

# Stone Arch Bridges in Downtown Amesbury

**Pond Street  
Main Street  
Elm Street**

by  
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Amesbury Carriage Museum  
Amesbury, MA

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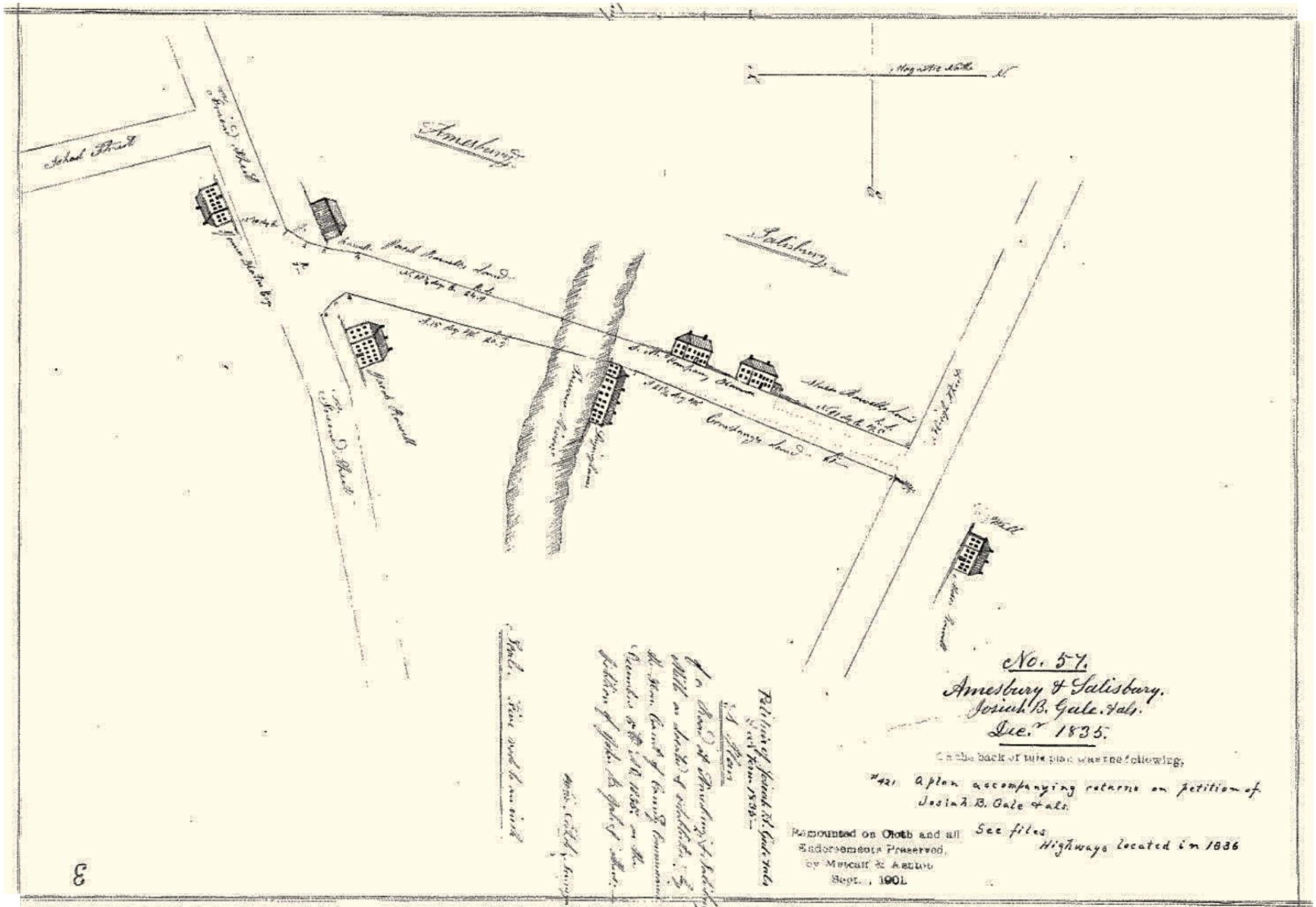
# Pond Street Bridge

Often seen and photographed, this bridge gracefully arches over the Powow River next to Mill #1. The next page shows an 1835 Amesbury plan petitioned by Josiah B. Gale with the county commissioners for a new street (Pond St.) connecting Friend St. in Amesbury to High St. in Salisbury, bridging the Powow River<sup>1</sup>. The river was the dividing line between Amesbury and Salisbury until 1886, so that Salisbury had to agree to any finalized plan and bridge. The plan was approved in 1836 and construction begun<sup>2</sup>. It was additionally agreed at the same planning meeting to improve Main Street, also part of Gale's petition.

