

TECHNICAL REPORT

**MOA MITIGATION SERVICES – ARCHAEOLOGICAL MONITORING
CARVER COTTON GIN DAM REMOVAL**

East Bridgewater, Massachusetts

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MANAGEMENT ABSTRACT

The mitigation services for the removal of the Carver Cotton Gin Company Dam on the Satucket River in East Bridgewater included archaeological monitoring of the dam removal process and construction excavations of the riverbed materials in the high sensitivity in-river work area upstream and downstream of the dam. The Carver Cotton Gin Company Dam was built in 1890–1900 to replace older dams dating back to the earliest documented mid-seventeenth-century mill privilege. The dam was a contributing element of the Carver Cotton Gin Company complex (MHC #EBR.10), a historic property eligible for listing in the National Register of Historic Places (National Register). The Carver Cotton Company manufactured cotton gins and other seed processing equipment at the site from approximately 1843 to 1992.

The archaeologically sensitive portion of the in-river dam removal work areas was identified as having the potential to contain the buried remains of an older wood or brick sawmill building documented at the river's edge at and just above and below the dam structure from at least 1879 to 1896 and structural remains and artifacts related to a documented eighteenth-century dam at the mill site and/or sawmill and gristmill structures. The sensitive in-river dam removal work area also was assigned high sensitivity for pre-contact Native American habitation-related resources, given the proximity of the dam site to important Native American sites, including Sachem's Rock and a stone fish weir.

The archaeological monitoring documented aspects of the 1890–1900 dam's internal construction and uncovered possible remnants of an earlier dam iteration possibly dating to the late eighteenth-century Whitman's grist and sawmills on the same privilege. The archaeological data reinforced and informed interpretations of the site history based on documentary evidence, providing insight into the manipulation of the industrial hydropower landscape. Additionally, the monitoring data provided specific information regarding the construction and engineering of the dam components, including its timber mattress or base set directly over the bedrock bottom of the river channel.

No archaeological evidence of Native American resources was identified during the dam removal monitoring and construction excavations. While the absence of such resources does not necessarily preclude Native American use of the river at the former dam site, it does suggest that activities may have been focused on the upstream fish weir or across the river at Sachem's Rock, and/or that post-contact industrial modifications of the landscape disturbed or removed evidence of Native American occupations at this particular location.

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Introduction

The Nature Conservancy (TNC) and its project partners, including the United States Department of the Interior, Fish and Wildlife Service (USFWS) as the lead federal agency (LFA), the National Marine Fisheries Service (NMFS), and the Massachusetts Department of Fish and Game's Division of Ecological Restoration (MA DER), undertook the removal of the Carver Cotton Gin Company Dam on the Satucket River in East Bridgewater, Massachusetts (Figure 1). The dam removal project (the Project) was designed to restore a free-flowing riverine system for migratory and resident fish in the Satucket River. The 1890–1900 dam structure was a contributing element of the Carver Cotton Gin Company complex (MHC #EBR.10), a historic property eligible for listing in the National Register of Historic Places (National Register). The Carver Cotton Gin Company (the Carver Company) manufactured cotton gins and other seed processing equipment at the site from approximately 1843 to 1992.

Before the dam removal activities, the MA DER, in consultation with the USFWS and the Massachusetts Historical Commission (MHC), contracted The Public Archaeology Laboratory, Inc. (PAL) to conduct a Phase I cultural resources survey for the Project's Area of Potential Effects (APE) to identify known and potential historic properties and archaeological resources and to evaluate the potential effects of the Project on these properties (PAL 2017). Following the completion of this work, the USFWS as the LFA, in consultation with the MHC and the Massachusetts Board of Underwater Archaeological Resources (MBUAR), determined that the Project would result in adverse effects to the Carver Cotton Gin Factory complex and archaeologically sensitive in-river work area (Figure 2). A Memorandum of Agreement (MOA) was developed that included stipulations to mitigate the adverse effects of the Project on historic properties.

The cultural resources mitigation work outlined in the MOA (Stipulations I, II, and III) was designed to fulfill the USFWS's obligations in accordance with Section 106 of the National Historic Preservation Act of 1966, as amended, and its implementing regulations (36 CFR 800) and Massachusetts General Laws, Chapter 9, Sections 26-27C (950 CMR 71). MOA Stipulation I involves the preparation of archival historical and photographic documentation of historic resources contributing to the significance of the Carver Cotton Gin Company complex that were directly impacted by the dam removal project. The contributing resources are the Carver Cotton Gin Company Dam and River Retaining Walls, the Blacksmith Shop and Hardening Building, and the headrace and tailrace below and adjacent to the Blacksmith Shop and Hardening Building. The "Historical and Photographic Documentation" to fulfill Stipulation I is presented under separate cover (see Daly and Johnstone 2018). Stipulation II involves the preparation of interpretive materials to disseminate information about the Carver Cotton Gin Company mill complex to the interested public. PAL has prepared draft interpretive text for a brass plaque to be placed on a granite block adjacent to the former dam site (Appendix A).

This report presents the results of archaeological monitoring conducted to fulfill Stipulation III of the MOA, which provides for a program of archaeological monitoring of the removal of the dam structure and excavation of riverbed materials in the high sensitivity in-river work area. PAL's mitigation work for Stipulations I, II, and II of the Project's MOA was conducted under contract to Gomez and Sullivan Engineers.

Project Description

The Project involved removing the Carver Cotton Gin Company Dam concrete spillway and adjacent fish ladder remains, installing a new rock riffle upstream of and in place of the dam extending upstream beneath

an adjacent state highway bridge (Plymouth Street [Route 106] Bridge) for scour protection, and disposing of excavated riverbed materials (sediments) in the headrace below a portion of the Carver Company Blacksmith Shop and Hardening Building¹. The dam was saw-cut at its abutments to protect the mill building foundation on the west bank and the retaining wall on the east bank, which was left intact. Channel grading on river left was used to help stabilize the retaining wall once it was saw-cut from the dam. Existing building piers were armored with riprap to protect them from scouring, and sediment excavated from the river bed was placed around the piers. A rounded river-stone riffle was constructed in place of the dam and extended upstream beneath the Route 106 bridge for scour protection. Access to the dam and riverbed was via earth fill ramps from the east side of the Satucket River on the mill property, and construction equipment staging and stockpiling was primarily on the east side of the river.

PAL Personnel and Tasks

PAL personnel involved in the archaeological monitoring program were Suzanne Cherau (principal investigator/senior archaeologist) and Jennifer Banister (project industrial archaeologist). The archaeological monitoring fieldwork was conducted from September 27 to November 16, 2017, under State Archaeologist's Permit No. 3769 issued by the MHC/State Archaeologist on July 21, 2017, and under MBUAR Special Use Permit No. 17-0006 issued on July 18, 2017 (Appendix B). Steve Craddock of the Wampanoag Tribe of Aquinnah provided Tribal monitoring during the dam removal and sediment excavation in the high sensitivity work areas.

All tasks were carried out in accordance with the *Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation* (48 FR 44716–44742, National Park Service [NPS] 1983) and the MHC's *Public Planning and Environmental Review: Archeology and Historic Preservation* (1979) and were completed in compliance with the applicable Massachusetts General Laws. This report follows the guidelines established by the National Park Service in the *Recovery of Scientific, Prehistoric, Historic, and Archeological Data* (36 CFR 66, Appendix A). Key PAL personnel involved in the cultural resources investigations meet the *Secretary of the Interior's Professional Qualification Standards* (36 CFR 61, Appendix A).

Methodology

A PAL archaeologist conducted archaeological monitoring of the contractor's removal of the dam, spillway, and fish ladder structures and of the excavation of riverbed materials in the high sensitivity in-river work area, in accordance with the 100% construction plans. The monitoring fieldwork effort included the recordation of structural elements exposed during the excavation. Digital photographs were taken and sketch/measured drawings were made as safety considerations allowed. The locations and nature of any identified artifacts or other potentially significant cultural deposit materials were recorded, but no materials were collected as part of the archaeological monitoring program.

Mill and Dam Site History

The following site history (including figures) for the Carver Cotton Gin Company complex is excerpted from PAL's 2017 technical memorandum for the Phase I cultural resources survey, which contains the full cultural context for the Project APE.

¹ The Project plans originally called for disposing of excavated sediments in the stone wall-lined tailrace to the south of the Hardening Building, but this was not needed during the construction work.

Early History

The Carver Cotton Gin Company complex is about 1,000 feet (ft) downstream (southwest) of what is reported to be the site of the first mill in East Bridgewater—a sawmill built and operated possibly as early as 1667 by Robert Latham (ca. 1623–1688) (Allen 1884; Forbes and Friedberg 2006). At his death, Robert Latham’s property passed to his three sons: James (1659–1738/39), Joseph (1663–1705), and Chilton (1672–1751). Chilton acquired much of the land on the north side of what became Plymouth Street, including the sawmill, while James settled on lands south of the road.² Chilton sold his farm to his son Robert Latham (1711–1788; referred to hereinafter as the second Robert Latham) in 1748, while James’ lands along the south side of Plymouth Street (possibly including the Project APE), were apparently transferred to Joseph Latham, the son of James. In 1749, Robert and James redrew their farm boundaries. Robert took at least 20 acres of land north of Plymouth Street and about 6 acres south of the street on the east bank of the Satucket River, of which a portion was within the Project APE. Joseph received about 25 acres that now constitute the majority of the current-day Sachem Rock Farm (outside the Project APE) (Forbes and Friedberg 2006).

About 1724–1726, Isaac Harris, Captain (later Deacon) Thomas Whitman, and Jonathan Bass relocated Latham’s sawmill downstream to a new site near the Plymouth Street Bridge over the Satucket River that was presumably at or near the late nineteenth-/early twentieth-century Carver Cotton Gin Company Dam. A new dam was likely erected for Latham’s sawmill. Thomas Whitman (1702–1788) owned land on the west bank of the river, opposite the second Robert Latham’s land; and Whitman added a gristmill at the dam soon after the sawmill was moved. It is not clear if this gristmill was on the east or west bank of the river, though Whitman’s involvement would suggest that it was on the west bank. Captain Whitman seems to have gained exclusive ownership of the sawmill, which he retained until 1762 or 1788; he transferred the gristmill to his son Amos Whitman (1743–1791). After Amos Whitman’s death, his brother Lieutenant Peter Whitman (1730–1801) assumed proprietorship of both the sawmill and gristmill. At Peter Whitman’s death, the mills passed to three of his daughters. The property was known under the Whitman’s ownership as Whitman’s Mills (Allen 1884; Allen 1899; Forbes and Friedberg 2006).

Ownership of the two mills and the dam and water privilege is unclear between 1801 and 1843. According to Allen (1884), the mills passed through the ownership of Arthur Harris, Benjamin Harris, Nahum Mitchell, Barzillai Allen, and others. By about 1814 or 1815, the sawmill on the east side of the river was owned by a partnership that included Azor Harris (1789–1873) and Constant Hayward. In 1814, Silvanus Lazell, Nahum Mitchell, Alpheus Allen, and John M. Goodwin formed a new company for nail manufacturing and erected a factory at the privilege in 1815, carrying on the business for about 10 years (Forbes and Friedberg 2006).

In 1827, two new manufacturing enterprises commenced at the privilege. Zebina Keit began tack manufacturing at a new building he added near the dam, supposedly on the east bank of the Satucket River. Nathaniel Wheeler, Wallace Rust, and Allen Whitman acquired the land and mills on the west bank of the river, incorporated the East Bridgewater Manufacturing Company, and built a brick mill for cotton textile production near the current Carver Company dam (Allen 1884; Hobart 1908).

An 1829 (Crane) map depicts three mill or factory buildings on the south side of Plymouth Street in East Bridgewater shortly after its incorporation as a separate town from Old Bridgewater. Two of the buildings are on the east side of the river and one (labelled as the East Bridgewater Manufacturing Company) is on

² Joseph moved to Providence, Rhode Island, and sold his interest in the farm to James (Forbes and Friedberg 2006).

the west side between the river and the street (Figure 3). The mill pond is depicted beginning a short distance north of Plymouth Street. The East Bridgewater Manufacturing Company remained active until the early 1840s, then closed for unknown reasons. The Keit family persisted in making tacks at the privilege until 1872, when a fire (described below) destroyed the entire mill complex (Allen 1884; Hobart 1908).

Carver Company Manufacturing, 1843–1992

The closure of the East Bridgewater Manufacturing Company provided an opportunity for Eleazer Carver (1785–1866), a Bridgewater native, to reestablish his successful cotton gin manufacturing business in his native Massachusetts town. Carver had trained as a millwright, then moved briefly to Ohio and then to Louisiana.³ About 1807, he settled in Natchez, Mississippi, then a center of cotton farming and cotton gin manufacture.⁴ Carver put his mechanical skills to use repairing sugar mills, cotton gins, and baling presses and gained familiarity with cotton plantation owners and the economics of cotton farming. In this way, he entered into a career built on the refinement of the mechanical cotton gin (Allen 1884; Lakwete 2003).

In the first decade of the nineteenth century, cotton gins were largely handmade by so-called gin-wrights, there being few mills or factories making the components required for the machines. During a down-turn in cotton production during the War of 1812 (1812–1815), Carver established a sawmill and other machinery to manufacture cotton gin parts and, at the close of the war, he (like several other residents of cotton-producing states) established expanded cotton-gin manufactories. Carver's first cotton gin factory, founded in 1817 in Natchez, was called the "Temple of Industry" and was operated in cooperation with Seth and Abram Washburn Sr. of Bridgewater (Allen 1884; Lakwete 2003).

About 1819, Carver established Carver, Washburn & Company, headquartered in Bridgewater. In 1825, he incorporated this firm as the Bridgewater Cotton Gin Manufacturing Company "for the purpose of Manufacturing Cotton Gins and other manufacturing purposes" (as quoted in Lakwete 2003:90) and began marketing his "Carver Gin." His partners were Solomon Washburn, Seth Washburn, Abram Washburn, Artemas Hale, Abram Washburn Jr. (aka the second), and Nathaniel Washburn. The gin factory (no longer extant) was on Summer Street in Bridgewater at the outlet to what is now Carver Pond. This was Massachusetts' first cotton gin manufactory and one of only four that operated historically in the state.

To market cotton gins, Carver and his company established an extensive network of sales agents across five southern cotton-growing states, and he quickly established a reputation that made his cotton gin the standard in the industry. Carver's success was also attributable to his close study of cotton gins and the problems inherent in early versions of his machine, from which he was able to develop several important patents.

At some time in the late 1830s or early 1840s, there was a split between Carver and Albert Washburn, the exact nature of which is not described in the historical accounts. In 1842–1843, Eleazer Carver and his new business partners, Caleb S. Hunt and Franklin Dexter, acquired the East Bridgewater Manufacturing

³ Louisiana was Mississippi Territory at the time.

⁴ Cotton gins are used to remove the seeds from the cotton plant and partially clean the raw cotton. The invention of the first successful mechanical cotton gin is apocryphally attributed to famous American inventor Eli Whitney in 1793, although several others also had invented mechanical gins. The introduction of the mechanical gin is widely credited with having a transformational effect on cotton farming, and, by extension, the textile industries of the eastern United States.

Company's cotton mill privilege.⁵ In 1846, the three men incorporated the E. Carver Company for the purpose of manufacturing cotton gins. The E. Carver Company apparently let out some portions of the premises to the Keit's tack manufactory until 1872 (Allen 1884; Beers 1873; Massachusetts General Court [MGC] 1846; Nutter 1977; Spence 2008; Stone 1930).⁶

An 1848 (Bates) map of East Bridgewater depicts "E. Carver and Company's Cotton Gin Manufactory" in what was presumably the former East Bridgewater Manufacturing Company mill in the Project APE. Two structures belonging to the Carver Company are indicated schematically on the south side of the street—one west of the river and one east of the river in an arrangement similar to that on the 1829 (Crane) map. By this time, the mill pond extended south under the Plymouth Street Bridge and the dam appeared to be at or close to its current location south of the bridge. An 1857 (Walling) map of East Bridgewater delineates a number of structures on both sides of the Satucket River/mill pond at its junction with Plymouth Street (Figure 4). Near the dam location, south of Plymouth Street, a structure labeled "Carver Co. Cotton Gin Works" was west of the river and a "Saw Mill" was on the east side of the river.⁷

Carver was able to repeat the success of his first cotton gin company in Bridgewater, apparently capitalizing on his brand recognition and patents. He continued his involvement in the company until almost the time of his death in 1866. Carver's death prompted a reorganization of his company and, in 1871, the Carver Cotton Gin Company was incorporated. The de facto leader of the company was its treasurer, Aaron Hobart (1816–1898) (Allen 1884; Beers 1912; International Publishing Co. 1885; Stone 1930).

