

United States Department of the Interior
National Park Service

National Register of Historic Places Registration Form

This form is for use in nominating or requesting determinations for individual properties and districts. See instructions in National Register Bulletin, *How to Complete the National Register of Historic Places Registration Form*. If any item does not apply to the property being documented, enter "N/A" for "not applicable." For functions, architectural classification, materials, and areas of significance, enter only categories and subcategories from the instructions.

1. Name of Property

Historic name: D & H Scovil Industrial Historic District

Other names/site number: D & H Scovil Inc.

Name of related multiple property listing: N/A

(Enter "N/A" if property is not part of a multiple property listing)

2. Location

Street & number: 11 Candlewood Hill Rd, 11 and 12 Scovil Rd, 529 Brainerd Hill Rd

City or town: Haddam State: CT County: Middlesex

Not For Publication: Vicinity:

3. State/Federal Agency Certification

As the designated authority under the National Historic Preservation Act, as amended,

I hereby certify that this ___ nomination ___ request for determination of eligibility meets the documentation standards for registering properties in the National Register of Historic Places and meets the procedural and professional requirements set forth in 36 CFR Part 60.

In my opinion, the property ___ meets ___ does not meet the National Register Criteria. I recommend that this property be considered significant at the following level(s) of significance:

 national statewide local

Applicable National Register Criteria:

 A B C D

<p>_____</p> <p>Signature of certifying official/Title:</p> <p>_____</p> <p>State or Federal agency/bureau or Tribal Government</p>	<p>_____</p> <p>Date</p>
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<p>In my opinion, the property ___ meets ___ does not meet the National Register criteria.</p>	
<p>_____</p> <p>Signature of commenting official:</p> <p>_____</p> <p>Title :</p>	<p>_____</p> <p>Date</p> <p>_____</p> <p>State or Federal agency/bureau or Tribal Government</p>

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4. National Park Service Certification

I hereby certify that this property is:

- entered in the National Register
- determined eligible for the National Register
- determined not eligible for the National Register
- removed from the National Register
- other (explain:) _____

Signature of the Keeper

Date of Action

5. Classification

Ownership of Property

(Check as many boxes as apply.)

- Private:
- Public – Local
- Public – State
- Public – Federal

Category of Property

(Check only **one** box.)

- Building(s)
- District
- Site
- Structure
- Object

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Number of Resources within Property

(Do not include previously listed resources in the count)

Contributing	Noncontributing	
<u>8</u>	<u>2</u>	buildings
<u>1</u>	<u>2</u>	sites
<u>3</u>	<u>0</u>	structures
<u> </u>	<u> </u>	objects
<u>12</u>	<u>4</u>	Total

Number of contributing resources previously listed in the National Register 0

6. Function or Use

Historic Functions

(Enter categories from instructions.)

INDUSTRY, manufacturing

Current Functions

(Enter categories from instructions.)

RELIGION, church related residence

INDUSTRY, manufacturing facility

COMMERCE, specialty

VACANT

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7. Description

Architectural Classification

(Enter categories from instructions.)

19th and early 20th century

Other: industrial

Materials: (enter categories from instructions.)

Principal exterior materials of the property: _

Foundations: granite. Walls: brick. Roof: asphalt. Other: brownstone sills & lintels

Narrative Description

(Describe the historic and current physical appearance and condition of the property. Describe contributing and noncontributing resources if applicable. Begin with a **summary paragraph** that briefly describes the general characteristics of the property, such as its location, type, style, method of construction, setting, size, and significant features. Indicate whether the property has historic integrity.)

Summary Paragraph

The D & H Scovil Co. Historic District is a discontinuous group of four mill sites developed for the manufacture of eye hoes from 1849 to 1948 along Candlewood Hill Brook in Higganum, a village in the town of Haddam in Middlesex County, Connecticut. The district is comprised of five property parcels encompassing 65 acres. It includes the ruins of the first mill purpose-built to manufacture hoes designed by the company, and extant buildings from the three subsequent mills built to meet the increasing demand during the 19th and early 20th century, together with some of the ponds, dams and other waterpower infrastructure that powered production. The district encompasses a total of 16 resources, of which twelve are contributing and four are non-contributing. One contributing archaeological site represents the mill and waterpower remnants of the first D & H Scovil mill. The elements of the district retain integrity of location and setting along the source of waterpower and in the relationship to one another. The complexes at three of the four sites exhibit the massing, material, workmanship and design that typified the building forms that efficiently accommodated D & H Scovil Co.'s manufacturing processes. The district represents an unusually intact example of the evolution of the manufacturing operations of a family owned and operated company focused almost entirely on a single product over 125 years.

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Narrative Description

Setting

The D & H Scovil Co. Industrial Historic District is located in the village of Higganum, within the town of Haddam, along the course of the Candlewood Hill Brook. The brook descends Candlewood Hill eastward and joins Higganum Creek, which empties into the Connecticut River. A natural cove at the outlet of Higganum Creek allowed for boat access and transportation of supplies and finished goods along the Connecticut River. D & H Scovil Co. produced agricultural hoes across four mill sites originally powered and geographically connected by Candlewood Hill Brook. The three upper sites are located amid a hilly rural area; the lower site is located within the village center. The successive sites downstream on the brook represent the expansion of operations across the 19th and early 20th centuries (Figures 1-2).

The ruins, buildings, dams, reservoirs, canals, turbines, flumes and races associated with D & H Scovil Co. are located on five property parcels. Beginning upstream on Candlewood Hill Brook, the westernmost sites of Mill #1 and Mill #2 are both contained within the 48.5 acre parcel identified as 529 Brainard Hill Road (Haddam parcel ID 16-035). The parcel also includes about half of the western extent of land that was covered by the upper pond for Mill #1 when the dam was intact. Candlewood Hill Brook runs through the property, generally from west to east, and after crossing Candlewood Hill Road, flows into the site of Mill #3. Two contiguous parcels totaling 12.28 acres (Haddam parcel IDs 15-097 and 15-097-3) and identified as 12 Scovil Road (just off Candlewood Hill Road) comprise the complex and waterpower infrastructure of Mill #3. Immediately across Scovil Road from Mill #3 is the office and storage building on 0.88 acres (Haddam parcel ID 15-097-2). The brook traverses the property along its northern boundary, and east along Candlewood Hill Road, beneath Scovil Road and Route 9 to the next site. Mill #4 together with the infilled pond and structures associated with a flume is located on 4 acres about 0.43 miles downstream at 11 Candlewood Hill Road (Haddam parcel ID 15-090). All four mill sites can be accessed from Candlewood Hill Road, which follows the path of the Haddam-Durham Turnpike established in 1815, beginning at Route 154 (Middlesex Turnpike) in Higganum Center. A 19th century drive or path from Brainard Hill Road just north of its intersection with Candlewood Hill Road connects the two earliest and westernmost mill sites (Figures 4-7).

The first mill buildings at each of the four D & H Scovil Company mill sites were built between 1849 and 1889, and each mill was enlarged at least once. All extant buildings date between 1859 and c.1910, and except as noted in the descriptions below, share the following original construction features regardless of date:

- one-a-half story height,
- granite foundation,
- load-bearing brick walls,
- window openings with stone sills and one- or two-course brick header segmental arches, evenly balanced across each elevation,
- door openings with stone sills and stone or brick segmental arch headers,
- timber queen post truss with iron tie rods instead of or in addition to timber posts, seated in the brick bearing wall or on brick corbels, and supporting a smaller secondary hammer beam type truss for a ridgeline monitor,
- gable roof with ridgeline monitor with asphalt shingles.

The shared construction features relate in large part to the fact that each mill site was comprised of forge shops where iron and steel were shaped into eye hoes (the eye is the short tube at the top of the hoe which holds the long wooden handle). Forge shop floors were dirt throughout the period of Scovil use and the bulk of the space was open to the roof to reduce the chance of fire from the heat and sparks of the process. At one or both ends

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of each forge shop were two-story areas for machine shops (to work on the equipment used in manufacturing), grinding or trimming of hoes, and at Mill #4 woodworking. Mill #3 did not entirely follow the pattern, as the forge room was also used as a grinding room, the machine room was free standing, and there are buildings for polishing and grinding operations which largely took place at this mill.

Summary of Archaeological Investigations

In 1978, the Wesleyan Archaeology Labs conducted a survey of Haddam documenting several industrial sites primarily along Candlewood Hill Brook. Three of the surveyed sites fall within the area of interest for this nomination. Wesleyan's survey was a pedestrian walkover that documented above ground resources only; no shovel tests were conducted, and no artifacts were recovered. The original photographs taken for the survey could not be found, only the site forms completed by Wesleyan Archaeology Labs and some sketches made during the walkover (located in the Wesleyan Special Collections and Archives). The authors of this nomination completed a similar walkover survey in November of 2023 across all four mill sites to locate and assess the resources recorded by the Wesleyan team. Many of the resources documented by the Wesleyan team at Mill #1 were located. The dam at Mill #1 and the resources downstream at Mill # 4 were compromised by a flood in 1982. While the site of Mill #1 was deemed eligible for Criterion D, there is insufficient information as to the potential integrity of archaeological resources related to D & H Scovil Co. at Mill #s 2, 3 and 4. The archaeological resources documented at the site of Mill #s 4 by Wesleyan and additional resources at Mill #3 identified during the course of this investigation, do not pertain to D & H Scovil operations and are therefore outside of the scope of this nomination. A single shovel test pit was conducted to evaluate archaeological integrity at the site of Mill #1.

Mill #1/Upper factory

This mill site was the earliest location built by and for the D & H Scovil Co. and today consists of an archaeological site that comprises the ruins of a dam, canal, gate mechanisms and foundations of brick forge shops as well as a tailrace bridge beneath the old drive. Wesleyan Archaeology Labs recorded this site in 1978 under two Historic Archaeological Inventory Forms: 061-078 documents features of the waterpower infrastructure and 061-078 documents the foundations of the mill buildings (#061-077). See Figures 8-10 for 19th c images and Figures 14a and b for Wesleyan sketches.

At the western end of the site, a north/south "air face earth filled dam" approximately 165 ft long, with a 65 ft spillway and concrete sluice to a canal race, impounded and controlled the water for power. The sluice was fitted with a wooden gate and metal ratchet mechanism. The canal race, approximately 26 ft wide and 560 ft long extended northeast toward the building foundations. It terminated at a north-south earthen dike, approximately 74 ft long, where three conduit pipes directed water to the wheel pits.

Site walkovers for this project, including on November 9, 2024, identified the northern portion of the dam and intact sluice (or head) gate, however the dam was breached in 1982 and the entire spillway area was blown out leaving only stone ruins of the dam face at its southernmost end (Figures 12-13 show intact dam). The water from the breach followed the path of the brook and did not impact the canal race, whose earthen and stone berm walls still hold water. It was not possible to verify the existence of the earthen dike and conduit pipes at the northeastern end of the canal as the area has some forty years of overgrowth, however these features may remain. (Photographs 1-3)

The ruins of two buildings were identified in 1978 at the northeastern end of the canal. The larger foundation, approximately 32 ft by 110 ft, sat parallel to the earthen dike; two wheel pits were identified inside its western

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wall. The second, smaller foundation, approximately 30 ft x 54 ft, was located off the southwest corner of the larger foundation on the south end of the dyke; its wheel pit was located beneath the northwest corner. Large iron turbine wheels were noted in two of the pits. In addition, rotting timbers were noted within the footprint of the larger building and coal and slag within the footprint of the smaller building.

Both building foundations were located for this project, however neither the earthen dike at the end of the canal, nor the wheel pits were discernable beneath the overgrowth on the west side of the buildings. An iron turbine wheel was leaned up against a tree on the east side of the old road at the site, together with several iron rods. Other iron artifacts observed include connecting bars in the east wall of the large forge shop foundation, riveted flume pipes and some kind of water diverter in one of the pits. A couple of timber frame member with iron strap were noted within the footprint of the larger foundation. Used grinding stones are evident in the area, including atop one of the foundation walls. (Photographs 4, 6, 8-10)

Outfalls for the turbines were not mentioned in the 1978 report but were clearly identifiable during site visits for this project (the area had been cleared of vegetation more than once, including prior to the 1978 site visit and most recently between site visits for this project). A flume pipe and discharge well toward the north end of the east side of the large foundation correspond to the northern wheel pit on the west side of the building and emerge beneath a stone wall beyond the foundation (see the bridged race in Figure 9). A second flume pipe and discharge well are located toward the south end of the large foundation and corresponds to the southern wheel pit on the west side. A third flume discharge emerges from the south wall of the large forge shop foundation at the corner with the small forge shop foundation; in the pit is a metal artifact that may have been a water diverter. (Photographs 4, 5, 7)

On November 7, 2023, a 50cm-by-50cm judgmental test pit was placed within what is thought to be the footprint of the former iron cutting building (the smaller structure described in 1978) to look for intact archaeological deposits. Underneath a thin strata of duff was a very dark brown soil indicative of burn activity. Within the first 15cm of excavations numerous metal artifacts were found along with slag. (Photograph 110) The test pit was excavated to a depth of 45cm before terminated due to thickly packed gravel and slag. From about 30cm to 45cm, the soil was mostly gravel intermixed with slag and melted metal. Soils around the rest of the factory site appear to have been minimally impacted besides recent vegetation clearing, which did uncover part of the historic turbine used at the factory. These factors all point towards good site integrity that has the potential to yield further information about the manufacturing processes completed on site.

The Wesleyan reports noted the potential of archaeological resources to clarify the sequence of the Scovil manufactories, however that has largely been accomplished through this project. It also identified the research potential in the ruins of the complex water channeling system to an understanding of 19th century hydropower design and capabilities, a potential that is undiminished. Finally, the archaeological remains of Mill #1 reflect eighty years of hoe making operations and may offer information on changes in systems, processes, tools, and materials over that time period.

The drive that historically provided access to Brainard Hill Road to the north and to the second mill site at Brainard Hill Road and Candlewood Hill Road to the southeast is still discernable. Its path generally corresponds to the drive documented in an 1874 atlas. A stone culvert carries the drive over the tail race outlet to the pond for Mill #2; it appears to consist of stone side walls that carry one or more cut stone slabs. (Photograph 11; Figures 7,12)

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Mill #2/Bell shop

None of the 1978 Wesleyan Archaeology Lab reports mention features at the site of Mill #2. The pond had been dredged in 1975, and the dredge material was used as fill in the yard and to build up the island. The entire length of the dike has been upgraded with the removal of trees and the installation of rip rap stone to stabilize the banks. The head race opening to the east forge turbine chamber at the far eastern end of the dike is closed off with a section of concrete wall. A large portion of the east forge shop came down c.1930, and the area has been regraded and paved since. Thus, site visits for this project, including on November 9, 2023, showed loss of integrity through modern renovations to the water infrastructure at the mill pond and landscaping.

Mill #3/Grinding mill

Wesleyan Archaeology Labs did not document any resources on this property; its 1978 record 061-062 documents the Dickinson Dam Site (061-062) on the Candlewood Hill Brook, just north of the site.

During walkovers for this nomination, the ruins of a raceway that starts about 60 feet west of the dam and travels south and then east passing through what appears to be a stone wheel pit were found (Photographs 111-112); the dam at this site was scoured by the 1982 flood waters. No clear evidence was found to indicate that these ruins were associated with the D & H Scovil Co. or the Mill #3 complex¹ and therefore investigation of this non-contributing archaeological site was outside of the scope of work for this nomination. The ruins could be associated with S. Hubbard whose name is attached to a structure adjacent to and on the south side of the brook on 19th century atlases (Figures 4-5).

The dam for Mill #3, located nearly 1,000 feet to the southwest of the complex, was partially reconstructed in 2005, and as a result the surrounding soil lacks integrity. The location of Hezekiah Scovil Sr.'s 1836-37 mill, where Daniel and his brother started their development of a hoe for the southern market, was between the brook and the road, to the west of the current dam and likely at the eastern end of the private property known as 187 Candlewood Hill Rd (not included in the scope of work for this project).

Archaeological site integrity in the corridor of land between the brook to the north, dam to the west and reservoir canal to the south is unknown; it may have been affected by the 1982 floodwaters as well as construction activities from the 2005 dam work.

The soils adjacent to the mill buildings and office have been heavily disturbed through construction and grading activities and are therefore unlikely to have intact archaeological deposits.

Mill #4/Lower factory

The 1978 Wesleyan Archaeology Labs survey focused on structures on the south side of Candlewood Hill Brook, opposite the Scovil buildings, and identified the site as the Strong Sawmill (061-060). The topography rises fairly sharply up from the streambed to Maple Avenue East. Several structures related to waterpower and manufacturing were inventoried: the remains of a "dry wall dam"; a 395 foot race running east from the dam

¹ The archives of the Scovil Ledger Collection, Haddam Historical Society, were reviewed, and no direct reference to these features was found. The records are extensive however and could not all be consulted in the scope of this project. Further study of these archaeological resources may be warranted with the discovery of evidence of Scovil use or in the context of another manufacturer.