Gale's proposal encompasses School St. over to High Street. Pond Street begins between several Rowell family residences on Friend Street. Just across the bridge, on the right, is a drying house along the river belonging to Salisbury Mfg. Co. textile mills. That older building was replaced by current brick Mill #1 in 1855. The bridge is pictured on pages following Gale's proposal.

- 1) Researched by ACM volunteer, Joyann Reynolds
- 2) *History of Amesbury*, Joseph Merrill, 1880, pg. 349

# Josiah B. Gale's 1835 Proposal for Pond Street and its Bridge



# Pond Street Stone Arch Bridge next to Mill #1



# The Seldom Seen Side of Pond Street Bridge



## Pond Street Bridge Interior Construction



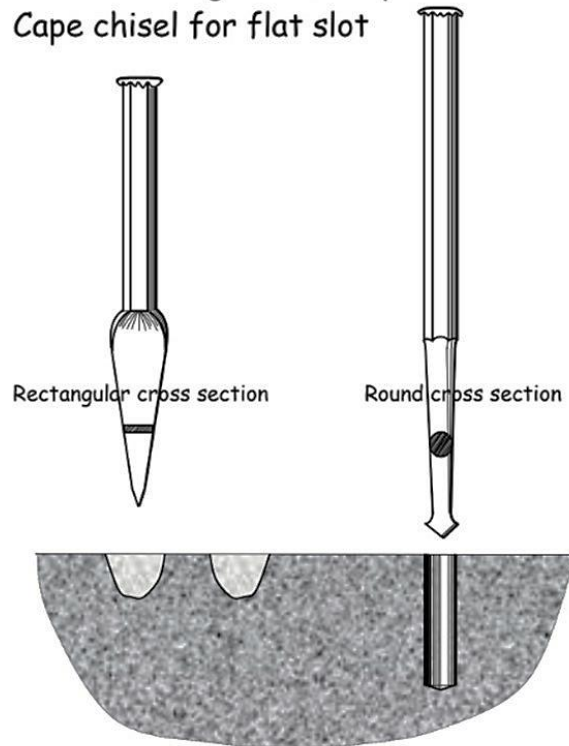
General construction of the arch and bridge face is similar to that of the Main Street west arch and Elm Street bridges. Foundation stones are of both natural and rectangular shapes, surmounted by a sill of long rectangular stones. The arch is composed of rows of rectangular stones staggered such that end joints do not align with joints in rows above or below, so that no vertical slippage can occur. An arch stone is seemingly missing, although the gap may intentionally accommodate a visible drainage pipe. Traversing the arch near that is a concrete beam that either supports the arch or encloses a water main.

# The Granite

While granite for occasional uses can be harvested from local outcroppings, widespread infrastructure and large buildings required significant supplies. It is known that Rockport, MA granite was used on piers for the 1883 iron truss bridge between Deere Island and Salisbury. Rockport had several harbors and piers for loading granite directly onto barges that could be brought up-river to Amesbury, and even up the Powow River to town docks. It is probable that some of the early and mid 19<sup>th</sup> century Amesbury projects also used Rockport stone.

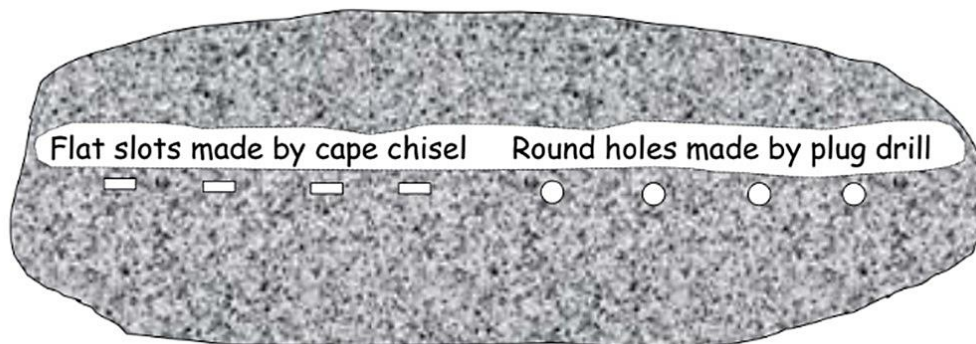
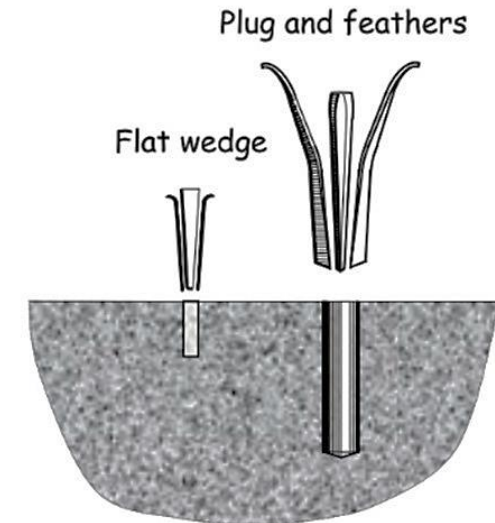
# The Two Main Methods of Splitting Granite<sup>1</sup>

