

Merrimac Bridge (Rocks Bridge)
Spanning the Merrimack River on Bridge Street
Haverhill (Newbury)
Essex County
Massachusetts

HAER No. MA-103

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PHOTOGRAPHS
WRITTEN HISTORICAL AND DESCRIPTIVE DATA

Historic American Engineering Record
National Park Service
Department of the Interior
Washington, DC 20013-7127

HISTORIC AMERICAN ENGINEERING RECORD

MERRIMAC BRIDGE
(ROCKS BRIDGE)
HAER NO. MA-103

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Location: Spanning the Merrimack River on Bridge Street, approximately one and three-quarter miles southeast of US-495, between Rocks Village in the City of Haverhill, and West Newbury in the Town of Newbury, Essex County, Massachusetts
UTM: Haverhill, Mass., Quad. 19/336460/4741510

Date of Construction: 1883 (spans 2,3)
1895 (span 1)
1914 (spans 4,5,6)

Structural Type: Six-span iron and steel bridge, featuring a rim-bearing through truss swing span

Engineer: D.H. Andrews (spans 2,3)
Edward S. Shaw (span 1)
R.R. Evans and George F. Swain (spans 4,5,6)

Fabricator/
Builder: Boston Bridge Works, Boston (spans 1,2,3);
McClintic-Marshall & Co., Pittsburgh (spans 4,5,6)

Previous Owner: Essex County, Massachusetts

Present Owner: Massachusetts Department of Public Works, Boston

Use: Vehicular highway bridge

Significance: The Merrimac Bridge is located on a site which has been utilized as a major river crossing since the seventeenth century. It contains the oldest moveable span identified in the Massachusetts Department of Public Works database, and is still operable under hand power. It also contains one of the earliest riveted metal trusses identified in the state, which is one of the earliest known surviving works of the Boston Bridge Works, a nationally significant bridge-building firm in the late-nineteenth and early-twentieth centuries.

Project Information: Documentation of the Merrimac Bridge is part of the Massachusetts Historic Bridge Recording Project, conducted during the summer of 1990 under the co-sponsorship of HABS/HAER and the Massachusetts Department of Public Works, in cooperation with the Massachusetts Historical Commission.

Lola Bennett, HAER Historian, August 1990

Over the wooded northern ridge,
Between its houses brown,
To the dark tunnel of the bridge
The street comes straggling down.

You catch a glimpse, through birch and pine,
Of gable, roof, and porch,
The tavern with its swinging sign,
The sharp horn of the church.

The river's steel-blue crescent curves
To meet, in ebb and flow,
The single broken wharf that serves
For sloop and gundelow.

With salt sea-scents along its shores
The heavy hay-boats crawl,
The long antennae of their oars
In lazy rise and fall.

Along the gray abutment's wall
The idle shad-net dries;
The toll-man in his cobbler's stall
Sits smoking with closed eyes.

You hear the pier's low undertone
Of waves that chafe and gnaw;
You start,--a skipper's horn is blown
To raise the creaking draw.

Thus begins John Greenleaf Whittier's immortal poem, "The Countess," describing the scene of Rocks Village in the early nineteenth century.¹ The bridge spoken of was the Merrimac Bridge, otherwise known as the Rocks Bridge, spanning the Merrimack River, between Rocks Village, in the town of Haverhill, and West Newbury, Massachusetts. The first Merrimac Bridge, built in 1795, replaced a ferry system that had been in operation since the late seventeenth century. Throughout its history, the Merrimac Bridge has served as a weathervane of transportation history, bridge technology, and the politics and economics of this eastern Massachusetts community.

The Merrimac Bridge

From the earliest days of settlement at Haverhill, the northeastern section of the town, now known as Rocks Village, was referred to as "The Rocks," and later, "Holt's Rocks," owing to the abundance of rocks at that spot in the river. The village began as a ferry crossing in the seventeenth century, and a small farming and fishing settlement gradually spread around

it. After John Swett was licensed to keep the ferry in 1711, the place became known as "Swett's Ferry."²

In the late-eighteenth century, Rocks Village was a small but thriving ship-building community, and a group of men from Haverhill and Newbury proposed erecting a bridge across the Merrimack River at that point. This proposal met with heated discussion, and several vigorous protests were made.

Some of the old inhabitants thought that a ferry was the divinely appointed means of crossing a river and that all innovations in such matters were dangerous. Every proposal brought forth a storm of protest from those living above [the location of the proposed structure]. Some of them insisted that it would interfere with the bringing of salt hay up the river, others said it would drive away shad [a type of fish] and others said it would interfere with the normal course of the tides.³

In spite of these protests, however, on June 14, 1794, Enoch Sawyer, William Coffin, Joshua Wingate, Jacob Brown, Joseph Newell, Amos George, Ephraim Elliot, Moses Moody, William L. Abbot, and William Cutler, were incorporated by the General Court, and authorized "to erect a bridge over Merrimack river, from the public landing place at Swett's Ferry in Haverhill aforesaid to the opposite shore in Newbury aforesaid."⁴ The bridge was known as the Merrimac Bridge, or Rocks Bridge, and connected Rocks Village in East Haverhill with the upper parish in Newbury, now a part of the town of West Newbury. The General Court further enacted:

that the said Bridge shall be thirty feet wide, that there shall be one arch at least one hundred and forty feet long over a good depth of water, the Crown of which arch shall be thirty feet above common high water; that there shall be a convenient draw or passage way for vessels at least thirty feet wide, which shall be opened without toll or pay at all times on demand for vessels which cannot pass under said Bridge, that the said Bridge shall be covered on the top with plank or timber, and that the sides be boarded up two feet high, and be railed for the security of passengers four feet high at least and that said Bridge shall at all times be kept in good, safe, and passable repair and shall be furnished with at least four good Lamps which shall be well supplied with oil and kept burning through the night, one of which shall be on each side of the middle of the great arch, and one at each end of said Bridge.⁵(See Appendix A.)

The bridge was completed on November 26, 1795. The event was celebrated by the display of flags, the ringing of bells, the firing of cannons, and by a parade of workmen, officers of the corporation and citizens, who marched in military order over the bridge.⁶ At the time of its construction, the Merrimac Bridge was the longest bridge on the Merrimack River.

The proprietors, naturally hoping that they had made a good investment, were in for a big disappointment, however. The bridge did not raise nearly

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the revenue they had hoped, and consequently, it was allowed to fall into disrepair. In the winter of 1818, the bridge was washed away in a freshet.

The snow had been suddenly melted by a violent rain, and the water rushed down the valley of the Merrimack with the greatest fury, tearing up the ice, which was nearly two feet thick, with the noise and convulsions of an earthquake. Driven into immense dams, the ice rolled and flew about in every possible direction. The river was raised twenty-one feet above common high water mark; the country around inundated; buildings were removed, and destroyed; cattle and sheep drowned; and ruin spread on every side. The noble bridge across the Merrimack at the Rocks' Village became a total wreck, and its fragments were soon lost to sight in the angry and resistless flood.⁷

In the aftermath, the communities were forced to resort to more primitive means of crossing the river, and Haverhill leased the old ferry at Rocks Village to Colonel John Johnson.⁸ The proprietors of the bridge, probably being somewhat relieved to have the decaying structure off their hands, made no effort to rebuild until ten years later.