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terminating in 4 foot wide concrete troughs with metal and ratchet gates; two stone wheels; two 11 foot long wrought iron bars; a concrete support for a conduit pipe 13 feet below the terminus of the race; an adjacent 35 foot foundation running eastward. Some of these structures were part of a flume system that carried water from the mill pond upriver, south across the brook and east to the concrete piers where the flume turned back north across the brook to power the former spar mill. Not all of these elements remain in place following the 1982 dam break. The dry wall dam identified at the south side of the creek by Wesleyan is no longer standing. Portions of the foundation wall survive, as do a section of the west end of the concrete race, the concrete race terminus and a stone pier below with curved concrete support to carry the flume back across the brook. Although D & H Scovil bought this site when the spar mill was still standing, the system as a whole lacks integrity due to the loss of the pond and structures after the 1982 flood.

On the north side of the brook, where the buildings are located, severe ground disturbances have occurred. The mill pond at the west end of the site was completely filled with soil and gravel to create a surface level with Candlewood Hill Road that is above grade of Mill #4. The grounds around the buildings have been graded, paved and were used for DOT vehicles and road maintenance activities for around sixty years. Archaeological site integrity is low for subsurface deposits; according to State Historic Preservation Office staff in a 10/20/2023 conversation, previous inspections also indicated a lack of archaeological integrity.

Buildings and Structures

Mill #2/Bell shop

Waterpower and transportation infrastructure

The second mill site is located roughly 1,300 feet downstream on the historic path along the southern edge of the mill pond that provided waterpower to Mill #2. Infrastructure features from operation of Mill #2 remain in place. A bridge and culvert at the west end of the pond allows overflow water from the lower pond to return to the brook, or brook water from its outflow at the upper pond to flow into the lower pond. A granite waste gate spillway is located on the south side of the pond. Both were integral to maintaining the appropriate water level depending on rainfall and operational needs. The walls of the dike holding back the pond are earth and rip rap and the head race opening from the pond into the turbine chamber under the east forge shop is closed off with concrete. Granite tail race walls, on the south side of the east forge directed the water back into the brook and toward the pond for Mill #3 after passing through the wheel or turbine (Photographs 12-14, 30-34; Figures 7, 18-19).

Two in-line former forge shops sit approximately ten feet apart and are connected by a wood-frame bell tower at the ridgeline. A cut granite stone retaining wall starts at the edge of the pond above the former head race and runs eastward to a wood-frame barn; the ground behind the retaining wall gradually slopes down to the level of the mill buildings at its east end. Note: the Greek Revival dwelling to the northeast fronting Brainard Hill Road was not part of the manufacturing concern, a road originally which later became the drive to Mill #2 from Candlewood Hill Rd. separating it from the factory site; it is not within the district boundaries (See the 1874 atlas, Figure 7).

West forge shop (c.1860, Contributing Building)

The west forge shop is a one-and-one-half-story, rectangular brick building with an asphalt-clad gable roof and a granite foundation. It measures five bays (approximately 33 feet) wide by fourteen bays (84 feet) long. A one-story, three-bay ell extends off the west elevation at the north end perpendicular to the block. Its eastern wall was removed to open into a one-story brick 20th century chapel addition ending in a half-octagon and topped with a cupola (together the ell and addition are approximately 23 feet wide by 32 feet long). Door

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openings have brownstone headers; two door openings on the south elevation have wood-frame landings with railings. Between the two is a modern concrete wall basement entry cut into the grade (a 20th century utility room was dug out; the first-floor framing sits on the foundation walls several inches above grade). Single, segmental arched window openings have brick header-course lintels, brownstone sills, and contain modern one-over-one double-hung replacement vinyl sash. A non-historic, three-sided wood-frame bay window is located between the two doors on the north elevation. Two windows in the eastern gable end are modern openings with no sills and concrete headers; these have multiple lights. Two anchor ties are visible on the west end of the south elevation. Attic vent openings are located in the apex of both gable ends. Three wood-frame gabled dormers project from the roof on the south elevation; two are located on the north elevation. Two brick chimney stacks are located at the center of the building, one on the ridgeline and a second in the slope of the south roof pitch (Photographs 15, 17-18).

The interior has been adaptively reused as residential quarters. A kitchen and bathroom are located in the east end on the first floor beneath rooms on an inserted second floor; bedrooms are located in the western half, on the first floor and an inserted second floor off a central hall; and a common area open to the roof connects the two. The floor steps up between each area. Trusses and brick walls are exposed in the common area. The ceiling follows the gable roofline up to the purlins that supported the monitor where flat wood planks close the ceiling off. Framing visible in the attic space shows newer framing materials from removal of the original roof monitor and rebuild as a gable roof. Rafters are exposed in second floor bedrooms. The west wall of the ell is mostly gone and is open to the chapel (Photographs 21-24).

East forge shop (c. 1859, Contributing Building)

The east forge shop is similar in design and materials to the west forge shop. It currently measures five bays wide by three bays long. Its original length was truncated, demolished by a fire, and the north and south elevation walls taper down from the roof to terminate as half walls that help define a parking area created on the footprint of the rest of the building (Figures 19-20). The north elevation has a door opening and two window openings. The south elevation is where water exited the turbine to return to the brook, and the tail race is below grade between granite block retaining walls. The brick wall here is two stories in height supported by a massive granite sill that straddles the tail race. The lower turbine chamber level is only two bays wide and has two window openings in the western bays that sit directly upon the granite sill without brownstone. Several tie rods and anchor ties are located at both ceiling levels. Door openings have granite sills and brownstone headers; windowsills are brownstone and windows are twelve-over-twelve double-hung wood sash. An exterior wood frame stair against the west wall leads to a door opening to the upper level beneath the gable. The non-historic 20th century east wall is of wood frame construction with vertical board sheathing beneath a narrow pent roof, above which the walls are stuccoed. A garage door opens into the parking area, and two non-historic casement windows are located in the upper level beneath the gable apex. A pair of non-historic shed dormers, one on each roof pitch, are stuccoed and have non-historic windows (Photographs 15-16, 20).

The interior retains mid-19th through early 20th-century features including wood doors and tin ceilings. The open plan has a quarter turn staircase to the attic in the northeast corner behind a vertical beadboard wall. The wood plank floor has an access hatch to the turbine chamber below. Brick walls are painted. Framing over the turbine chamber supports the building above while leaving the area open for unimpeded water flow; a significant number of structural members are replacements or additional supports. The head race opening from the pond into the turbine room in the north foundation wall beneath the mill has been closed off with concrete block. The iron turbine sits in the center of the chamber; its vertical power shaft is disconnected from any power transmission equipment and now serves a structural function for the floor above. The turbine chamber

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depth drops on the south side of the turbine for optimal head, and the iron turbine exit flume remains in situ in the granite retaining wall. The lower part of the chamber is the beginning of the tail race. (Photographs 25-29)

Bell tower

A wood-frame bell tower straddles the space between the two forge buildings. The tower sits on the line of the purlins which supported the original clerestories and is approximately twelve feet square. It consists of a half wall with columns at each corner that support round arched openings; a hip roof is surmounted by a spire. The tower is sheathed in vinyl siding (Photograph 19).

Barn

A one-story, non-historic wood-frame barn, parallel to and facing the forge buildings, is located approximately 40 feet off the northwest corner of the east forge footprint. It measures approximately 18 feet by 24 feet. It sits upon the granite block foundation of the former horse shed, the rear wall of which is the previously mentioned retaining wall. The barn is sheathed in vertical boards, has both a single and a double door opening on the south elevation, and window openings with fixed six light windows on the west, south and east elevations. The side-facing gable roof is covered in asphalt shingles (Photograph 14).

Mill #3/Grinding mill

The third mill site is roughly 1900 feet downstream (southeast) of Mill #2. Candlewood Hill Brook flows south from the second mill site beneath Candlewood Hill Road into the mill pond that provided waterpower to the third mill site. The pond occupies most of the western end of the property, and the complex sits at the easternmost end of the property. While the topography generally rises from north to south, the area surrounding the complex is flat.

Waterpower infrastructure

The dam was rebuilt in c.2005, however the stone face, side walls and spillway remain. The brook continues eastward from the dam along the northern property boundary and Candlewood Hill Road. A stone retaining wall and modern concrete channel and headgate on the south side of the dam feeds water into a reservoir canal that is roughly 650 feet long. It is contained by a natural topographic rise on its south side and a man-made berm on its north side and terminates at a stone retaining wall with a concrete channel and sluice gate. Neither the path of the reservoir feed nor that of the head race is visible, but the head race ultimately ran beneath the engine room block and beneath Scovil Road, emerging on the east side of the road to rejoin the brook. A pit in the engine room opens into the race channel which still carries water; some of the equipment that transferred power from the turbine to the belts remains. (Photographs 34-41, 55-58; Figures 28-29)

The brick complex fronts the west side of Scovil Road and consists of three buildings: the manufacturing building with five sections, an auto house and a free-standing machine shop. A building combining office and storage functions is opposite the manufacturing building on the east side of Scovil Road.

Manufacturing building (c.1881, c1900, c.1905, c.1910, Contributing Building)

Foundation walls along the road are visible; those at the rear of the complex are not as the ground has been graded with stone and, in the courtyard formed by the engine/boiler block as well as in front of the free-standing machine shop, concrete. Most external door openings have modern metal frames and doors. Except as noted, windows are either six-over-six or twelve-over-twelve, wood-frame double-hung sash with tinted exterior storms. Only one of the sections, the grinding/forging room, has a monitor; the others are either gable or flat roofed (Photographs 42-43). On the interior, all perimeter walls are exposed brick. Non-structural partition

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walls divide some of the space and in some areas -- notably the japan house, polish room and first floor of the grinding/forge room -- drywall ceiling fully or partially hides the trusses.

Note that the names of individual building sections are derived from early 20th century Sanborn Atlas Insurance Maps: the eye hoes would have been made in the grinding/forge room, a coating applied by the japanning process in the japan house, and final polishing in the polish room (Figures 25-27).

Japan house (between 1881 and 1901 with c.1905 extension)

The southernmost (and earliest extant) building section along Scovil Road is three bays wide and nine bays long (approximately 30 feet x 89 feet) with a side facing gable roof. A change in the brickwork between the third and fourth bays from the south is evidence of the c.1905 southern expansion. Single, segmental arched window openings have brick header-course lintels and granite sills. A door opening in the sixth bay on Scovil Road is accessed by a three-step concrete stair. A door opening in the second bay on the west side was retrofitted in what had been a window opening. A three-row brick corbel runs below the roof line; it turns the corner of the south elevation following the rake line with a stepped pattern. The roof framing is not original; either at the time of the c.1905 extension and/or following a fire, it was replaced with a steel truss, the ends of which can be seen extending beyond the shared brick wall with the polish room. (Photographs 42, 44, 52; Figure 30a)

Polish room (by 1901)

The polish room is four bays wide by six bays long (approximately 42 feet x 66 feet) and connects the north end of the japan house and the south end of the grinding/forge room. It's footprint and height are larger than that of the japan house; the east elevation steps out about eighteen inches from the line of the latter. It has a side facing gable roof. Window openings are double width with brownstone sills and paired wood frame double hung sash windows. A door opening is located on the south elevation, west of the japan house wall. The first bay on the west elevation is a floor to ceiling garage door opening, the fourth bay has been modified with infill plywood and brick to create a small door opening; the remaining two bays are obscured by the engine room. The modified timber queen post truss configuration suggests the possibility of a monitor at one time, or perhaps was simply the framing technique used throughout the buildings at the various sites. (Photographs 49, 53-54)

Grinding/forge room (after 1881; rebuilt/enlarged between 1901 and 1908)

The grinding/forge room is the largest building section, with two stories and a wide monitor centered on the ridgeline. It is seven bays wide by eleven bays long (approximately 68 feet x 90 feet). Tall window openings have rusticated granite sills. Some openings on the north wall have been modified: two rectangular garage door openings with brick headers likely supported by steel are flanked by door openings with steel headers reinforced with another set at the level of the attic girt. On the north elevation, modern bolt ties are spaced across the girt level and four tie rods are visible in the gable end. Walls are finished at east and west elevation roof eaves with four-step corbel and soldier course; there is no corbel detail along the rake of the gable ends. The monitor is raised four feet above the roof pitch and is approximately 24 feet wide by 70 feet long. A mix of wood frame windows -- large two-light sash between paired sixteen-light sash at either end -- are located on the east side of the monitor; the entire west side is covered in corrugated sheathing and end walls appear to be vertical boards. The upper-level framing is carried on stone supports in the brick load bearing wall; brick piers down the center line of the wide building provide additional support. The truss is complex and consists of two rows of modified queen trusses which support the roof and wide monitor above. A small, narrow concrete block addition is attached to the four southernmost bays on the west elevation of the grinding/forge room; it measures approximately 14 feet x 31 feet. Its south end terminates against the north wall of the engine block.

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Window openings are large, rectangular extending up to the cornice with narrow concrete sills and nine over nine sash. A door opening with bracketed pent roof that matches that of the auto house is located on the north elevation.

(Photographs 47, 50, 51, 62-67; Figure 30b)

Engine room and boiler house (between 1901 & 1908)

An engine room (approximately 23 feet x 40 feet) sits at the southwest corner of the grinding/forging room and polish room and has a one-story boiler house extension (approximately 16 feet by 29 feet). The architectural features of the boiler house distinguish it as a different construction than the engine block. The former has window openings with stone sills and single header segmental arches; the latter has a window opening with brownstone sill and two-course brick header segmental arch. A door opening with massive granite header and modern door is located at the intersection of the two blocks. A modern garage door opening has been inserted in the south wall of the engine block. Turbine power drive equipment survives in the engine room.

(Photographs 46-47, 57)

Auto house (between 1908 & 1914, Contributing Building)

A one-story, flat roof auto house off the north end and west side of the japan house is connected by later brick infill. The auto house is approximately 32 feet x 32 feet, and the infill connector approximately 32 feet x 12 feet. The south elevation of the auto house has three balanced garage door openings with three-course brick header segmental arches; these have been closed in with modern multi-light picture windows. A four-step corbel is topped with four rows of bricks and a decorative metal coping to form a parapet wall on the east, south and west elevations. The low one-story flat roof brick connector is three bays wide with a center two-course header segmental arch door opening immediately flanked by rectangular window openings with stone sills, soldier course headers and sixteen-light metal frame windows with center pivot opening. The western elevation has a four light casement window in what appears to be a modified door opening, with concrete sill and timber header, and three small modern rectangular window openings. The north elevation has three door openings – one with two-course segmental arch and two modern rectangular – and two window openings with concrete sill and metal windows. The wall is finished with a pent roof supported by decorative wooden brackets. Both the auto house and the infill connector have steel I-beam joists. (Photographs 48, 60-63).

Machine shop (between 1908 & 1914, Contributing Building)

This free-standing low pitch gable roof building is three bays wide by four bays long (approximately 33 feet x 42 feet). It has a 10 foot by 12 foot gable roof boiler room extension (after 1914) off the southeast corner. Window openings have stone sills. A door opening in the south wall shares the segmental arch configuration of the windows at the same height. A central wide door opening on the north elevation terminates in a three-course brick header segmental arch, above which is a squat loft window opening. Walls are finished at east and west elevation roof eaves with four-step corbel course; there is no corbel detail along the rake of the gable ends which have plain wood cornice boards. (Photographs 50-51).

Office and storage building (1870, Contributing Building)

The office and storage building is located immediately across Scovil Road from and level with the complex. The land drops quickly on the east (back) side. The water used in Mill #3 exits from the tail race beneath Scovil Road just north of the building.