Plug drill for cylindrical hole  
Cape chisel for flat slot



Rows of flat slots made by cape chisels were used for early granite splitting, gradually replaced starting in the 1830s by round holes having shims and wedges inserted. Stones in the west section of the Main St. bridge show both methods of stone splitting, as does the Powow River side of the granite foundation for 1854 Mill #4 on Water Street. In both cases, round holes dominate. It appears that these methods overlapped for some time, and thus may not provide a “finely-tuned” dating method.

Into this hole were placed a pair of half-round steel shims or “feathers,” and between these was driven a wedge or “plug” which exerted outward pressure and split the stone. The advantage of the “plug-and-feathers” method of splitting was the greater depth within the stone at which the wedges exerted their pressure, thus allowing larger pieces to be split more accurately.



- 1) *Granite Splitting Tools and Techniques*, New Hampshire Division of Historical Resources, James L. Garvin, researched by Steve Klomps



# Main Street Bridge

There has been a bridge at this location for 300 years, although it is unclear when a stone arch first appeared. When Mill #3 (Ben's Uniforms) was built in 1820, it was noted as being adjacent to the bridge<sup>1</sup> (or at least a bridge). Following photos show that the stone arch bridge has two side-by-side sections that differ in construction style. The riverbed under the bridge is strewn with rock rubble.

It was noted regarding the Pond Street bridge that approving its plan included 1836 improvements to Main Street, which seemingly implied widening Main Street on its west side<sup>2</sup>. That resulted in the west bridge section, accompanied by construction of the adjacent Counting House expansion by the textile mill company. The following photos show that the west section is of similar construction to the Pond Street bridge, having natural foundation stones, long rectangular sill stones, and staggered rows of rectangular arch stones.