In 1872, a large fire destroyed the premises, although it may have spared the sawmill on the east side of the river. The Carver Company's physical plant was immediately rebuilt. An 1873 (Beers) map and 1879 (Walker) map of East Bridgewater depict the Carver Cotton Gin Company site immediately after the fire and reconstruction. Three brick industrial buildings belonging to the "Carver Cotton Gin Co." are on the south side of Plymouth Street, on the east and west sides of the Satucket River (Figure 5). On the west side of the river is a large factory building (still extant) with a T-shaped plan, and the headrace entering the building at its northerly end. A small outbuilding is between the factory and the river. On the east bank of the river is a rectangular plan building (labeled "S. M." (on the 1873 map), which means the sawmill presumably survived the 1872 fire. Both the 1873 and the 1879 maps depict the mill pond on the north side of the Plymouth Street Bridge as extending west to the edge of the street and south under the bridge to the mill buildings and dam. According to an undated (post-1872) hand-drawn map in the Old Bridgewater Historical Society files, a new dam was built in 1872. This dam may have been downstream of the previous dam, which appears to be shown as a line across the river channel just south of the bridge that is labeled "Whitman's Mills" (Allen 1884; Beers 1873).

The Carver Company persisted as the leading manufacturer of cotton processing equipment and expanded into lines of machinery for shoes, shingles, and boxes and paper products by developing its own patents

⁵ Fire destroyed the Carver Mill in Bridgewater in 1854, and Carver's original company did not operate past this time. Carver's influence would spawn two additional cotton gin factories in Bridgewater, making Bridgewater and East Bridgewater two of only three communities to manufacture cotton gins in the entire state of Massachusetts (Spence 2008). The other two Bridgewater companies were Bates, Hyde & Co. (founded in 1833, later the Eagle Cotton Gin Company) and the Southern Cotton Gin Company (founded ca. 1840). There had also been a short-lived cotton gin factory in Braintree in the 1820s (Lakwete 2003; Spence 2008).

⁶ The East Bridgewater Manufacturing Company was dissolved in 1873 (MGC 1873).

⁷ It is not known if this was Latham's sawmill that had been moved to this approximate location in the eighteenth century, or a later building.

and by acquiring the patents of others. By 1884–1885, 100 workers were at the factory and the company's machinery was sold across the country and exported to Europe, Australia, Asia, South America, and Mexico (Allen 1884; *Brockton Weekly Gazetteer* 1880; Howland 1968; International Publishing Co. 1885).

The success of the company led to multiple, frequent expansions of its physical plant, including the construction of the current Carver Cotton Gin Company Dam. As of 1885, the company had a 180-by-50-ft factory (built in 1872) with power for its sawmills, blacksmith shop, and machine tools provided by a turbine (International Publishing Co. 1885). An 1887 (Bailey) birds-eye view of the mill shows the 1873 factory with an addition at its north end (labeled as these on an 1896 [Sanborn] insurance plan as a blacksmith shop), a cross-gabled wheel house and engine room (labeled on the 1896 Sanborn) east of the factory adjacent to the dam, the dam itself, and several storage sheds south of the factory (Figure 6). Part of a building—possibly the sawmill shown on the 1873 and 1879 maps—is depicted at the east end of the dam. The 1896 insurance plan provides a detailed layout of the Carver Cotton Gin Company factory at this time, including the dam flanked by a 30- to 40-ft-long “shed” right to the east (it's unknown if this is the sawmill shown on the 1873 and 1879 maps or a different structure) and a wheel house and engine room to the west that project into the river channel (Figure 7).

Before 1890, the dam consisted of a rubblestone spillway with wood sluiceways near both ends (Figure 8). A fishway consisting of a long straight wood trough supported on timber posts and stacked stones ran downstream from the east end of the dam. The sawmill or shed was at the east end of the dam, atop the dam abutment, and was an approximately 3-by-2-bay shingled wood building with a stone masonry foundation. A small wing supported on timber bents projected off the downstream end of the building and may have functioned as a wheel house or outhouse.

A photograph taken in the 1890s during dam construction (Figure 9) shows the rubblestone spillway partially dismantled or reassembled along most of its length; at the west end of the spillway, one section of the structure appears to be fully encased in concrete. The sawmill or shed is no longer extant, although the east abutment was partially retained; the photograph shows construction staging, a hoist, the abutment, and stacked rubblestone to the east of the abutment (below the staging). The photograph also shows that Plymouth Street spanned the Satucket River and dam impoundment via a three-span stone arch bridge.

Reconstruction of the dam spillway was complete by ca. 1901–1906, as shown in another photograph (Figure 10), with the spillway, possibly fully encased in concrete, provided with a larger sluiceway near its west end. At its east end, the spillway terminates at a stone abutment reinforced with what appears to be a concrete wall. Behind (east of) the abutment, the dam continues as a stone and earth berm (currently fully buried under twentieth-century fills). There was no shoreline retaining wall along the east bank at this time. Two wood buildings—one gabled and one shed-roofed—rest atop the rubblestone abutment and training wall and span the factory raceway on the west bank. These are labeled as a wheel house and shed on the 1906 (Sanborn) insurance plan. The dam work coincided with the installation of a new turbine in the wheel house (*Brockton Enterprise* 1898).

The Carver Company's success persisted through the early twentieth century, and expansions to the factory complex continued apace, with multiple enlargements and new buildings to accommodate the company's expanding and shifting machine production. Printing presses were introduced and necessitated a large addition to the mill in 1901. In or near the Project APE, the 1901 (Sanborn) insurance plan shows that the shed or sawmill at the east end of the dam was removed and a lumber shed built in the vicinity on the east bank of the river, while a new storage building was built downstream of the dam on the west river bank.

The 1906 (Sanborn) insurance plan shows that the east bank downstream of the dam was realigned and a new storage shed may have been built over the factory tailrace.

The 1912 (Sanborn) insurance plan shows a dramatic revision to the river course and adjacent buildings at the dam (Figure 11). A large new addition (approximately 100-x-40 ft) was added in 1909–1910 directly atop the west bank and raceway, replacing the wheel house at this location. Multiple new storage buildings and sheds and a coal bin added on the east bank of the river were accessed by a steel bridge downstream of the dam. This stretch of bank may have been straightened at this time, although it is unclear if differences between the 1906 and 1912 (Sanborn) insurance maps represent physical changes or merely corrections to the delineation of the complex (*Brockton Enterprise* 1898, 1901, 1904, 1914; Carver Cotton Gin Co. 1901).

In 1920, a concrete fishwa⁸y was installed at the Carver Cotton Gin Company Dam in an effort to restore alewife passage on the river. Small differences in the sluiceway and spillway seen in the ca. 1901–1906 photograph (see Figure 10) and the dam's appearance at the time of removal indicate that additional, undocumented alterations were made to the dam, maybe in 1920 at the same time that the fishway was installed. By 1921, the steel storehouse near the east bank of the river (only the steel frame remained at the time of dam removal) had been built, along with the nearby garage (Kennebec Reborn, Inc. 2012; Sanborn 1921).

Just before the Great Depression (1929–1941), the Carver Company employed 1,500–2,000 workers, had capital of \$900,000, was the largest manufacturer in East Bridgewater, and was the oldest cotton gin manufacturer in the world (Stone 1930). In addition to cotton gins, the company was also producing cotton seed oil machinery, box board machines, and other equipment. The Great Depression led to a downturn in company fortunes during the 1930s. As orders for new machinery slowed, employment dropped to 350 workers in 1930, and to just 100 workers by 1936. No changes to the complex appear on the insurance map for this period (*Brockton Enterprise* 1938; Sanborn 1931; Stone 1930). In 1938, the Murray Company of Texas bought the Carver Company; by that year, the company had halted production of cotton gins in favor of its linter and other types of cotton processing machines. Besides the linter, the most successful Carver Company offerings included machines for processing seed hulls (used for stock feed and synthetic rubber production) and the seed kernel (used for soaps and cooking oils). Exports increased to account for more than 80 percent of company sales (Anon 1938; Howland 1968).

The Murray Company was founded ca. 1898 as a manufacturer of cotton seed cleaning and separating machinery with plants in Dallas, Atlanta, and Memphis and a workforce of 1,500. During the mid-twentieth century, the company engaged in an aggressive expansion and diversification program and acquired steel fabrication, metal alloys casting, and air conditioning manufacturing companies. In 1948, it purchased the Boston Gear Works of Boston and Quincy. The Murray Company maintained the Carver Company name (later shortened to Carver, Inc.) because of its strong market recognition and made few changes to the physical infrastructure. The 1943 (Sanborn) insurance plan shows a small addition to the building over the tailrace (Figure 12); a 1960 aerial photograph (NETR 1960) shows that a series of steel beams supporting an unknown structure (now removed) were erected across about 150 ft of the river channel downstream of the dam (Anon. n.d.; *Brockton Enterprise* 1938; Howland 1968).

In 1965, the Murray Company merged with the Rockwell Standard Corporation of Pittsburgh, Pennsylvania. In 1967, Rockwell merged with North American Aviation to form the North American

⁸ The fishway was only partially extant at the time of dam removal. A possible wooden upper component was missing.

Rockwell Corporation, headquartered in California. During this period, the dam continued to support manufacturing at the Carver Company factory on a limited basis, providing some 50 horsepower to various machine tools. “1969” was inscribed on the dam’s sluiceway, indicating that the steel gate frame was likely added that year, and the sluiceway’s concrete opening may have been modified as well. The Plymouth Street Bridge over the Satucket River was replaced with the current structure in 1971. Ownership of the parcel passed to RBZP Realty Group, Inc. in 1988, then to a series of banks, with Carver, Inc. leasing the property (Howland 1968; Weston 1996).

Post-Manufacturing History, 1992–Present

The Carver Company relocated to Savannah, Georgia in 1992. After this date, the Carver Company factory complex in East Bridgewater was used by various light manufacturing and industrial tenants. The entire property is now owned by Fifteen Whitman Street, doing business as U Store It. Several of the buildings are now vacant. At the time of its removal, the dam was no longer used; its sluiceway had been permanently opened and the impoundment was drawn down in 2001 to comply with an order from the Massachusetts Office of Dam Safety (Kennebec Reborn, Inc. 2012; Town of East Bridgewater Assessor’s Office 2016; Weston 1996).

Pre-Dam Removal Conditions

The following information about the pre-dam removal site conditions (without figures) is excerpted from PAL’s 2017 technical memorandum for the Phase I cultural resources survey, which contains the complete pre-dam removal site conditions (including figures), with updated information from PAL’s 2018 historical documentation.

The Carver Cotton Gin Company Dam was built in 1890–1900 by reconstructing or rehabilitating a previous dam that served the Carver Company and predecessors at the Project site. The dam was near the northerly end of the Carver Cotton Gin Company complex, 120 ft downstream of the Plymouth Street Bridge over the Satucket River⁹ (PAL 2017:figures 14 and 15). The Carver Cotton Gin Company complex is a dense group of 23 buildings, 3 structures, and 1 object with associated landscape features spanning the Satucket River on two level parcels (totaling approximately 9 acres) at the intersection of Whitman and Plymouth streets. Immediately adjacent to the Dam are the Blacksmith Shop and Hardening Building to the west and open circulation areas for the factory complex to the east. The dam formerly impounded the river for approximately 1,000 ft upstream (north). The perimeter of the former impoundment area upstream of Plymouth Street is largely undeveloped woodland. The river channel immediately downstream of the dam, and the impoundment between the dam and the bridge are entirely channelized by mortared rubblestone walls (the River Retaining Walls) built by the Carver Company.

The dam was a run-of-the-river, concrete and stone, gravity-type structure consisting of abutments, a spillway, and a sluiceway. The spillway was formerly flanked to the east by an earth berm dam section buried beneath fills behind the east dam abutment or possibly demolished. The Blacksmith Shop and Hardening Building of the Carver Company factory complex adjoined the dam at its west end. The dam’s concrete spillway was 44 ft long, with a triangular cross section 10 ft high (above the riverbed), 8 ft wide at the base, and 1 ft wide at the crest (PAL 2017:figures 16 and 17). It was constructed from a rubblestone,

⁹ Portions of this dam description were derived from previously published dam inspection reports (Gomez and Sullivan Engineers 2016; MacBroom 2007).

cobble, and brick core encased within about 4–12 inches of poured concrete (*PAL 2017, figure 18*). Six cast-iron stanchions projected from the flat crest and formerly supported wood flashboards and a wood and timber catwalk. (The flashboards had been permanently removed as of 2001). A door from the Blacksmith Shop and Hardening Building and an iron ramp on the east river wall formerly provided access to the catwalk. A poured concrete sluiceway was near the west end of the dam and was surmounted by a painted, rolled steel frame. The gate opening that formerly housed two vertical-lift gates was 5.5 ft wide and 10 ft high (*PAL 2017:figure 16*). The gate leaves and operating mechanisms were removed in 2001. The spillway's west abutment was a 6- to 12-inch-thick concrete wall poured against the rubblestone foundation/river training wall below the Blacksmith and Hardening Building. The east abutment was of a similar design and poured against the rubblestone river training wall. Immediately downstream of the abutment, the partially collapsed east training wall sloped down, indicating the former location of the earth berm portion of the dam.

Water from the impoundment behind the dam was formerly diverted into a forebay and then to a turbine in a wheel pit. The forebay, turbine, and wheel pit are beneath the Blacksmith and Hardening Building, which is supported over the forebay on concrete piers (*PAL 2017:figure 15*). (The penstock intake within the forebay is now sealed and abandoned, and the turbine wheel pit could not be accessed for inspection to determine what waterpower infrastructure remains.) Water reenters the channelized river from the wheel pit approximately 70 ft downstream of the dam via a mortared rubblestone tailrace that passes beneath the former Blacksmith and Hardening Building. An approximately 10-x-15-ft in plan fragment of the 1920 poured concrete fish ladder rose from the river bed immediately downstream of the dam (*PAL 2017:figure 17*). At the time of dam removal, the dam was in poor physical condition—a 15-ft-long section of the spillway's downstream face had failed and partially collapsed at the east end, and the spillway was undermined by scour along its toe. There were no gates or flashboards.

Archaeological Resources and Potential

Before the Phase I cultural resources survey and archaeological construction monitoring, there were no recorded archaeological sites within the Project APE. Recorded sites in the area include a pre-contact Native American fish weir site (MHC #19-PL-274) approximately 750 ft upstream (north) of the Plymouth Street (Route 106) Bridge and about 525 ft upstream of the northern limit of the dam removal river channel work areas. A pre-contact habitation site (MHC#19-PL-61) near the fish weir on a level terrace on the southeast side of the Satucket River, north of Plymouth Street, yielded chipping debris, pottery fragments, and chipped-stone tools, including projectile points dating from the Late Archaic through Late Woodland periods (5,000–450 years before present [B.P.]). No cultural features were identified, but the site was interpreted as a temporary occupation area, probably related to the seasonal herring (alewives) collected at the weir, which may have been established as early as the Late Archaic Period and used through the Late Woodland Period (Cassulo and Davidson 1975).

Recorded archaeological sites within the Sachem Rock Farm National Register Historic District (MHC #EBR.F) are on the south side of Plymouth Street on the east side of the river southwest of the Project APE on Town of East Bridgewater lands not associated with the former Carver Company industrial complex. Of these sites, the Sachem Rock Farm Cellar Hole (MHC #EBR.HA.18) at the northwest corner of the farm property adjacent to Plymouth Street is closest to the Cotton Gin Dam Removal Project APE. This area currently is an open meadow separated from the former industrial complex by a narrow strip of trees, a chain-link property fence, and a paved access drive that leads to the Carver Company industrial buildings on the east side of the river. Another site within the NR district, the Native American Sachem Rock Site (19-PL-63) is also on the south side of Plymouth Street on the southeast side of the Satucket River. It

consists of a large outcropping of bedrock called Wonnocoote (Woonocooto) by the Pokanokets, a subgroup of the Wampanoags who inhabited the area during the Contact Period (450–300 B.P. [A.D. 1500–1620]). The bedrock outcropping apparently acquired the name Sachem (or Sachem’s) Rock as early as 1800 (Forbes and Friedberg 2006). The rock held great cultural significance to the Indians and its broad, flat summit is said to have been the site where tribal councils were held before the arrival of English settlers. The rock was also the site of the 1649 land transaction between Myles Standish and Ousamequin (Massasoit), sachem of the Wampanoags.

According to a March 1889 local newspaper clipping, three human skeletons were unearthed on the south side of Plymouth Street within or adjacent to the Project APE. Workmen digging a trench for the foundations of a new factory building near the Carver Cotton Gin Company discovered the skeletons, one in a sitting position and the other two laying on their right sides, and all facing east. The burials reportedly were on the west bank of the Satucket River, about “one hundred yards from Sachem’s Rock” and were believed to be those of Indians. The newspaper clipping does not mention the disposition of the skeletal remains or any associated artifacts, but acknowledges that “numerous and rare Indian relics” had been found “from time to time” in the local area and included the “remains of the Indian fishing weir” located a “little upstream from this spot” (Old Bridgewater Historical Society files).

The Phase I cultural resources survey included a review of late eighteenth- and nineteenth-century town maps, which indicated a ca. 1857 mill office building would have been within the Project APE on the northwest side of the current Plymouth Street Bridge in the mill pond as it existed before the 2001 drawdown. Documented eighteenth- and early to mid-nineteenth-century mill structures and the original dam would have been within the current Plymouth Street Bridge alignment or slightly to the south in the area of the Carver Cotton Gin Company Dam and extant factory buildings. The documented 1873 sawmill appeared to be at or close to the location of a ca. 1896 shed adjacent to the dam on the east side of the river below the Plymouth Street Bridge and the later site of lumber and storage buildings added in the early to mid-twentieth century. All other buildings and structures on the late nineteenth- and twentieth-century atlas and insurance maps within the Project APE on the south side of Plymouth Street are still standing today on the former industrial property (PAL 2017).

