rehabilitated, and the building is now an historic photo exhibit center.



Detail from 1888 birds-eye view of Newton Upper Falls, showing Pettee Machine Works (map fig. 10, but rebuilt along Oak Street since this view was made), Charles River Railroad station (fig. 2), and Highland Avenue Bridge. The Newton Water Works pumping station (fig. 15) no longer stands.

71 Gamewell Company
169.863
In 1848, Dr. William F. Channing of Boston devised a fire-alarm system which utilized the principles of the recently developed telegraph. Channing and Moses G. Farmer, a telegraph operator in Framingham, set up the first telegraphic fire-alarm system in the world in Boston in 1851. Impressed with the success of Channing's method, John Gamewell of South Carolina purchased the rights to use the system in the South. Soon after, he bought Channing and Farmer out completely and formed the Gamewell Company in New York. It was not long before Gamewell installed alarms in most major American cities. After 1873, the manufacturing branch of the business was conducted by Moses Crane in a factory in Newton Highlands. In 1890-91 the company moved to the existing site at Newton Upper Falls. The original wood-frame factory, which opened in 1892, is still standing on Chestnut Street, flanked by later brick additions. At that time, there were approximately 100 employees. By 1930, 90 percent of all fire-alarm systems in North America were manufactured by Gamewell, and employment had reached 400 through the acquisition of other related manufacturers. In the 1970s the firm, by then owned by Gulf and Western, began renting out some of its manufacturing space to other companies, and by the mid 1970s the firm had moved altogether to Medway, Mass. The old Upper Falls plant is currently used by small engineering and electronics firms.

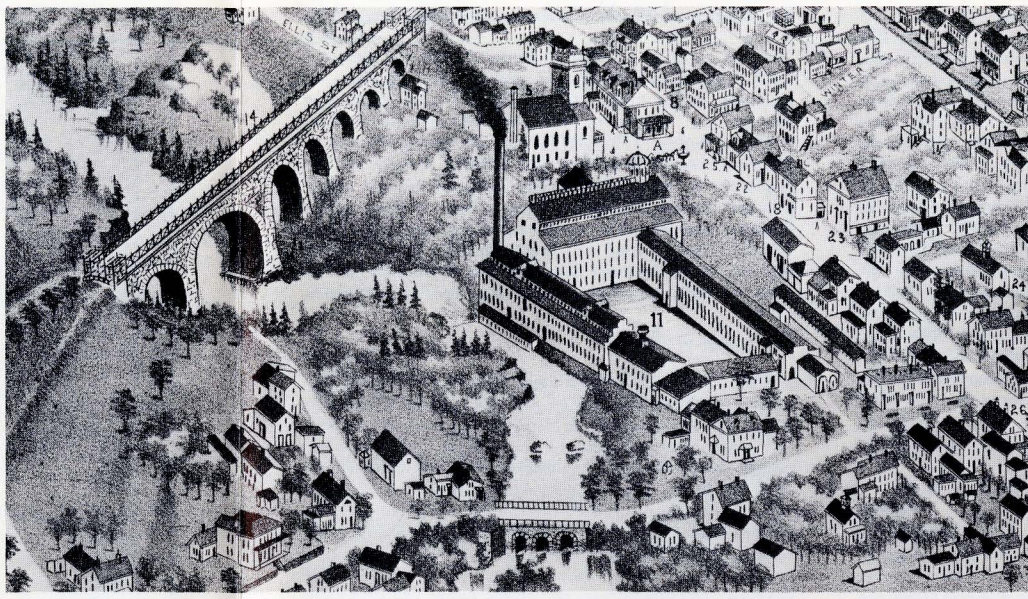
72 Elliot St. Bridge/"Cook's Bridge" 164.866

According to Newton town records, the present bridge was built in 1850. Originally 25 feet wide, the 80-foot long roadway was carried by three stone arches, each with a span length of 24 feet. The bridge was widened in 1896 by the extension of the south face twelve feet further upstream to accommodate the tracks of the Newton & Boston Street Railway. The bridge takes its Needham name from the Cook family, whose home stood not far from the Needham end of the bridge.