The one-story brick Second Empire style mansard roof building on the east side of Scovil Road across from Mill #3 is six bays wide and two bays deep (approximately 60 feet x 34 feet). A door opening to the office section at the south end is accessed by a granite step and stoop covered by a pedimented gabled portico

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supported by plain wood Tuscan columns and simple molded cornice. The face of the pediment has a decorative truss with triangular cutout above sawtooth and stepped horseshoe curve. The door opening to the storage area, centered beneath a cross gable truncated at the level of the mansard roof, is accessed by concrete steps and stoop and terminates in a two-course brick header segmental arch above a five-light transom and double doors. The office and storage area entry doors share the same design: short lower panels and tall upper panels of vertical beadboard, and chamfered edges on rails and stiles of frame; the office door has six panels and the paired storage doors have four panels each. Directly above the storage entry is a loft opening with stone sill, single header segmental arch and plain two-panel double doors. Windows have wood frame six over six double hung sash behind tinted storms. Decorative tie rod ends are visible on east and west elevations at the height of window arches. A three-course brick corbel runs beneath the roof eaves and follows the slope of the cross gable creating a sawtooth profile. A mansard roof with flare at the bracketed eaves is punctuated by gabled dormers: three each on the east and west elevations and two each on the north and south elevations. The gable faces have the same decorative truss design as the office portico. The slope of the roof is slate, and a decorative molded cornice defines the outer edge of the flat roof. A brick chimney is centered on the flat roof along an interior brick dividing wall. (Photographs 66-67)

The storage area occupies the western four bays as well as the second floor and has significantly more space than the first-floor office. A full height brick wall on the south side of the storage area entry separates the office from storage areas; a four-panel wood door (plainer than the exterior doors) with extra wide wood surround provides access between the two at the front/west end. Floors throughout the first floor are covered in linoleum tile; upper-level floors are wood planks. The office space consists of two rooms and a bathroom. Office walls have vertical panels, an elaborate composite chair rail which also serves as interior sills, ceiling molding and composite window surround molding. The bathroom has vertical beadboard and a chair rail. A small foyer at the storage entry was created with the addition of non-structural walls. Opposite the entry, an enclosed stair against the interior brick wall provides access through a wood plank trap door to the loft space on both sides of the wall. In the storage area, loft timber joists are carried above granite blocks in the brick bearing walls (except in the last bay on the east side which has a timber support plate). The joists are supported along the center line by three chamfered columns. Timbers are affixed the length of east and west walls immediately above window openings as well as against the center columns -- presumably a functional feature to do with the movement of material. Writing in chalk on the south side of the interior brick wall dates to shortly after construction and reads "Al[bert?] P M[illegible]/ 11-1880." The ceiling in the first-floor storage area and walls and ceiling in the loft are sheet-rocked, but the framing of the mansard roof is exposed. A door opening with wood plank sill and timber header between the upper storage loft and space above the office is located on the east end of the interior brick wall; the space over the office is three steps lower than that of the storage area. (Photographs 68-73)

Mill #4/Lower factory

The lower factory is located roughly 2,665 feet downstream (northeast) from Mill #3, and 740 feet from the intersection of Candlewood Hill Road, Saybrook Road (Rte. 154) and Killingworth Road (Rte. 81). The terrain slopes gradually down to the east, toward the intersection of Candlewood Hill Road, Saybrook Road (Rte. 154) and Killingworth Road (Rte. 81)

Waterpower infrastructure

Waterpower for the 19th century operations of the former spar mill came from water impounded by a dam roughly 215 feet west of the building along the brook. A part of the dam wall is still visible, but the pond was filled in between 1934 and 1965 creating a flat area partially overgrown and partially used for parking. A flume carried water from the pond, across an aqueduct, down the south side of the brook, across the brook

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again to a 19th century wood frame mill which no longer stands. However, the path of the flume on the opposite side of the brook and some supporting piers for its crossing survive. The banks of the brook were built up on both sides with stone retaining walls. (Photographs 74-78; Figures 37-38).

Two parallel forge buildings are oriented east to west between Candlewood Hill Road to the north and Candlewood Hill Brook to the south and sit roughly 50 feet apart. The southern forge building is located along the bank of the brook and the northern forge is against the rise of the road (Photograph 79; Figures 34-35).

Forge shop (c. 1889, Contributing Building)

The southern forge shop is the older of the two buildings and has a footprint of approximately 40 feet by 200 feet and is five bays by twenty-two. The rough granite block foundation steps down as the terrain slopes downward to the east, and foundation walls are not visible at the east end of the south wall or the corner, beyond the interior brick fire wall. A small brick mid-20th century furnace addition (approximately 9 feet by 18 feet) with stack is located against the east end wall. The four bays at the east end of the building have two levels of window and door openings, corresponding to what had been a ground floor machine shop and second floor wood working shop. A few tie rods are located on the east end of the north elevation and the west elevation. Original door and window openings are intact on the south and east elevations, except where obscured by the furnace addition. Windows in the eastern two-story section are 8 over 8 double hung wood; those throughout the rest of the building are twelve over twelve double hung. Modifications from use of the site by DOT have been made on the north and west elevations with the intrusion of four steel frame garage door openings and modern garage doors and the conversion of two window openings into doors. Both north and south elevation walls terminate in four course brick corbelling at the eaves. A gabled monitor starts about 70 feet from the east elevation and runs west approximately 110 feet; note that a shorter monitor over the east end is no longer extant. The monitor windows are covered over with vertical siding, and the monitor roof has deep eaves and exposed rafter tails. (Photographs 80-82.)

The interior is divided into two sections by a brick firewall: the former two-story engine room, machine shop and woodworking area are on the east end, and the rest of the building is an open forge area with modern non-structural partition walls. Floors are concrete throughout, except for an access trench/basin covered with wood planks. Exterior brick walls are exposed, though painted; the engine room brick walls are unpainted. Each end of the building has framing, wood plank flooring and an access stair to an upper level; the center of the building is closed off to the roof with plywood or composite sheets. The floor framing for the upper-level woodworking shop appears to have been built to carry a high load: joists are close together and use double tenons to secure to beams, and tie rods connect to roof framing. The monitor framing of the two-level eastern bays is supported by brick corbels on the brick firewall. (Photographs 83-94.)

Drop forge shop c. 1905 (Contributing Building)

The northern drop forge shop has a footprint of 40 feet x 260 feet and is four bays wide by 32 bays long. The building has a concrete foundation, at ground level at the west end and exposed as the terrain descends to the east. The east end foundation is stepped up and runs beneath the window sills. An external brick stack is located against the north elevation between the third and fourth bays; the ground in this area is up against the building to just below the window sill. Original door and window openings are largely intact on the east and north elevations, except for fan units mounted in a few window openings in lieu of sash. Windows are twelve over twelve wood-frame double hung sash. Modifications from use of the site by the Department of Transportation (DOT) have been made with the insertion of two steel frame garage door openings on the west elevation and seven on the south elevation. In addition, a window opening has been changed to a door and a modern door opening created between garage doors. The north and south walls terminate in five-course brick corbelling beneath the roof line. An approximately 190 foot long monitor is centered along the ridgeline. Most,

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but not all, of the window area is covered in vertical siding; a section of window is exposed on each side. Exposed windows are paired sets of four large panes with wood sills. The monitor roof has deep eaves and exposed rafter tails. An interior chimney rises from the south facing roof slope near the east end of the building, and another from the north facing slope near the west end of the building. A wood frame shack housing mechanical equipment is located off the north side near the door opening. (Photographs 95-98.)

The interior is divided into four areas by three brick firewalls parallel to the gable ends. Floors are concrete. The easternmost section, built as an engine room, is comprised of office and bathroom spaces. Office ceilings and walls, visible above a drop ceiling, appear to be covered in modular panels and molding. A non-structural wall between the eighth and ninth bays from the east end, likely built by DOT, defines another office and storage area with non-structural mid-height brick walls for a boiler room and bathrooms. The remaining spaces are open. The western stack sits against the firewall between the fourth and fifth bays from the west wall. Wood framing and plank floors create upper levels above the eight bays from both end walls, while the other areas have been closed to the upper space by modular ceiling panels. (Photographs 99-109.)

Integrity

The D & H Scovil Company Industrial Historic District retains integrity of location and setting. The spatial relationship between each complex along and to the Candlewood Hill Brook is unchanged, as is that of each site with the surrounding roads. The archaeological resources associated with Mill #1 provide significant evidence of integrity and the potential to yield information about the workings and evolution of manufacturing at the site. The area surrounding the district remains a largely rural village with few modern intrusions. Despite some losses or modifications to the dams and ponds over time, much of the waterpower system infrastructure remains across all four sites. Furthermore, each of the forge buildings retains its core design, material, workmanship and massing features: from the ubiquitous granite foundations and one-and-a-half story load bearing brick wall construction to the timber and wood queen post trusses seated in the brick walls beneath gable roofs. The four mill sites together retain the feeling and association of mid-19th century tool forge and manufacturing operation that expanded production at locations along the waterway from which it derived power even as its late 19th and early 20th century buildings were retrofitted with steam engines.

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D & H Scovil Industrial District Data Table

Nbr.	Street	Parcel Number	Style/ Description	Resource Type	Construction Date	Photo No.	Contributing C/ NC
529	Brainard Hill Rd.	16-045-1	Mill #1 dam; head gate; canal; building ruins; discharge flumes; tailrace bridge	Site	1849-56	1-11	C
529	Brainard Hill Rd.	16-045-1	Mill #2, cabin	Building	mid-20 th c		NC
529	Brainard Hill Rd.	16-045-1	Mill #2 pond; bridge/culvert connecting water with brook; waste gate; granite tail race walls	Structure	c.1857-58; 19 th c; 20 th c	12-14, 20	C
529	Brainard Hill Rd.	16-045-1	Mill #2, east forge shop, including turbine chamber & equipment, flume	Building	1857-58; 19 th c equipment	15-26, 20, 25-33	C
529	Brainard Hill Rd.	16-045-1	Mill #2, west forge shop	Building	1860	15, 17-18, 21-24	C
529	Brainard Hill Rd.	16-045-1	Mill #2 granite retaining wall and foundation;	Structure	19 th c	14	C
			Barn	Building		14	NC
12	Scovil Rd.	15-097-3	Mill #3 granite dam; reservoir canal headgate; reservoir canal; reservoir sluiceway; tailrace bridge	Structure	19 th c with 2005 repairs	34-41	C
12	Scovil Rd.	15-097	Dam and wheelpit ruins	Site	19 th c	111-112	NC
12	Scovil Rd.	15-097	Mill #3, grinding mill	Building	1870; c.1881-1901; c.1905; c.1910	42-49, 52-63	C
12	Scovil Rd.	15-097	Mill #3, auto house	Building	c.1910	43-45, 64-65	C
12	Scovil Rd.	15-097	Mill #3, machine shop	Building	c.1910	50-51	C
11	Scovil Rd.	15-097-2	Mill #3, office and storage building w/ NC	Building	1870	66-73	C

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Nbr.	Street	Parcel Number	Style/ Description	Resource Type	Construction Date	Photo No.	Contributing C/ NC
			wood storage platform				
11	Candlewood Hill Rd.	15-090	Mill #4, granite dam wall; concrete flume section; granite flume support pillars; brook embankment stone walls	Site	mid-19 th c	74-78	NC
11	Candlewood Hill Rd.	15-090	Mill #4, forge shop	Building	c.1889	80-94	C
11	Candlewood Hill Rd.	15-090	Mill #4, drop forge shop	Building	c.1905	95-109	C

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8. Statement of Significance

Applicable National Register Criteria

(Mark "x" in one or more boxes for the criteria qualifying the property for National Register listing.)

- A. Property is associated with events that have made a significant contribution to the broad patterns of our history.
- B. Property is associated with the lives of persons significant in our past.
- C. Property embodies the distinctive characteristics of a type, period, or method of construction or represents the work of a master, or possesses high artistic values, or represents a significant and distinguishable entity whose components lack individual distinction.
- D. Property has yielded, or is likely to yield, information important in prehistory or history.

Criteria Considerations

(Mark "x" in all the boxes that apply.)

- A. Owned by a religious institution or used for religious purposes
- B. Removed from its original location
- C. A birthplace or grave
- D. A cemetery
- E. A reconstructed building, object, or structure
- F. A commemorative property
- G. Less than 50 years old or achieving significance within the past 50 years

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Areas of Significance

(Enter categories from instructions.)

INDUSTRY

ARCHAEOLOGY

Period of Significance

1849-1948

Significant Dates

1849, construction of first D & H Scovil mill #1

1857, construction of first forge at mill #2

1866, acquisition of site of mill #3 for expanding production

1887, acquisition of site of mill #4 & construction of first forge on site

Significant Person

(Complete only if Criterion B is marked above.)

N/A

Cultural Affiliation

N/A

Architect/Builder

Unknown

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Statement of Significance Summary Paragraph (Provide a summary paragraph that includes level of significance, applicable criteria, justification for the period of significance, and any applicable criteria considerations.)

The D & H Scovil Industrial Historic District is significant at the state level under Criterion A in the category of Industry and under Criterion D in the category of Archaeology. Located along an approximate 1.25-mile stretch of the Candlewood Hill Brook in the village of Higganum, Haddam, Connecticut, it is a comprehensive cluster of the 19th and early 20th century development of the successful manufacturing operation of a leading provider of hoes to mostly southern states. In 1848, Daniel Scovil designed a hoe that met the specific needs of southern cotton plantations which relied upon the manual labor of enslaved people; it used a network of wholesalers through which to distribute the product. The D & H Scovil Co. business model remained effective after the Civil War and well into the 1930s, with the transition to sharecropper and tenant farmer labor that continued to work the land with manual tools. The 20th century addition of a customer base that relied upon manual labor in South and Central America allowed for continuous operations through 1960. The product it made and sold was so successful that it spawned imitations under the name "Scovil hoe pattern;" the company thus identified its own product as "the Genuine Scovil hoe, manufactured solely by D & H Scovil." Under Criterion D, the site of Mill #1, also known as the Upper Factory, has potential to yield important information about 19th century hoe forging processes as well as about the complex water supply system that powered operations. The period of significance is from 1849, the construction date of the first forge made specifically to produce D & H Scovil hoes (now the ruins at the contributing site of Mill #1), to 1948, the end of management by a Scovil relative (Joseph Scovil Porter); the period covers production through World War II. The company had divested itself of Mill site #s 1, 2 and 4 by 1942, after which it operated only at Mill site #3 at reduced production levels. D & H Scovil Co. officially closed its doors in 1961 and sold off the last mill property in 1965.

Narrative Statement of Significance (Provide at least **one** paragraph for each area of significance.)

Criterion A: Industry

The D & H Scovil Industrial Historic District meets Criterion A as a manufacturer that designed and provided a hoe product specifically for use by the southern cotton farming sector that relied upon manual labor, and prospered and endured in the same village from 1849 to 1961 while serving that customer base. Higganum, with frontage on the Connecticut River, was historically the locus of industrial activity in Haddam due to the waterpower from three brooks as they descend from the hills on their journey to the river. A natural cove in Higganum provided calm waters and protected access to the river for transportation and trade. A gristmill was running by the third quarter of the 17th century, and in the 18th century, the brooks were powering sawmills and gristmills and the village had a shipyard. Production of textiles and tools, notably agricultural implements, evolved during the 19th century. Among the latter were several small shops including that of Hezekiah Scovil, and at midcentury that of his sons, Daniel and Hezekiah Jr., who together started the D&H Scovil company.

Early Experience of Daniel and Hezekiah

Hezekiah Scovil, Sr (1788-1849) was a blacksmith whose family settled outside of the village along Candlewood Hill Brook and the Haddam-Durham Turnpike (Candlewood Hill Road) in 1734.² At his shop near Little City Road, he (with two men paid for piecework) made a variety of tools such as axes, sledges, hammers, and hoes; beginning in 1811 and for the next 38 years, he also made skelps (iron, and later steel,

² Porter, Joseph Scovil. "A Yankee Industry in Five Wars," undated (c.1945) typed manuscript, Business & Industry Scovil File, Haddam Historical Society.

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forged into narrow strips for tubing) and musket and pistol barrels. That year he was subcontracted by the New Haven gunmaker Eli Whitney to supply barrels for his U.S. government gun contracts in the lead-up to the War of 1812. Whitney would be one of several gun manufacturers he supplied.³ The barrel business grew and by 1836-37 Scovil purchased a site further downstream, on the southeast side of the intersection of Candlewood Hill Road and Brainard Hill Road, near where a water powered chisel shop already sat; he built a new wood frame mill building and installed a water-powered trip hammer.⁴ This mill site would be left to Daniel and Hezekiah upon their father's death (Figure 3).

Of Scovil's ten children, Daniel (1815-1881) and Hezekiah Jr (1820-1904) learned aspects of his smith works at a young age. When not engaged in six to twelve month periods of study at private schools in Middletown, East Haddam, Colchester and Westfield, Connecticut⁵ the brothers worked for their father, likely starting around the age of twelve.⁶ In his records for 1835-36, Scovil records payments to both boys for welding hoes and making axes.⁷ A banking crisis in 1837 led to an economic depression that lasted through 1843, and Scovil's gun barrel business declined significantly between 1837 and 1839.⁸ It was at this moment that he sent his elder son Daniel south to Eufaula, Alabama, on the Chattahoochee River, to learn sales from a Mr. Walkley who was a manufacturer's agent and who sold Scovil's axes. This would turn out to be a formative trip, as Daniel learned that there was a large market for axes and hoes but that the latter were generally imported from England rather than American made.⁹ Upon his return to Higganum, he joined Hezekiah Jr to help his father make gun barrels once again. Not long after, c.1842, toward the end of the economic depression, Hezekiah Jr went to work at the Middlesex County Bank in Middletown for two years.¹⁰ It seems likely that through this experience he learned about loans, financing, and the perils of loan defaults – knowledge that prepared him to successfully manage a business.