On March 11, 1828, the General Court authorized the proprietors of the Merrimac Bridge to "rebuild the same upon the old foundations of the bridge."⁹ The work of reconstruction, begun in April, 1828, was completed early in the month of November. The opening took place early in October, and in order to invite travel across the bridge, the proprietors had the following notice placed in the local newspapers:

Notice is hereby given that the bridge across the Merrimack between the towns of Haverhill and West Newbury has been rebuilt the present season upon Town's plan. It is built of plank (except the floor timbers), and for simplicity, strength and durability is considered inferior to no bridge ever invented. Travellers from Haverhill and the interior of New Hampshire to Newburyport will find the road over this bridge pleasant, and the distance less than in any other direction.¹⁰

This bridge, comprised of two Town lattice spans, with a wooden draw span in the middle, was "900 feet in length, with four stone piers and abutments, defended by four sterlings, and was supplied with a draw, as required in bridges over navigable waters."¹¹

In 1868, by an act of legislature, the Merrimac Bridge, along with all other toll bridges in Essex County, was made free, and the county paid the bridge proprietors \$4000 for the structure.¹² The county then decided that the bridge should be kept in repair by the towns of Haverhill, West Newbury, and Amesbury, each paying one third of the cost. During the next fifty years, the bridge underwent dramatic changes.

In 1873 the bridge was found to be in poor condition, especially the wooden draw. The county paid for a new iron draw, while the towns paid for repairs to the rest of the bridge. In 1882 the county commissioners were

authorized to relocate and reconstruct the draw, and the following year, the bridge received two new spans--spans 2 and 3 of the present bridge.(See Figure 1.) Twelve years later, the county rebuilt the westerly span and abutments--span 1.(See Figures 2 and 3.) In 1909 the county assumed full responsibility for the bridge, and a few years later they decided to replace the remaining wooden spans. Of this decision, the newspaper reported:

Its piers have been demolished and renewed from time to time; its underpinning has been strengthened; its roof has been repaired and everything that engineers could devise has been done to keep it strong, but time and use have won and there is no longer any hope of saving it. The spans sag down and the sides sway. The heavy timbers, which have outlived years of storms, are no longer able to support the big loads that pass over the structure, and as it must be rebuilt without further delay, it has been decided that it might just as well be repaired in a modern way, and consequently a new steel bridge will be built, to replace the wooden section. Steel spans have already been built on the Haverhill or Rocks Village end, including the centre span, which is the draw.¹³

In 1913, upon petition from Essex County, the state legislature approved the removal of the two remaining wooden spans, which were replaced by three new steel truss spans--now spans 4, 5 and 6.

The Merrimac Bridge is located on a site which has been utilized as a major river crossing since as early as the seventeenth century. It contains the oldest known moveable span in Massachusetts, and is still operable under hand power. Spans 2 and 3 are thought to be among the earliest riveted metal trusses identified in the state, and among the earliest known surviving work of the Boston Bridge Works--a nationally significant bridge-building firm--discovered to date. Aside from minor repairs, and floor system replacements over the years, the Merrimac Bridge has remained virtually unchanged since 1914.

Description

The Merrimac Bridge is a six-span, 812-foot, iron and steel bridge, comprised of two riveted Pennsylvania through truss spans, three riveted Pratt pony truss spans, and a rim-bearing swing through truss span. The two oldest spans, dating to 1883, are the pony truss at the west end and the swing through truss in the center (spans 2 and 3). The next oldest span is the Pennsylvania through truss on the Haverhill (west) end, built in 1895 (span 1). The remaining three spans (spans 4, 5 and 6) on the West Newbury (east) end, two Pratt pony trusses and a Pennsylvania through truss, were constructed in 1914. Although the spans were all built at different times, the overall elevation of the bridge appears to have been nicely composed, with alternating span lengths and styles.(See Figure 4.) A small toll-keeper's house still stands at the Haverhill end of the bridge. The inclined end posts of the end spans have builders plates, the west end for Boston Bridge Works (fabricators of spans 1, 2 and 3), and the east end for McClintic-Marshall Company

(fabricators of spans 4, 5 and 6).

Beginning at the Haverhill end of the bridge, the 1895 Pennsylvania through truss is 175' long and has riveted connections and built-up members. The polygonal upper chord is comprised of three plates and four angles with lacing. The lower chord is comprised of two sets of angles and two plates. The upper and lower chords are connected by verticals, either four angles and a plate or four angles and lattice. Sub-struts and sub-ties are four angles with lacing and tie plates. The two trusses are laterally braced between the upper chords with single diagonals crossing between panel points, and with transverse struts and bracing.

Span 2 is a 71-foot Pratt pony truss, built in 1883. It has built-up members and riveted connections. The upper chord is comprised of two plates and two angles with lacing in between and on the upper side. The lower chord is two parallel members, each comprised of a plate and an angle. The upper and lower chords are connected with hip posts (two angles with lacing), verticals (two angles with tie plates), and diagonals (two angles, or two angles with lacing).

At the east end of the bridge, spans 4 and 6, built in 1914, are both Pratt pony trusses, with built-up members and riveted connections. They are nearly identical, except for length, with span 4 being 107' long, and span 6 being 94' long. Between them, span 5, also built in 1914, is a 192-foot Pennsylvania through truss, with built-up members and riveted connections.

Span 3 is a 158-foot through truss, with a rim-bearing swing mechanism, built in 1883. (See Figure 5.) The bridge functions as two simple fixed trusses in the closed position and as two cantilevers in the open position. The overall configuration of the span is essentially that of a cross-braced central tower standing on the swing span drum, with two cantilever arms (one on either side), which utilize the double-intersection Warren web system. It has built-up members and riveted connections. The upper and lower chords are comprised of two plates and two angles, with lacing in between and on the upper side. They are connected by built-up diagonal members, which are two angles, or two angles with lacing. The center panel, directly above the swing mechanism, is defined by vertical members, built up of two plates and four angles with lacing. Upper lateral bracing consists of transverse struts (four angles with lacing) at U4 and U7, and single angles crossing between U3 and U5, U5 and U6, and U6 and U8. The floor system is comprised of built-up floor beams (a plate and four angles), steel stringers, and a timber deck. The two central floor beams rest on the swing mechanism, which is operated by means of a pipe, which keys into a shaft accessible through a hole near the center of the bridge deck. The "key" turns a reducing gear, which is attached by a short shaft to a pinion gear, which engages a 24'-diameter rack, fixed to the top of a 26'-diameter central pier. When in motion, or in the open position, the entire weight of the bridge is carried by twenty-four steel wheels which rotate between the built-up, circular drum of the moveable span, and a track plate fixed to the top of the pier. When the bridge closes, wedges on the piers lift the ends of the bridge, thereby relaxing the tension forces on the upper chord, and enabling the super-structure to function as a simple through truss. Of all six spans, the central swing span is the most significant by engineering standards.