The 2017 archaeological sensitivity assessment for the Phase I cultural resources survey assigned high archaeological sensitivity to a portion of the proposed in-river dam removal work areas from a point about 60 ft upstream of the dam south to the downstream limit of work, including the area of collapsed retaining wall on river left. Remains of the wood (or brick) older sawmill building documented at the river’s edge at and just above and below the dam structure from at least 1879 to 1896 could be buried below the vegetated mill pond sediments in this area. The Project APE near the Plymouth Street Bridge was also documented to be at or near an early eighteenth-century sawmill and dam on the Satucket River. The west bank of the river was the location of an early eighteenth-century sawmill and a gristmill, although it was not clear if the gristmill was on the east or west bank of the river. Structural remains and artifacts related to the documented eighteenth-century dam at the mill site and/or saw and gristmill structures could also be present.

High archaeological sensitivity was also assigned to a portion of the in-river dam removal work areas for the potential presence of Native American human remains based on the 1889 finding of three skeletons on the west bank of the Satucket River.

Archaeological Monitoring Results

Dam Footprint

The contractor machine excavation of the dam structure occurred over a three-week period and generally progressed east to west (Figure 13). Work began by removing the cast-iron stanchions from the crest and saw-cutting the concrete spillway in multiple locations (Figures 14 and 15). The concrete spillway and rubblestone and cobble core were completely excavated from the eastern concrete abutment to the eastern wall of the concrete sluiceway (Figures 16 and 17).

Below the rubblestone and cobble core of the dam, three longitudinal timbers were uncovered that corresponded with the triangular cross section of the spillway (Figures 18 and 19). The timbers likely ran the entire length of the concrete spillway and were approximately 10 in (25 cm) wide and 8–9 in (22–24 cm) thick, with the west end of the timbers anchored to the sluiceway concrete floor (Figures 20 and 21). The east end of the timbers was not exposed during construction excavation but were covered with fill placed to reinforce the training wall (Figure 22).

Excavation of the river channel within the dam footprint showed that the central and southern timbers were laid over bedrock, but showed the northern timber was attached to a second lower timber (Figure 23). The two timbers were fastened to each other with wooden pegs and machine-cut spikes (Figures 24 and 25) and both were bolted directly to bedrock (Figures 26 and 27). The bolt that attached both timbers to bedrock was approximately 1.25 in (3 cm) in diameter, 46 in (117 cm) long, and was threaded at one end with an attached 2-in (5-cm) square nut and 4.5-in (11-cm) diameter washer.

Attached to the upstream face of the lower timber was truncated vertical sheet planking that ran the full exposed length of the timbers (Figure 28; see Figure 26). Water levels did not allow for the lower timber and sheet planking to be documented in situ, so they were set aside for documentation after excavation. All the sheet planking was approximately 32 in (80 cm) long and 3 in (8 cm) thick and was hand-planed at its bottom. Two widths of 16.5 in (42 cm) and 12 in (30 cm) were noted. The sheet planking was attached to the lower longitudinal timber with machine-cut spikes (see Figure 28).

Upstream and Downstream of Dam

Excavations of sediment within the archaeologically sensitive in-river work area upstream of the dam exposed five 9-x-9-in (23-x-23-cm) timbers that were 10–25 ft (3.0–7.6 m) from the concrete bridge abutment wall (Figures 29 and 30; see Figure 13). Four of the timbers were aligned parallel to the river channel and one lower timber was perpendicular to the other four (see Figures 13 and 30). No hardware was noted with the timbers and only one of the timbers was intact. This timber was 14.5 ft (4.5 m) long and contained mortise joint on one side and rectangular and ovoid notches on both sides with holes in the sides at each end that suggest large bolts may have been used to anchor the timbers in place or to other no longer extant structural elements (Figures 31–33). The timbers did not appear to be in situ but were all set in the uniform dark brown (10YR 3/3) silty sand fill and river bed sediments with a high density of cobbles and broken concrete (Figure 34). A low density of twentieth century bottles, brick fragments, and metal strapping were also noted in the fill and underlying river sediments.

The excavated sediment within the archaeologically sensitive in-river work area downstream of the dam did not contain any archaeological features or notable artifacts. Two timbers were uncovered in the dark brown silty sand sediment laying roughly perpendicular to the stream channel (Figure 35; see Figure 13).

The timbers were loose in the sediment, not in situ, and approximately 9-x-9-in (23-x-23-cm) and 10 ft (3 m) long. One of the timbers was broken on one side and contained four mortise joints on the lower side (Figure 36). The second timber was broken on both ends and contained no joints. No fasteners were noted associated with the timbers. A very low density of modern refuse was noted in the upper levels of the excavated downstream sediment but no pre-twentieth-century materials were present.

Interpretations

During excavation of the rubblestone and cobble core of the dam in East Bridgewater, several timbers were uncovered immediately beneath the core of the dam directly over the bedrock bottom of the Satucket River channel. The three longitudinal timbers aligned perfectly with the triangular cross section of the concrete spillway. Both wooden tree nails and machine-cut spike fasteners were associated with the timbers indicating their construction post-dates 1790. The three timbers likely functioned as the mattress or base for the 1890–1900 Carver Cotton Gin Company Dam. The northern timber was bolted to a second lower timber that contained remnant sheet piling attached by machine-cut spikes. These elements may represent remnants of an earlier legacy dam with the 1890–1900 dam structure built directly over it.

The presence of machine-cut spikes with the truncated sheet piling means the piling dates to after 1790 and does not represent the earliest documented late seventeenth-century dam at the mill site. These dam elements may date to the late eighteenth-century Whitman's Mills occupation of the gristmills and sawmills on the same privilege. Ownership of the two mills and the dam and water privilege is unclear between 1801 and 1843, when Eleazer Carver purchased the mill privilege and buildings. The timbers and associated hardware recorded during the archaeological monitoring are recorded as the archaeological component of the Carver Cotton Gin Company Dam (Appendix C).

The disarticulated timbers recorded in the silty river sediments upstream of the dam may have been related to the wooden deck bridge that spanned the river near that location in the nineteenth century. The wooden deck bridge was replaced by a stone bridge between 1896 and 1912 (see Figures 7, 10, and 11) and then with the current concrete bridge abutment structure in 1971 (PAL 2017). There was no evidence of vertical sheet piling to suggest an in situ mill building or legacy dam in this location. It is possible the loose timbers recorded in the silt fill and river sediments between the dam and the concrete bridge abutment were related to the wooden bridge deck or side rails and were discarded in the river bed when the wood bridge was replaced with the stone bridge.

Two loose timbers were uncovered in the silty river sediments excavated downstream of the dam. These timbers were also not in situ, not associated with any other structural elements, and simply may represent structural debris that was discarded into the river channel downstream of the dam by the previous mill owner(s).

Conclusions

Archaeological monitoring of the dam removal construction work has documented aspects of the 1890–1900 Carver Cotton Gin Company Dam's internal configuration and uncovered possible remnants of an earlier dam iteration. The archaeological data reinforce and inform interpretations of the site history based on documentary evidence, providing insight into the manipulation of the industrial hydropower landscape. Additionally, the monitoring data provides specific information regarding the construction and engineering of the dam components.

Modification and optimization of natural terrain for water control and mill construction represented a substantial investment in time and resources for mill corporations and played an important role in the success or failure of such endeavors. The pre-industrial landscape and subsequent construction required to develop waterpower at the site beginning in the late seventeenth century are poorly documented in the historical record. Archaeological monitoring during the dam removal activities has provided new information about the historic industrial manipulation of the natural landscape at the Carver Cotton Gin Company complex.

The archaeological findings at the Carver Cotton Gin Company Dam affirm the information potential and research value of historic dam structures. Temporal and engineering analyses of these resources may be difficult based solely on their visible physical characteristics. The presence of possible late eighteenth-century dam components provides a record of a continuum of industrial activities at the site that may only be suspected through the documentary record. Such records often provide vague information concerning the construction and manipulation of the industrial waterpower landscape through various periods of occupancy. Archaeological recordation of a dam's internal structure allows for a more precise analysis of site chronologies and construction activities than visual and documentary evidence alone.

The archaeological monitoring did not find any evidence for pre-contact Native American burials or occupation within the sensitive in-river portion of the Project APE upstream and downstream of the dam. Although the absence of such resources does not necessarily preclude Native American use of the river at the former dam site, it does suggest that activities may have been focused on the upstream Contact and early Post-Contact Period fish weir or across the river at Sachem's Rock, and/or that post-contact industrial modifications of the landscape disturbed or removed evidence of Native American occupations at this particular location.

References

- Allen, Rev. Charles A.
1899 *The Bridgewater Book, Illustrated*. George H. Ellis, printer, Boston, MA.
- Allen, William
1884 History of East Bridgewater. In *History of Plymouth County, Massachusetts*, edited by D. Hamilton Hurd. J. W. Lewis and Company, Philadelphia, PA.
- Anon.
n.d. Texas Firm Buys East Bridgewater Plant. Undated, un-paginated newspaper clipping. On file, East Bridgewater Public Library, East Bridgewater, MA.
- 1938 Plan Purchase of Carver Cotton Gin. Undated, un-paginated newspaper clipping. On file, East Bridgewater Public Library, East Bridgewater, MA.
- Bailey, O. H.
1887 *Bird's Eye View of the Carver Cotton Gin Manufactory, East Bridgewater, Massachusetts*. O. H. Bailey and Company, Boston, MA.
- Bates, M. Jr.
1848 *Map of East Bridgewater, Mass.* J. H. Bufford's Lithography, Boston, MA.
- Beers, F. W. & Co.
1873 *Map of the Town of East Bridgewater, Massachusetts*. F. W. Beers and Company, New York, NY.
- Beers, J. H. & Co.
1912 *Representative Men and Old Families of Southeastern Massachusetts*. J. H. Beers & Company, Chicago, IL.
- Brockton Enterprise*
1898 Untitled. 10 August: unpaginated clipping, Brockton, MA. On file, U-Store It Company, East Bridgewater, MA.
- 1901 Dedication of New Building. 10 August: unpaginated clipping, Brockton, MA. On file, U-Store It Company, East Bridgewater, MA.
- 1904 Untitled. 24 June: unpaginated clipping, Brockton, MA. On file, U-Store It Company, East Bridgewater, MA.
- 1914 New Building Dedicated. 12 February: unpaginated clipping, Brockton, MA. On file, U-Store It Company, East Bridgewater, MA.
- 1938 New Carver Cotton Gin Co. Owner Sees Bright Future. 10 June: unpaginated clipping. On file, East Bridgewater Public Library, East Bridgewater, MA.

Brockton Weekly Gazetteer

- 1880 East Bridgewater. Undated and unpaginated clipping. On file, Old Bridgewater Historical Society, West Bridgewater, MA.

Carver Cotton Gin Company

- 1901 Dedication Party of the Employees of the Carver Cotton Gin Co. Printed program. On file, Old Bridgewater Historical Society, West Bridgewater, MA.

Cassulo, Joanne, and Rebecca Davidson

- 1975 *Satucket River Site, East Bridgewater*. Class study, Bridgewater State College. Report on file, Massachusetts Historical Commission, Boston, MA.

Crane, Joshua E.

- 1829 Map of East Bridgewater, Mass. Map 33 in Drawer IV. Massachusetts State Archives, Boston, MA.

Daly, John J., and Michelle H. Johnstone

- 2018 *Historical Documentation, Carver Cotton Gin Company Complex: Dam and River Retaining Walls and Blacksmith Shop and Hardening Building, East Bridgewater, Massachusetts*. The Public Archaeology Laboratory, Inc. Report No. 3213.01-1. Submitted to U.S. Department of the Interior, Fish and Wildlife Service, Concord, NH.

East Bridgewater Public Library

- Var. Miscellaneous newspaper clippings, documents, and photographs in Carver Cotton Gin vertical files; Miscellaneous pictures in Box 7, Folders 4, 5, and 14; and Scrapbook Series Vol. 2. On file, East Bridgewater Public Library, East Bridgewater, MA.

Forbes, Anne, and Betsy Friedberg

- 2006 *National Register of Historic Places Registration Form: Sachem Rock Farm, East Bridgewater, Massachusetts*. On file, Massachusetts Historical Commission, Boston, MA.

Gomez and Sullivan Engineers

- 2016 *Carver Cotton Gin Dam Preliminary Design for Removal, Satucket River, East Bridgewater, MA, Preliminary Basis-of-Design Report, June 24, 2016*. Prepared for Commonwealth of Massachusetts, Division of Ecological Restoration, Boston, MA.

Hobart, Mrs. John

- 1908 *Reminiscences of Satucket*. Typewritten Manuscript. On file, East Bridgewater Public Library, East Bridgewater, MA.

Howland, Rick

- 1968 'King Cotton' Spawned Machine Empire. *The Patriot Ledger* 24 September:28.

International Publishing Company

- 1885 *Leading Manufacturers and Merchants of the City of Boston and a review of the Prominent Exchanges*. International Publishing Company, Boston, MA.

Kennebec Reborn, Inc.

- 2012 *Satucket River, East Bridgewater, Mass. Fish Passage and Boating Improvement Project.* Working Draft, Feb. 15, 2012. Kennebec Reborn, Inc., Augusta, ME.

Lakwete, Angela

- 2003 *Inventing the Cotton Gin: Machine and Myth in Antebellum America.* Johns Hopkins University Press, Baltimore, MD.

MacBroom, James

- 2007 Memorandum: Cotton Gin Dam, Satucket River, East Bridgewater, MA. Prepared for the Massachusetts Riverways Program by Milone & MacBroom, Inc. MMI# 22688-12-1.

Massachusetts Historical Commission (MHC)

- 1979 *Public Planning and Environmental Review: Archaeology and Historic Preservation.* Massachusetts Historical Commission, Boston, MA.

Massachusetts General Court (MGC)

- 1846 Chapter 165—An Act to Incorporate the E. Carver Company. In *Acts and Resolves Passed by the General Court*, 112. Secretary of the Commonwealth, Boston, MA.
- 1873 Chapter 327—An Act to Dissolve Certain Corporations. In *Private and Special Statutes of the Commonwealth of Massachusetts*, revised and published by authority of the Legislature, 393–703. Albert J. Wright, State Printer, Boston, MA.

National Park Service (NPS)

- 1983 *Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation* (48 FR 44716–44742). National Park Service, U.S. Department of the Interior, Washington, D.C.

Nationwide Environmental Title Research, LLC (NETR)

- 1960 Aerial photograph of East Bridgewater. Electronic resource, <http://www.historicaerials.com/>, accessed August 18, 2016.

Nutter, Charles L.

- 1977 Eleazer Carver. In *Earlier Days in East Bridgewater*, compiled by the East Bridgewater Historical Commission, pp. 7–8. East Bridgewater Historical Commission, East Bridgewater, MA.

Old Bridgewater Historical Society

- Var. Miscellaneous newspaper clippings and documents. On file, Old Bridgewater Historical Society, West Bridgewater, MA.

The Public Archaeology Laboratory Inc. (PAL)

- 2017 *Phase I Cultural Resources Survey, Carver Cotton Gin Dam Removal Project, East Bridgewater, Massachusetts.* The Public Archaeology Laboratory Inc. Technical Memorandum No. 3213. Submitted to the Massachusetts Department of Fish and Game's Division of Ecological Restoration, Boston, MA.

Sanborn Map Company (Sanborn)

1896–1943 *Insurance Maps of Bridgewater, Massachusetts: Carver Cotton Gin Factory Special, East Bridgewater*. Sanborn Map Company, New York, NY.

Spence, Benjamin A.

2008 Manufacturing in Bridgewater, 1900–1910. In *Bridgewater, Massachusetts: A Town in Transition*. Monograph 4. Bridgewater State University, Bridgewater, MA.

Stone, Orra L.

1930 *History of Massachusetts Industries*. Volume II. The S. J. Clarke Publishing Co., Boston, MA.

Town of East Bridgewater Assessor's Office

2016 East Bridgewater Public Maps On-Line. Electronic GIS database, <https://www.mapsonline.net/eastbridgewaterma/index.html>, accessed August 19, 2016.

U-Store It Company

Var. Miscellaneous newspaper clippings and files. On file, U-Store It Company, East Bridgewater.

Walker, George H. and Company

1879 Map of the Town of Bridgewater. In *Atlas of Plymouth County, Massachusetts*. George H. Walker and Company, Boston, MA.

Walling, Henry F.

1857 *Map of the County of Plymouth, Massachusetts*. H. F. Walling & Company, New York, NY.

Weston, Roy F. Inc. (Weston)

1996 *Final Site Inspection Prioritization Report for Murray-Carver Landfill, East Bridgewater, Massachusetts*. CERCLIS No. MAD980520308, TDD No. 9411-05-CWX, Delivery Order No. 0002. Prepared for the Massachusetts Bureau of Waste Site Cleanup, Department of Environmental Protection, Boston, MA.