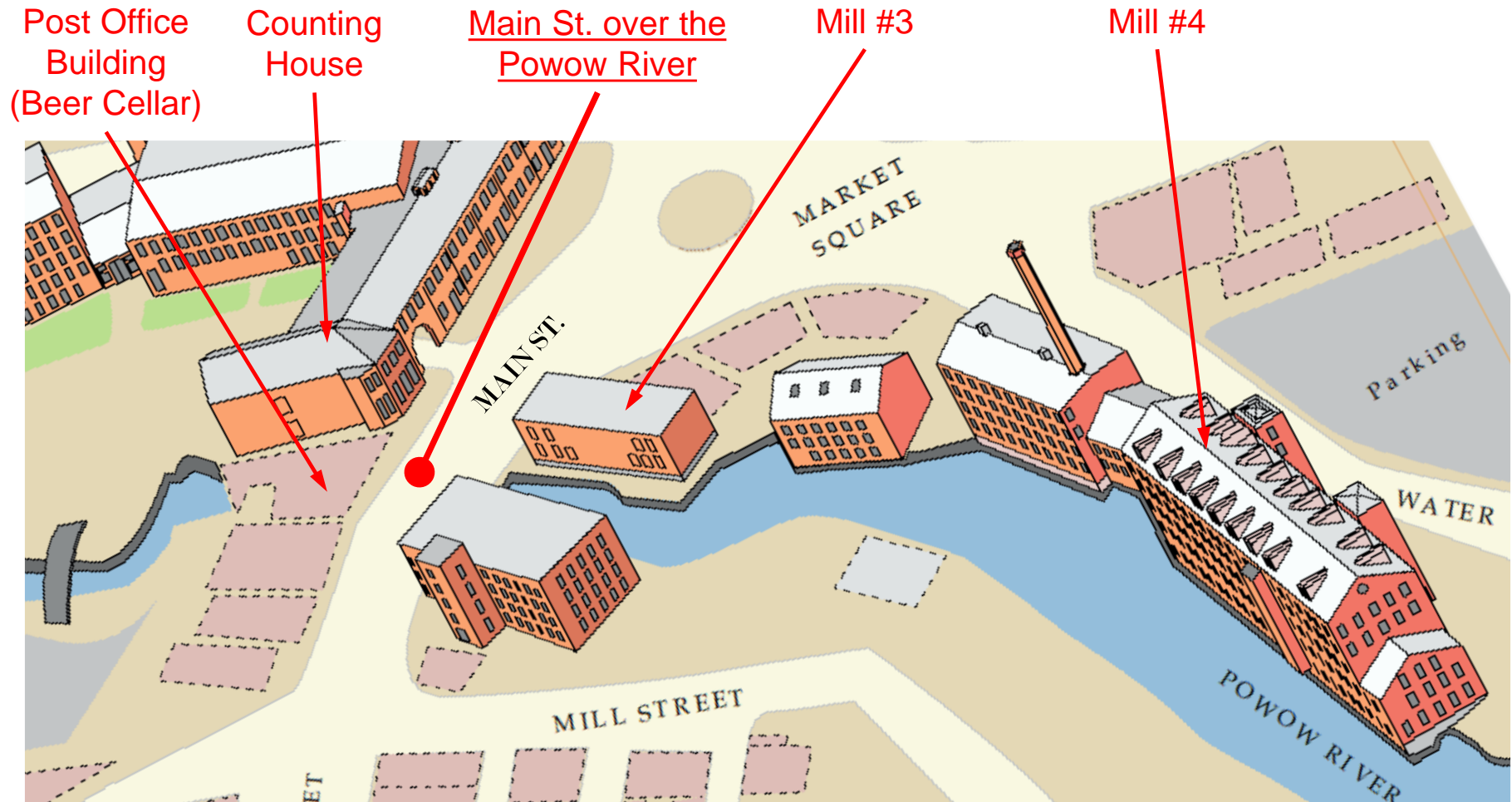
The east section is of slightly different construction in the foundation and lack of a distinct sill. On one hand, the east section could be surmised as the bridge that Mill #3 was built adjacent to in 1820. While west section stones have been split using both the earlier and later splitting techniques previously explained, drilled holes dominate, and drilled holes are about entirely used on the east section, pretty strongly suggesting on the other hand that the east section may be of a later date than the west section. Under that scenario, the front of Mill #3 was cut back at some date between 1849 and 1885 and the east bridge section added to widen Main Street on that side. At this point, no definitive document has been found that clarifies absolutely when the east bridge section was built.

1) *History of Amesbury*, Joseph Merrill, 1880, pg. 338

2) *ibid.*, pg. 349

Researched by Steve Klomps

# The Powow River and the Main Street Bridge



The Powow River runs downstream west-to-east under Main Street with Main Street oriented roughly north-south. The following photos progress upstream underneath the Main Street bridge from Mill Street and on under the Post Office Building. The Main Street stone arch bridge has two parts: the narrower east side bridge, plus an 1836 westside main span. The east end of the east bridge is what first comes into view when approaching the bridge coming upstream.

# Approaching the Main Street Bridge coming upstream from Mill Street



Along side of Mill #3 looking west at east end of the east bridge section

Along side of Mill #3, with steam pipe support, looking at left arch foundation.



At entry to east bridge the pipe is completely broken off. Electric cables can be seen hanging down inside

An over-exposed version of the previous picture allows an interior view of a flanged water pipe crossing the top of the arch, hanging electric cables, and lower single hanging wire. Barely visible just beyond the pipe is a jog to the slightly lower arch of the 1836 bridge section.



## Just Inside the Bridge – Looking Upstream under Main St.

Standing inside the east bridge section looking upstream, there is a slight drop from the east arch to the lower west arch.

At upper right, one hanging cable is barely visible, and the hanging wire can be seen below it. The drop in height is clearly visible. There is light at the end of the tunnel where water flows in.



The flanged water pipe, hanging cables, and lower hanging wire are all visible here.



## Looking back Downstream

Standing under the west bridge section looking downstream through the east arch. Pipe, cables, and wire are all visible, plus the side of Mill #3 at left.