Swing Bridges

Because land and water traffic patterns inevitably intersect one another, moveable bridges have dotted the landscape since very early times. Moveable bridges function the same as ordinary bridges when in the closed position, but allow clearance for boats and other water craft when in the open position. There are many types of moveable bridges, but most fall into one of three categories: lift bridges, bascule bridges, and swing bridges. Lift bridges have a moveable truss span that moves vertically between two lifting towers. Bascule bridges stay attached at one end of the span, while the other end lifts upward, tilting the span at an angle. Swing bridges swing or rotate around a central pier.

Historical evidence indicates that draw bridges and lift bridges were used much earlier than swing bridges, particularly in Europe. In modern times, however, swing bridges have superceded other types of moveable bridges in popularity. In the United States, some of the earliest moveable bridges were swing spans. Swing bridges were often chosen over other types of moveable bridges for several reasons: 1. They require less materials to build. 2. They require less routine maintenance, as there are less parts subject to wear. 3. They require less power to operate. 4. They stay in a constant horizontal plane, even during operation, which makes them less subject to stress and wind pressure. The swing bridge was not necessarily the ideal solution for every site--and many times a particular site demanded a particular type of bridge--but all other factors being equal, the swing bridge was generally held as the best solution for the majority of sites. In 1898, Civil Engineer Charles Wright published a book on the design of draw bridge spans, in which he stated, "The swing [bridge] is still the form of draw most used, and except in crowded cities or under special conditions it is the simplest, cheapest, and best."¹⁴

The biggest drawback of the swing span, as noted in 1873 by Squire Whipple--one of the leading bridge authorities of his day--was countering the "reversed action in the upper and lower members, from what they would suffer if supported at the ends. That is, in the [open position], the upper members are exposed to tension, and the lower, to compression, instead of the reverse, which takes place in the [closed position]."¹⁵ In early swing bridges, the solution to this problem was the erection of a central tower above the truss, from which suspension cables ran out toward the ends of the span. These cables, or rods, supported the ends of the bridge in the open position, but the drawback was the tremendous weight of the tower. Later swing spans still incorporated the tower idea into the superstructure of the bridge, thus centering the weight over the central pivot point, but built-up members and riveted connections allowed the bridge members to carry both tension and compression forces, thus eliminating the need for the cables.

Other improvements, including turntable design, were adapted from the railroads, and further enhanced the engineers' ability to design efficient swing mechanisms, making the swing span the choice of civil engineers designing moveable spans across the country. In his 1926 treatise on the design of moveable bridges, Otis Hovey, then Assistant Chief Engineer of the American Bridge Company, noted that "less power is needed to turn a swing

bridge than for any other type [of moveable bridge]."¹⁶ In the case of the Merrimac Bridge, one man can turn the span in just a couple of minutes.

Boston Bridge Works

The Boston Bridge Works was established in 1876 by David H. Andrews, a young man who had apprenticed in machine shops in Worcester and Fitchburg, and received his formal engineering training from Dartmouth College. Shortly after graduation, Andrews worked for the National Bridge & Iron Works of Boston, where he gained experience in structural engineering of buildings and bridges.¹⁷ When National Bridge & Iron Works went out of business in 1876, Andrews bought the tools and machinery, and founded his own company in Cambridge, the Boston Bridge Works. From a small shop in the 1870s, the business grew into one of the most successful bridge-building companies in New England by the turn of the century.¹⁸ (See Figure 6.) In 1900, when the American Bridge Company merger gobbled up many of the company's smaller, regional competitors, Boston Bridge Works became one of the largest independent bridge manufacturers in New England.¹⁹

In the sixty years of its existence, Boston Bridge Works took on many types of projects, ranging from the standard Warren and Pratt trusses, to custom-curved railroad bridges. Moveable bridges never constituted a significant portion of the company's trade, but at least ten Boston Bridge Works swing, lift, and draw spans are known to have survived in Eastern New England.²⁰ According to the Massachusetts state historic bridge inventory, conducted by the Massachusetts Department of Public Works, spans 2 and 3 of the Merrimac Bridge represent the second earliest known surviving work of the Boston Bridge Works. The bridge has a lattice railing along its length, with the section at the west end incorporating original trademark Boston Bridge Works medallions.

McClintic-Marshall Construction Company

The manufacturer of spans 4, 5 and 6 was the McClintic-Marshall Construction Company of Pittsburgh, Pennsylvania, a nationally significant twentieth-century bridge-building company. The company's primary founder, Howard Hale McClintic, was born at Lewistown, Pennsylvania, April 9, 1867. His father, Robert Hofferd McClintic, was in the furniture and undertaking business. Howard McClintic received his early education in the public schools and went on to study civil engineering at Lehigh University. After his graduation in 1888, McClintic was employed for a short time by a Pittsburgh engineering firm, and subsequently was engaged by the Shiffler Bridge Company of that same city.

When the American Bridge Company took over the Shiffler Company in 1900, McClintic, along with college classmate Charles Donnell Marshall, went into business for themselves. With the financial backing of Andrew and Richard Mellon, the two men purchased an old steel plant in Pottstown, Pennsylvania, and began to operate a bridge fabricating shop under the name of McClintic-Marshall Construction Company, and "ultimately built it into one of the nation's largest independent steel fabricating firms."²¹ The company's most

well known projects included: the lock gates for the Panama Canal; the towers and floor system for the George Washington Bridge over the Hudson River and the Golden Gate Bridge at San Francisco; the Ambassador Bridge at Detroit, Michigan; Salmon Tower and the New York Central Railroad Building in New York; the Civic Opera House and Merchandise Mart of Chicago; and the steel plant for the Tata Iron & Steel Co. of British India.²² Of the company's projects in New England, perhaps one of their best-known was the construction of the French King Bridge on Route 2 over the Connecticut River at Erving, Massachusetts, in 1932. (See HAER report MA-100.)

By 1931, the company was valued at \$64,000,000, and had plants at Rankin, Lancaster, Carnegie and Pottstown, Pennsylvania, and at Chicago, Buffalo and Los Angeles.²³ That year, Howard McClintic retired, and the business was acquired by the Bethlehem Steel Company for \$32,000,000, although the company retained its name and some of its directors.²⁴ Several years later, H.H. McClintic died in Pittsburgh, on August 5, 1938.