73 Elliot Mfg. Co./Newton Mills 165.868

In the late 18th and early 19th centuries, Simon Elliot, a snuff and tobacco merchant in Boston, purchased the land and small mills around the Upper Falls of the Charles, and built a snuff mill. By the time he sold off his holdings in 1814, the site included a snuff mill, a grist mill, wire mill, screw factory, and annealing house. Purchasers of the property were Elliot's son-in-law and merchant prince, Thomas Handasyd Perkins, and his brother James. They intended to build a cotton mill, but were forced to delay their plans until 1823, when improved American machinery and better economic conditions spurred the Perkinses to action. The Elliot Manufacturing Co. was formed and Otis Pettee hired to oversee the mill's construction. Under Pettee's management, the machine shop made much of the original machinery and continued to build machinery for other mills in the area. The success of this aspect of the business led him to start his own textile machinery works in 1831 (see #69).

By 1840, Pettee had become so successful that he took over the mills of his former employer and converted them to the manufacture of calico print cloth. In 1886, the mills were purchased by Phipps and Train, silk manufacturers based in New Jersey. Through successive owners the mills continued an association with the silk industry which lasted three quarters of a century. In 1920 the mills were purchased by the recently incorporated New England Spun Silk Co., which used the Newton factory for its preliminary operations (boiling and dressing the raw silk), while finishing and spinning work was completed in their Brighton headquarters. The firm ceased operation in 1962, and since then the buildings have been rehabilitated for retail stores, a restaurant, and high-tech manufacturing.



Detail from 1888 birds-eye view of Newton Upper Falls showing Echo Bridge, the Elliot Mfg. Co. mill, and the Elliot St. Bridge.

The mill complex and surrounding area is a well preserved example of early 19th-century industrial community planning. Much of the factory complex, associated mill housing, and transportation system remains intact. The buildings are arranged around a quadrangle, which is anchored by the three-and-a-half story, clerestory-monitor brick cotton mill built in 1821, and possibly the oldest of its type in the state.

74 Sudbury River Aqueduct: Echo Bridge 164.869

Echo Bridge is the largest of the visible structures on the 18.8-mile Sudbury River Aqueduct connecting the Sudbury River in Framingham with Boston's Chestnut Hill Reservoir. Completed in 1878, the aqueduct was Boston's second major water supply, supplementing the Cochituate Aqueduct of 1848 (see #79).

Chief engineer in charge of construction was Alphonse Freley (1837-1903). The 475-foot long bridge consists of seven arches: five have 37-foot spans; that over Ellis Street is 28 feet long. The river span has a length of 130 feet, for many years the second largest masonry-arch span in the U.S. (following that of the 220-foot Cabin John Aqueduct in Washington), and the eleventh in the world. A footbridge on the crown covers the conduit, which is inside a brick and concrete framework. The bridge takes its name from the ability of the central arch to echo loudly voices and other sounds beneath it. The bridge is situated in Hemlock Gorge, a rugged, wooded setting, now an MDC reservation.

75 Sudbury River Aqueduct: Terminal Gatehouse 217.888

The Sudbury River Aqueduct passes over Echo Bridge and continues underground to the eastern border of Newton with Boston at Chestnut Hill. There it empties into the Bradlee Basin, the extant of two original reservoirs (the former Lawrence Basin is now the location of Boston College's athletic facilities). The terminal chamber is a rectangular granite structure with Romanesque arched windows. An elaborate, denticulated cornice tops walls of both rough-cut and well-dressed granite. The pyramidal roof is pierced by low, arched dormers and a wood-frame ventilator. Today the gravity-flow Sudbury River Aqueduct is used only in emergencies.

76 Cochituate Water Works: Chestnut Hill Reservoir 220.890

The Cochituate Aqueduct, reaching 15.0 miles between Lake Cochituate in Wayland and the Brookline Receiving Reservoir (#79), was Boston's first public water supply, completed in 1848. The maximum capacity of the Brookline Reservoir, with a surface area of nearly 23 acres, was 119.5 million gallons. In the early 1860s, the city began to consider ways of expanding its capacity in the event that the aqueduct itself needed to be taken out of service for repairs. Surveys were undertaken by City Engineer N. Henry Crafts (1828-1908), and in September 1864 the Chestnut Hill location, a little more than a mile from the Brookline end of the aqueduct, was chosen. Two basins were constructed: the Bradlee Basin, of 87.5 acres and a capacity of 550.5 million gallons, is the reservoir as we know it today. The basin was named after the architect, Nathaniel J. Bradlee (1829-1888), president of the Boston City Water Board while the reservoir was being constructed, and author of the first comprehensive history of the Cochituate system to that time. A smaller, 37.5-acre basin constructed to the west, called the Lawrence Basin, is now the Boston College athletic field. The two basins were separated by a water-tight dam, along the top of which now runs the Chestnut Hill Driveway. The stone "intermediate gatehouse" is located at the center of the dam, so arranged as to connect the two basins when necessary. As the main conduit from Lake Cochituate to Brookline ran lengthwise along the dam, the water could be let out into one or both basins at this point; or the water from the lake could be shut off, and the Brookline Reservoir supplied from Chestnut Hill.