Creation of D & H Scovil

Daniel began thinking about how to design an improved hoe to cater to the needs of the southern farming and plantation market as an alternative product to English imports. He discussed his ideas with his brother, and by 1844, when Daniel was 29 and Hezekiah 24, their father let them make hoes in his newer, downstream forge shop when not producing gun barrels.¹¹ Scovil began a separate account in his daybook for "D. and H. Scovil Jr" to record transactions between 1845 and 1849 such as debits for supplies, which he provided them and

³ H Scovil Sen Daybook 4-1, Scovil Ledger Collection, Haddam Historical Society. Peck, Lindamae, D & H Scovil lectures, 2019-22, posted on YouTube by Valley Shore Community Television.

⁴ Griswold, C. "1836-37 A Birdseye, or Ground-plot view of the Lands, Factories, etc of Hezekiah Scovill [sic] & others; situated in Haddam, on the Haddam & Durham T.P. Road & on the Candle-wood-hill-brook. Surveyed Sept 23 1836 & Feby 20 1837," Private Collection, digital image, Haddam Historical Society. Porter, op.cit.

⁵ Beers, J. H. *Commemorative Biographical Record of Middlesex County Connecticut* (Chicago: JH Beers & Co., 1903) pgs 60-fwd.

⁶ Porter, op.cit.

⁷ H Scovil Sen, op.cit.

⁸ Porter, op.cit. Peck, op.cit. For these and other figures pertaining to production of hoes I am indebted to Lindamae Peck who has been working her way through the company records, compiling information and presenting it in a series of taped lectures sponsored by the Haddam Historical Society.

⁹ Porter, *ibid.*

¹⁰ Beers, op.cit.

¹¹ Porter, op.cit. "Higganum. D & H Scovil," *The Middletown Tribune Souvenir Edition: An Illustrated & Descriptive Exposition of Middletown, Portland, Cromwell, East Berlin and Higganum* (Middletown: EF Bigelow, 1896), pg 114-16, Business & Industry Scovil File, Haddam Historical Society. Beers, op.cit.; the article further states that barrels were being made more in steel than iron and so the forges were no longer needed for gun barrel production.

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credits for pistol barrel piecework that they still made for him.¹² There is no record as to hoes made or sold until Daniel and Hezekiah started their own daybooks in September 1847;¹³ it is likely that they were mastering the form and manner of making the new hoe product in those early years. However, at the end of 1847, the record shows them making weeding hoes, rice hoes, sugar hoes, bog hoes and grubbing hoes, and by March 1848, working in his father's 1836-37 shop near the intersection of Candlewood Hill Road and Brainard Hill Road, Daniel had created a new hoe pattern.¹⁴

His hands-on experience in Alabama provided Daniel with an understanding of what might make a hoe design more efficient and useful, as well as how to market and distribute the product to southern planters. The planter's hoe was used from a standing position and brought down hard into the earth to remove grasses and weeds. His design idea was to modify the traditional method of making cutting edge tools out of iron to make it sharper; he also repositioned the eye for more efficient downward movement. Iron is softer and more brittle than steel, but less expensive. By laying down a layer of steel on an eye hoe rolled and forged from iron, a hoe could offer a longer lasting sharp edge ("self-sharpening") at a lower cost than one made fully from steel. D & H Scovil did not initially apply for a patent, and it wasn't until 1876, after thirty years of production, that both patent and trademark applications were recorded. The other modifications to the company's specialized design were touted years later, in 1890, when Hezekiah wrote to a potential client that the design of the Scovil hoe "has not only no neck, but [the eye] is set down between the shoulders... for the purpose of bringing the handle nearer where the work of the edge is performed... making a better balanced and easier operating tool."¹⁵ From the beginning, the company marketed and sold its hoes to jobbers, or wholesalers, in southern cities such as Augusta and Macon (GA), Georgetown (SC), Washburn (NC), and Mobile and Eufaula (AL) where Daniel had apprenticed.

In November of 1848, with recorded sales of over 7,500 hoes,¹⁶ Daniel and Hezekiah were ready to expand their operation and build their own shop; construction of Mill #1 was in process throughout 1849-50.¹⁷ This was the first shop purpose-built for the manufacture of hoes, and a July 1849 daybook entry, "first recorded deed," suggests the importance to the brothers.¹⁸ After their father's death later that year, Daniel and Hezekiah inherited the 1836-37 shop property, and, with Mill #1, had two manufacturing locations. Meanwhile Daniel continued to refine the manufacturing process, and designed and built a machine to roll the eye of the hoe.¹⁹ It is not surprising then, that with increased capacity and improved equipment, hoe production more than tripled from 1848 to 23,000 in 1850. In 1851, D & H Scovil purchased 4 acres of adjoining property to allow them to raise the dam a foot to improve waterpower.²⁰ The figure jumped again in 1854 to over 47,000 hoes. Plans for expansion were soon set in motion and construction on an enlargement at Mill #1 occurred during 1855-56 (Figures 7-10).²¹

¹² H. Scovil Sen. op.cit.

¹³ D & H Scovil Daybook #2, Scovil Ledger Collection, Haddam Historical Society.

¹⁴ Ibid

¹⁵ Peck, op.cit.

¹⁶ Peck, op.cit.

¹⁷ D&H Scovil Daybook #2; November 1848 entries record orders for 75,000 hard bricks, 10,000 soft bricks and 60,000 sq ft of planks; entries from Jun 1849 thru Feb 1850 record payment of construction supplies and labor as well as equipment.

¹⁸ D&H Scovil Daybook #2

¹⁹ Porter, op.cit.

²⁰ Haddam Land Records, Vol.31 Pg.25. Many such land purchases were made over time; see footnote 36.

²¹ D&H Scovil Daybook #3; Dec 1856 letter advised the insurance company that the new shop had been completed, as well as "a roof over the doorway between the two blacksmith shops."

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During Daniel and Hezekiah's first few years, 1844 to 1853, whether in their father's shop or their own, they continued making musket and pistol skelps and barrels to finish out orders after their father's death in 1849, and perhaps as a stable additional source of income for the fledgling company.²² With a few exceptions, including during times of war, the company primarily produced a single product: a planter's hoe in various sizes and shapes (Figures 39-45, 47-48).

D & H Scovil were not the only ones making hoes in Connecticut during the 1850s. Business directories for the period list a half dozen, including Tuttle Manufacturing Company in Naugatuck (the inventor of the gooseneck hoe, established in 1852) and small shops in Chatham (Portland/East Hampton), Plymouth, Norfolk and Wilton. One, American Hoe Company in Winsted (later Winsted Edge Tool Works), was at the time in direct competition with the Scovil brothers; in an illustrated book of products from around the world displayed at the 1853 New York Exhibition, the company's cast steel planter's hoe was noted to be "adapted for southern culture."²³ English-made agricultural tools had been used since colonists began developing farms and the plantation system, however English hoes were not designed specifically for the needs of southern crop cultivation. Cotton production in New England states increased with the expansion of textile manufacturing after the War of 1812,²⁴ and presented an opportunity for US manufacturers to introduce new and more appropriately designed hoe products. Daniel Scovil's experience in Alabama however gave the D & H Scovil an edge in creating a product adapted for cotton cultivation.

Daniel and Hezekiah continued to grow their business without regard for the competition. From at least the early 1850s, they implemented and revised incentives, such as percentage discounts for large quantity orders, or cash or early payment. They sold only to jobbers (wholesalers who sold to hardware stores) not direct to users; even when they took large orders directly from a hardware store, these were handled through the jobbers. Their distribution network expanded, with orders coming from Maryland and Illinois starting in the mid-1850s. All the while, they touted the value of their product, as in this negative response to an inquiry for a price reduction: "...believing that the care bestowed in the manufacture of our hoes renders it better with the price it bears than any other hoes in the market."²⁵

The orders came unabated. A common complaint registered in company records beginning in the 1850s was frustration at obtaining enough raw materials to keep up with orders and letters to clients routinely apologized for delays in filling orders.²⁶ With an established, steady and growing clientele, the brothers expanded again, purchasing an existing mill shop just downstream of Mill #1 in 1857. They built their own brick forge building (extant) in 1857-58,²⁷ doubling it in size soon after in 1860.²⁸ This became Mill #2, later referred to as the bell shop because of the wood frame bell tower that bridged the two forge buildings (Figures 15-17).

²² D&H Daybook #2. Peck, op.cit.

²³ Silliman Jr., B. and Goodrich, C. R. *The World of Science, Art & History Illustrated from Examples in the New-York Exhibition, 1853-54* (New York: G.P. Putnam & Co., 1854). D & H Scovil apparently did not enter their hoe in the exhibition.

²⁴ "The Cotton Economy," Blackstone River Valley National Historical Park website; <https://www.nps.gov/blrv/learn/historyculture/cotton-economy.htm#:~:text=The%20Cotton%20Economy&text=Little%20cotton%20was%20grown%20in,after%20the%20War%20of%201812>.

²⁵ D & H Scovil Letter Copy Book #5

²⁶ Letters to that effect found throughout the Letter Copy Books read for this nomination. Porter, op.cit.

²⁷ Letter Copy Book #2; this likely is the eastern block where the turbine is located.

²⁸ D & H Scovil Daybook #5

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D & H Scovil became the most important industry in Higganum by 1860; of twelve mills identified in an 1859 map of Higganum, one was Hezekiah Scovil senior's shop (perhaps still used by Daniel and Hezekiah), two belonged to D & H Scovil (Mill #1 and Mill #2), and the remaining nine were individual saw mills, tool and wagon shops (Figure 4).²⁹ Production and sales increased steadily until 1860, when 54,162 hoes were shipped³⁰ to a business base of some fifty companies (mostly jobbers in southern states).

Leading up to the Civil War, tensions rose between southern states whose agricultural economies relied on the labor of enslaved people and northern states with industrial economies. Initially, D & H Scovil continued to supply hoes to its southern jobbers, but as states seceded, and war approached, shipping became more difficult. Ever business minded, the brothers began to require payment in advance, as it became increasingly difficult to collect payment on hoes sold. On at least one occasion the hoes arrived but payment did not.³¹ With the April 1861 Union blockade of Confederate ports, D & H Scovil's hoe trade effectively stopped. By 1862, sales were virtually nonexistent, having plummeted from 54,000 in 1860 to hundreds from 1862 to 1864.

During these years, for the second time, D & H Scovil turned to fabrication for the military to sustain the company and its employees. With the experience of a decade earlier making the mandrels (or rods) around which the metal for pistol barrels was shaped, they began making ramrods for Union firearms in 1861, and bought a milling machine for that purpose in 1862.³² From 1862 to 1865, they supplied about 78,000 ramrods to several arms makers, including Parker Snow & Co. in Meriden, Connecticut; C.D. Schubarth in Providence, Rhode Island, Norwich Arms Co. in Norwich, Connecticut and others.³³ In March 1865, as the confederate economy was succumbing to Union forces, Daniel and Hezekiah prepared to resume the manufacture of hoes with the purchase of iron.³⁴ Southern food and trade crops had not been able to supply the food or export revenue needs of the southern states having been confiscated, foraged or trampled by military troops; agricultural tools would be needed to rebuild farm productivity.

Daniel and Hezekiah began planning a third manufacturing facility, expanding at what had been their father's 1836-37 mill site, as economies stabilized after the war. In January 1866, they purchased the mill, dam and attendant equipment below the mill site, and at the end of the year purchased two other parcels including mill buildings from which they would begin to operate what became Mill #3 in 1867 (Figures 3, 21-23).³⁵ Daniel and Hezekiah consolidated their industrial holdings on Candlewood Hill Brook with these additional properties, creating a nearly contiguous run of land with control over waterpower generation across more than 65 acres along the brook. As business grew, so too did the real estate assets of Daniel and Hezekiah individually and together. The brothers were major landholders in Higganum, purchasing and selling parcels throughout their lifetimes for water rights and reservoir capacity, practical operations, access to transportation from the mills, timber, and general investment.³⁶ In 1869, the company remained the largest manufacturer in Higganum, with an income nearly 30% higher than that of two other companies in town qualifying for excise taxes.³⁷

²⁹ Walling, Henry Francis. *Map of Middlesex County, Connecticut* (H. & C. T. Smith & Co., 1859).

³⁰ Peck, op.cit.

³¹ Porter, op.cit.

³² D & H Scovil Daybook #5

³³ Peck, op.cit.

³⁴ Peck, ibid.

³⁵ Haddam Land Records Vol.31, Pgs.338, 373, 374. D&H Scovil Daybook #6. Beers, *The Middletown Tribune*, op.cit.

³⁶ There are no fewer than 200 land transactions in Haddam grantee indices under Daniel, Hezekiah and D& H Scovil between 1843 and 1899.

³⁷ "Alphabetical List of Persons in Division No. Five of Collection District No. Two of the State of Connecticut, liable to a tax under the Excise laws of the United States," June 1869, Connecticut, US, Excise Tax Lists 1865-1874.

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From the company's earliest days, Daniel and Hezekiah participated in activities that further supported their business interests, both at the local and state level. Hezekiah represented Haddam in the state legislature in 1857, 1861 and 1869.³⁸ They invested in the steamships that carried supplies to them and product to New York, as well as railroad lines such as the New York, New Haven, and Hartford and the Housatonic.³⁹ In order to control their ability to ship and receive products via the steamships that traveled the Connecticut River, D & H Scovil purchased an acre on Higganum cove to build a wharf in 1856.⁴⁰ Supplies and product were subsequently brought by horse-drawn carts less than two miles down Candlewood Hill Road for loading. In 1869, as the new route of the Connecticut Valley Railroad was being surveyed, Hezekiah was one of two men elected to represent the town and lobby for a stop at Higganum.⁴¹ That same year, the D & H Scovil Company and the brothers individually were the major founding shareholders of the Higganum Cove Wharf Company, established with two acres on the cove bought from D & H Scovil to connect with the railroad.⁴² When the town voted to subscribe to the new railroad in 1870, Daniel was appointed as agent for the town.⁴³ After the Cover Wharf Company folded in 1889, D & H Scovil bought back the wharf and land, continuing to use it until at least 1915 alongside rail transportation.⁴⁴

The U.S. Patent Office issued approximately fifty patents for various types of hoes between 1865 and 1881, but none for Scovil hoes. It appears that D & H Scovil did not apply for a patent until thirty years after they had fine-tuned their design and manufacturing process. Their first recorded patent was in 1876, at which time they also registered a trademark.⁴⁵ In an 1889 issue of *The Iron Age* journal, a list of hoe manufacturers included Lane's Razor Blade maker of a "Scovil pattern" hoe,⁴⁶ and responses to inquiries from potential clients in letters in 1916-18 refer to American Hoe of Cleveland, which made a copy "Scovil Pattern hoe", not the genuine Scovil "self-sharpening laid hoe."⁴⁷ Perhaps 1876 was the year Daniel and Hezekiah first became aware that their hoe was being copied and sold as a "Scovil pattern." Once the patent and trademark were in place, the trademark was routinely renewed (1893, 1947, 1957). A company sign that likely hung outside the office declared that one was in the right place to buy the "Genuine Scovil Hoe." Figure 39.

In 1879 the company built an office and storage building adjacent to Mill #3 in the fashionable Second Empire style as befitted a venerable local business with a national clientele (Figure 24).⁴⁸ Within a year, Daniel and Hezekiah had taken over a former wood-frame spar mill downstream of Mill #3 for additional production space.⁴⁹ They removed the equipment used to process feldspar and installed a new iron waterwheel and trip

³⁸ Beers, op.cit.

³⁹ Peck, op.cit. Probate records for Hezekiah Sr, Hezekiah Jr and Daniel Scovil.

⁴⁰ Haddam Land Records, Vol.31 Pg.127. D&H Scovil Daybook #3

⁴¹ Beers, op.cit.

⁴² Haddam Land Records, Vol.34 Pg.187.

⁴³ Whittemore, op.cit.

⁴⁴ "Higganum Cover Wharf Company," undated typed manuscript, Haddam Historical Society.

⁴⁵ US Patent Office. *Annual Report of the Commissioner of Patents for the Year* (Washington DC: Government Printing Office, 1876).

⁴⁶ *The Iron Age*, 1889, Vol.44, September 5, 1889, p.393.

⁴⁷ Letter Copy Book #57

⁴⁸ Copy of clipping from Penny Press, Haddam Historical Society.

⁴⁹ Whittemore, Henry. *History of Middlesex County, Connecticut, with biographical sketches of its prominent men* (NY: J. B. Beers & Co., 1884) pp 384-393. Note that though the former spar mill building no longer stands, it was used throughout Scovil production and demolished only after sale of the mill site.