## Looking Upstream

Standing under the east section looking upstream through west bridge arch. Pipe support is toppled and the pipe is on the ground. A second pipe (above pipe support) crosses the west bridge arch.



# West Side & East Side, Where the Two Bridge Sections Meet



# Full North Side of the West Bridge Section





## The West Face of the West Bridge Section

Looking downstream through the full west bridge section, with steam pipe coming through. Prior to construction of the Post Office Building this face of the bridge was open to outside view. The near wood beam on vertical supports is a floor joist for the 1872 Post Office Building, placed about four or five feet out from the bridge face. In that gap are modern metal plates supporting the sidewalk above.

A pipe can be seen crossing through the arch of the bridge. This may have been a water pipe belonging to the original 1872 fire suppression system of Salisbury Mills, which also served part of the town, running up Main Street to Huntington Square. That system had 4-inch and 5-inch pipes with street-side fire hydrants. The later Powow Hill Water Co. used 8-inch pipe.



## Brick Support Arch for the West Wall of Post Office Building

Standing near the west end of the west bridge section, looking further upstream under the Post Office Building to the brick arch that supports the back wall of the original Post Office Building. Beyond that are more floor joists and vertical columns that support an 1882 rear addition to the Post Office Building. Granite blocks at right form the foundation of the Counting House building. A section of the steam pipe appears to have been intentionally stripped of its insulation, disclosing a larger steam pipe and a smaller water return pipe. The pipes originate at what is now the Sylvaticus Brewery building, which was originally a boiler house for the textile mills.



# Elm Street Bridge Over Back River at Railroad Avenue

Back River originates with creeks that flow under Congress Street and Fern Avenue and then into Clark's Pond. From there it crosses under the R Street Bridge and on under both #79 and #77 Elm Street brick factory buildings, then turns under Elm Street and emerges along the side of the Senior Center on Railroad Avenue. Prior to construction of #79 and #77 brick buildings, it flowed as an open channel beside Elm Street. As with Main Street, there has been a bridge here for 300 years<sup>1</sup>, as Back River had to be crossed to reach grist and saw mills at the Powow River. It is unclear when the stone arch was constructed.

Back River is tidal all the way up to Elm Street, which likely required some deliberate digging. The Colchester Mill thus garnered maximum available drop and power.

ACM Director, John Mayer, discovered the idyllic photo on the next page among digital archives of the New York Public Library for Essex County<sup>2</sup> (MA & NY), titled questioningly as "Amesbury?". Photo comparisons that follow clarify that this photo certainly shows Amesbury.

1) From a 1693 deed researched by Steve Klomps, Essex County Deeds, Book 10, Page 128

2) <https://digitalcollections.nypl.org/search/index?utf8=%E2%9C%93&keywords=Essex+County+Views#>

## The Elm Street Bridge at Back River – 1870s



The vintage photo is on a stereopticon card<sup>1</sup> from the 1870s. Residences crowd onto and over Back River from both sides. A three-story brick factory appears at far left. There is a privy beside both the factory and the house at the bridge, both positioned over Back River for convenient auto-flushing.

The stone arch can be observed today from either side, over the fence at the service station on the left side of Back River (looking upstream at the bridge) or by stepping over the guardrail at the beginning of Railroad Avenue (taking care not to fall over the wall above Back River).

1) *Essex County Views*, Published by W. C. Thompson, Newburyport, Mass.



Above, the stone arch is visible, plus the far-left-side vertical stone wall underneath. At right, large rectangular stone blocks are visible in the face wall that can also be identified in the vintage photo on the previous page (enlarged comparison on next page).