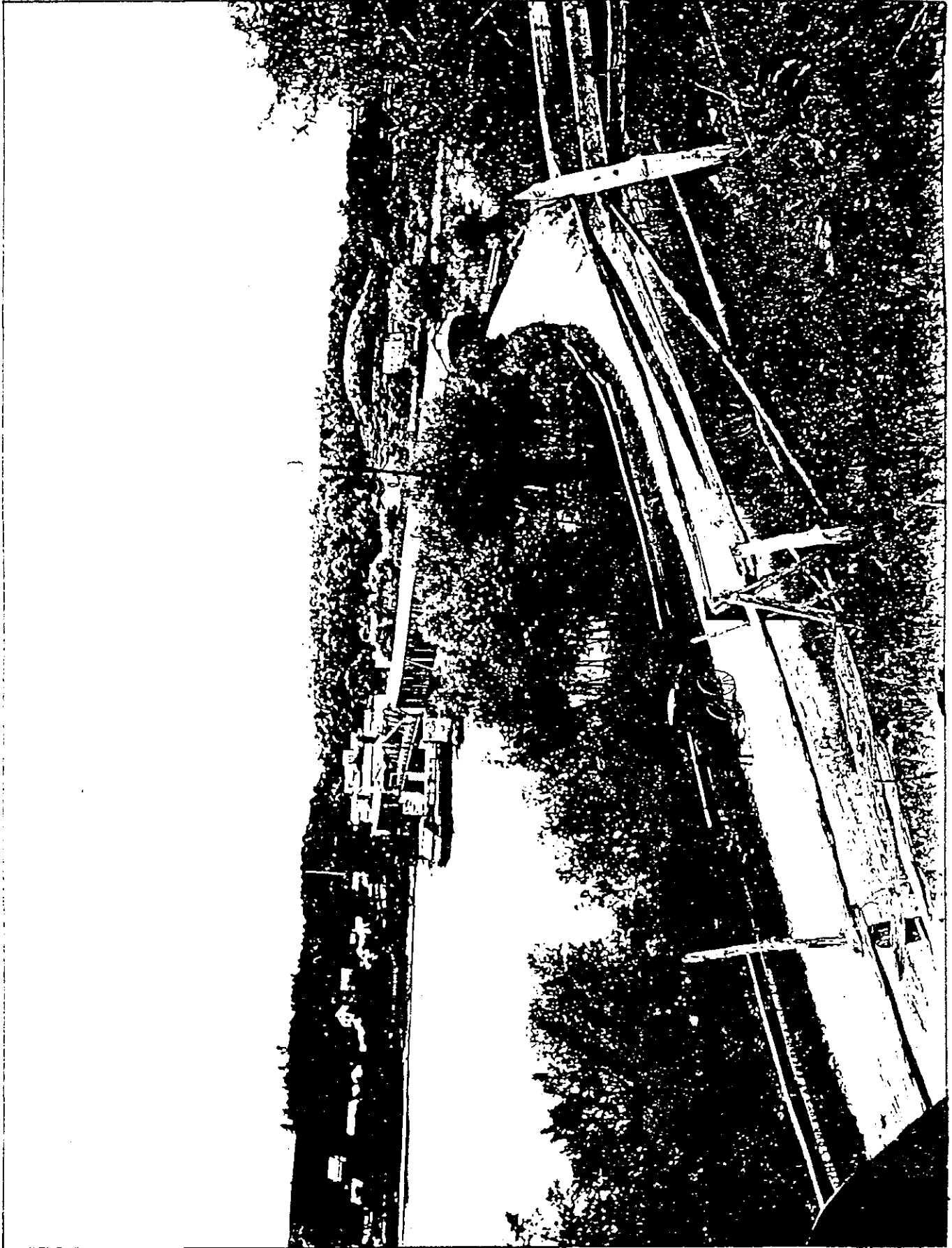


Figure 1. Historic view of Merrimac Bridge, from West Newbury shore, c. 1880s.
(Photo courtesy of Haverhill Public Library Special Collections.)

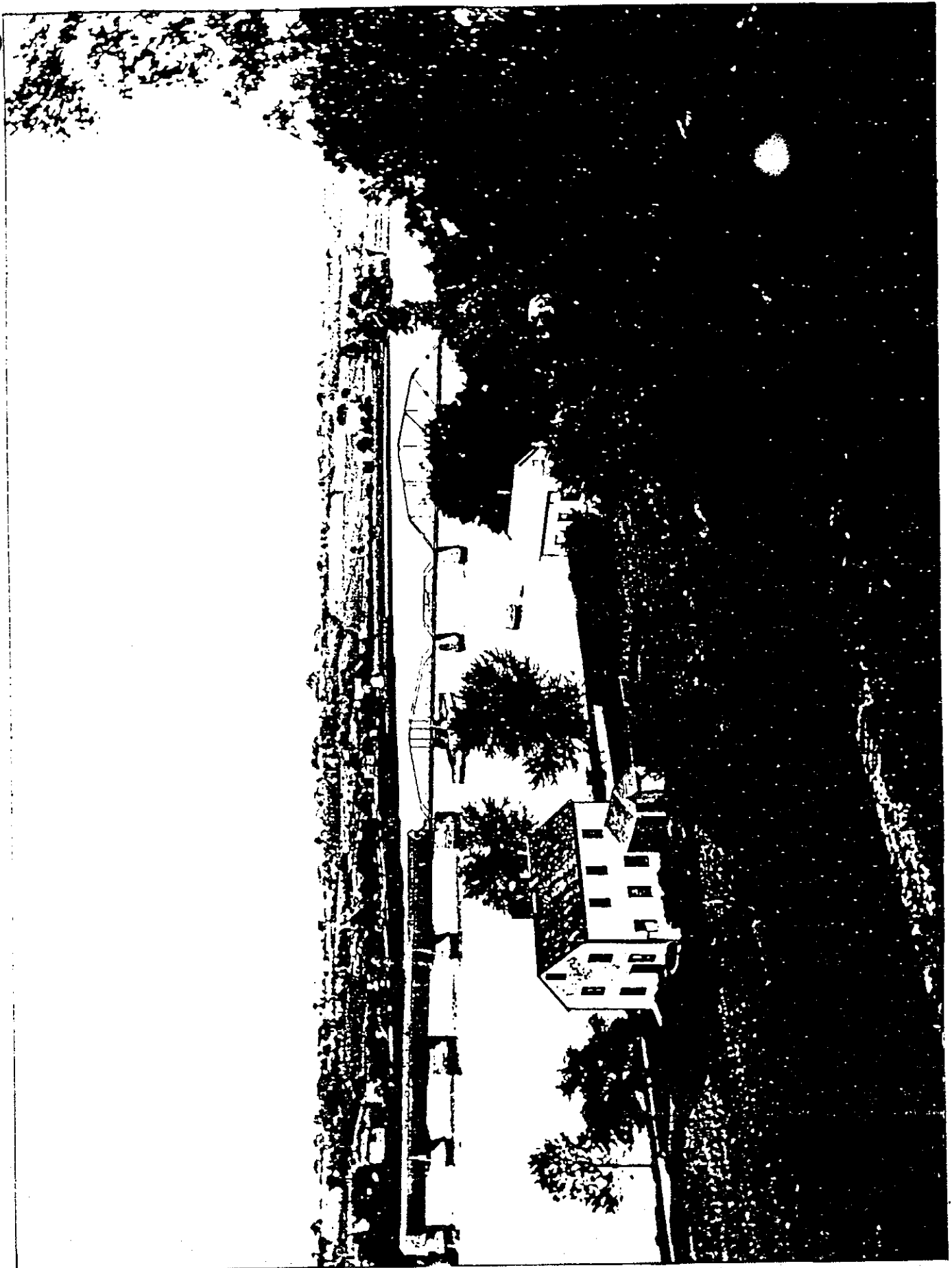


Figure 2. Historic view of Merrimac Bridge, from Haverhill shore, c. 1890s.
(Photo courtesy of Haverhill Public Library Special Collections.)