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hammers to make the hoes.⁵⁰ In 1887, they expanded the facility again with a new brick forge and two-story machine shop, just north of the spar mill at Mill #4. The former spar mill, like all the other D & H Scovil mills, was run with waterpower, but the new brick forge was built for steam-driven engine power and was never plumbed into the waterpower infrastructure (Figures 31-35).⁵¹ Improvements and modernization continued, with construction of a new reservoir “at the D & H Scovil lower hoe shops” (perhaps for the former spar mill) in 1888,⁵² installation of steam power at two plants in 1890, and construction of new brick japan, polish and grinding/forge rooms at Mill #3 in place of the existing wood frame blocks between 1881 and 1901 (Figure 25).⁵³

After Daniel’s death in 1881 at age 66, Hezekiah continued the business with the same business acumen that the two men together had established. The company had a wide distribution network in thirteen southern states from South Carolina to Texas and Florida to Missouri, as well as in New York and Illinois. After the Civil War, enslaved labor was replaced by sharecroppers and tenant farmers. The new system was almost as repressive as the old, and those working the fields could not keep up with their obligations to the landowners, never mind adopt new cultivation methods. Furthermore, crop prices were low and it took many years for production to rebound. So D & H Scovil continued to supply the southern market. In its 1896 article on Higganum, the *Middletown Tribune Souvenir Edition* noted: “The Scovil hoe is made especially for use in cotton growing states, and time has proved that it has no equal for the purposes intended. So widely is it known, and so thoroughly is its reputation established, that figuratively speaking, it sells itself. Orders come to the office at Higganum, no soliciting is necessary and the name Scovil’s Planters Hoe is a recognized guaranty of quality.”⁵⁴ Nonetheless, Hezekiah sought to expand the business into new markets, which hitherto had not purchased Scovil hoes, particularly outside the U.S. The company distributed free sample hoes to export contacts in Brazil, Chile and New Zealand, and hired an agent to explore hoe sales in South America. He found the market of potential purchasers well satisfied by orders through the Collins Company (Canton, Connecticut) and gave up.⁵⁵ By the early 20th century, D & H Scovil routinely referred inquiries for hoes other than Scovil planter hoes to the Collins Company.⁵⁶

D & H Scovil Inc.

As neither Daniel nor Hezekiah had children who survived them, their eldest sister Fanny’s children, Philip W. Porter, Joseph S. Porter, and Whitney S. Porter, inherited the business upon Hezekiah’s death in 1903. All three served as company officers, but Joseph ran the operations until his death in 1948. With the founding owners gone, the Porters incorporated the company in 1907.⁵⁷ At this time, the company was by far the biggest manufacturer in Higganum with property valued at \$79,000 (\$2.6 million in 2023) compared to \$25,000 (\$830,000 in 2023) for the Russell Co. and \$22,000 for Cutaway Harrow.⁵⁸ Those assets included the mill properties, seven dwelling houses, likely for worker housing, and 200 acres. At around the same time, the

⁵⁰ “Higganum,” *Hartford Courant*, undated article clipping, Haddam Historical Society.

⁵¹ “Higganum,” *Hartford Courant*, 6/17/1887 p.4; article states that a large steam engine was ordered and the new forge would employ about 25 people.

⁵² “Higganum,” *Hartford Courant*, 8/6/1888 p.6 clipping, Haddam Historical Society

⁵³ Porter, op.cit. See figures for historic images and Sanborn Insurance Atlases.

⁵⁴ *The Middletown Tribune*, op.cit.

⁵⁵ Peck, op.cit.

⁵⁶ Letter Copy Book #57

⁵⁷ Recorded in land records 6/25/1907.

⁵⁸ Peck, op.cit.

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second brick drop forge shop was built at Mill #4, and three brick auxiliary buildings went up at Mill #3 (Figures 26-27, 33-35).

Joseph Porter continued to operate using Daniel's and Hezekiah's principles, focusing on the hoe product proven across sixty years of manufacturing. Like his uncles before him, adjustments were made during wartime. The same issues, from the difficulty of obtaining materials, to the temporary demise of the cotton industry, to challenges in shipping imposed by embargoes, resulted in a temporary shutdown in 1914. The company partially transitioned to making entrenching tools and handles for turret lathes during World War I, and during World War II it produced universal joints for submarines and milling cutters for the Remington Arms 1903 rifle.⁵⁹

During Porter's tenure, he introduced new machine tooling equipment and shifted production from trip hammers and welding to drop hammers and welding, and in the 1920s to "drawing hoes in one piece from strip steel with presses."⁶⁰ In the 19th century, steel was more expensive than iron and had been applied as a layer on iron hoes to contain costs. As metal processing technology evolved, the cost of steel declined so that it was no longer prohibitive to make the entire hoe out of steel. By at least 1930, the company made hoes entirely of a carbon-alloy steel that was tempered in oil (Figure 44).⁶¹ In addition, the acquisition and design of modern equipment, such as a machine for polishing the finished hoe product made around 1935, resulted in more efficient and uniform manufacturing. It also provided a potential new revenue stream, as D & H Scovil Inc. marketed the polishing machine (Figure 46). A journal entry by Philip W. Porter in 1937 noted that "Business is fair. Have sold one of our new machines with a prospect of two more this week."⁶²

Within just two years of Porter taking over, changes likely resulting from his efforts to reduce costs would lead to internal unrest. The relationship between the local labor economy and D & H Scovil had been of mutual importance throughout its evolution. In the first years of business, beside their own labor, Daniel and Hezekiah paid first three men, then five, then seven men for piecework, and by 1857, with Mill #1 up and running 35 men were employed. Most of the laborers in those early years belonged to local families of English descent.⁶³ The number of men employed grew slowly for the next three decades reaching 51 in 1890 but doubled in the next fifteen years to 110 in 1904.⁶⁴ The local labor pool had also grown and changed, with the arrival of Irish immigrants in the late 1850s, followed by German and Swedish immigrants in the 1870s-1890s, and an influx of Italian immigrants in the early 1900s.⁶⁵ The Scovils appear to have offered some worker housing: Daniel owned a half dozen houses; Hezekiah owned ten houses, including at least one tenement house and one double house; and in 1905 D & H Scovil owned seven houses.⁶⁶ During the 19th century wages were often paid in

⁵⁹ Porter, op.cit.

⁶⁰ Porter, op.cit.

⁶¹ A review of D * H Scovil Daybooks, which often record material supplies, might identify when the transition to all steel occurred.

⁶² 2/19/1937 entry in journal of Philip Wells Porter, shared in 3/18/23 email from Charles Rounds Jr (Grandson of Philip Porter, to Alain Munkittrick.

⁶³ Peck, op.cit.

⁶⁴ Various D & H Scovil Daybooks and Letter Copy Books reviewed.

⁶⁵ Peck, op.cit. Cunningham, Janice P. and Warner, Elizabeth A. *Portrait of a River Town: the History and Architecture of Haddam, Connecticut* (Middletown: Greater Middletown Preservation Trust Inc., 1984) pp 97-103. D & H Scovil Daybook #24.

⁶⁶ The probate documents for Daniel and Hezekiah Scovil provide some information on houses owned, but identifying locations and determining occupants was not possible in the scope of this nomination.

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goods such as food or hay.⁶⁷ Letters and daybook entries written by the brothers from the 1850s onward regularly expressed concern over the company's ability to retain workers in light of work disruptions, whether due to insufficient water to power the mills, floods that overwhelmed the hydropower system, lack of raw materials to keep men working or wartime embargoes.⁶⁸ While this was clearly about keeping production going, it was also about keeping the labor force employed for when the workload could return to normal. An example of this is recorded under Joseph Porter's management with the outbreak of World War I in 1914. A slump in the cotton industry and a pivot to munitions and war supply manufacturing resulted in a temporary suspension of hoe making and longer-term reduction in operations, affecting about 200 employees by this time. Porter put as many men to work as possible harvesting chestnut lumber from trees affected by blight in an effort to retain employees for whom the war work offered many job opportunities.⁶⁹

However the decades surrounding the turn of the 20th century were characterized by labor unrest and strikes in a variety of industries in Connecticut as throughout the country. In 1905, the state board of mediation and arbitration followed some 15 cases of "labor difficulties," including at D & H Scovil Co.⁷⁰ In August 1905, 24 men who made the eye of the hoe went on strike for wage parity with the "platers" who applied the steel.⁷¹ Porter had found the manufacturing process little changed since the 19th century, with skilled blacksmiths making machine parts and hoe eyes with hammers, sledges and anvils. He had begun modernizing operations since taking over in 1903 to increase efficiency and reduce costs and was docking pay for unacceptable work. Affected by these changes in production, perhaps the Scovil strikers were emboldened by the example of other workers taking a stand. Porter negotiated with the men, stopped deducting pay for inferior work, and provided modest pay raises to some, though not giving them the same wages as the platers.⁷²

The shifts in material, equipment and process also meant that less workspace was needed to meet the demand in hoes. By 1942 D & H Scovil had divested itself of the Mill #1, #2 and #4 sites.⁷³ The company retained the grinding mill, Mill #3 on Scovil Road, where all manufacturing operations took place using the existing hydropower system, and the office and storage building across the street.

The market for Scovil hoes appears to have held during the first decades of the 20th century.⁷⁴ Engine driven tractors had been introduced around 1910, and harvesters around 1930, but the southern cotton industry was slow to adjust to crop mechanization. The oppressive tenant farm system gave owners little economic incentive to modernize.⁷⁵ However, after decades of the boll weevil scourge and the further impoverishment of

⁶⁷ Peck, op.cit.

⁶⁸ From various D & H Scovil Daybooks and Letter Copy Books reviewed, this occurred at least in July 1856, October 1858, August-September 1860, December 1879, August 1892 and 1904.

⁶⁹ "Higganum," *Hartford Courant* 9/1/1914 p15 clipping, Haddam Historical Society. Porter, op.cit. Letter Copy Book #57.

⁷⁰ "State Arbiters Not Called On," *Hartford Courant*, 1/6/1906, p.3.

⁷¹ "Hoe Works Strikers Vote to Remain Out on Account of Wages," *Hartford Courant*, 8/16/1905, p.12.

⁷² "Strikers at Scoville [sic] Hoe Works Expected to Return to Work Monday." *Hartford Courant*, 8/19/1905, pg.10

⁷³ Haddam Land Records; Mill #1-2 property was sold in 1930 (V59 P528); cove wharf property was sold in 1931 (V61 P171); Mill #4 was sold to the State of CT in 1942 (V47 P365). Other transactions as early as 1926 included associated acreage and parts of ponds.

⁷⁴ Except for a daybook from late 1916 to early 1918, review of 20th century company records was not possible within the scope of this project, so actual company sales figures are not known.

⁷⁵ Fleisig, Heywood. "Mechanizing the Cotton Harvest in the Nineteenth-Century South." *The Journal of Economic History* 25, no. 4 (1965): 704-6. <http://www.jstor.org/stable/2116143>.

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sharecroppers and farmers during the Depression, New Deal programs encouraged diversification of crops;⁷⁶ that may have begun an erosion of Scovil's southern hoe market. World War II further slowed the hoe business and D & H Scovil instead made universal joints for submarines and milling cutters for the Remington Arms Co.'s 1903 rifle, which were supplied to British forces around 1940-41 and U.S. forces after Pearl Harbor.⁷⁷ Coming out of wartime production, Joseph Porter wrote of his concerns for the future of the company, laying hopes in the United States' "Good Neighbor Policy," established in 1933 to improve relations with Central and South American countries. The policy meant stronger trade relations and D & H Scovil had benefited through U.S. trade with Columbia and Brazil, as well as South Africa and the Belgian Congo (Figure 45).⁷⁸ However the "Good Neighbor Policy" was essentially dropped after the war as the government instead began focusing on the tensions that became the Cold War. D & H Scovil Inc. operated for another twenty years, but it appears to have been largely thanks to orders from its long-standing Southern customers: "...the product still goes to jobbing companies that bought these Haddam hoes before the Civil War."⁷⁹

Whitney Scovil Porter and Philip Wells Porter continued to serve as D & H Scovil Inc. directors after Joseph Porter's death in 1948, but neither was as engaged as their brother or uncles had been. They retained ownership of the company but had someone outside the family, Frederick Waterman, run the business. It was not long after his death in 1961 that the company closed its doors and, in 1965 sold the last of the D & H Scovil manufacturing sites and the company's office.⁸⁰

Criterion D: Archaeology

The site of D & H Scovil Co.'s Mill #1 is significant under Criterion D for its potential to yield data on several important historical patterns: the development and adaptation of waterpower, the evolution of single product manufacturing processes over time, and the growth and decline of small-scale industries. The ruins at Mill #1 reflect a nearly complete history of seventy-five years of hoe manufacturing activity by the D & H Scovil Co. and that company alone; no other manufacturer occupied this site before or after Scovil. Surface indications throughout the majority of the site are that there is a high degree of integrity.

The archaeological resources were initially recorded in the 1978 survey work completed by the Wesleyan Archaeology Lab and in site walkovers conducted for this project in 2023. The 1978 work documented the dam, sluice gate, reservoir canal and its termination dike, as well the inlets for the turbine water intakes and two forge shop foundations, as well as some iron artifacts. The dam for Mill #1 failed in a major floor event in 1982, and blew out the spillway, but the other elements of the waterpower infrastructure were unaffected. The more recent walkover identified most of the same resources recorded in 1978, though vegetative overgrowth inhibited inspection of the area of the dike and west side of the foundation. Clearing of trees and vegetation on the north and east sides of the foundations has occurred on at least two occasions since 1978, exposing an out of place iron turbine, three flumes, and what appears to be a diverter, in their corresponding pits that carried water from the turbines to the tail race; these had not been noted in 1978.

It is known that the Scovil brothers regularly concerned themselves with securing reliable water flow for power during both drought and flood conditions through property acquisition, dam upgrades, and reservoir

⁷⁶ Dobbs, Chris. "Agricultural Adjustment Act." New Georgia Encyclopedia, last modified Dec 14, 2020.

<https://www.georgiaencyclopedia.org/articles/business-economy/agricultural-adjustment-act/>

⁷⁷ Porter, op.cit. Canfield, Bruce. "The Remington M1903 Rifles," *NRA American Rifleman* (2016).

⁷⁸ Porter, *ibid.*

⁷⁹ "Connecticut's Haddams," *Hartford Courant*, 10/30/1949, p91.

⁸⁰ Haddam Land Records Vol.97 Pg.521.

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construction. Archaeological investigations of this intricate, and possibly unique, 19th century system of water delivery and control could uncover other elements of the system, illuminate sequences of its construction and upgrades, the amount of power produced, the capacity of the facility and engineering innovations for the period.

While 19th century D & H Scovil records identify in detail materials and supplies ordered for hoe production, a study of archaeological deposits could illuminate production methodologies, how and in what sequence labor tasks were undertaken within the facility, and how those may have changed over the years. The Mill #1 Archaeology Site has the potential to yield this data through analysis of waste piles left on site and artifact remains within the footprint of the buildings. Archaeological investigations could more precisely locate machinery stations and help lead to an understanding of the industrial sequencing of on-site processes.

The Mill #1 Archaeology Site could also help archaeologists and historians better understand the needs and changes of small-scale manufacturing over time. The site was where D & H Scovil first started their independent work and would continue to serve the company for over 70 years. During that time, changes made to the forge shops and mills were documented in company records, however, being able to identify through archaeological investigations the construction process has the potential to highlight minor improvements or changes made by D & H Scovil that would otherwise not be captured in the document record. D & H Scovil Co. was able to adapt to supply chain issues and new production flows during wartime, but also continued to use core hoe production techniques for decades, and further study of this first manufacturing site may offer a better picture of this dynamic in the forge shops.

D & H Scovil Industrial District
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Previous documentation on file (NPS):

- preliminary determination of individual listing (36 CFR 67) has been requested
- previously listed in the National Register
- previously determined eligible by the National Register
- designated a National Historic Landmark
- recorded by Historic American Buildings Survey # _____
- recorded by Historic American Engineering Record # _____

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___ recorded by Historic American Landscape Survey # _____

Primary location of additional data:

___ State Historic Preservation Office

___ Other State agency

___ Federal agency

___ Local government

___ University

___ Other

Name of repository: _____

Historic Resources Survey Number (if assigned): _____

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10. Geographical Data

Acreage of Property 65.67 acres.

Use either the UTM system or latitude/longitude coordinates

Latitude/Longitude Coordinates

Datum if other than WGS84: _____

(enter coordinates to 6 decimal places)

- | | |
|-------------------------|-----------------------|
| 1. Latitude: 41.490411 | Longitude: -72.586174 |
| 2. Latitude: 41.493082 | Longitude: -72.579303 |
| 3. Latitude: 41.490328 | Longitude: -72.574155 |
| 4. Latitude: 41.493261 | Longitude: -72.569334 |
| 5. Latitude: 41.491976 | Longitude: -72.568540 |
| 6. Latitude: 41.491644 | Longitude: -72.571892 |
| 7. Latitude: 41.490178 | Longitude: -72.574064 |
| 8. Latitude: 41.495855 | Longitude: -72.563422 |
| 9. Latitude: 41.496548 | Longitude: -72.560154 |
| 10. Latitude: 41.495964 | Longitude: -72.560033 |
| 11. Latitude: 41.495470 | Longitude: -72.562243 |

Or

UTM References

Datum (indicated on USGS map):

NAD 1927 or NAD 1983

- | | | |
|----------|----------|-----------|
| 1. Zone: | Easting: | Northing: |
| 2. Zone: | Easting: | Northing: |

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3. Zone: Easting: Northing:

4. Zone: Easting: Northing:

Verbal Boundary Description (Describe the boundaries of the property.)