## Comparing Vintage and Current Bridge Pictures

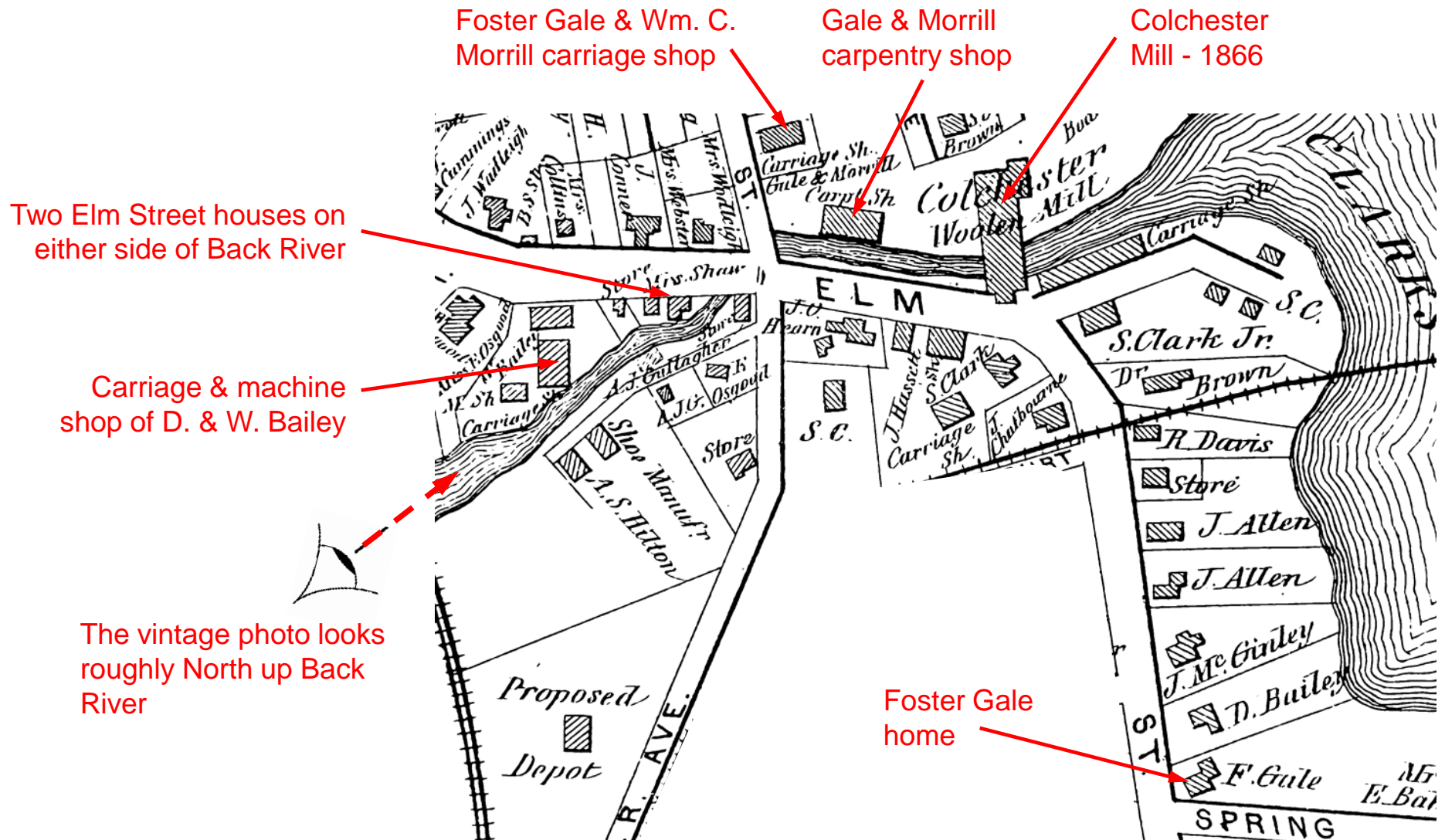


Next to the residence in left picture there is a dock over the river that holds a privy. At right, rectangular blocks in the bridge face wall just right of the arch stones can be seen in both photos, providing clear location identification for the vintage photo.



# 1872 Map of Clark's Pond, Elm Street, & Back River

The vintage photo looks roughly north up Back River. At far left is a 3-story building of D. & W. Bailey, with adjacent privy. Just left of bridge is a house with adjacent privy. Seen directly above the bridge is a one-story building that is the carpentry shop of carriage makers Foster Gale and Wm. C. Morrill. Their main shop is above and left. Right of their shop is the smokestack and back the of Colchester Mill.



# Identifications of Buildings in the NYPL Vintage Photo

Carriage & machine  
shop of D. & W. Bailey

Carriage shop of Foster  
Gale & Wm. C. Morrill

Gale & Morrill  
carpentry shop

Colchester Woolen  
Mill - 1866



The Gale & Morrell carriage shop main building was located at #6 Clark Street, where today's Dalton Mfg. Co. now stands. The Colchester Mill was purchased in 1882 by a group of carriage entrepreneurs who operated as a industrial real estate company. Owning the land over to Clark Street, they built the existing #79 Elm Street brick factory in 1882, and the #77 Elm Street building in 1884, eliminating Gale & Morrill's carpentry shop (next page).