At the east end of the Bradlee Basin, overlooking Beacon Street, is the larger "effluent gatehouse," a single-story structure built of hammered granite. At this point a 48-inch main was laid around Fisher Hill to connect with the pipes which supplied the city from the Brookline Reservoir. By this means the older reservoir could be taken out of service for repairs.

Although the reservoir continues to be the focal point for the MDC's entire water system, virtually all of Boston's water today passes through a deep pressure tunnel 200 feet below the reservoir. The open reservoir itself and the two pumping stations are used only in emergencies.

77 Boston Water Works: Chestnut Hill High Service Pumping Station 223.886

With the construction of the Roxbury Standpipe (#84) in 1870 and the small pumping station nearby, the Boston Water Board had introduced water to the higher elevations of Roxbury and other parts of Boston. The original works, however, had been designed to supply an area of about 760 acres. By 1875, with the annexations of Dorchester, Charlestown, Brighton, and West Roxbury, the area requiring high-service water supply had grown to over 10,000 acres. Under the direction of City Engineer William Jackson (1848-1910), the city constructed a monumental granite pumping station and, about 1000 yards to the east in Brookline, a large distributing reservoir on Fisher Hill. The station, in the Romanesque style of the period, was designed by City Architect Arthur H. Vinal (1854-1923) and



1895 Leavitt Engine. Photo: Jet Lowe for HAER, 1982.

completed in 1889. Extant is the third engine installed, the 1895 triple-expansion steam pumping engine designed by Erasmus D. Leavitt of Cambridgeport (1836-1916), then one of the nation's leading mechanical engineers. Built by the Quintard Ironworks of New York, the engine represented the peak of accomplishment in steam reciprocating engines. The engine was designated a National Historic Mechanical Engineering Landmark in 1973.

With the creation of the Metropolitan Water District in 1895, the high service requirements of the region were divided into northern and southern systems: the northern to be supplied from an entirely new plant at Spot Pond in Stoneham, and the southern region, extending as far as Quincy and Hyde Park, to be supplied from Chestnut Hill. The pumping station was extended to the west in 1897-98, according to the plans of Boston architects Wheelwright and Haven. A new triple-expansion pumping engine (#4) was installed, built by the E. P. Allis Co. of Milwaukee. This engine also remains in place.

The station pumped water from the Chestnut Hill Reservoir into the Fisher Hill Distributing Reservoir, some 125 feet above the level of the receiving reservoir. The engines remained in use until 1954, when oil-fired turbines were installed. Today, no pumping at all is done at Chestnut Hill, its place being taken by the gravity-flow pressure aqueduct constructed 200 feet beneath the reservoir in 1950.

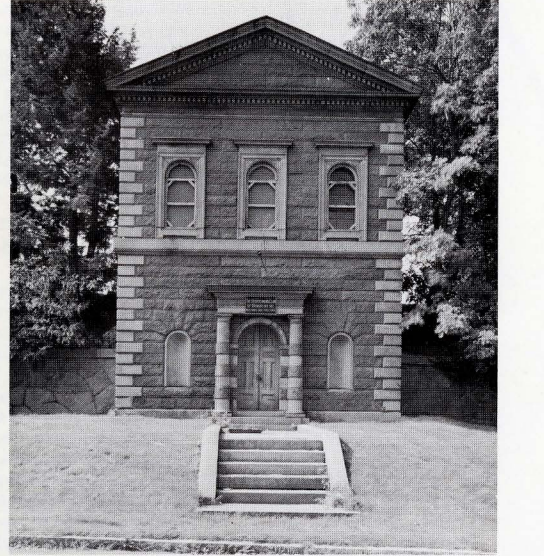
78 Metropolitan Water Board: Chestnut Hill Low Service Pumping Station 225.887