The district boundaries encompass the land used as part of D & H Scovil Co. manufacturing operations in the Higganum section of Haddam, Connecticut, that retain ruins or intact features and resources. The boundary is continuous around the sites of Mill numbers 1, 2, and 3. Mill number 4 is located approximately 0.4 miles northeast and separated from the other sites by State Route 9 and six unrelated properties fronting Maple Avenue.

The five parcels within the district boundary include:

- **Parcel ID 16-035, 529 Brainerd Hill Road**, comprising 48.5 acres at the corner of Brainerd Hill and Candlewood Hill Roads (Town of Haddam Deed Book Vol. 303, Pg. 938);
- **Parcel IDs 15-097-3, 15-097 and 15-097-2** identified as **11 and 12 Scovil Road**, comprising 13.17 acres with frontage on the south side of Candlewood Hill and the east and west sides of Scovil Road (Town of Haddam Deed Book Vol. 291 Pg.181); and
- **Parcel 15-090, 11 Candlewood Hill Road**, comprising 4.0 acres (Town of Haddam Deed Book Vol.66 Pg. 295).

Boundary Justification (Explain why the boundaries were selected.)

The boundary encompasses the ruins and extant buildings and structures associated with all four mill complexes that made up the historic physical plant of the D & H Scovil Co. during their operation from 1849 to 1948 together with the infrastructure created to supply hydropower from the head and flow of the Candlewood Hill Brook. For mill site #s 2, 3, and 4, lines of convenience were used to exclude areas not part of the manufacturing facilities.

11. Form Prepared By

name/title: Renée Tribert
organization: Preservation Connecticut
(Edited by Jenny Scofield, CT SHPO)
street & number: 940 Whitney Avenue
city or town: Hamden state: CT zip code: 06517
e-mail rtribert@preservation.org
telephone: 203-562-6312
date: 4/2023

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Additional Documentation

Submit the following items with the completed form:

- **Maps:** A USGS map or equivalent (7.5 or 15 minute series) indicating the property's location.
- **Sketch map** for historic districts and properties having large acreage or numerous resources. Key all photographs to this map.
- **Additional items:** (Check with the SHPO, TPO, or FPO for any additional items.)

GRAPHICS

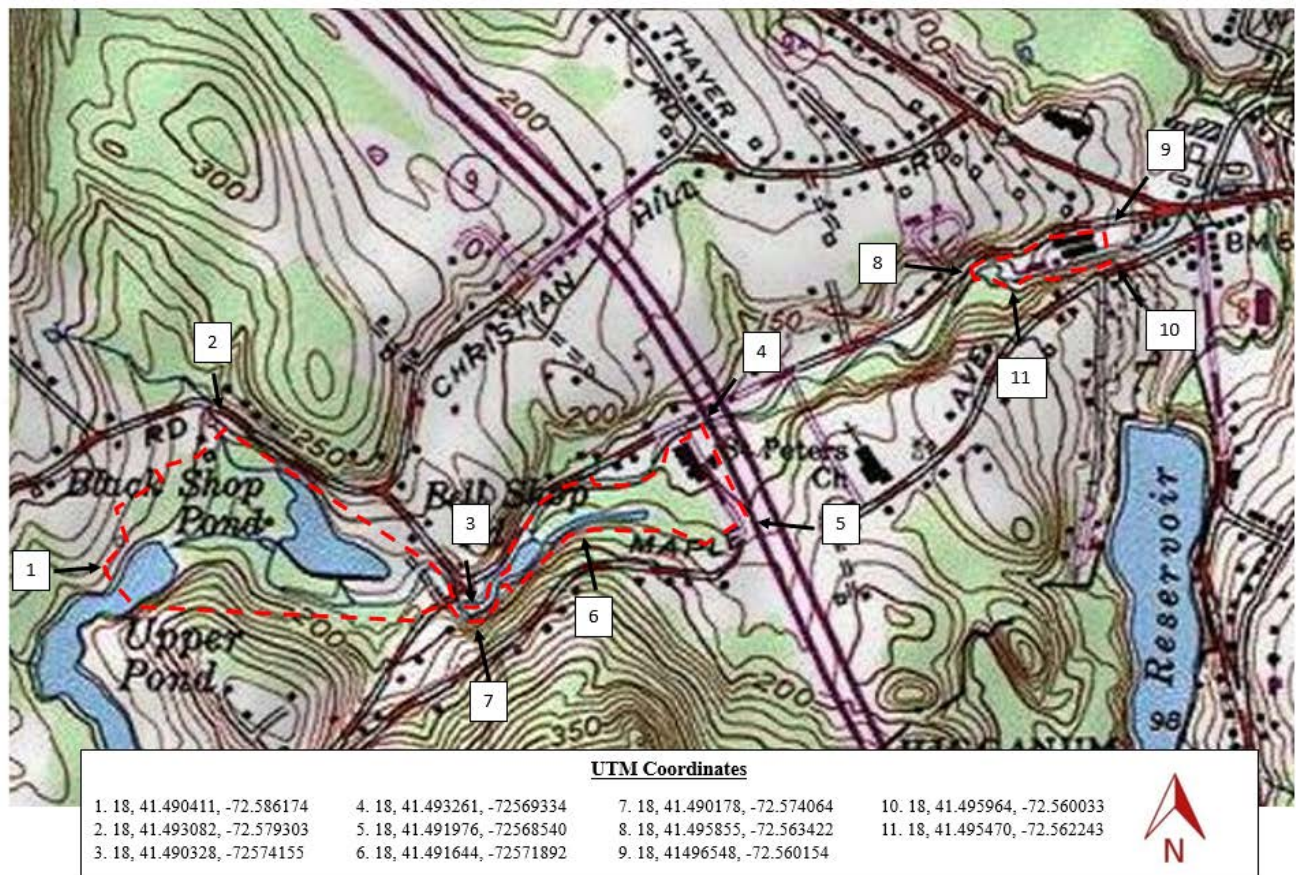


Figure 1. D & H Scovil Industrial Historic District overall boundary map on USGS Haddam CT Quadrangle Map.

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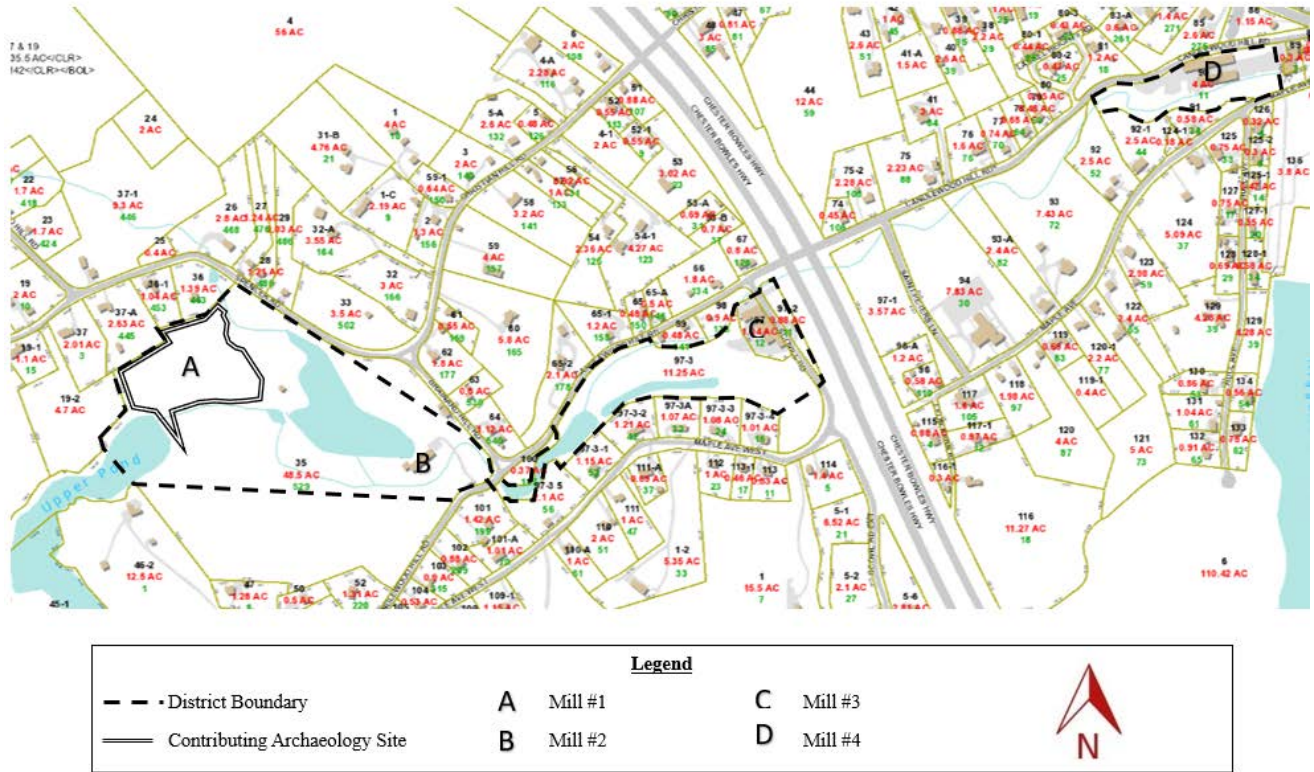


Figure 2a. D & H Scovil Industrial Historic District overall boundary map.

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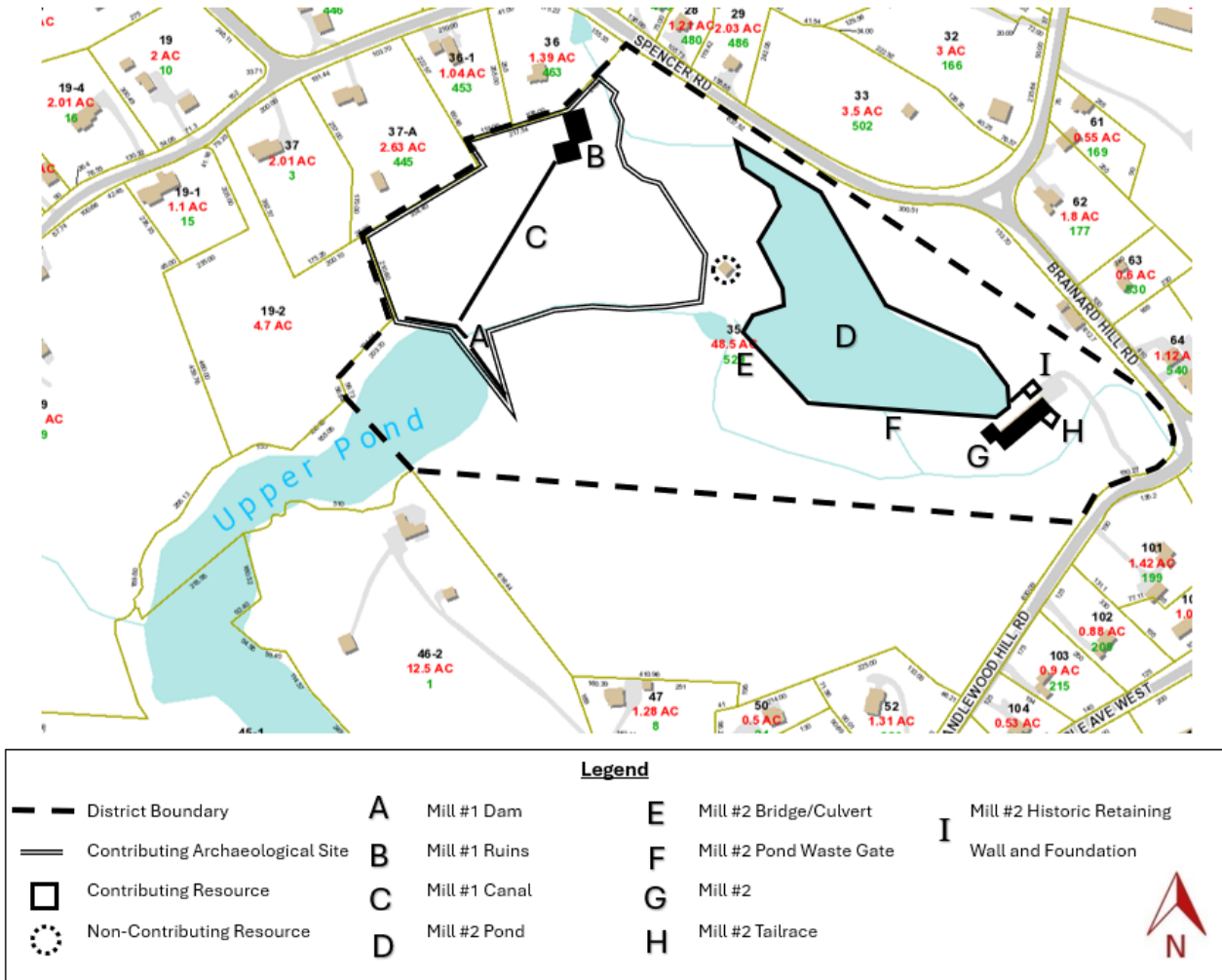


Figure 2b. Boundary map for Mill site #s 1 & 2 of D & H Scovil Historic Industrial District.

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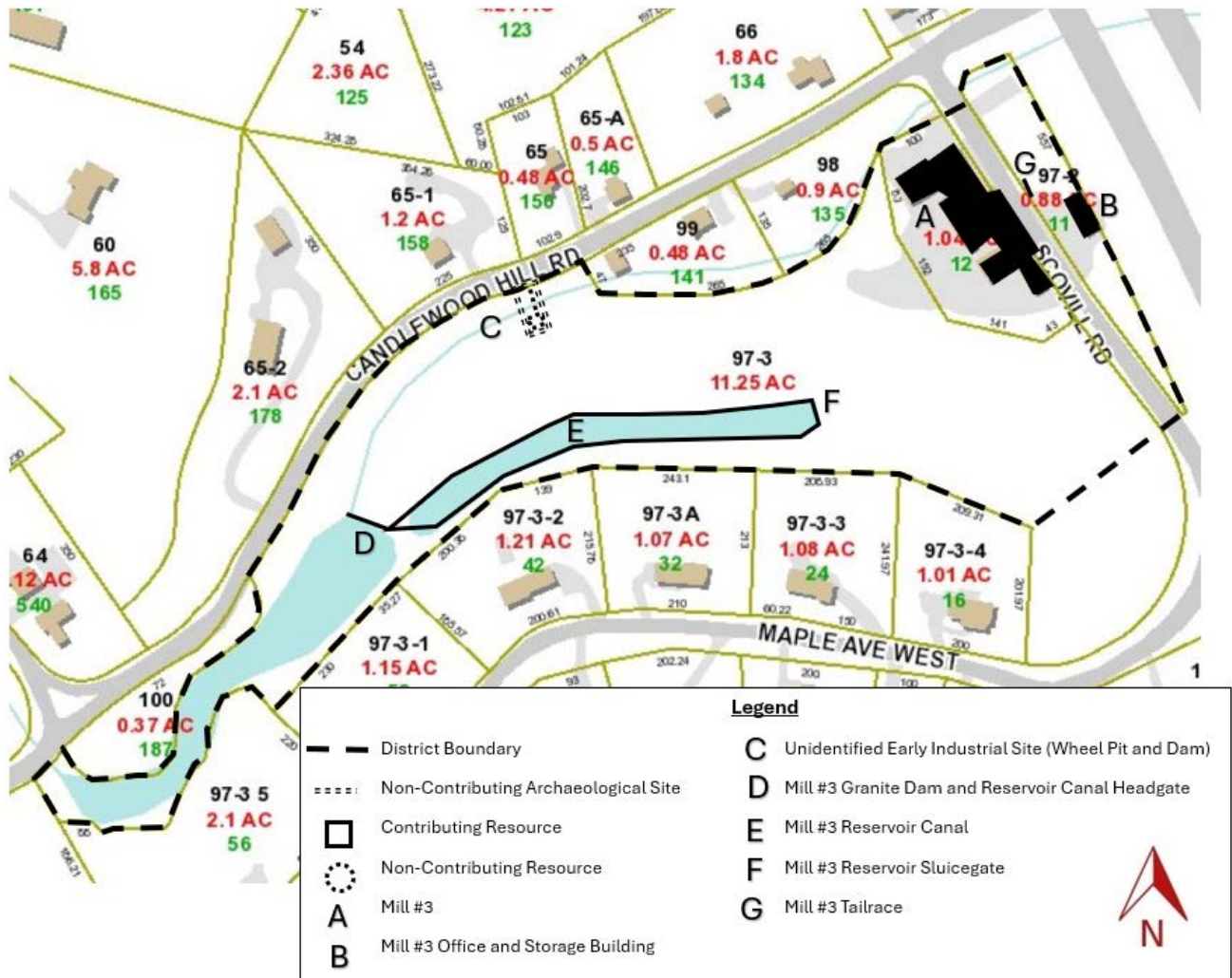


Figure 2c. Boundary map for Mill site #3 of D & H Scovil Historic Industrial District.