# 1885 Sanborn Map, Sheets 2 & 3, Around Elm Street Bridge

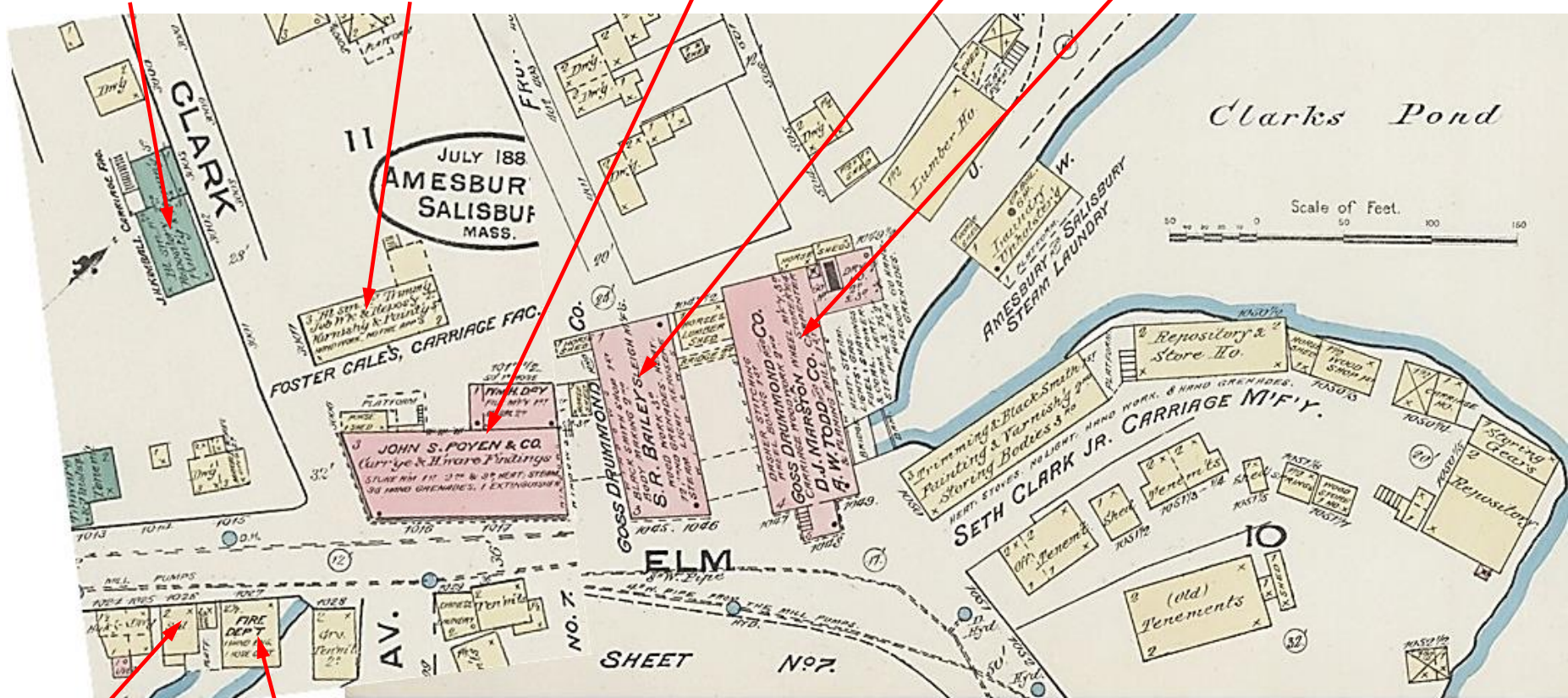
Carriage shop  
of J. H. Kimball

Carriage shop  
of Foster Gale

#77 Elm Street

#79 Elm Street

Colchester Mill,  
#85 Elm St.



House

Fire House

All major businesses in this picture are related to carriage making. Foster Gale is operating here on his own in his shop behind the new #77 Elm Street, the latter being what we see in today's photos of the Elm Street Bridge. Gale had expanded to a repository for finished carriages behind his house at the corner of Elm & Spring Streets. His shop above burned in this year (1885), and he retired from the business. Bottom left, the house and platform over the river still existed in 1885, and a fire house had been built directly over Back River by no later than 1880.