Like the acts establishing the earlier metropolitan sewage and parks systems, the Metropolitan Water Act of 1895, written by the State Board of Health, recognized the mutual and interdependent needs of the separate towns and cities in the region. The Board found that the existing 47-year-old Cochituate system was insufficient to supply many of Boston's new high-rise buildings. In addition, the slower conduit flow encouraged the growth of algae. Accordingly, the Board recommended that pressure be increased by pumping directly into the Boston system and to a new Northern High Service distributing reservoir, Spot Pond, in Stoneham, 29 feet higher than the reservoir at Chestnut Hill. The new low-service pumping station, built 500 feet northwest from the 1889 high-service station, was designed by Shepley, Ruten & Coolidge, and completed in 1900. Its exterior classical facade is of Indiana limestone with a base of pink Milford granite. Inside were installed three vertical triple-expansion steam pumping engines built by the Holly Manufacturing Company of Lockport, New York. In 1901, the first year of its operation, the low-service

station pumped 71% of the total amount of water supplied by the Metropolitan Works. The station still retains the original three Holly engines, although they have not seen service since the early 1960s when the station's steam boilers were removed.

79 Cochituate Aqueduct: Brookline Reservoir Gatehouse 242.882

The Cochituate Aqueduct was Boston's first major water-supply conduit. Completed in 1848 to the designs of John B. Jervis and E. S. Chesbrough, the 15-mile conduit from Lake Cochituate to the Brookline Reservoir was linked to cast-iron pipes at this gatehouse. Of all the surviving structures on the aqueduct, the gatehouse was the most architecturally elaborate. Granite quoins, a heavy belt course, and gable pediment frame the two-story street facade of the granite ashlar building.



Brookline Reservoir Gatehouse. Photo: Jet Lowe for HAER, 1982.

80 American Brewing Company 262.880

In the last half of the 19th century, the growth of the German community in Roxbury, together with the presence of several important springs, encouraged the establishment of more than a dozen breweries in Roxbury. After the establishment of the Highland Spring Brewery (#83), at the other end of Heath Street, several came to locate on the same route. One of the last was the American Brewing Company, organized in 1891, and which in the following year completed its monumental four-story brick brewery. Designed by Boston architect Frederick N. Footman, it remains today one of the most elaborate and intact of Boston's surviving breweries.

81 Alley Brewing Co.: Eblana Brewery 266.879

The Eblana Brewery was founded in 1886 by John R. Alley (1822-1898), until the previous year a partner with Henry Rueter in the Highland Spring Brewery (#83). Designer of the new four-story structure was Philadelphia brewery architect Otto Wolf. In 1899, the firm added a two-story brick bottling department housing a 35-ton refrigeration unit. Like the American Brewing Company, the Eblana Brewery was among the eight Boston breweries which became part of the new Massachusetts Breweries Company in August, 1900. As the Alley Branch, it operated until Prohibition.

82 Roxbury Brewing Company 269.878

The Roxbury Brewing Company, incorporated under the laws of New Jersey in June, 1897, completed their new Heath Street brewery, adjacent to the Heath Street Railroad Station, the same month. Its independent life was short, however, and from 1900 until Prohibition the brewery was used for storage purposes only by Rueter and Company, whose Highland Spring Brewery (#83) was located a block to the north.

83 Rueter & Alley: Highland Spring Brewery 269.879

The Highland Spring Brewery was founded in 1867 by Henry H. Rueter and John R. Alley. It derives its name from the spring at the foot of the range of hills where the plant is located. In 1872 this brewery had risen to the distinction of being the largest ale brewery in the United States. At the 1876 Centennial Exposition in Philadelphia, Highland Spring Ale carried off the first prize for "perfection in every requisite of good ale." Rueter and Alley were one of the first to add refrigerating machinery to their plant, and with its great storage capacity, it was still in 1906 the largest exclusively ale and porter brewery in Boston.

Remaining buildings include a small, single-story ice-making plant constructed in the 1890s on the site of the earlier wood-frame spring house; and the bottling department, a four-story brick structure on the opposite side of Terrace Street, originally connected to the brewery by a tunnel under the street. The storage warehouse now carrying the inscription, "Oliver Ditson Company, 1825-1925", was built by the Rueter company in 1913 and acquired by the music publisher a decade later.

84 Cochituate Water Works: Highland Park Standpipe 273.877

The Highland Park Standpipe, completed in 1870 to supply the higher elevations of the newly annexed City of Roxbury, is not only an architectural and visible landmark on the skyline, it is also an important engineering and political landmark. It marks the change from a gravity-flow to a pumped water-supply system in Boston, a system which would remain in use for nearly 100 years. It marks, too, probably the first use of a standpipe in New England, and is the archetype of all the standpipes which in later decades would come to mark the hilltops of many eastern Massachusetts communities. For Roxbury, it also marks the end of the city's independent existence and its annexation to the city of Boston.