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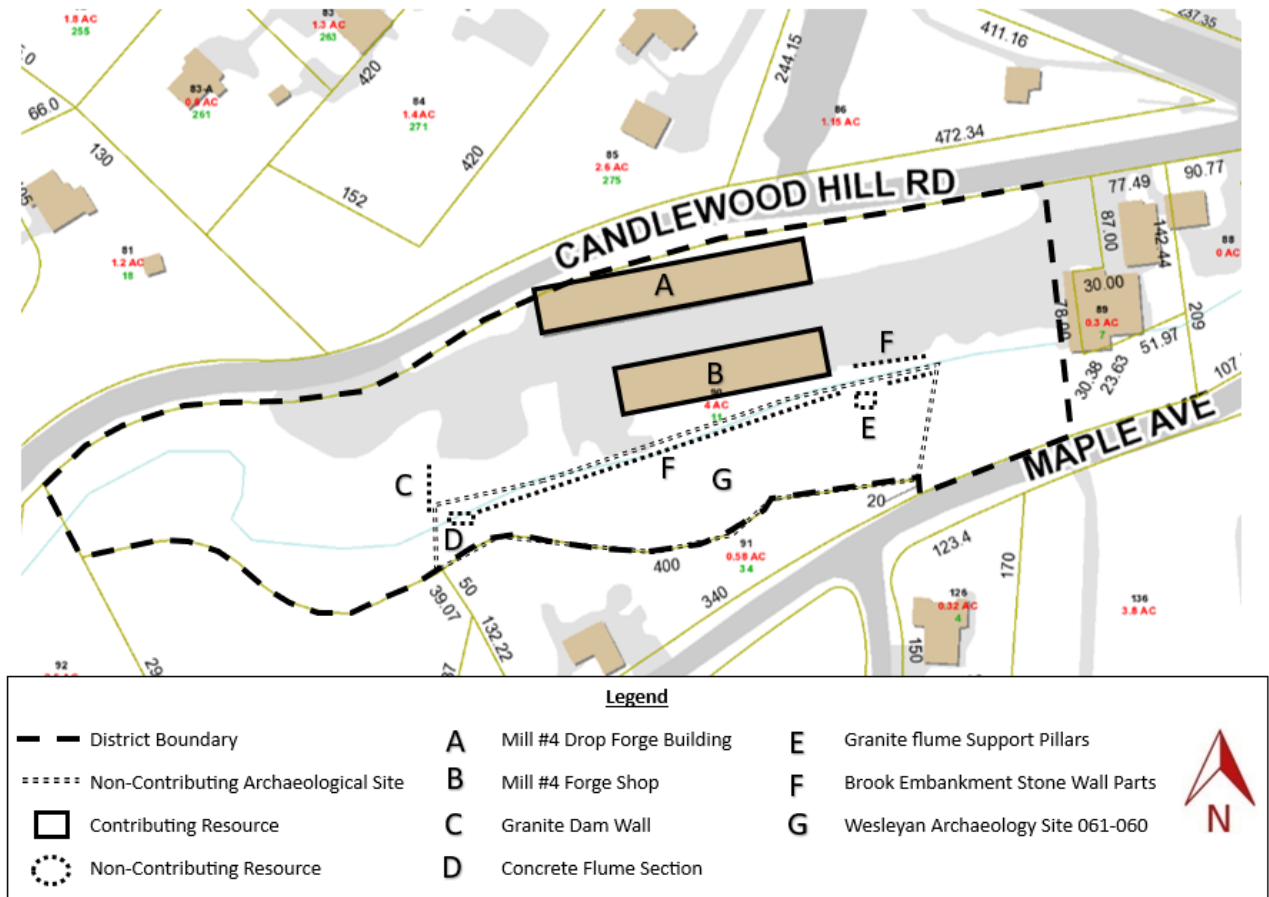
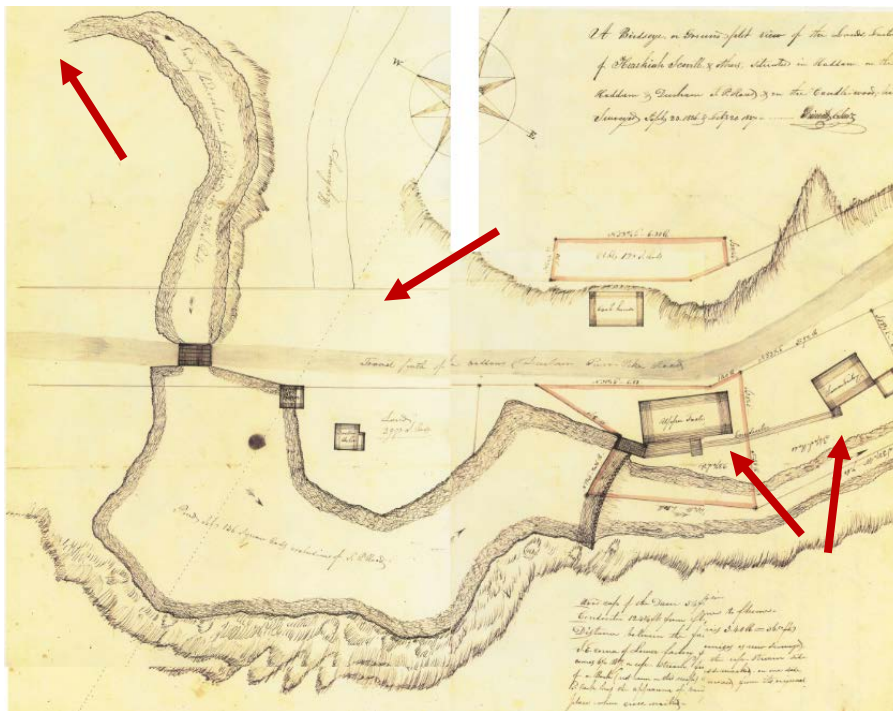


Figure 2d. Boundary map for Mill site #4 of D & H Scovil Historic Industrial District.

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Top left arrow:
 approx.
 location of
 future Mill #2

Middle arrow:
 intersection of
 Brainard Hill Rd
 & east-west
 Candlewood Hill
 Rd (Haddam-
 Durham Turnpike)

Lower arrows:
 1836-37 mill
 building sites
 now on abutting
 property and/or
 beneath
 embankment.

Figure 3. “A Birdseye, or Ground plot view of the Lands, Factories etc of Hezekiah Scovill [sic], situated in Haddam, on the Haddam & Durham T. P. Road 7 on the Candlewood hill brook. Surveyed Sept 20, 1836 & Sept 20 1837. Griswold, C Sur;” private collection.



Left arrow:
 site of Mill #1

Middle arrow:
 1836-37 mill
 site

Right arrow:
 approx. future
 site of Mill #3

Red arrow:
 residence of
 Daniel
 Scovil, not
 associated with
 manufactories

Figure 4. Close-up of Scovil sites in 1859. *Map of Middlesex County, Connecticut*, Walling, Henry Francis (H. & C. T. Smith & Co., 1859).

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Mill #1 Upper Factory

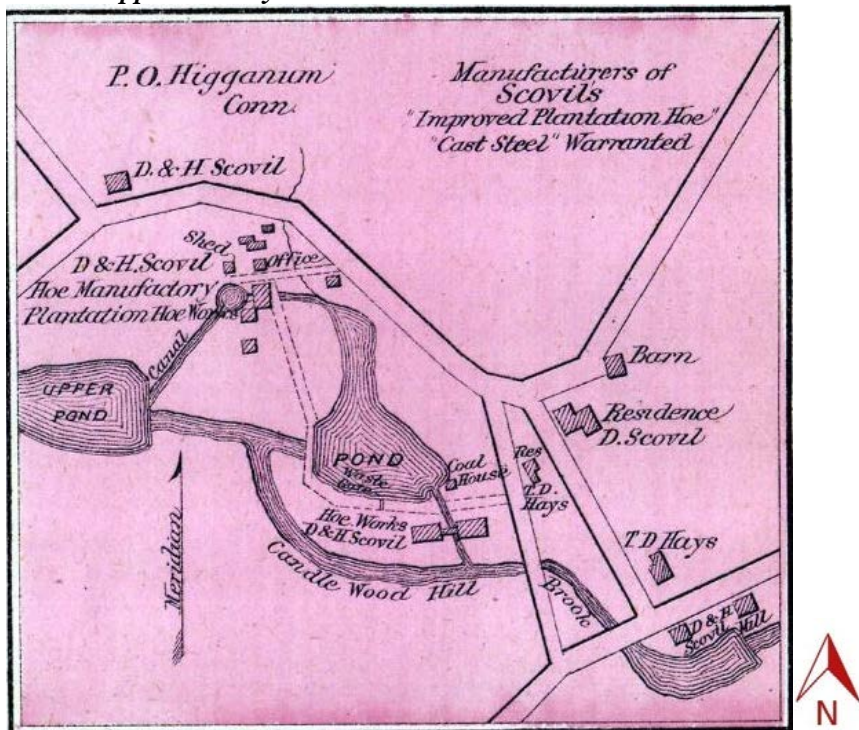


Figure 7. D & H Scovil inset in Beers County atlas of Middlesex, Connecticut, from actual surveys, 1874. Note D & H Scovil operations at lower right, which correspond to the 1836-37 site; that area is now beneath the pond at the Mill #3 site.

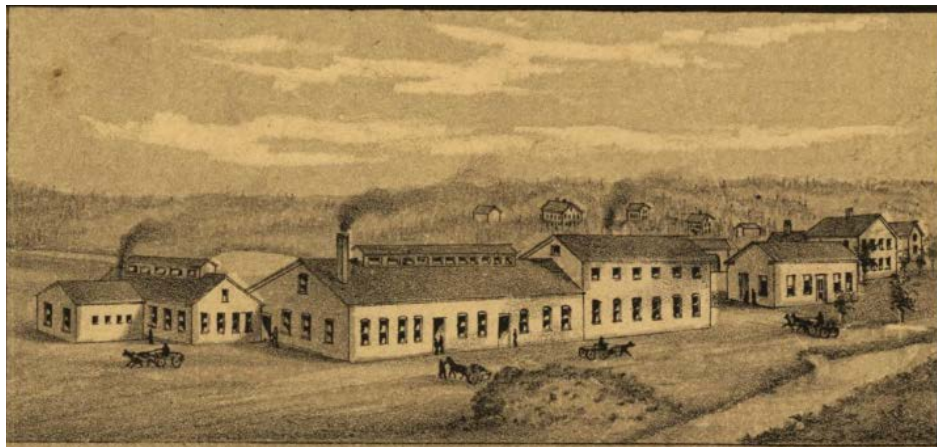


Figure 8. Inset rendering of Mill #1. Bailey's View of Higganum, Connecticut 1881.

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Figure 9. Undated photograph workers at Mill #1 (before 1895). Haddam Historical Society.



Figure 10. Photograph illustration of Mill #1 in *The Middletown Tribune Souvenir Edition*, 1896.

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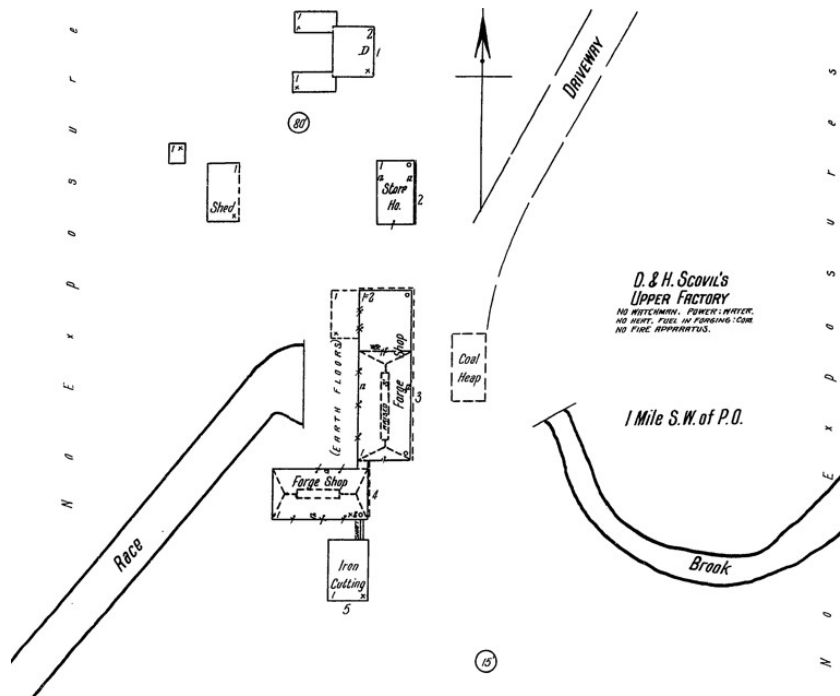


Figure 11. D & H Scovil Upper Factory (Mill #1), 1901 Sanborn Fire Insurance Map from Higganum, Middlesex County, Connecticut.

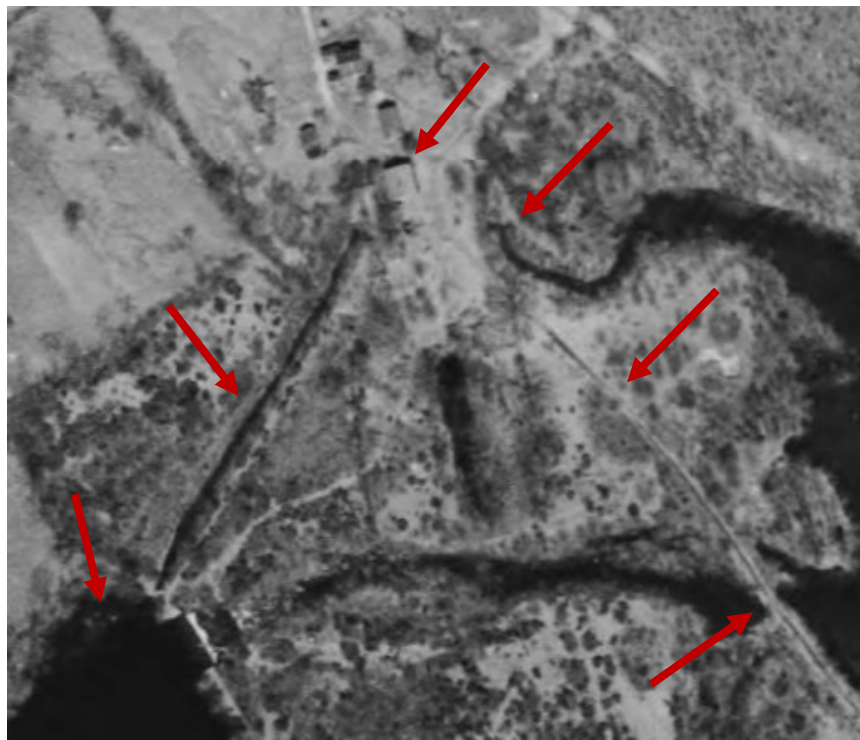


Figure 12. 1934 Aerial survey close up Mill #1. From left: the upper pond, reservoir canal to Mill #1, buildings of Mill #1, tailrace outflow, drive connecting Mill #1 and Mill #2, connection of brook outflow from dam to pond for Mill #2.

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Figure 13. Photograph of dam at upper pond for Mill #1, c.1940. Benham photo album.