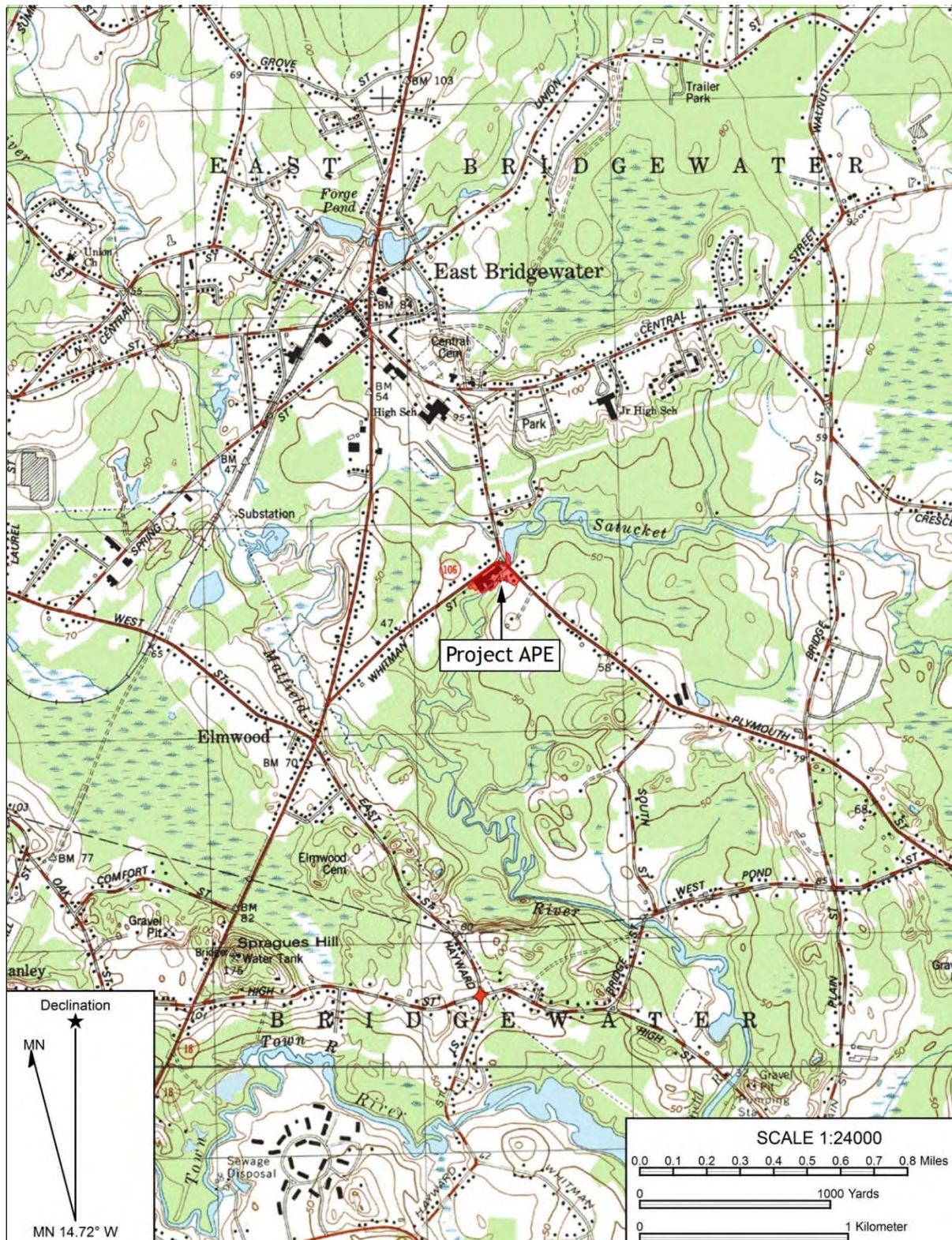


Figure 1. Location of the Carver Cotton Gin Dam Removal Project APE on the USGS Whitman, MA, topographic quadrangle, 7.5-minute series.

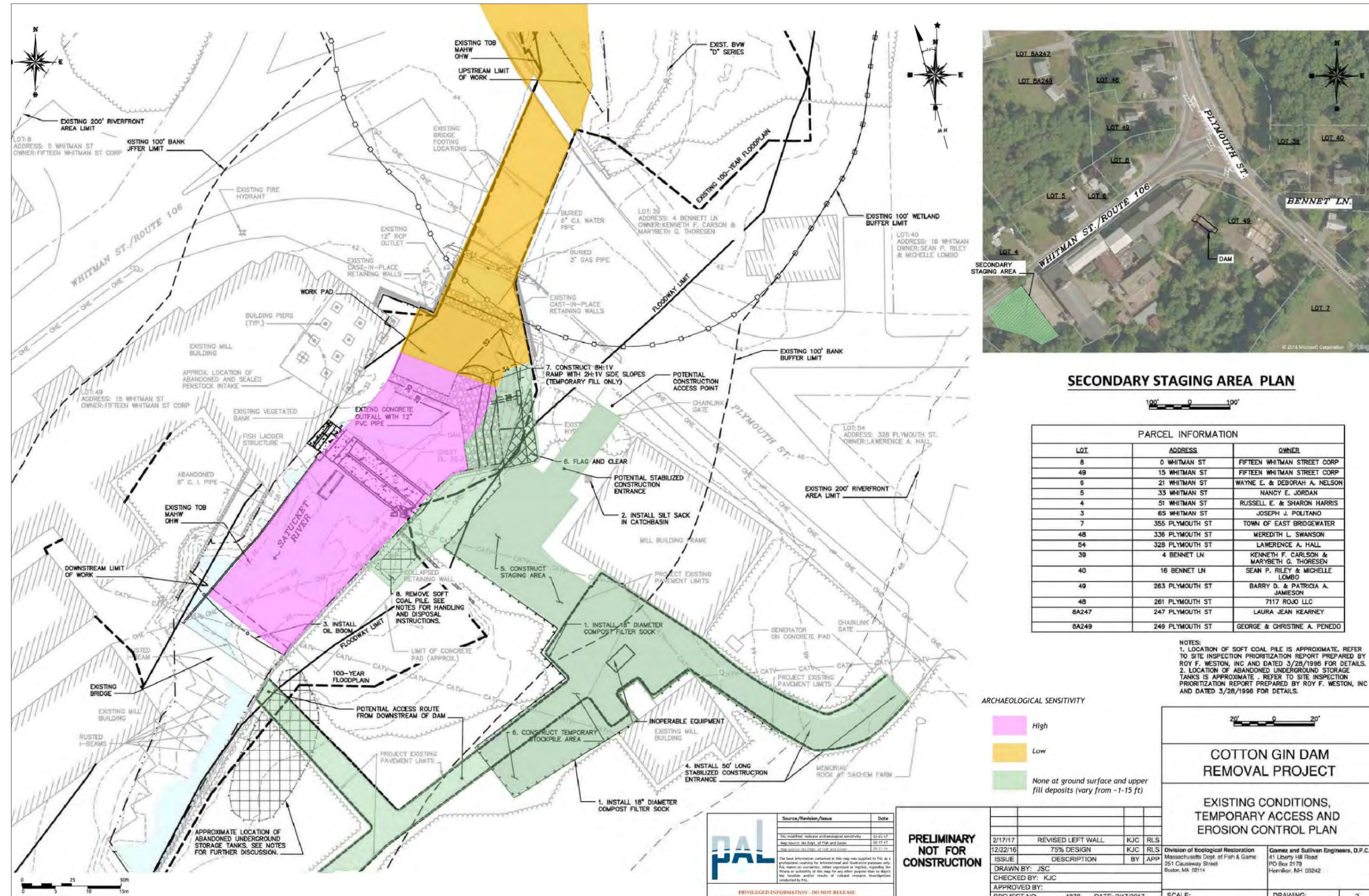


Figure 2. Project 75% design plan showing the archaeological sensitivity assigned to the Project APE work areas.

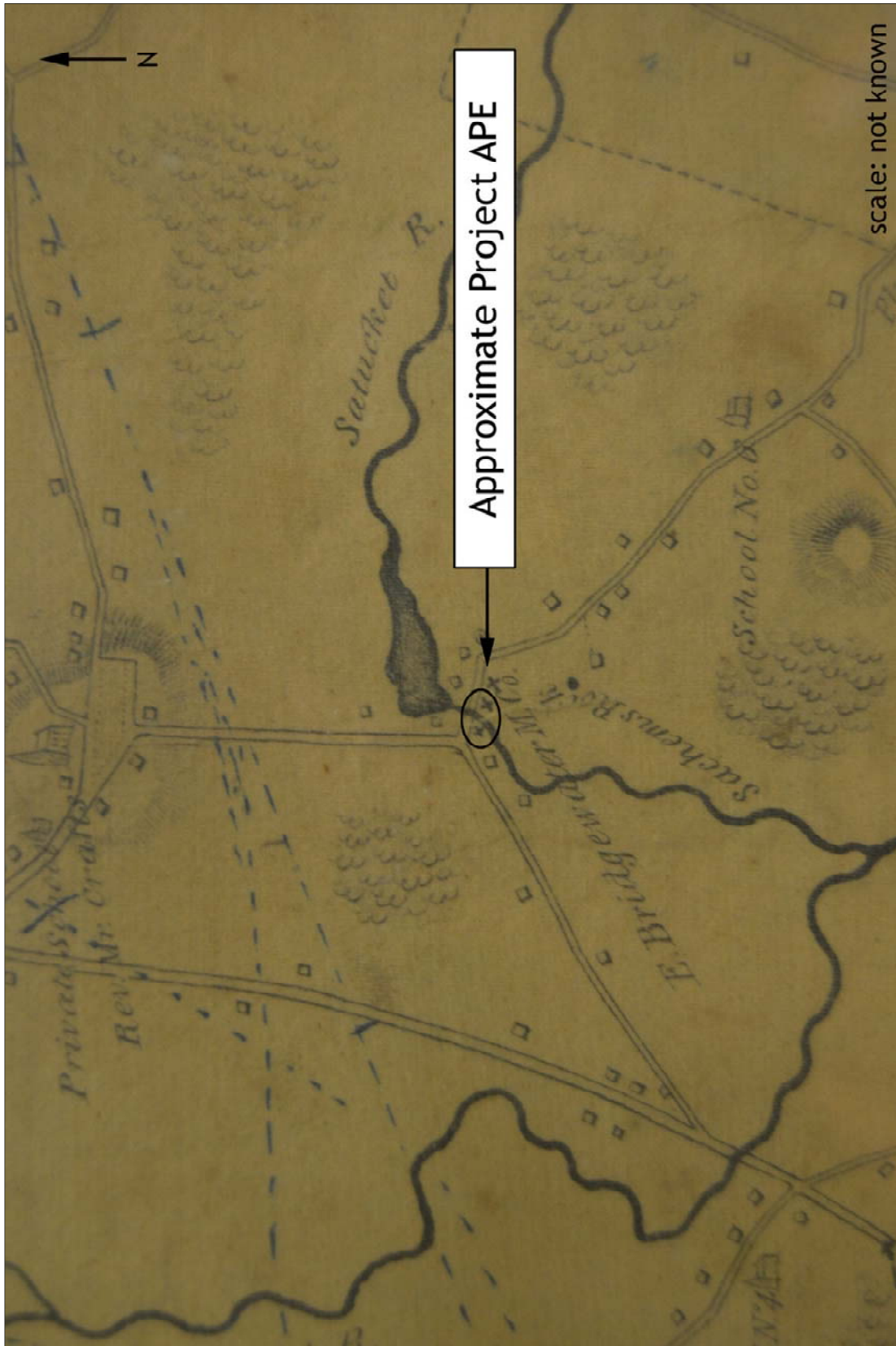


Figure 3. 1829 map of East Bridgewater showing the approximate Project APE (source: Crane 1829).

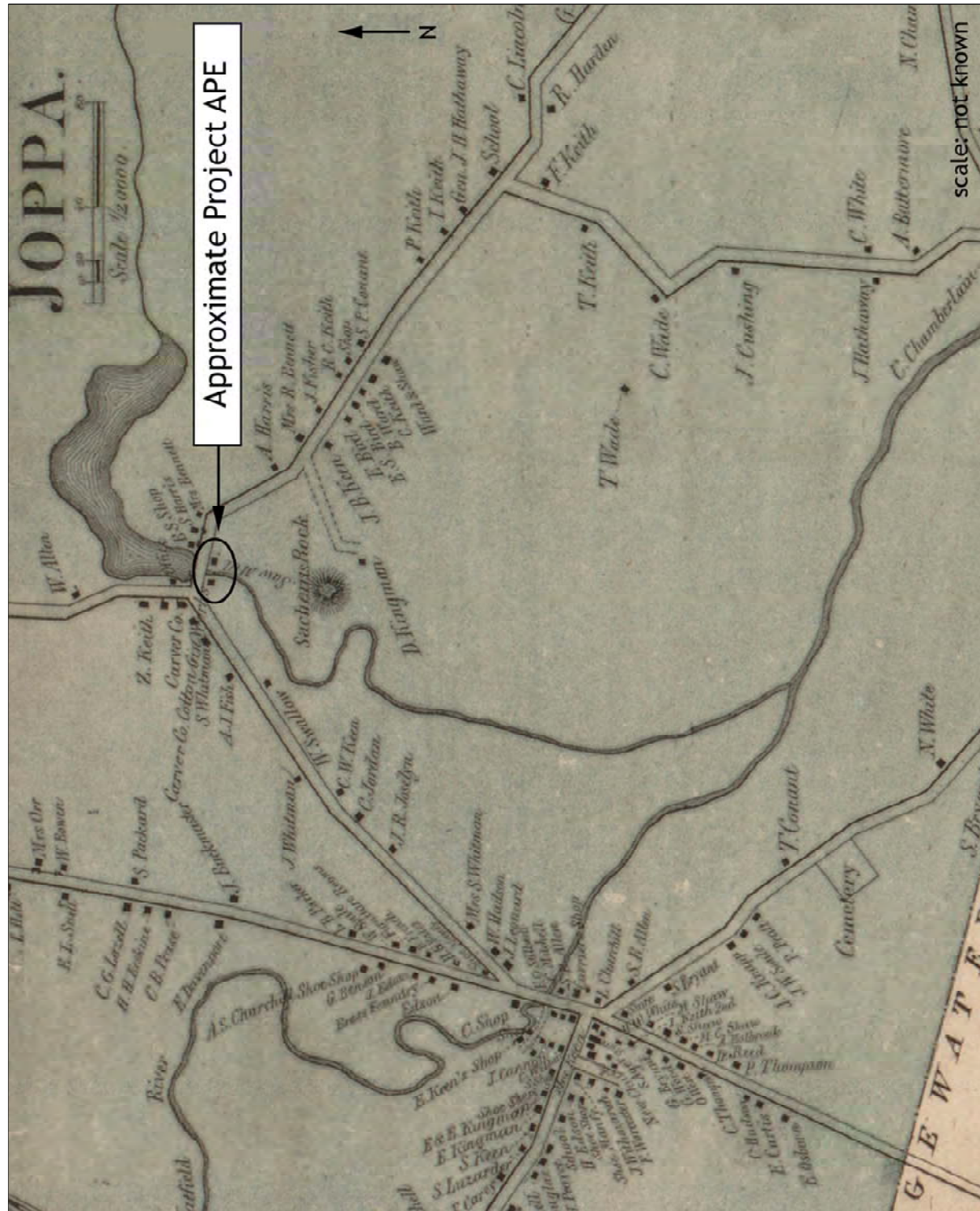


Figure 4. 1857 map of Plymouth County showing the approximate Project APE (source: Walling 1857).

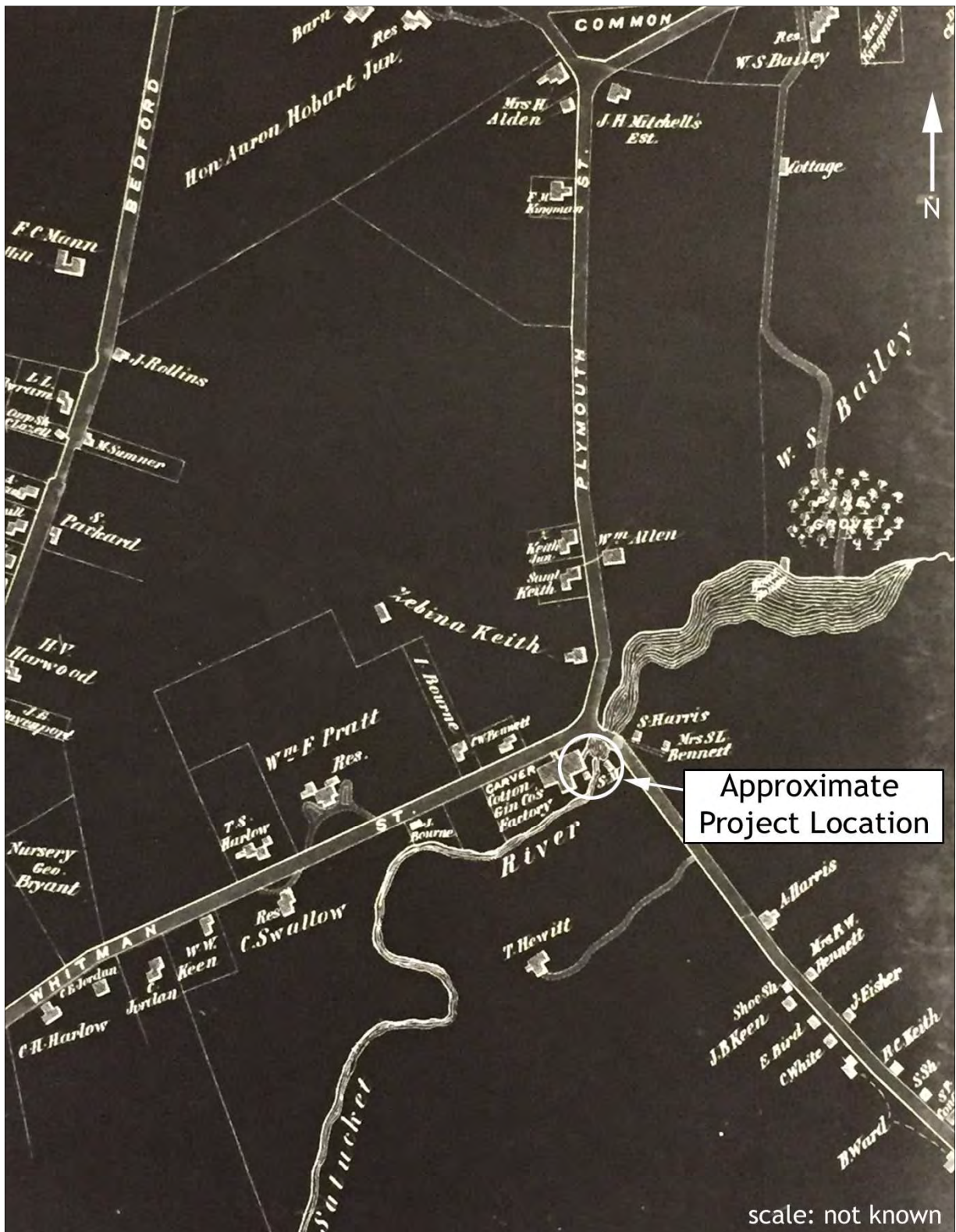


Figure 5. 1873 map of East Bridgewater showing the approximate Project APE (source: Beers 1873).