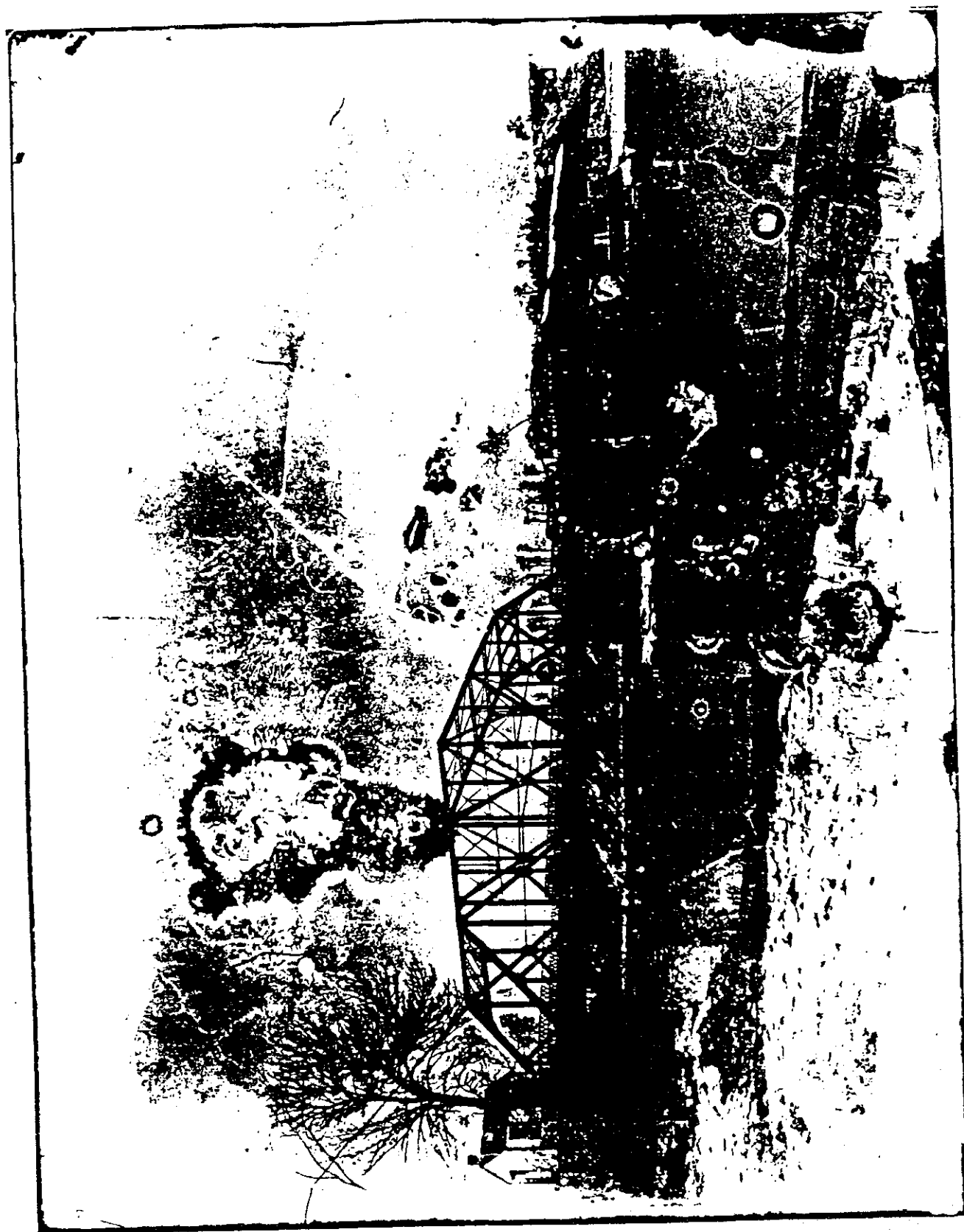


Figure 3. Historic view of Merrimac Bridge, from Haverhill shore, c. 1900.
(Photo courtesy of Haverhill Public Library Special Collections.)