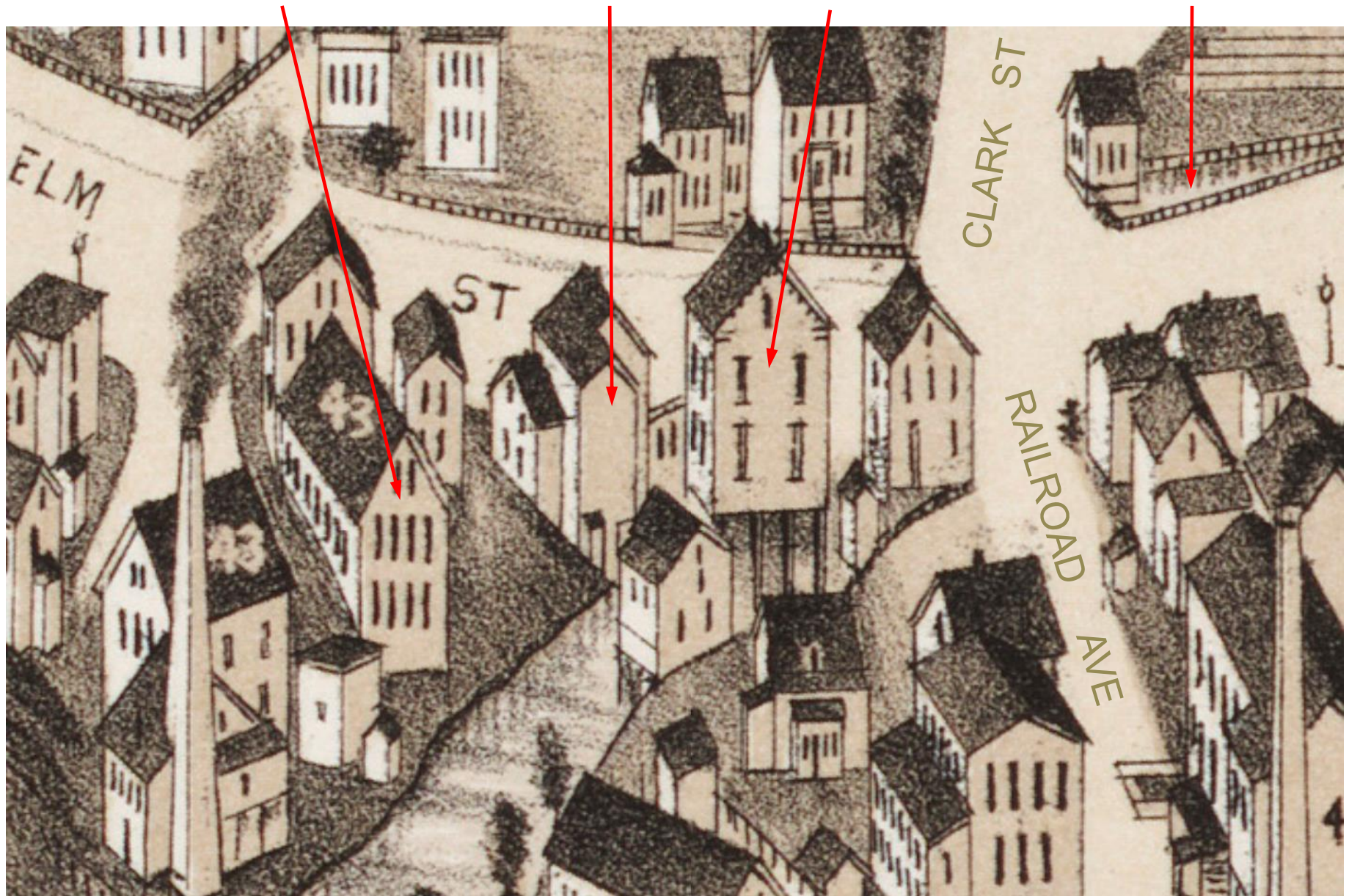
# 1880 Aerial Map Around Elm Street Bridge, with new Fire House

Former Bailey building, now part of George Hunt carriage complex

House next to river

Fire House on stilts over river

Back River flowing open along Elm Street





The brick building is #77 Elm Street at the corner of Clark Street, seen on previous page. To its left is Dalton Manufacturing Company at #6 Clark Street, on the site of the former Foster Gale Carriage shop, previous page. Beside the bridge opening, below, is a tall free-standing concrete and brick pier, brickwork on its left face having remnants of previous structural features. It appears that this pier supported the fire house that once stood here over Back River.





# Amesbury Stone Arch Bridges



[amesburycarriagemuseum.org](http://amesburycarriagemuseum.org)