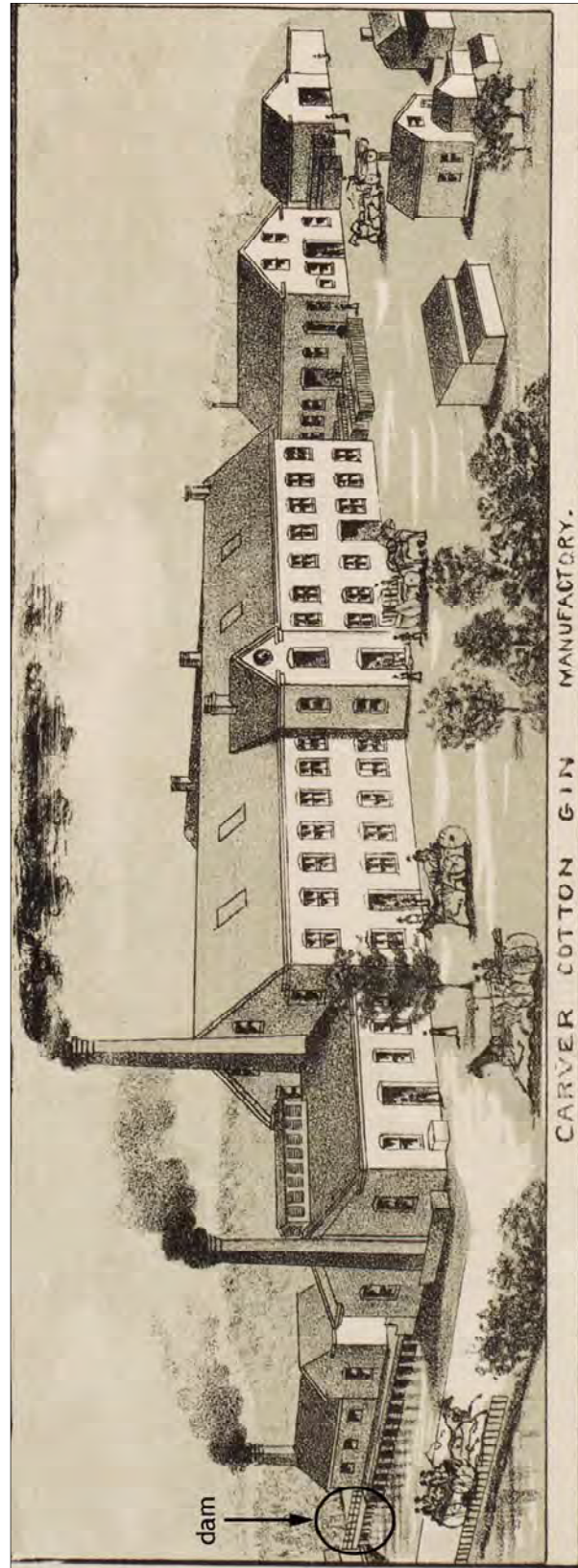


Figure 6. 1887 bird's eye view of the Carver Cotton Gin Company and dam, looking west (source: Bailey 1887).



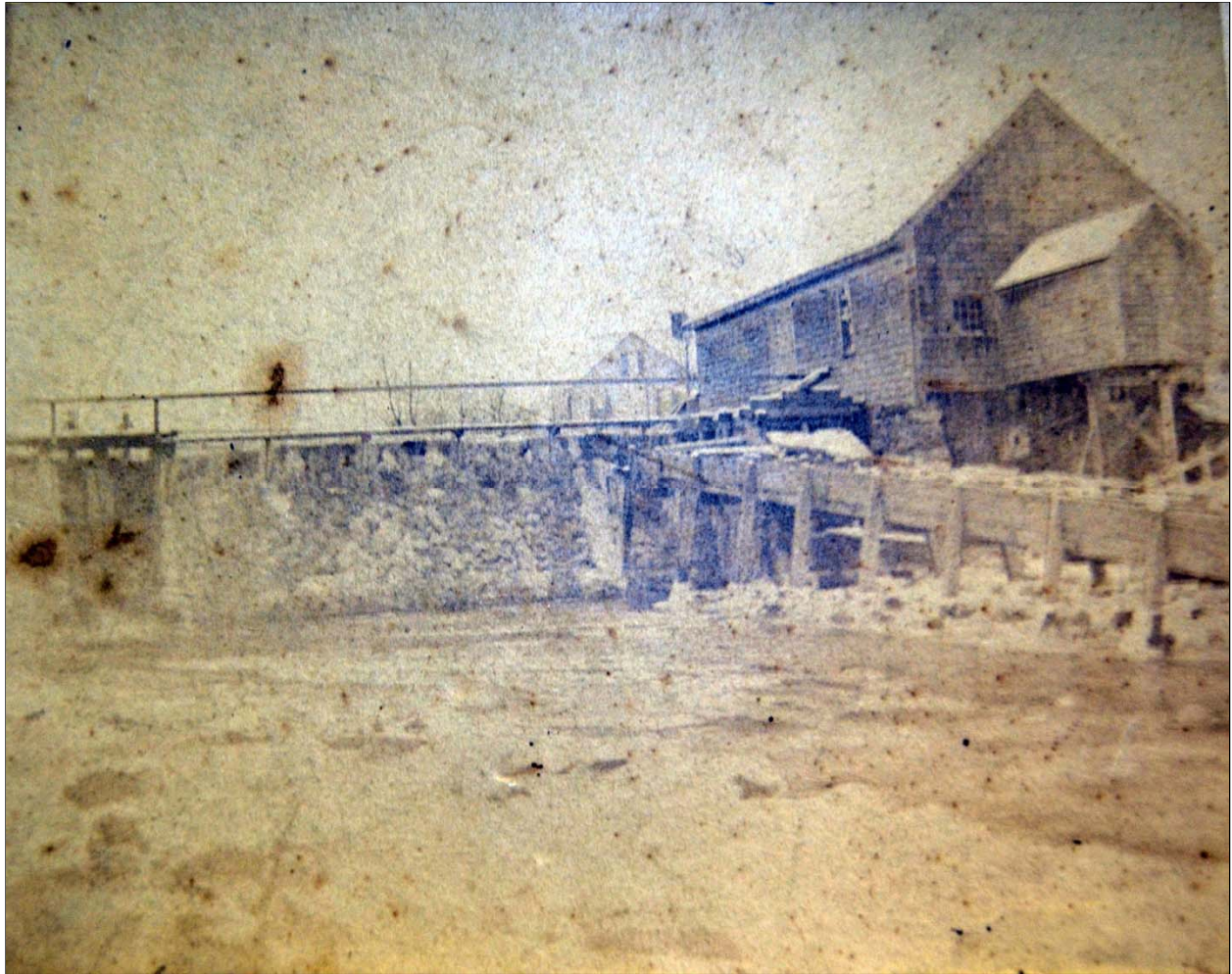


Figure 8. Pre-1890 photograph of the Carver Cotton Gin Company Dam, looking northeast (upstream), with shed or former sawmill at right (source: East Bridgewater Public Library collections).

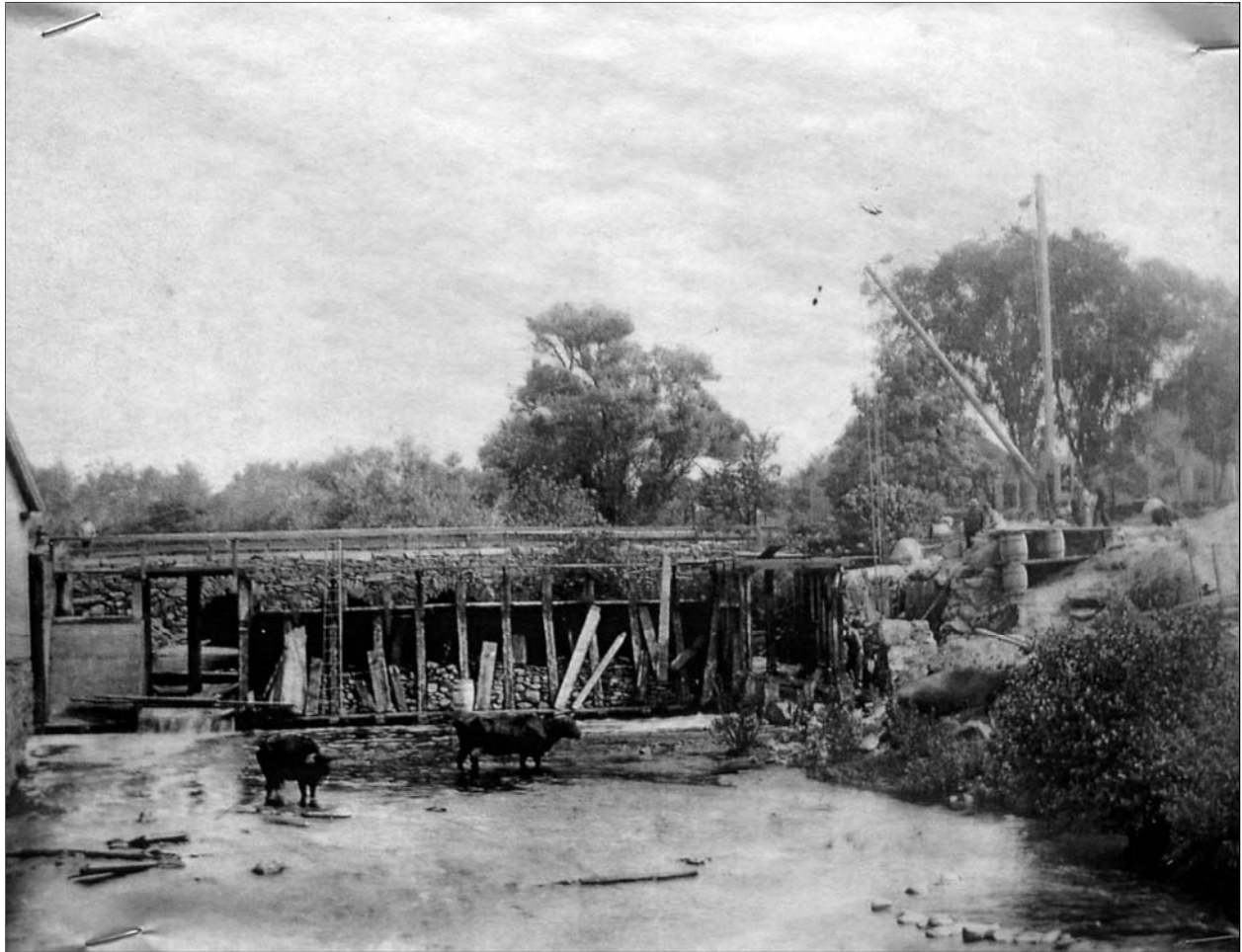


Figure 9. 1890s photograph showing reconstruction or rehabilitation of the Carver Cotton Gin Company Dam, looking northeast (upstream) (source: U-Store It Company files).



Figure 10. Photograph dating to between 1901 and 1906 showing Carver Cotton Gin Company Dam after rehabilitation, looking northeast (upstream) (source: East Bridgewater Public Library collections).

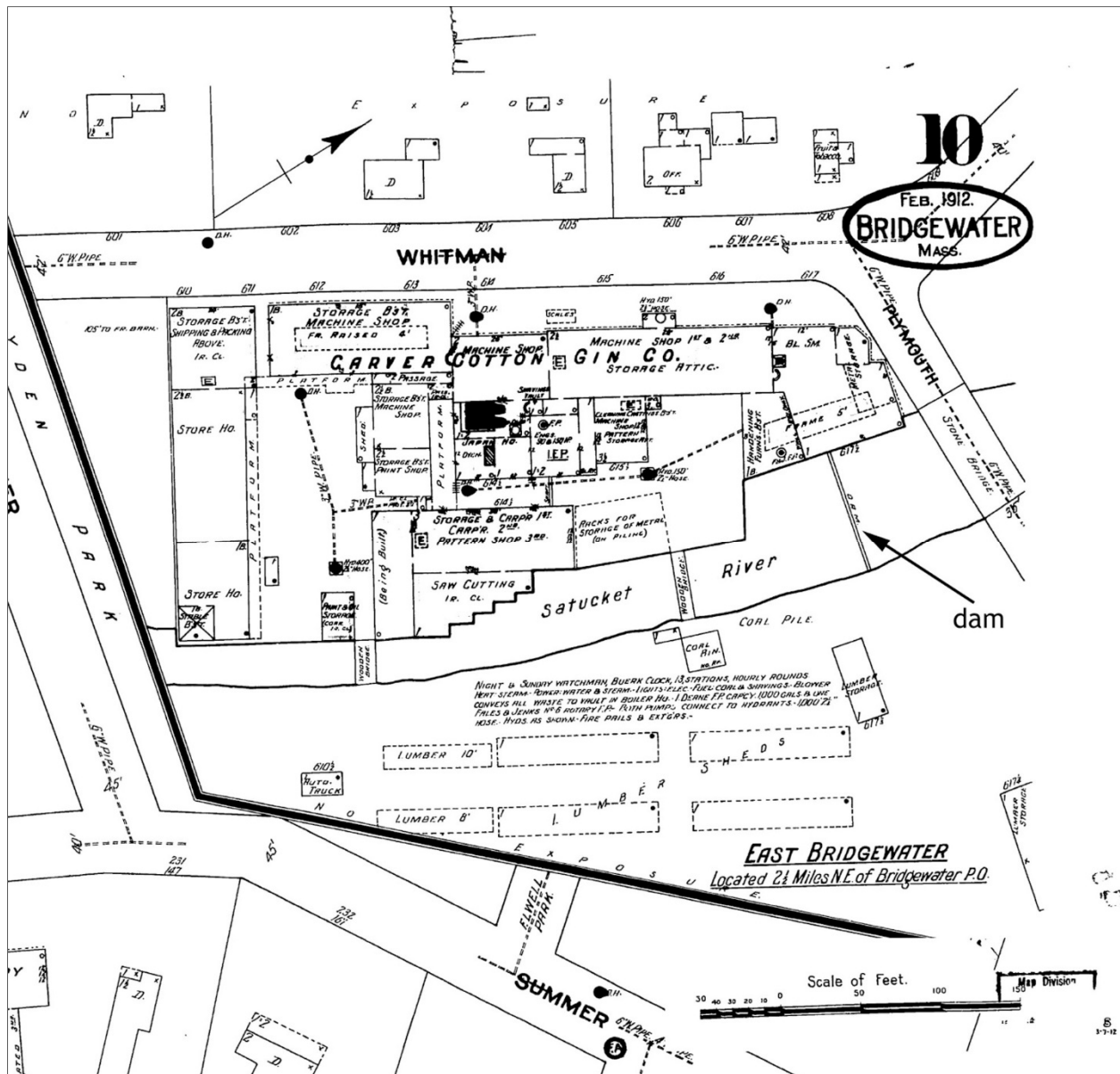


Figure 11. 1912 insurance plan of the Carver Cotton Gin Company (source: Sanborn 1912).







Figure 14. Removal of cast-iron stanchions from the dam crest, view northwest.



Figure 15. Removal of saw-cut concrete from dam spillway, view southwest.



Figure 16. Rubblestone and cobble core exposed during concrete removal, view northwest.



Figure 17. Excavation of rubblestone and cobble core of dam, view northwest.



Figure 18. Three longitudinal timbers exposed below the rubblestone and cobble core of the dam, view northwest.