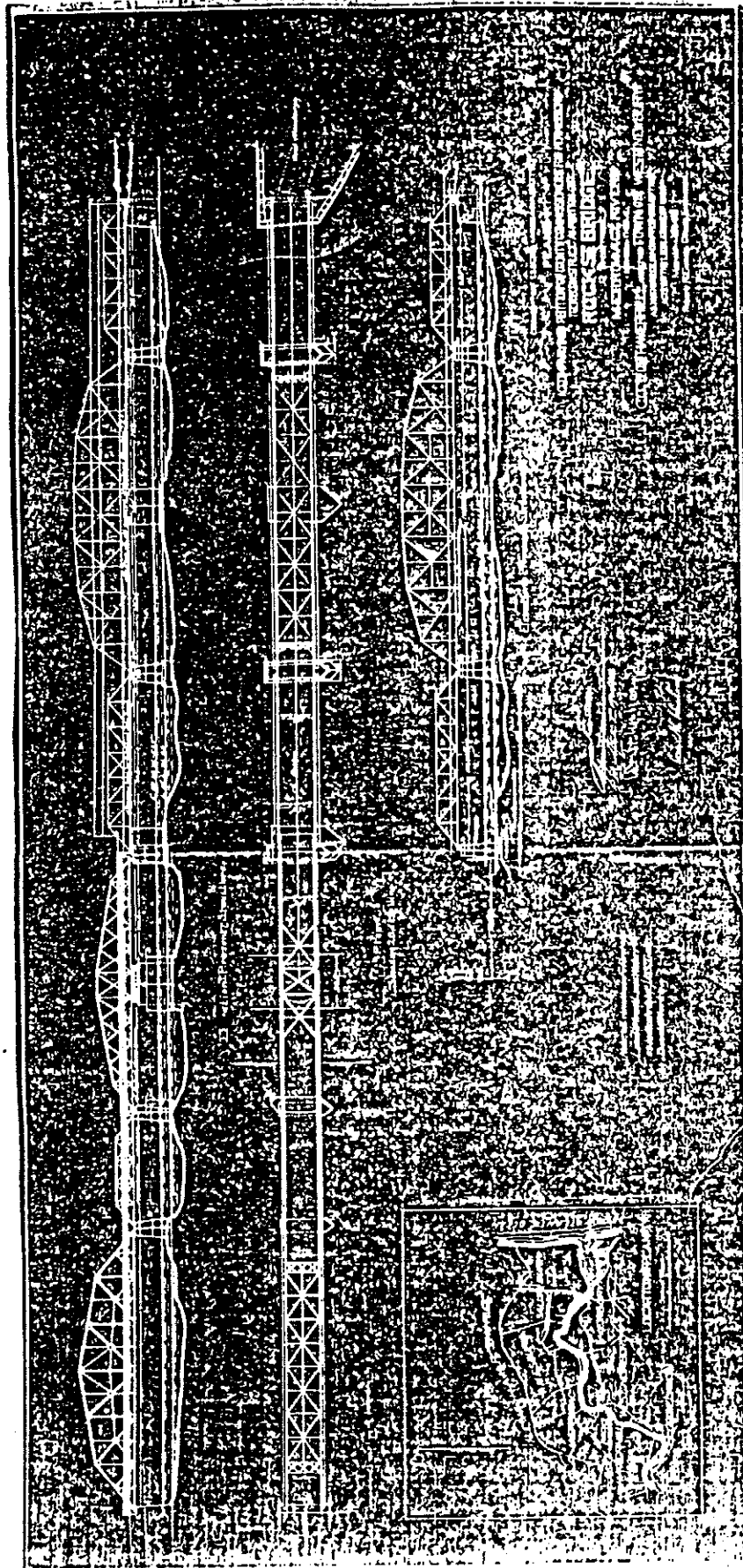


Figure 4. Elevation of Merrimac (Rocks) Bridge, 1914.
(Massachusetts Department of Public Works bridge files.)

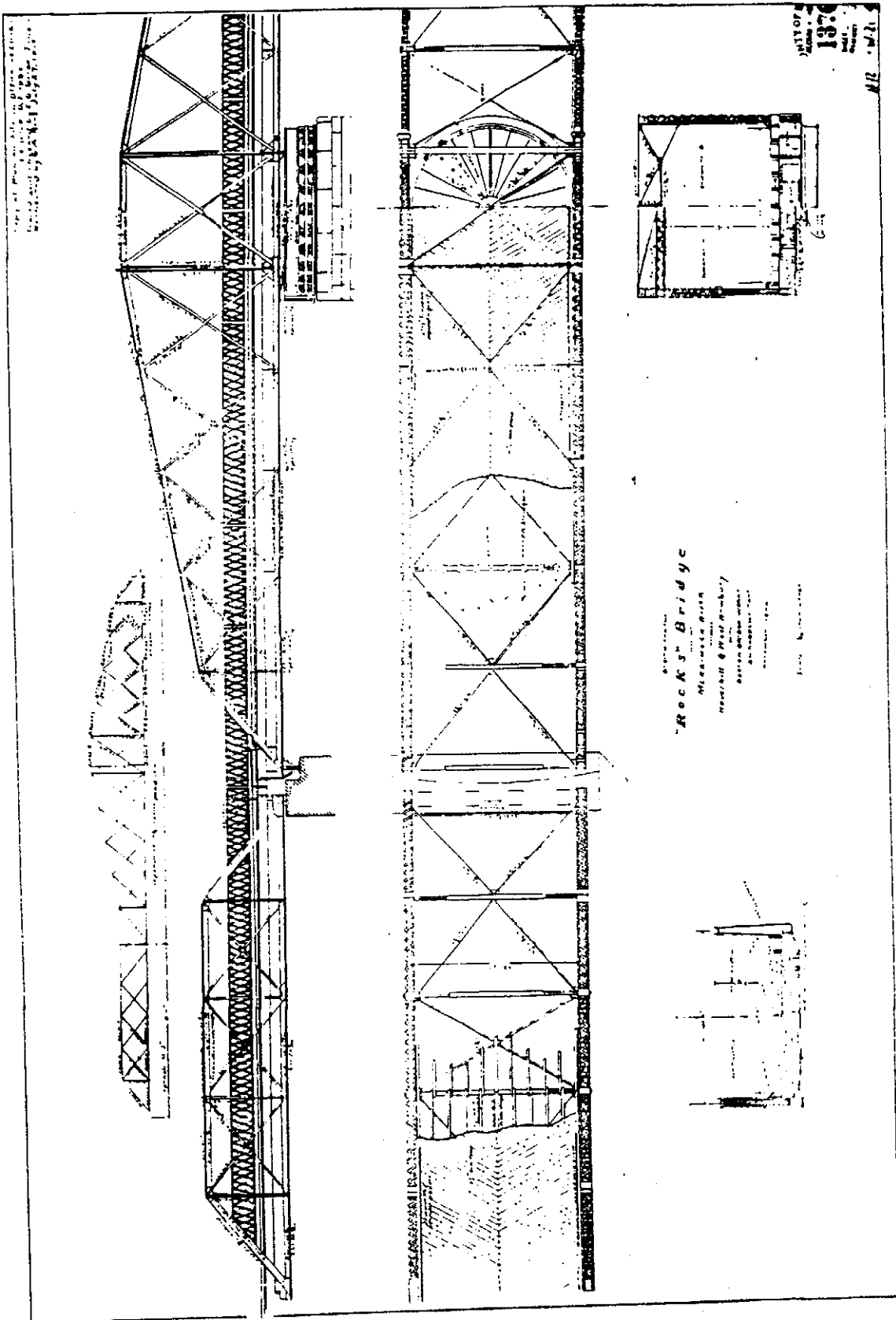
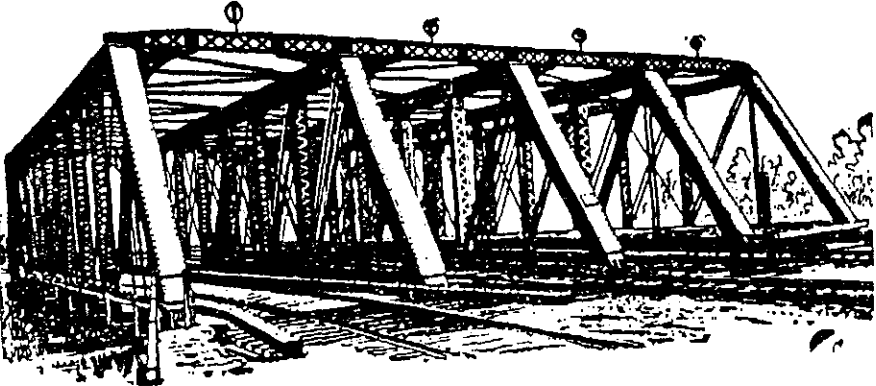


Figure 5.
Plan for spans 2 and 3 of Merrimac (Rocks) Bridge, Boston Bridge Works, 1882.
(Massachusetts Department of Public Works bridge files.)

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BOSTON BRIDGE WORKS.
D. H. ANDREWS, Proprietor. 70 KILBY ST., BOSTON MASS.



DESIGNERS AND BUILDERS OF
Railroad Bridges and Heavy Wrought Iron Structural Work.
OF EVERY DESCRIPTION.
SUPERIOR WROUGHT IRON TURNABLES A SPECIALTY.
Works on Grand Junction Railroad. Annual Capacity, 10,000 Tons.

Figure 6. Advertisement for Boston Bridge Works.

line dividing the Middle parish and the North parish as above described, be and hereby are incorporated into a separate parish by the Name of the North parish in Hallowell; and that each of said parishes be, and hereby is vested with all the powers, privileges and immunities which other Parishes within this Commonwealth are entitled to, or do by Law enjoy.