Supplied from a pumping station (now demolished) at the base of the hill on which it stands, the standpipe consists of a boilerplate iron shell, 5 feet in diameter and 80 feet in height. The pipe was enclosed in an elaborate brick tower in the Gothic style, possibly designed by the Water Board's staff architect, Edward R. Brown. A three-foot space between the interior pipe and the outer wall is occupied by a spiral staircase leading to a lookout at the top. The Roxbury standpipe was abandoned after only ten years of service, and for many years the structure became a popular observation tower.

85 L. Prang & Company 274.883

One of the most important landmarks in the history of 19th-century lithography is the publishing house founded by Louis Prang, inventor of the chromolithograph. Born in Silesia in 1824, Prang was apprenticed to his father in the calico printing business. Caught up in the Revolution of 1848, he was forced to flee Germany in 1850, coming almost immediately to Boston. In 1866, Prang produced the first "chromo," a name he coined to describe the lithographic reproduction of oil paintings. Prang's work marked the first time that the quality reproduction of an oil painting had been made affordable to the general public; and as the publisher added new titles and new artists to his lists, public interest in Prang's chromos grew rapidly.

Coinciding with Prang's first success, the firm moved to Roxbury in 1867, into a new four-story brick factory, 34x134 feet in plan. Capable of employing 150 persons, the elaborate Victorian factory was extended in 1881 to twice its original size, expanding its working space to house 350 employees.

Prang retired from the business in 1897. For many years the building was used as a storage warehouse; later the former lithograph plant was converted to apartment units.

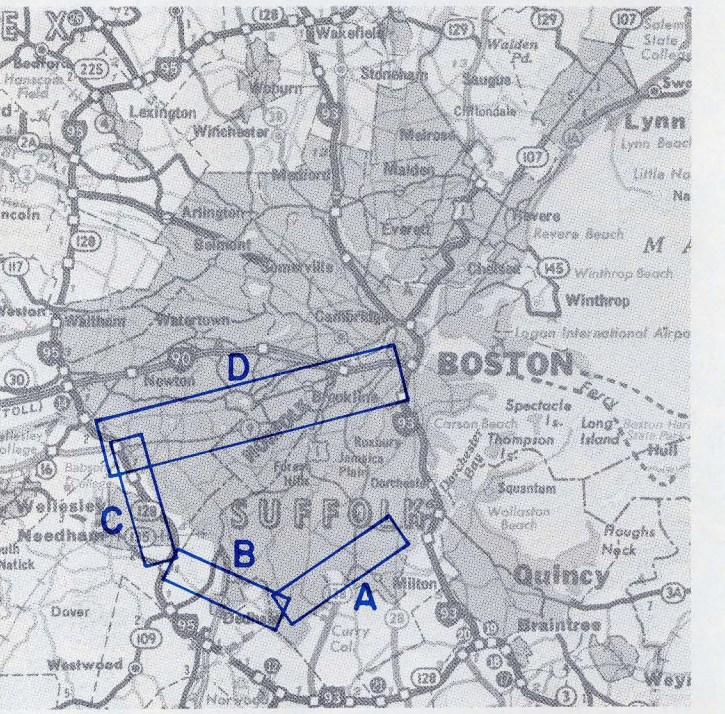


L. Prang Art Publishing House

86 Chickering & Sons Piano Factory 284.892

The most famous of Boston's many piano manufacturers was Jonas Chickering (1797-1853), often credited as the founder of the piano industry in the United States. In 1823 he set up in business for himself near King's Chapel Burying Ground, though the present structure was built in 1853-54 after his old factory was destroyed by fire.

Designed by the Holliston-born architect Edwin Payson, the new brick piano factory was said to be the largest building in North America but for the U. S. Capitol. Built around a large open courtyard, the building measures 250 feet on the side. Today the building contains 174 apartments, in addition to working and exhibition areas for musicians, artists, and craftsmen. (See Guide #525.)



This brochure has been written and edited by Peter Stott from material included in the forthcoming *Guide to the Industrial Archeology of Eastern Massachusetts*, to be published by the MIT Press next year. Production of the brochure was by Charles Parrott and Peter Stott. Peter Bernson, Beth Bower, and Suzanne Spencer-Wood have also contributed to its preparation.

Maps have been prepared from the following 7.5-minute U.S. Geological Survey quadrangles: NEWTON, BOSTON SOUTH, NORWOOD, and BLUE HILLS.

SCALE: 1:25 000
1 in. = approx. 2083 feet
1 cm = 250 meters