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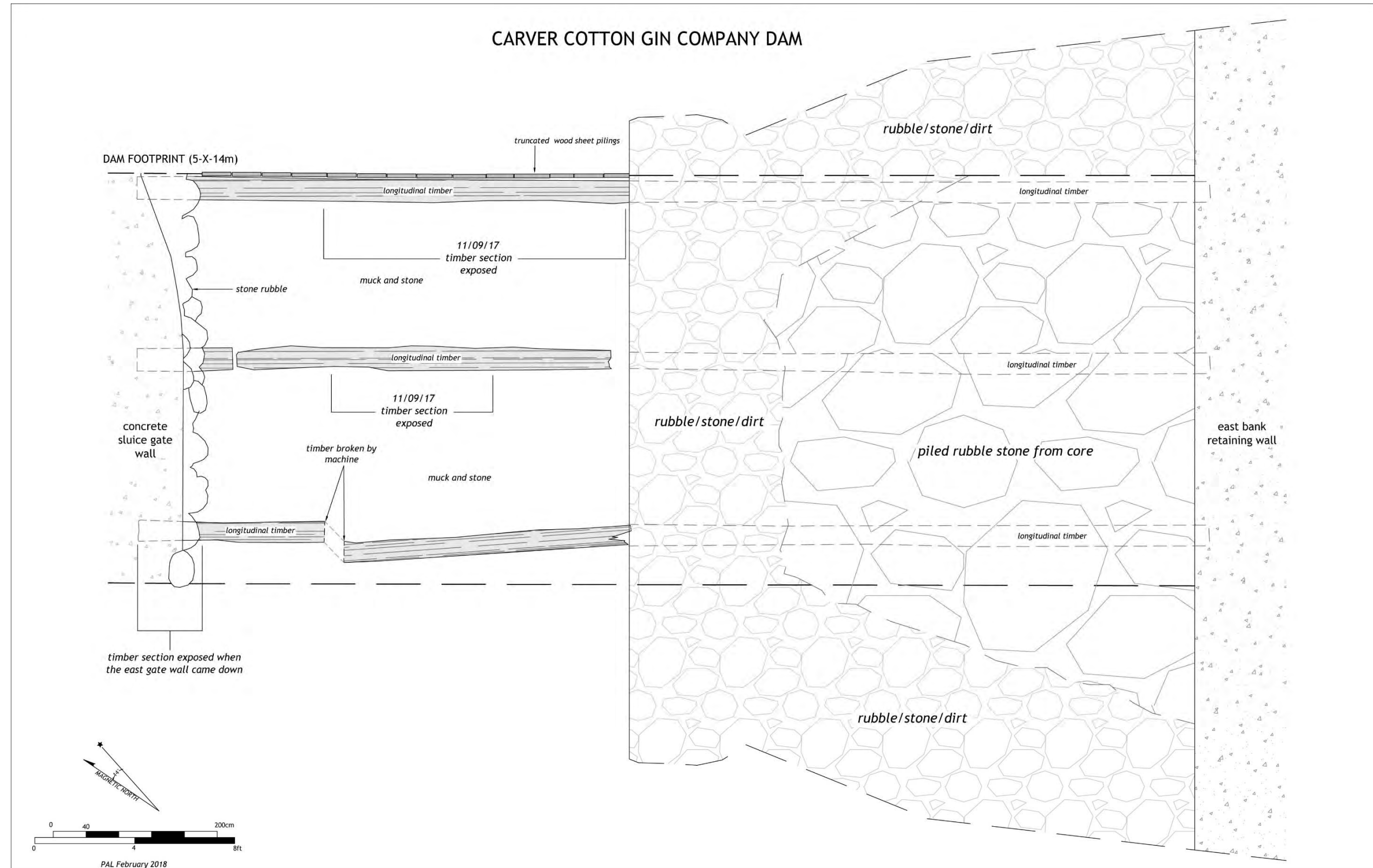


Figure 19. Plan drawing of longitudinal timbers exposed at base of dam.



Figure 20. Western end of exposed longitudinal timbers anchored into concrete sluiceway floor, view northwest.



Figure 21. Detail of west end of longitudinal timber anchored into concrete sluiceway floor, view southeast.



Figure 22. Fill and stone placed at the east end of the no longer extant dam spillway to reinforce the stone training wall, view southwest.



Figure 23. Removal of northern longitudinal timbers showing vertical truncated sheet piling, and upper and lower timbers, view northeast.

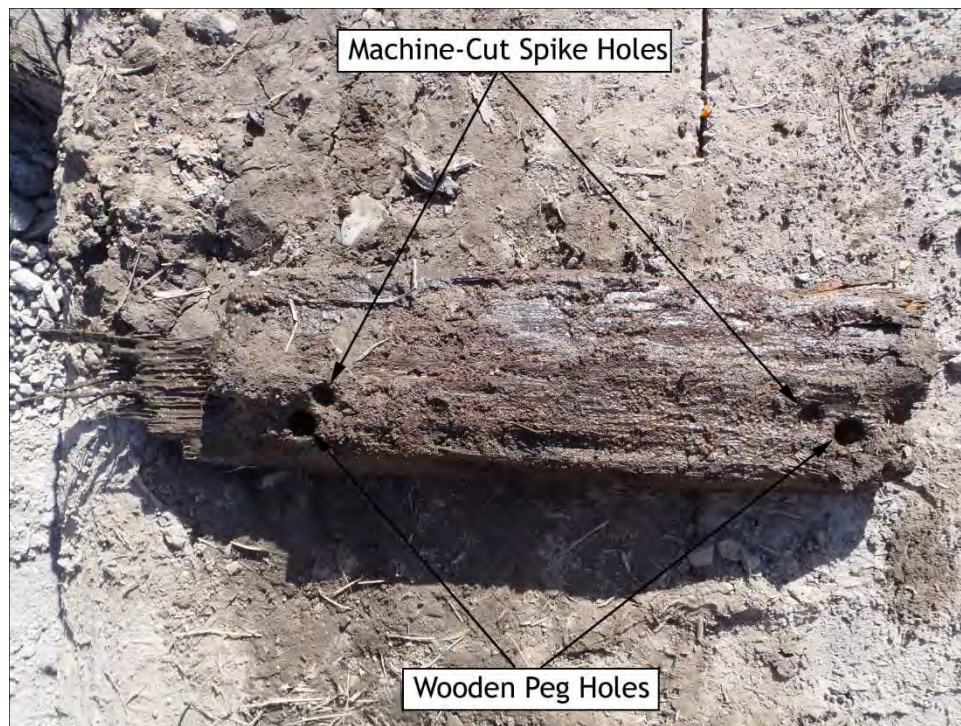


Figure 24. Section of northern (upper) longitudinal timber showing holes for machine-cut spikes and wooden pegs.



Figure 25. Wooden peg and machine-cut spike removed from northern longitudinal timber.



Figure 26. Excavation of two northern longitudinal timbers and attached vertical sheet piling, view west.



Figure 27. Bolt that attached two northern longitudinal timbers to bedrock.



Figure 28. Representative sheet piling (with machine-cut spike) removed from lower northern timber for documentation.



Figure 29. Timbers exposed (not in situ) in the silty fill/river sediment upstream of the Carver Cotton Gin Company Dam, view southwest.

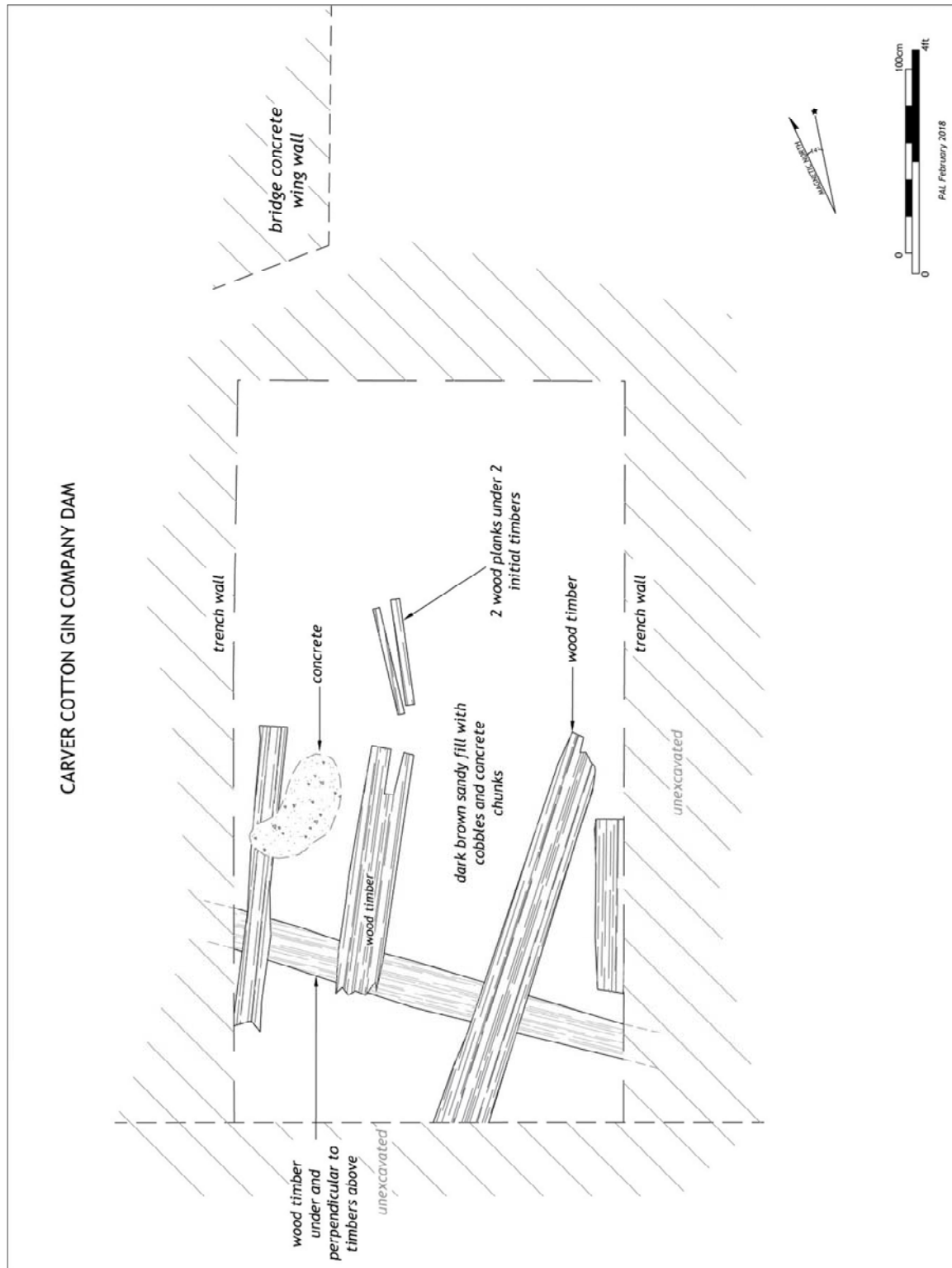


Figure 30. Plan drawing of timbers exposed in fill/river sediment upstream of the Carver Cotton Gin Company Dam.



Figure 31. Mortise joint and bolt holes at one end of the intact timber exposed upstream of the Carver Cotton Gin Company Dam.



Figure 32. Rectangular notch on one side of the intact timber exposed upstream of the Carver Cotton Gin Company Dam.



Figure 33. Ovoid notch on one side of the intact timber exposed upstream of the Carver Cotton Gin Company Dam.



Figure 34. Profile view of fill/river sediment upstream of the Carver Cotton Gin Company Dam, view northwest.



Figure 35. Timbers exposed (not in situ) in the silty river sediment downstream of the Carver Cotton Gin Company Dam, view northeast.



Figure 36. Mortise joints on one of the timbers exposed downstream of the Carver Cotton Gin Company Dam.

APPENDIX A:
DRAFT INTERPRETIVE CONTEXT – BRASS PLAQUE

Carver Cotton Gin Company

Bridgewater native Eleazer Carver (1785–1866) organized the E. Carver Company and bought a factory here in 1842. A new Carver Company factory was built in 1872. The company employed nearly 2,000 workers and was a world-renowned maker of Carver's "patent cotton gin" and other machines. The cotton gin was used to separate seeds from cotton fibers to make clothing and linens. The Carver Company factory was an important industry in East Bridgewater until it closed in 1992. A dam on the Satucket River next to the factory provided power for the manufacturing operations. For thousands of years before the dam was built, Wampanoag Native Americans used the river for fishing and hunting. In 2017 the dam was removed to restore a free-flowing river system and improve the habitat for migratory fish, including river herring and American eel.

APPENDIX B:
CORRESPONDENCE AND ARCHAEOLOGICAL PERMITS



Public Archaeology Laboratory

July 12, 2017

Brona Simon
State Historic Preservation Officer
Executive Director
State Archaeologist
Massachusetts Historical Commission
220 Morrissey Boulevard
Boston, Massachusetts 02125


Re: Carver Cotton Gin Dam Removal, 15 Whitman Street, East Bridgewater, MA
Cultural Resources Mitigation
MHC #RC.60204, PAL #3213

Dear Ms. Simon:

Enclosed please find an application for a permit to conduct cultural resources mitigation including in-river archaeological monitoring and recordation in accordance with Stipulations I, II, and III of the Memorandum of Agreement (MOA) for the removal of the Carver Cotton Gin Dam in East Bridgewater, Massachusetts. The project area is located on the Whitman, Massachusetts topographic quadrangle. Per your letter dated May 23, 2017, the USFWS has consulted with the Massachusetts Board of Underwater Archaeological Resources (MBUAR) to verify that the proposed in-water archaeological monitoring will also need to be conducted under a MBUAR Special Use Permit (312 CMR 2), and an application has been submitted under separate cover to Victor Mastone, MBUAR Director.

The construction work is anticipated to start on/about August 7, 2017. If you have any questions or concerns, please do not hesitate to contact Suzanne Cherau, Principal Investigator, at your convenience.

Sincerely,



Deborah C. Cox, RPA
President

Enclosures

cc: Eric Derleth, USFWS (w/encl.)
William Bennett, USFWS (w/encl.)
Kristopher Houle, MADER (w/encl.)
Victor Mastone, MBUAR (w/encl.)

950 CMR: DEPARTMENT OF THE STATE SECRETARY

APPENDIX B
COMMONWEALTH OF MASSACHUSETTS

SECRETARY OF STATE: MASSACHUSETTS HISTORICAL COMMISSION

PERMIT APPLICATION: ARCHAEOLOGICAL FIELD INVESTIGATION

A. General Information

Pursuant to Section 27C of Chapter 9 of the General Laws and according to the regulations outlined in 950 CMR 70.00, a permit to conduct a field investigation is hereby requested,

1. Name(s): Suzanne Cherau
2. Institution: The Public Archaeology Laboratory, Inc.
Address: 26 Main Street
Pawtucket, Rhode Island 02860
3. Project Location: Carver Cotton Gin Dam Removal
see attached proposal
4. Town(s): East Bridgewater
5. Attach a copy of a USGS quadrangle with the project area clearly marked.
see attached
6. Property Owner(s): Valle Property, LLC
7. The applicant affirms that the owner has been notified and has agreed that the applicant may perform the proposed field investigation.
8. The proposed field investigation is for a(n):
 - a. Reconnaissance Survey
 - b. Intensive Survey
 - c. Site Examination
 - d. Data Recovery
 - e. Mitigation – Monitoring/Recordation

B. Professional Qualifications

1. Attach a personnel chart and project schedule as described in 950 CMR 70.11 (b).

a. Personnel

Principal Investigator:	Suzanne Cherau
Industrial Historian:	John Daly
Project Archaeologist(s):	Jennifer Banister John Kelly

b. Schedule

Fieldwork:	August – October 2017
Laboratory:	November 2017
Report:	December 2017 – January 2018

2. Include copies of curriculum vitae of key personnel (unless already on file with the State Archaeologist).

C. Research Design

1. Attach a narrative description of the proposed Research Design according to the requirements of 950 CMR 70.11.
2. The Applicant agrees to perform the field investigations according to the standards outlined in 950 CMR 70.13.
3. The Applicant agrees to submit a Summary Report, prepared according to the standards outlined in 950 CMR 70.14 by: January 31, 2018
4. The specimens recovered during performance of the proposed field investigation will be curated at:

The Public Archaeology Laboratory, Inc.
26 Main Street
Pawtucket, Rhode Island 02860

SIGNATURE

APPLICANT(S)

Suzanne G. Cherau

DATE

July 12, 2017



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

PERMIT TO CONDUCT ARCHAEOLOGICAL FIELD INVESTIGATION

Permit Number 3769 Date of Issue July 21, 2017
Expiration Date July 21, 2018

PAL is hereby
authorized to conduct an archaeological field investigation pursuant to
Section 27C of Chapter 9 of General Laws and according to the regulations
outlined in 950 CMR 70.00.