And he it further Enacted by the Authority aforesaid, that any of the Inhabitants of said Town of Hallowell shall at all times forever hereafter, have full liberty to join themselves with their families and estates to either of the Parishes aforesaid in said Town, and to return or remove therefrom to any other parish in said Town, *Provided* they shall some time in the month of March certify in writing under their hands to the Clerk of said Town, to which of said Parishes they choose to belong; Whereupon they shall thereafter be liable to be taxed with their estates in such Parish mentioned in such Certificate; then just proportion of all parish Taxes and not elsewhere.

Inhabitants permitted to join either Parish.

Proviso.

Hon D Concy, Esq. to be sworn out warrant

And he it further Enacted by the Authority aforesaid, that the Honorable Daniel Concy Esq. be, and he is hereby authorized to issue his several warrants directed to some suitable person in each of said Parishes respectively, requiring him to notify and warn the Inhabitants of such parish to meet at the time and place expressed in such warrants for the purpose of choosing such Officers as may by Law be chosen by Parishes in the month of March or April annually, and also for the transaction of any other business, that may be legally transacted in parish meetings.

Approved June 11, 1794.

1794. — Chapter 3.

[May Session, ch. 3.]

AN ACT FOR INCORPORATING CERTAIN PERSONS FOR THE PURPOSE OF BUILDING A BRIDGE OVER MERRIMACK RIVER, BETWEEN THE TOWNS OF HAVERTHILL AND NEWBURY IN THE COUNTY OF ESSEX, AND FOR SETTING THE SAME.

Whereas a Bridge over Merrimack River, between the towns of Haverhill and Newbury in the County of Essex, would be of public convenience; and whereas Daniel Sawyer Esqr. and others have presented a petition to this Court setting forth that they with divers other persons, have associated for the purpose of building said Bridge, and

ACTS, 1794. — CHAPTER 3.

praying for liberty to build the same, and to be incorporated for that purpose;

Be it therefore Enacted by the Senate and House of Representatives in General Court assembled and by the authority of the same that Daniel Sawyer, William Collins, Joshua Wingate Esqrs, Messieurs Jacob Brown, Joseph Newell, Amos George, Ephraim Elliot, Moses Moody, William L. Abbot, and William Cutler, with such other persons as have associated with them as aforesaid, and all those who may hereafter become proprietors in said Bridge be, and they are hereby made and constituted a Corporation and Body Politick for the purpose aforesaid, by the name of the proprietors of Merrimack Bridge, and by that name may sue, and be sued to final judgment and execution, and do and suffer all matters acts and things which Bodies politic may or ought to do and suffer; and the said Corporation shall and may have and use a common seal, and the same may break and alter at pleasure.

Proprietors incorporated into a body politic.

And he it further Enacted by the authority aforesaid,

Proprietors may call meet

that the said Joshua Wingate, Jacob Brown and Moses Moody, or any two of them may by advertisement in the News paper called the Morning Star, and by posting an advertisement in the towns of Haverhill and Newbury respectively, warn or call a meeting of the said proprietors to be holden at any suitable place and time after six days from the publication and posting up said advertisement; and the said proprietors by a vote of the majority of those present, or represented at said meeting, accounting and allowing one vote to each single share in all cases, shall choose a Clerk, who shall be sworn to the faithful discharge of the duty of his said Office; and shall also agree on a method of calling future meetings, and at the same or any subsequent meeting may elect such officers, and make and establish such rules and bye laws as to them shall seem necessary and convenient for the regulation & government of the said Corporation, for carrying into effect the purpose aforesaid and for collecting the toll herein after granted and established; and the same rules and bye laws may cause to be executed, and may annex penalties to the breach thereof, not exceeding three pounds; *provided* the said rules and bye laws be not repugnant to the Constitution or laws of this Commonwealth; and all representations at any meeting of said Corporation, shall be proved by writing signed by the person to be represented, which shall be filed by the Clerk; and this act, and all rules and

may make and establish rules and regulations.

Proviso.

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by laws, regulations votes and proceedings of said Corporation shall be fairly and truly recorded by the said Clerk in a book or books to be provided and kept for that purpose.

And he it further enacted by the authority aforesaid that the said proprietors be, and they are hereby permitted to erect a bridge over Merrimack river, from the public landing place at Sweet's Ferry in Haverhill aforesaid to the opposite shore in Newbury aforesaid.

And he it further Enacted by the authority aforesaid, that the said proprietors be, and they are hereby authorized and empowered to purchase any real estate they think necessary or convenient to purchase, for effecting the purpose aforesaid to the amount of one thousand pounds and to hold the same in fee simple, and that the share or shares of any proprietor in said real estate and bridge be transferred by deed acknowledged and recorded by the Clerk of said proprietors in a book to be kept for that purpose; & when any share or shares in said Bridge and estate shall be attached on *mesne* process, as the property of any of said proprietors, an attested copy of such process shall be left with the Clerk of said proprietors at the time of such attachment, otherwise the same shall be void.

And he it further Enacted by the authority aforesaid, that for the purpose of reimbursing the said proprietors, the monies by them expended or to be expended in building and supporting the said Bridge, a toll be, and hereby is granted and established for the sole benefit of the said proprietors, according to the rates following, *viz.* For each foot passenger two thirds of a penny; — for each person and horse three pence; — for each wheelbarrow, hand cart, or other vehicle capable of carrying like weight two pence; for each horse and chaise chair or sulkey eight pence; — for each riding sley drawn by one horse six pence; — for each riding sley drawn by more than one horse, nine pence; — for each coach, chariot, Phaeton or other four wheeled carriage for passengers one shilling and six pence; — for each curicle one shilling; — for each cart, sled, sley or other carriage of burthen drawn by one beast six pence; — for each wagon, cart, sled, sley or other carriage of burthen drawn by more than one beast, and not more than four beasts, nine pence; — for each wagon, cart, sled, sley or other carriage of burthen drawn by more than four beasts at the rate of two pence for each beast; — for each horse or neat Cattle, other than those rode on or in carriages, two pence; — for each sheep or swine two thirds

Proprietors permitted to build a bridge —

— authorized to purchase real estate.

A toll established.

Rates of.

of a penny, and to each team one penny only shall be allowed as a driver, to pass free of toll; And at all times when the toll gatherer shall not attend his duty, the gate or gates shall be left open; and the said toll shall commence on the day of the first opening of said Bridge for passengers and shall continue to the said proprietors their heirs and assigns for ever — *provided however* that the General Court shall have a right to regulate the toll after a term of fifty years.

Time of continuation.

And he it further Enacted by the authority aforesaid that the said Bridge shall be thirty feet wide, that there shall be one arch at least one hundred and forty feet long over a good depth of water, the Crown of which arch shall be thirty feet above common high water; that there shall be a convenient draw or passage way for vessels at least thirty feet wide, which shall be opened without toll or pay at all times on demand for vessels which cannot pass under said Bridge, that the said Bridge shall be covered on the top with plank or timber, and that the sides be boarded up two feet high, and be railed for the security of passengers four feet high at least and that said Bridge shall at all times be kept in good, safe, and passable repair and shall be furnished with at least four good lamps which shall be well supplied with oil and kept burning through the night, one of which shall be on each side of the middle of the great arch, and one at each end of said Bridge.

Reason.

And whereas the erection of said Bridge may diminish the emoluments of the proprietors of Essex Merrimack bridge built at Deer Island, which was a work of heretofore public utility;

Time of the Corporation of the Proprietors of Essex Merrimack Bridge to be computed from the day of the first opening of said Bridge for passengers.

Be it Enacted that the proprietors of Essex Merrimack bridge shall continue to be a Corporation & body politic for and during the term of seventy years, to be computed from the day said Bridge was completed and opened for passengers subject to all the conditions regulations & provisions contained in an Act intitled *An Act for incorporating certain persons for the purpose of building a bridge over Merrimack River in the County of Essex & for supporting the same.* And during said term of seventy years said proprietors of Essex Merrimack Bridge shall and may continue to collect and receive all the toll granted by said act for their use and benefit; and at the expiration of said seventy years said Essex Merrimack bridge, shall revert to and be the property of the Commonwealth, and shall be surrendered in good repair.

Act null, in case.

And be it further Enacted by the authority aforesaid that if the said proprietors shall neglect for the space of six years from the passing this Act to build said Bridge, then this Act shall be void. *Approved June 14, 1794.*

1794 — Chapter 4.

(May Session, ch. 4.)

AN ACT FOR INCORPORATING CERTAIN PERSONS BY THE NAME OF THE BOSTON LIBRARY SOCIETY.

Be it enacted by the Senate and House of Representatives in General Court assembled and by the authority of the same, that Samuel Parker, Joseph Lacey, John Eliot, George Richards, Minot, Samuel Hall, Charles Bulfinch, William Spooner, Charles Vaughan & William Scollay, and their associates, proprietors of the said Library, and all such as may hereafter subscribe to the same be, and they hereby are incorporated into a body politic by the name of the Boston Library Society; and that they have perpetual succession by the said name, & have power to make all bye laws and regulations for the better use and maintaining of the said Library & recollecting the manner of using the same, with penalties of debt, imprisonment, or fines not exceeding sixty dollars for each offence without such penalties as to the said Society may seem best; provided such bye laws and regulations be not repugnant to the laws of this Commonwealth.

And be it further enacted by the authority aforesaid, that the said Boston Library Society be, and they hereby are authorized and empowered, to make and use a Common Seal, and are hereby made liable to be sued, and empowered to sue and defend in their said corporate capacity, by the name aforesaid, in any of the Courts of law of this Commonwealth; and to make purchases and receive subscriptions, grants & donations of real and personal estate, not exceeding the sum of fifteen thousand pounds, for the purpose of their association as aforesaid, and to dispose of their property as to the said Corporation shall seem fit.

And be it further enacted by the authority aforesaid, that it shall be lawful for the said Society at any meeting in the month of March at which a majority of the subscribers in number shall be present, to vote grant or order the raising of such suitable sum or sums of money as may be necessary for defraying the annual expense of preserving the said library, and managing the same for the use of

Persons incorporated.

Society empowered.

Power of raising money.

the proprietors but for no other purpose: *provided* not less than one month's notice be given in two or more of the Newspapers printed in Boston, of such meeting, and the business, so far as relates to any proposed assessment there to be transacted.

And Be it further enacted by the authority aforesaid, that the said Society be, and hereby are authorized to assemble on the second Monday of July next, and afterwards on the first Monday of March in every year, to choose Trustees, a Treasurer, Librarian, and such other officers as to them may appear necessary who shall continue until others are chosen in their room, & that the said society may assemble as often as they may agree upon, for filling up any vacancies that may happen in such offices, & for transacting all other business excepting assessing & raising monies as aforesaid; And George Richards Minot Esqr. is hereby authorized and empowered to call a meeting of the said Society at such place in Boston, as to him may appear proper, on the second Monday of July next as allowed by this act.

Approved June 17, 1794.

1794 — Chapter 5.

(May Session, ch. 5.)

AN ACT IN ADDITION TO AN ACT INTITLED AN ACT FOR THE DISTRIBUTION OF INSOLVENT ESTATES.

Be it enacted by the Senate, and House of Representatives in General Court assembled, and by the authority of the same, that whenever any Executor of the last will, or Administrator upon the estate of any person deceased, or that may hereafter decease, already appointed, or that may hereafter be appointed, shall neglect to exhibit and settle his Account of Administration with the judge of probate, where the Estate has been represented insolvent, and commissioners have reported to the judge a list of claims within six months after such report shall be made to the judge, or within such further time as the judge of probate shall think proper to allow therefor, under his hand and seal, so that by such refusal or neglect, the judge cannot proportion the estate among the Creditors, any Creditor to such estate may commence and prosecute any action, or prosecute any action then already commenced, and depending for his demand against such Executor or Administrator, and the Court before whom such action may be depending shall and may proceed to hear, and determine

Creditors may commence and prosecute any action in court of probate, or in any court of law.

George Richards and Minot Esqr. is hereby authorized and empowered to call a meeting.

ENDNOTES

1. Whittier wrote the poem about Mary Ingalls, a Rocks Village native, who married Count Francois de Vipart of France early in the nineteenth century.
2. George Wingate Chase, The History of Haverhill, Massachusetts, 1640-1860 (Lowell, Massachusetts, 1861), pp.236-237, 248, 323, 338.
3. Sunday Record, Haverhill, Massachusetts, August 25, 1929.
4. Acts of Massachusetts, 1794, Chapter 3, pp.8-12.
5. Ibid.
6. John J. Currier, History of Newbury, Massachusetts, 1635-1902 (Boston, 1902), p.279.
7. Chase, pp.492-493.
8. Haverhill Gazette, Haverhill, Massachusetts, December 13, 1912.
9. Acts of Massachusetts, 1827, Chapter 117, p.689.
10. Haverhill Gazette, December 13, 1912.
11. Cyrus Mason Tracy, and others, Standard History of Essex County, Massachusetts (Boston, 1878), p.169.
12. Haverhill Gazette, December 13, 1912.
13. Haverhill Evening Gazette, December 6, 1912.
14. Charles H. Wright, The Designing of Draw-Spans (New York, 1898), p.87.
15. Squire Whipple, An Elementary and Practical Treatise on Bridge Building, 2nd ed. (New York, 1873), p.324.
16. Otis Hovey, Movable Bridges, vol. 1 (New York, 1926), p.20.
17. See Gregory J. Galer, "The Boston Bridge Works and the Evolution of Truss Building Technology," Senior Thesis, Brown University, Providence, Rhode Island, 1989.
18. Ibid.
19. Ibid.
20. Ibid.

MERRIMAC BRIDGE
(ROCKS BRIDGE)
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21. "McClintic, Howard Hale," biographical sketch, in The National Cyclopaedia of American Biography, vol. 29 (New York, 1941), p.95.

22. Ibid.

23. Ibid.

24. "Bethlehem Enters Pittsburgh," Post-Gazette, Pittsburgh, Pennsylvania, February 7, 1931.

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