Carver Cotton Gin Dam Removal, East Bridgewater

Project Location

Brana Simon
Brana Simon, State Archaeologist
Massachusetts Historical Commission



July 12, 2017

Victor T. Mastone
Director
Massachusetts Board of Underwater Archaeological Resources
251 Causeway Street, Suite 800
Boston, Massachusetts 02114-2136

Re: Carver Cotton Gin Dam Removal, 15 Whitman Street, East Bridgewater, MA
Cultural Resources Mitigation
PAL #3213, MHC #RC.60204

Dear Mr. Mastone:

Enclosed please find an application for a Special Use Permit to conduct cultural resources mitigation including in-river archaeological monitoring and recordation in accordance with Stipulations I, II, and III of the Memorandum of Agreement (MOA) for the removal of the Carver Cotton Gin Dam in East Bridgewater, Massachusetts. The project area is located on the Whitman, Massachusetts topographic quadrangle. Per the Massachusetts Historical Commission (MHC) letter dated May 23, 2017, the USFWS consulted with you to verify that the proposed in-water archaeological monitoring will need to be conducted under a MBUAR Special Use Permit (312 CMR 2). We have also submitted a permit application to conduct the archaeological mitigation work under State Archaeologist's Permit (950 CMR 70-71).

The construction work is anticipated to start on/about August 7, 2017. If you have any questions or concerns, please do not hesitate to contact Suzanne Cherau, Principal Investigator, at your convenience.

Sincerely,

A handwritten signature in black ink, appearing to read 'Deborah C. Cox'.

Deborah C. Cox, RPA
President

Enclosures

cc: Eric Derleth, USFWS (w/permit application only)
William Bennett, USFWS (w/permit application only)
Brona Simon, MHC (w/permit application only)
Kristopher Houle, MADER (w/permit application only)



THE COMMONWEALTH OF MASSACHUSETTS BOARD OF
UNDERWATER ARCHAEOLOGICAL RESOURCES
251 Causeway Street, Suite 800, Boston, MA 02114

SPECIAL USE PERMIT APPLICATION

In accordance with 312 CMR 2, rules and regulations established by the Board of Underwater Archaeological Resources under MGL C. 91, s. 63, as amended, the undersigned herewith makes application for a permit to conduct archaeological research activities to identify and/or examine underwater archaeological resources located within the inland and coastal waters of the Commonwealth.

PLEASE TYPE OR PRINT LEGIBLY

NAME(S): Suzanne Cherau

ORGANIZATION: The Public Archaeology Laboratory, Inc. (PAL Inc.)

(Applicant must be a qualified archaeologist or archaeological organization meeting the minimum qualifications under 312 CMR 2.09(4)(d); if multiple applicants, provide information for all parties and each must sign. If a corporation, include a copy of the certificate of incorporation with this application, and write both corporate name and contact information.)

ADDRESS: 26 Main Street, Pawtucket, Rhode Island 02860

TELEPHONE NUMBER: 401-728-8780

FAX NUMBER: 401-728-8784

EMAIL ADDRESS: scherau@palinc.com

PROJECT NAME: Carver Cotton Gin Dam Removal

LOCATION OF PROPOSED ACTIVITY

Nearest City or Town: East Bridgewater

Longitude and Latitude of Proposed Project Area

Name of Water Body: Satucket River

(Project area of potential effect):

Depth of Water: to be drained; less than 5 ft

NE

NW

Total Acreage of the Project Area: less than 1 acre

SE

SW

Description of Proposed Permit Area (narrative): removal of concrete spillway and adjacent fish ladder remains, install a new rock riffle upstream of and in place of the dam upstream beneath an adjacent state highway bridge (Route 106) for scour protection, and dispose of excavated riverbed materials (sediments) at two locations: one in the headrace below a portion of the Carver Cotton Gin Company Blacksmith Shop and Hardening Building and the other in the stone wall-lined tailrace to the south of the building.

Please attach a copy of the section of the NOAA nautical chart(s) or USGS topographic map(s).

(Clearly indicate the exact location of and the extent of the requested permit area on attached NOAA nautical chart or USGS topographic Map, specifying marker buoys, longitude and latitude, loran bearings and/or any other identifying features which define the requested Permit area. Use the space provided or attach additional sheets if necessary to complete this section.)

PROJECT PROPONENT (if not applicant)

CONTACT NAME/ORGANIZATION: Eric Derleth/USFWS

ADDRESS: 70 Commercial Street, Suite 300, Concord, NH 03301

TELEPHONE NUMBER: 603-223-2541 x6417

FAX NUMBER: 603-223-0104

EMAIL ADDRESS: eric_derleth@fws.gov

PROJECT DESCRIPTION WHICH INCLUDES THE PURPOSE AND GOALS (attach additional sheets as needed):

See attached Technical Proposal dated June 19, 2017 prepared by PAL.

DESCRIPTION OF ANY KNOWN UNDERWATER ARCHAEOLOGICAL RESOURCE IN THE PROJECT AREA
No known underwater archaeological resources in the project area.

PLEASE INDICATE THE TYPE OF INVESTIGATION BEING UNDERTAKEN FOR THIS PROJECT (check one):

☐ Reconnaissance Survey☐ Site Examination☐ Intensive Survey☒ Data Recovery (MOA mitigation)

PLEASE ATTACH A COPY OF YOUR RESEARCH DESIGN AND DESCRIBE IN AS MUCH DETAIL AS POSSIBLE WHAT YOU PLAN TO DO, INCLUDING DOCUMENTARY RESEARCH, REMOTE SENSING, ON-SITE ACTIVITIES, INCLUDING TESTING, EXCAVATION, RESOURCES RECOVERY, CONSERVATION AND CURATION, ETC. (attach additional sheets as needed): See attached Technical Proposal

(This work plan should include, but not limited to, a description of: 1.) the plans to document activities and finds; 2. the inventory and catalogue which shall be maintained for all recovered artifacts; 3.) the artifact conservation program; and 4. the artifact repository)

WHAT IS YOUR PROPOSED WORK SCHEDULE (attach additional sheets as needed)?

See attached Technical Proposal – schedule on pp. 6-7

PROFESSIONAL QUALIFICATIONS OF APPLICANT: (1) ON A SEPARATE SHEET, PROVIDE A PERSONNEL OR ORGANIZATION CHART INDICATING THE NAMES, DUTIES AND RESPONSIBILITIES OF KEY PERSONNEL; (2) INCLUDE COPIES OF THE CURRICULA VITAE FOR THE PROJECT DIRECTOR/PRINCIPAL INVESTIGATOR, PROJECT ARCHAEOLOGIST, AND OTHER KEY STAFF AS NECESSARY.

See PAL Technical Proposal, Personnel on p. 6 and key staff resumes (Cherau, Daly, and Banister) on file at MBUAR

WHAT ARE YOUR PUBLIC BENEFIT PLANS, SUCH AS PUBLIC DISPLAYS, PUBLIC PRESENTATIONS, AND/OR PUBLICATION OF THE RESULTS OF YOUR WORK (Attach additional sheets as needed)?

see Project MOA, Stipulation II, PAL will provide technical support for interpretive text to be installed on a ~~brass plaque or marker at the site.~~

YOU MAY INCLUDE ANY OTHER INFORMATION YOU BELIEVE MAY ASSIST THE BOARD IN ASSESSING YOUR APPLICATION (Attach additional sheets as needed)

The undersigned understands and acknowledges that all underwater archaeological resources recovered under a special use permit remain the property of the Commonwealth of Massachusetts.

The undersigned understands and acknowledges that this permit does not authorize the excavation of human remains.

The undersigned understands and acknowledges that the Board may deny this permit application or revoke a permit granted whenever the Board determines that there is substantial fraud, deceit, corruption, or misrepresentation in the information or filing of this permit application.

Suzanne G. Cherau
(Signature of principal Investigator/Project Director)

same

(Signature of Project Archaeologist)

7/12/17
(Date)

Suzanne G. Cherau
(Type or Print Name)

same

(Type or Print Name)

(Date)

FOR OFFICIAL USE ONLY (DO NOT COMPLETE THIS SECTION)

Date and Time Received:

By:



The COMMONWEALTH OF MASSACHUSETTS
BOARD OF UNDERWATER ARCHAEOLOGICAL RESOURCES
EXECUTIVE OFFICE OF ENERGY AND ENVIRONMENTAL AFFAIRS
251 Causeway Street, Suite 800, Boston, MA 02114-2136
Tel. (617) 626-1141 Fax (617) 626-1240 Web Site: www.mass.gov/eea/agencies/czm/buar/

July 18, 2017

Deborah C. Cox, President.
Public Archaeology Laboratory
26 Main Street
Pawtucket, RI 02860

RE: Carver Cotton Gin Dam Removal Project, East Bridgewater
In-River Archaeological Monitoring and Recordation (PAL#3213)
Provisional Special Use Permit 17-006

Dear Ms. Cox:

This letter confirms the acceptance and provisional approval of Public Archaeology Laboratory's (PAL) Special Use Permit application by the Massachusetts Board of Underwater Archaeological Resources. This permit (17-006) is for archaeological reconnaissance and mitigation monitoring/recordation as part of the Carver Cotton Gin Dam Removal Project in East Bridgewater as detailed in the technical proposal accompanying the application. The permit is effective upon issuance, 18 July 2017, for the duration of one year, but a formal approval of this permit will be considered by the Board at its next regularly scheduled meeting. This meeting is scheduled for 28 September 2017.

This permit is herein granted dependent upon PAL's compliance with the Board's Regulations (312 CMR 2.00). All work must be conducted in accordance with Board directives, standard conditions and the Scope of Services included in the application. Activities allowed under this permit include remote sensing, archaeological reconnaissance, site examination, monitoring and recovery, and undertake any necessary recovery and documentation of these resources in the permit area. For projects subject to Section 106 of the National Historic Preservation Act of 1966, as amended (36 CFR 800), permittees are directed to consult with and provide their proposed research design and methodology to the State Historic Preservation Office/Massachusetts Historical Commission and the lead federal agency in accordance with 36 CFR 800.4, prior to conducting the field investigation. This permit does not relieve the permittee or any other person of the necessity of complying with all other federal, state and local statutes, regulations, by-laws and ordinances.

Review by the full Board of your provisional permit has been scheduled for Thursday, 28 September 2017 at 1:30 PM in the CZM Conference Room located on the 8th floor of 251 Causeway Street in Boston.

If you should have any questions or need further assistance, do not hesitate to contact the Board at the address above or by telephone at (617) 626-1141.

Sincerely,

A handwritten signature in black ink, appearing to read "Victor T. Mastone".

Victor T. Mastone
Director

/vtm

Cc: Brona Simon, MHC
Kristopher Houle, DFG/OER (via email)
Bill Bennett and Eric Derleth, FWS (via email)
Suzanne Cherau, PAL (via email)



The COMMONWEALTH OF MASSACHUSETTS
BOARD OF UNDERWATER ARCHAEOLOGICAL RESOURCES
EXECUTIVE OFFICE OF ENERGY AND ENVIRONMENTAL AFFAIRS
251 Causeway Street, Suite 800, Boston, MA 02114-2136
Tel. (617) 626-1141 Fax (617) 626-1240 Web Site: www.mass.gov/eea/agencies/czm/buar/

2 October 2017

Deborah C. Cox, President.
Public Archaeology Laboratory
26 Main Street
Pawtucket, RI 02860

RE: Carver Cotton Gin Dam Removal Project, East Bridgewater
In-River Archaeological Monitoring and Recordation (PAL#3213)
Formal approval - Special Use Permit 17-006

Dear Ms. Cox:

This letter confirms the vote taken by the Massachusetts Board of Underwater Archaeological Resources on 28 September 2017 to grant Special Use Permit 17-003 to the Public Archaeology Laboratory's (PAL) for archaeological reconnaissance and mitigation monitoring/recordation as part of the Carver Cotton Gin Dam Removal Project in East Bridgewater as detailed in the technical proposal accompanying the application. The duration of this permit shall be one year from the date of issuance with its expiration date as 28 September 2018.

This permit is herein granted dependent upon PAL's compliance with the Board's Regulations (312 CMR 2.00). All work must be conducted in accordance with Board directives, standard conditions and the Scope of Services included in the application. Activities allowed under this permit include remote sensing, archaeological reconnaissance, site examination, monitoring and recovery, and undertake any necessary recovery and documentation of these resources in the permit area. For projects subject to Section 106 of the National Historic Preservation Act of 1966, as amended (36 CFR 800), permittees are directed to consult with and provide their proposed research design and methodology to the State Historic Preservation Office/Massachusetts Historical Commission and the lead federal agency in accordance with 36 CFR 800.4, prior to conducting the field investigation. This permit does not relieve the permittee or any other person of the necessity of complying with all other federal, state and local statutes, regulations, by-laws and ordinances.

If you should have any questions or need further assistance, do not hesitate to contact the Board at the address above or by telephone at (617) 626-1141.

Sincerely,

A handwritten signature in black ink, appearing to read "Victor T. Mastone".

Victor T. Mastone
Director

/vtm

Cc: Suzanne Cherau, PAL (via email attachment)

APPENDIX C:
MHC SITE FORMS

FORM D ARCHAEOLOGICAL SURVEY
HISTORIC ARCHAEOLOGICAL SITES

Massachusetts Historical Commission
Office of the Secretary
State House, Boston

FOR MHC
OFFICE
USE ONLY

Town

UTM

QUAD

NR

☐ ACT

☐ ELIG.

☐ NO

DISTRICT

☐ YES

☐ NO

MHC NO.

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1. SITE NAME(S) Carver Cotton Gin Company Dam

MAS NO.

OTHER NO.

2. TOWN/CITY East Bridgewater

COUNTY Plymouth

3. STREET AND NUMBER (IF NOT AVAILABLE, GIVE DETAILED DESCRIPTION OF HOW TO REACH SITE)
near intersection of Whitman Street and Plymouth Street (Route 106)

4. OWNER(S) AND ADDRESS(ES) 15 Whitman Street Corporation, East Bridgewater, MA

☐ Public

☒ Private

5. SITE LOCATED BY

☒ CRM Survey

☐ Avocational Collector

☐ Field School

☐ Other (Specify)

Describe Sampling Strategy used to Locate Site archaeological monitoring of dam removal construction work

6a. PERIOD(S) (Check all applicable boxes)

☐ 17th C.

☐ 18th C.

☒ 19th C.

☒ 20th C.

☐ Unknown

6b. Estimated Occupation Range 1890-1900

7. DATING
METHODS

MAPS 1873 Beers, Sanborn insurance 1896,
1912, 1943

TITLE SEARCH

☐ Yes ☒ No

ADDITIONAL DOCUMENTS

1887 birds eye view, late 19th-early 20thc. Photos

Comparative Materials

OTHER corporate records

8a. SITE TYPE

☐ Agrarian

☐ Residential

☒ Industrial

☐ Commercial

☐ Military

☐ Unknown

☐ Other (Specify)

8b. DESCRIBE

Concrete and stone run-of-the-river gravity dam structure associated with brick and wood-frame cotton gin manufacturing complex of buildings; constructed from rubblestone, cobble, and brick core encased within about 4-12 inches of poured concrete

9. DESCRIBE SIZE AND HORIZONTAL AND VERTICAL BOUNDARIES

dam's concrete spillway was 44 feet long, 10 feet high, 8 feet wide at the base, and 1 ft wide at the crest

10. STRATIGRAPHY

Surface Indicators

Stratigraphy

☒ Standing Ruins

☐ Stratified

☐ Surface Finds

☐ NOT Stratified

☐ Markers

☒ Below Ground
Structural Remains

☐ Cellar Hole

11. SOIL

USDA Soil Series

Udorthents

Contour Elevation

36 ft msl

% Slope of Ground

☒ 0 - 5

☐ 5 - 15

☐ 15 - 25

☐ Over 25

Acidity

1 ————— 7 ————— 14

(Acid)

(Base)

12. TOPOGRAPHY

☐ Flat

☒ Gentle undulation

☐ Other

☐ Rolling Hills

☐ Mountains

13. WATER

NEAREST WATER SOURCE

Satucket River

SIZE AND SPEED

DISTANCE FROM SITE

at the site

SEASONAL AVAILABILITY

year round

14. VEGE-
TATION

PRESENT

marsh and sediment accumulation

PAST

in-river, open

15. SITE INTEGRITY

☐ Undisturbed

☐ Good

☒ Fair

☐ Destroyed

IF DISTURBED, DESCRIBE DISTURBANCE

natural degradation and removal of gate structure to allow drawdown

16. SURROUNDING ENVIRONMENT

☐ Open Land

☐ Woodland

☐ Eroded Soils

☐ Residential

☐ Scattered Buildings

☐ Commercial

☐ Industrial

☐ Rural

Visible from Site

☐ Coastal

☐ Isolated

17. ANY THREATS TO SITE

DESCRIBE POTENTIAL THREATS

☒ Yes

☐ No

dam removal and shoreline restoration

18. ACCESSIBILITY TO PUBLIC

☐ Free Access

☒ Need Owner Permission

☐ Restricted

☐ No Access

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FORM D-HISTORIC RESOURCES SURVEY
HISTORIC ARCHAEOLOGICAL SITES

Massachusetts Historical Commission

CONTINUATION SHEET

PAGE 1 OF 2

22. Documentary

See PAL's February 2018 report for the full site history, summarized below:

The Carver Cotton Gin Company dam is part of the mill factory complex where a dam was first erected about 1724–1726 by Isaac Harris, Captain (later Deacon) Thomas Whitman, and Jonathan Bass for a sawmill near the Plymouth Street Bridge over the Satucket River. Thomas Whitman (1702–1788) owned land on the west bank of the river and added a gristmill at the dam soon after the sawmill was erected here. It is not clear if the gristmill was on the east or west bank of the river, though Whitman's involvement would suggest that it was on the west bank. The property was known under the Whitman's ownership as Whitman's Mills. Ownership of the two mills and the dam and water privilege is unclear between 1801 and 1843. In 1827, two new manufacturing enterprises commenced at the water privilege. Zebina Keit began tack manufacturing at a new building he added near the dam, supposedly on the east bank of the Satucket River. Nathaniel Wheeler, Wallace Rust, and Allen Whitman acquired the land and mills on the west bank of the river, incorporated the East Bridgewater Manufacturing Company, and built a brick mill for cotton textile production near the current Carver Company dam.

In 1842–1843, Eleazer Carver and his business partners, Caleb S. Hunt and Franklin Dexter, acquired the East Bridgewater Manufacturing Company's cotton mill privilege. In 1846, the three men incorporated the E. Carver Company for the purpose of manufacturing cotton gins. The E. Carver Company apparently let out some portions of the premises to the Keit's tack manufactory until 1872. Carver continued his involvement in the company until almost the time of his death in 1866, which prompted a reorganization of the company and, in 1871, the Carver Cotton Gin Company was incorporated. The de facto leader of the company was its treasurer, Aaron Hobart (1816–1898). In 1872, a large fire destroyed the premises, although it may have spared the sawmill on the east side of the river. The Carver Company's physical plant was immediately rebuilt. An 1873 (Beers) map and 1879 (Walker) map of East Bridgewater depict the Carver Cotton Gin Company site immediately after the fire and reconstruction. Three brick industrial buildings belonging to the "Carver Cotton Gin Co." are on the south side of Plymouth Street, on the east and west sides of the Satucket River. On the west side of the river was a large factory building (still extant) with a T-shaped plan, and the headrace entering the building at its northerly end. A small outbuilding was between the factory and the river. On the east bank of the river was a rectangular plan building (labeled "S. M." (on the 1873 map), which means the sawmill presumably survived the 1872 fire. Both the 1873 and the 1879 maps depict the mill pond on the north side of the Plymouth Street Bridge as extending west to the edge of the street and south under the bridge to the mill buildings and dam. According to an undated (post-1872) hand-drawn map in the Old Bridgewater Historical Society files, a new dam was built in 1872. This dam may have been downstream of the previous dam, which appears to be shown as a line across the river channel just south of the bridge that is labeled "Whitman's Mills."

Before 1890, the dam consisted of a rubblestone spillway with wood sluiceways near both ends. A fishway consisting of a long straight wood trough supported on timber posts and stacked stones ran downstream from the east end of the dam. The sawmill or shed was at the east end of the dam, atop the dam abutment, and was an approximately 3-by-2-bay shingled wood building with a stone masonry foundation. A small wing supported on timber bents projected off the downstream end of the building and may have functioned as a wheel house or outhouse. A photograph taken in the 1890s during dam construction shows the rubblestone spillway partially dismantled or reassembled along most of its length; at the west end of the spillway, one section of the structure appears to be fully encased in concrete. The sawmill or shed is no longer extant, although the east abutment was partially retained; the photograph shows construction staging, a hoist, the abutment, and stacked rubblestone to the east of the abutment (below the staging). The photograph also shows that Plymouth Street spanned the Satucket River and dam impoundment via a three-span stone arch bridge.

Reconstruction of the dam spillway was complete by ca. 1901–1906, as shown in another photograph, with the spillway, possibly fully encased in concrete, provided with a larger sluiceway near its west end. At its east end, the spillway terminates at a stone abutment reinforced with what appears to be a concrete wall. Behind (east of) the abutment, the dam continues as a stone and earth berm (currently fully buried under twentieth-century fills). There was no shoreline retaining wall along the east bank at this time. Two wood buildings—one gabled and one shed-roofed—rest atop the rubblestone abutment and training wall and span the factory raceway on the west bank. These are labeled as a wheel house and shed on the 1906 (Sanborn) insurance plan. The dam work coincided with the installation of a new turbine in the wheel house. In 1920, a concrete fishway (only partially extant at the time of dam removal) was installed at the Carver Cotton Gin Company Dam in an effort to restore alewife passage on the river. Small differences in the sluiceway and spillway seen in the ca. 1901–1906 photograph and the dam's appearance at the time of removal indicate that additional, undocumented alterations were made to the dam, maybe in 1920 at the same time that the fishway was installed.

22. Archaeological

FORM D-HISTORIC RESOURCES SURVEY
HISTORIC ARCHAEOLOGICAL SITES

Massachusetts Historical Commission

CONTINUATION SHEET

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Dam Footprint - Below the rubblestone and cobble core of the 1890-1900 dam, three longitudinal timbers were uncovered that corresponded with the triangular cross section of the spillway. The timbers likely ran the entire length of the concrete spillway and were approximately 10 in (25 cm) wide and 8-9 in (22-24 cm) thick, with the west end of the timbers anchored to the sluiceway concrete floor. The east end of the timbers was not exposed during construction excavation but were covered with fill placed to reinforce the training wall. Excavation of the river channel within the dam footprint showed that the central and southern timbers were laid over bedrock, but showed the northern timber was attached to a second lower timber. The two timbers were fastened to each other with wooden pegs and machine-cut spikes and both were bolted directly to bedrock. The bolt that attached both timbers to bedrock was approximately 1.25 in (3 cm) in diameter, 46 in (117 cm) long, and was threaded at one end with an attached 2-in (5-cm) square nut and 4.5-in (11-cm) diameter washer. Attached to the upstream face of the lower timber was truncated vertical sheet planking that ran the full exposed length of the timbers. Water levels did not allow for the lower timber and sheet planking to be documented in situ, so they were set aside for documentation after excavation. All the sheet planking was approximately 32 in (80 cm) long and 3 in (8 cm) thick and was hand-planed at its bottom. Two widths of 16.5 in (42 cm) and 12 in (30 cm) were noted. The sheet planking was attached to the lower longitudinal timber with machine-cut spikes.

Upstream and Downstream of Dam - Upstream of the dam five timbers measuring 9-x-9-in (23-x-23-cm) were exposed 10-25 ft (3.0-7.6 m) from the concrete bridge abutment wall (Plymouth Street bridge). Four of the timbers were aligned parallel to the river channel and one lower timber was perpendicular to the other four. No hardware was noted with the timbers and only one of the timbers was intact. This timber was 14.5 ft (4.5 m) long and contained mortise joint on one side and rectangular and ovoid notches on both sides with holes in the sides at each end that suggest large bolts may have been used to anchor the timbers in place or to other no longer extant structural elements. The timbers did not appear to be in situ but were all set in the uniform dark brown (10YR 3/3) silty sand fill and river bed sediments with a high density of cobbles and broken concrete. Downstream of the dam two timbers were uncovered in the dark brown silty sand sediment laying roughly perpendicular to the stream channel. The timbers were loose in the sediment, not in situ, and approximately 9-x-9-in (23-x-23-cm) and 10 ft (3 m) long. One of the timbers was broken on one side and contained four mortise joints on the lower side. The second timber was broken on both ends and contained no joints. No fasteners were noted associated with the timbers.

23. Archaeological or Historical Significance

The three timbers uncovered immediately beneath the core of the dam directly over the bedrock bottom of the Satucket River channel aligned perfectly with the triangular cross section of the concrete spillway. Both wooden tree nails and machine-cut spike fasteners were associated with the timbers indicating their construction post-dates 1790. The three timbers likely functioned as the mattress or base for the 1890-1900 Carver Cotton Gin Company Dam. The northern timber was bolted to a second lower timber that contained remnant sheet piling attached by machine-cut spikes. These elements may represent remnants of an earlier legacy dam with the 1890-1900 dam structure built directly over it.

The presence of machine-cut spikes with the truncated sheet piling means the piling dates to after 1790 and does not represent the earliest documented late seventeenth-century dam at the mill site. These dam elements may date to the late eighteenth-century Whitman's Mills occupation of the gristmills and sawmills on the same privilege. Ownership of the two mills and the dam and water privilege is unclear between 1801 and 1843, when Eleazer Carver purchased the mill privilege and buildings. The timbers and associated hardware recorded during the archaeological monitoring are recorded as the archaeological component of the Carver Cotton Gin Company Dam (Appendix C).

The disarticulated timbers recorded in the silty river sediments upstream of the dam may have been related to the wooden deck bridge that spanned the river near that location in the nineteenth century. The wooden deck bridge was replaced by a stone bridge between 1896 and 1912 and then with the current concrete bridge abutment structure in 1971. Two loose timbers were uncovered in the silty river sediments excavated downstream of the dam. These timbers were also not in situ, not associated with any other structural elements, and simply may represent structural debris that was discarded into the river channel downstream of the dam by the previous mill owner(s).

Archaeological monitoring of the dam removal construction work documented aspects of the 1890-1900 Carver Cotton Gin Company Dam's internal configuration and uncovered possible remnants of an earlier dam iteration. The archaeological data reinforce and inform interpretations of the site history based on documentary evidence, providing insight into the manipulation of the industrial hydropower landscape. The archaeological findings at the Carver Cotton Gin Company Dam affirm the information potential and research value of historic dam structures. Temporal and engineering analyses of these resources may be difficult based solely on their visible physical characteristics. The presence of possible late eighteenth-century dam components provides a record of a continuum of industrial activities at the site that may only be suspected through the documentary record. Such records often provide vague information concerning the construction and manipulation of the industrial waterpower landscape through various periods of occupancy. Archaeological recordation of a dam's internal structure allows for a more precise analysis of site chronologies and construction activities than visual and documentary evidence alone.

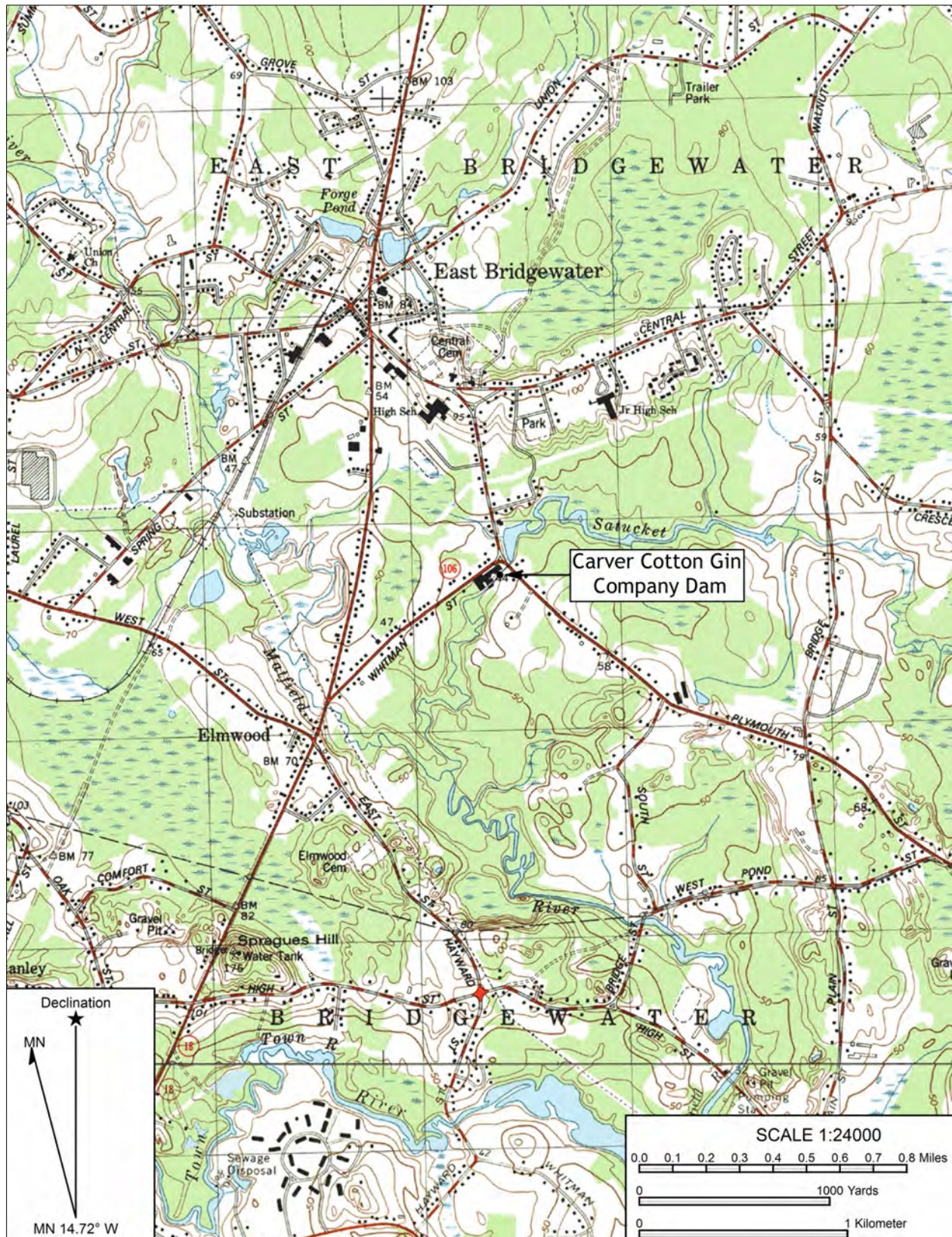


Figure 1. Location of the Carver Cotton Gin Dam Company Site on the USGS Whitman, MA, topographic quadrangle, 7.5-minute series.

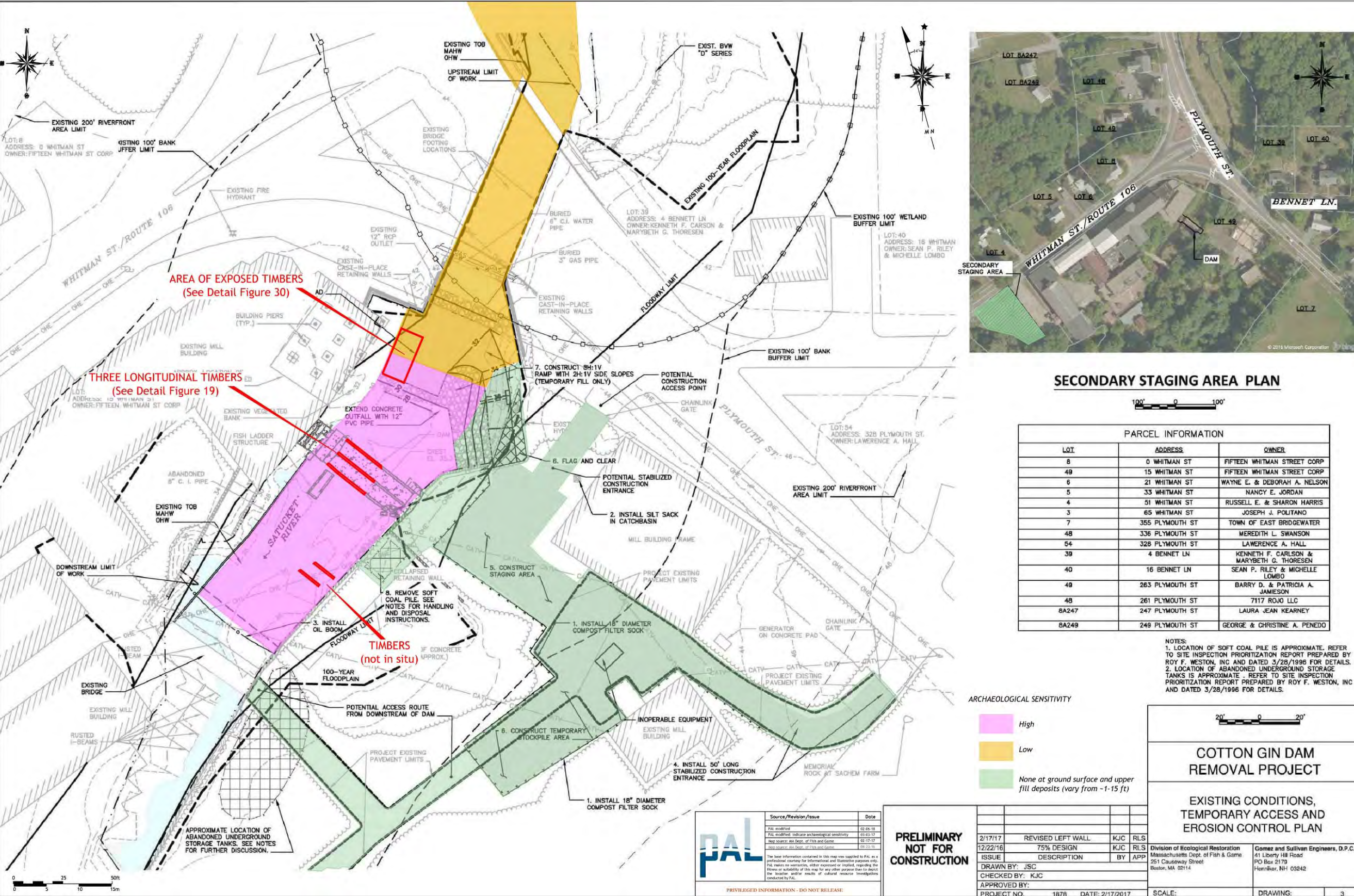


Figure 2. Plan of identified timber elements of the Carver Cotton Gin Company Dam and in the upstream and downstream river channel.