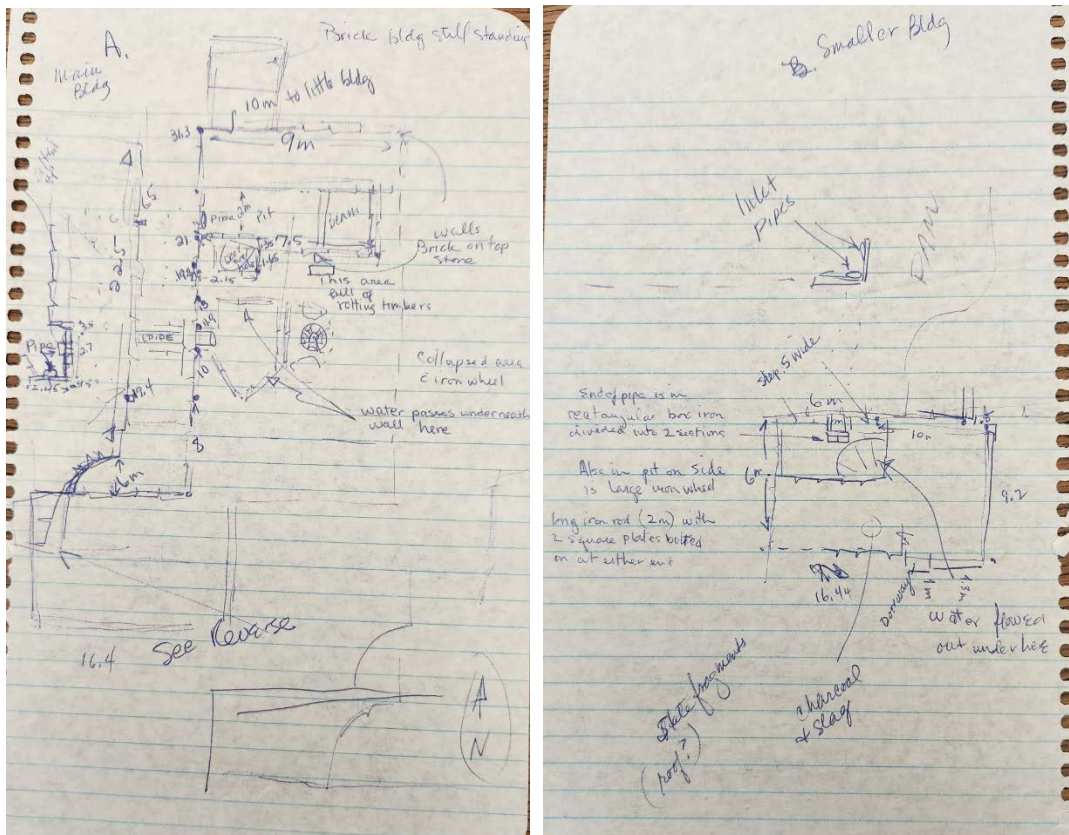


Figure 14a and b. Sketch of reservoir canal dike and large foundation at Mill #1 in 1978 (L); sketch of small foundation at Mill #1 in 1978 (R). Wesleyan Archaeology Labs.

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Mill #2 Bell shop

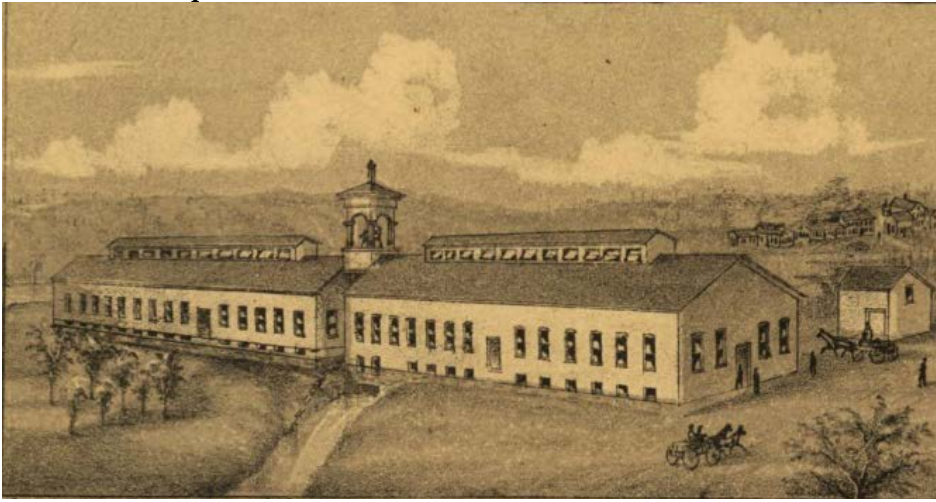


Figure 15. Inset rendering of Mill #2. Bailey's *View of Higganum, Connecticut 1881*.



Figure 16. Undated photograph of workers at Mill #2 (before 1895). Haddam Historical Society.

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Figure 17. Photograph illustration of Mill #2 in *The Middletown Tribune Souvenir Edition*, 1896.

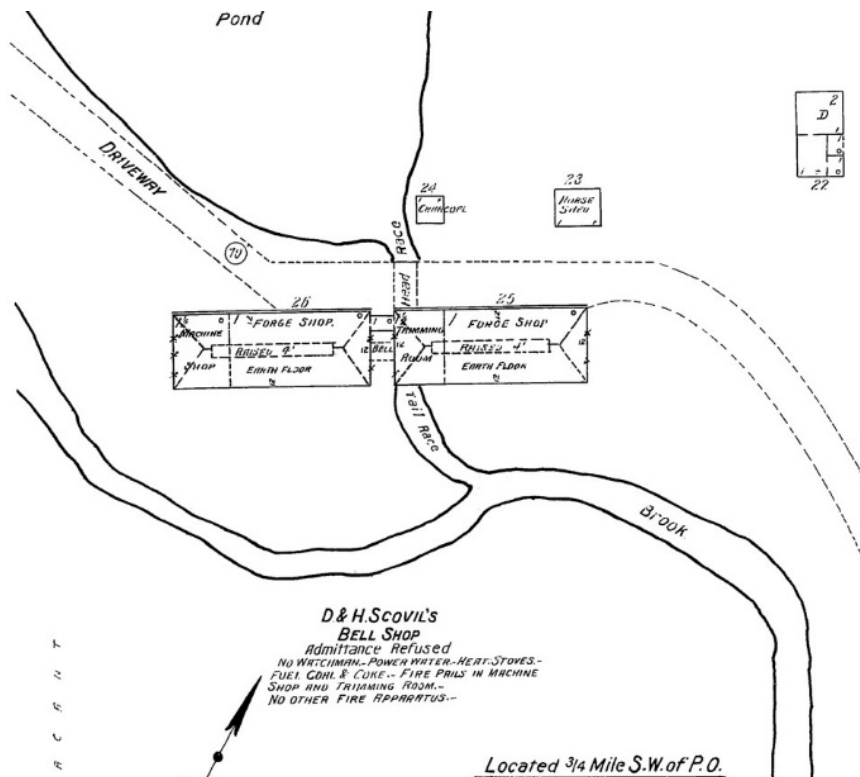


Figure 18. D & H Scovil Bell Shop (Mill #2), 1908 Sanborn Fire Insurance Map from Higganum, Middlesex County, Connecticut.

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Figure 19. 1934 Aerial Survey close-up, Mill #2. From left: waste gate and return to brook; factory buildings (it appears that demolition of the eastern part of the eastern block may already have occurred); tail race; brook entering dam for Mill #3.



Figure 20. Photograph of north elevation of Mill #2, after demolition of most of eastern block, c.1935-40. Benham photo album.

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Mill #3 Grinding mill

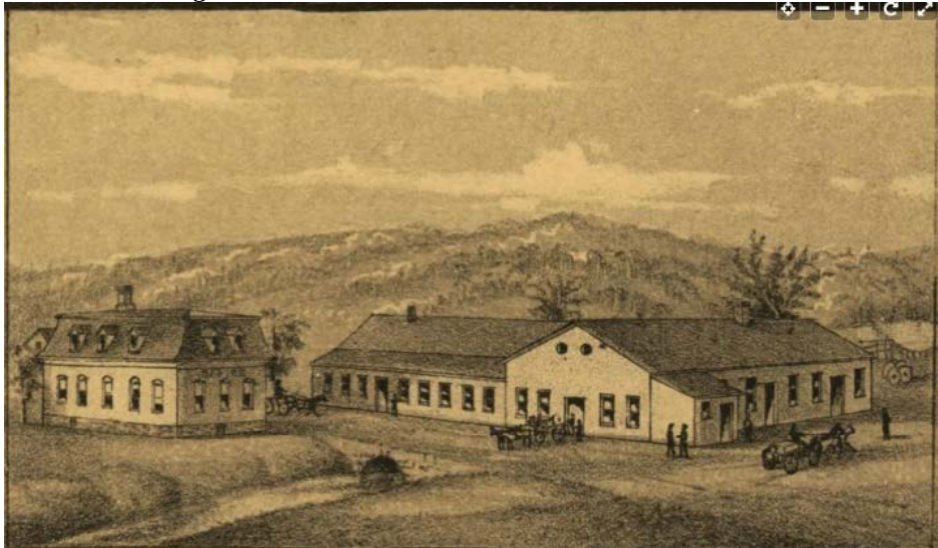


Figure 21. Inset rendering of Mill #3. Bailey's *View of Higganum, Connecticut 1881*.

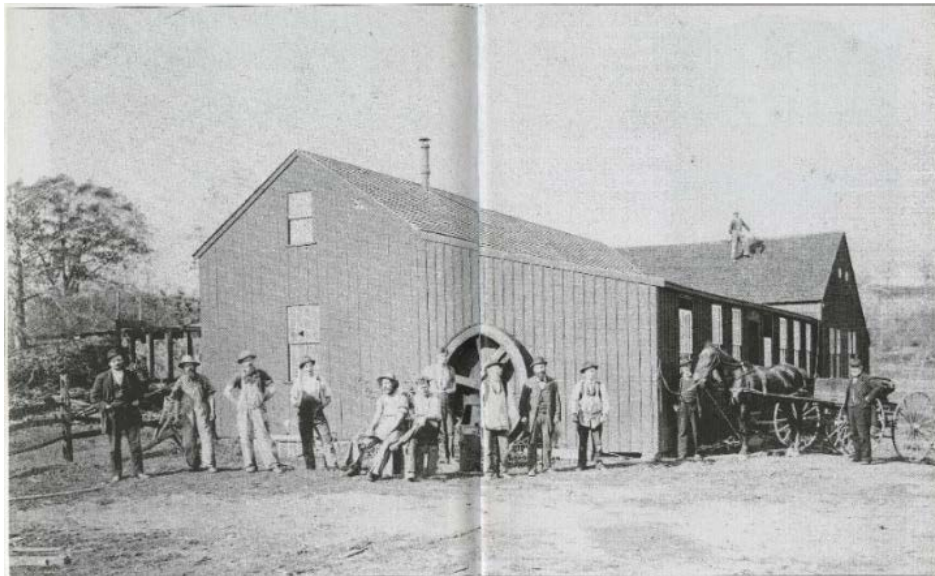


Figure 22. Photograph of Mill #3 c.1881; these buildings were all replaced over time. *Haddam 1870-1930, Images of America Series*.

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Figure 23. Photograph illustration of Mill #3 in *The Middletown Tribune Souvenir Edition*, 1896. The gable end block with shed roof addition at forefront of c.1881 image is in the center of the complex in this image.



Figure 24. Photograph illustration of Office/Storage building in *The Middletown Tribune Souvenir Edition*, 1896.

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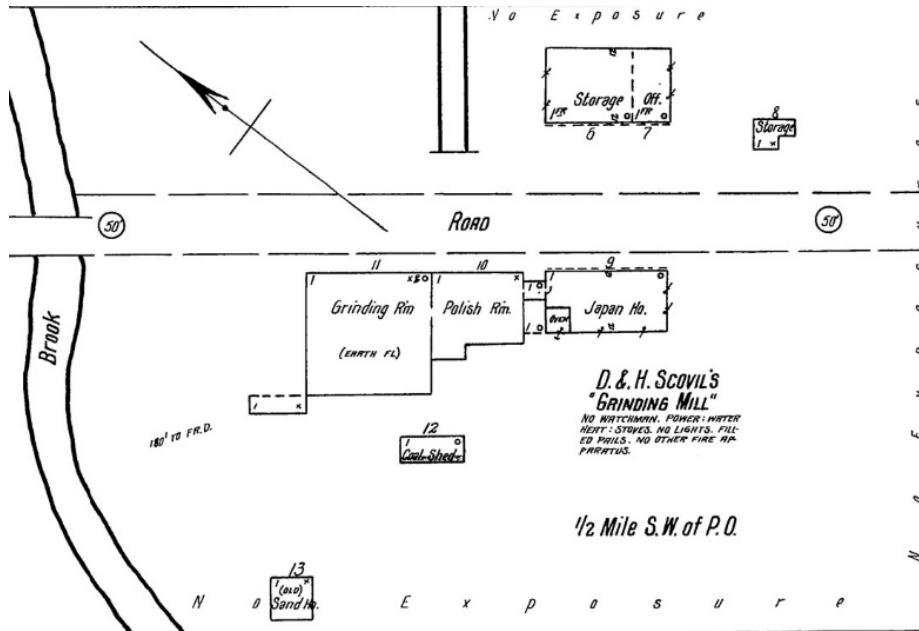


Figure 25. D & H Scovil Grinding Mill (#3), 1901 Sanborn Fire Insurance Map from Higganum, Middlesex County, Connecticut.

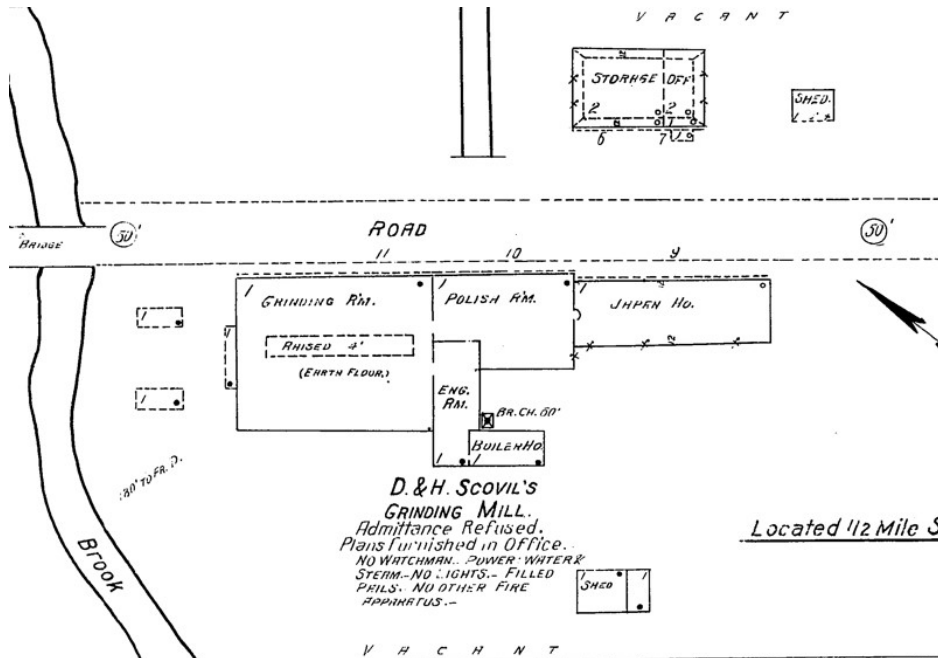


Figure 26. D & H Scovil Grinding Mill (#3), 1908 Sanborn Fire Insurance Map from Higganum, Middlesex County, Connecticut.

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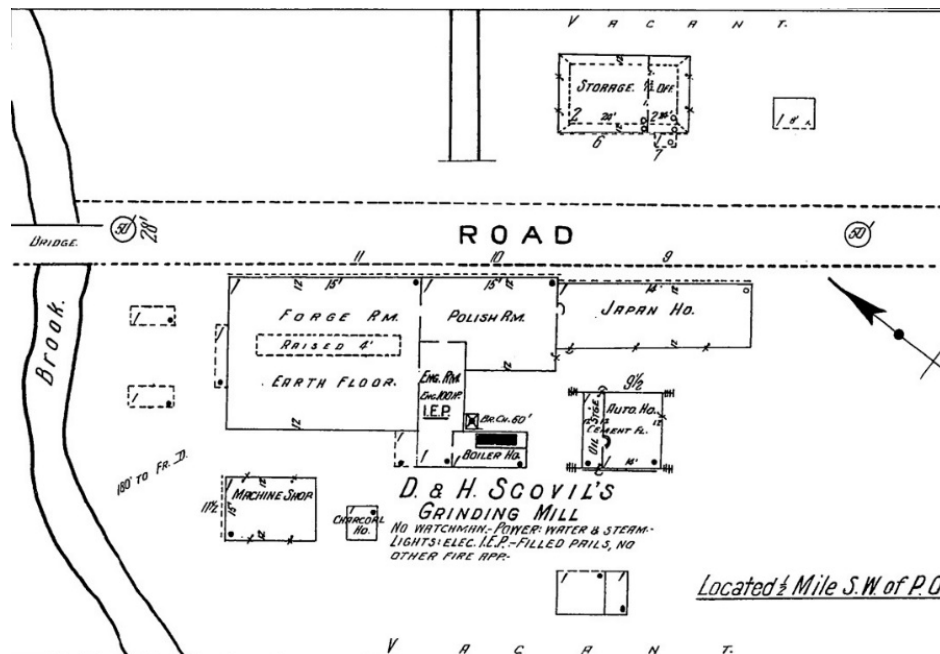


Figure 27. D & H Scovil Grinding Mill (#3), 1914 Sanborn Fire Insurance Map from Higganum, Middlesex County, Connecticut.

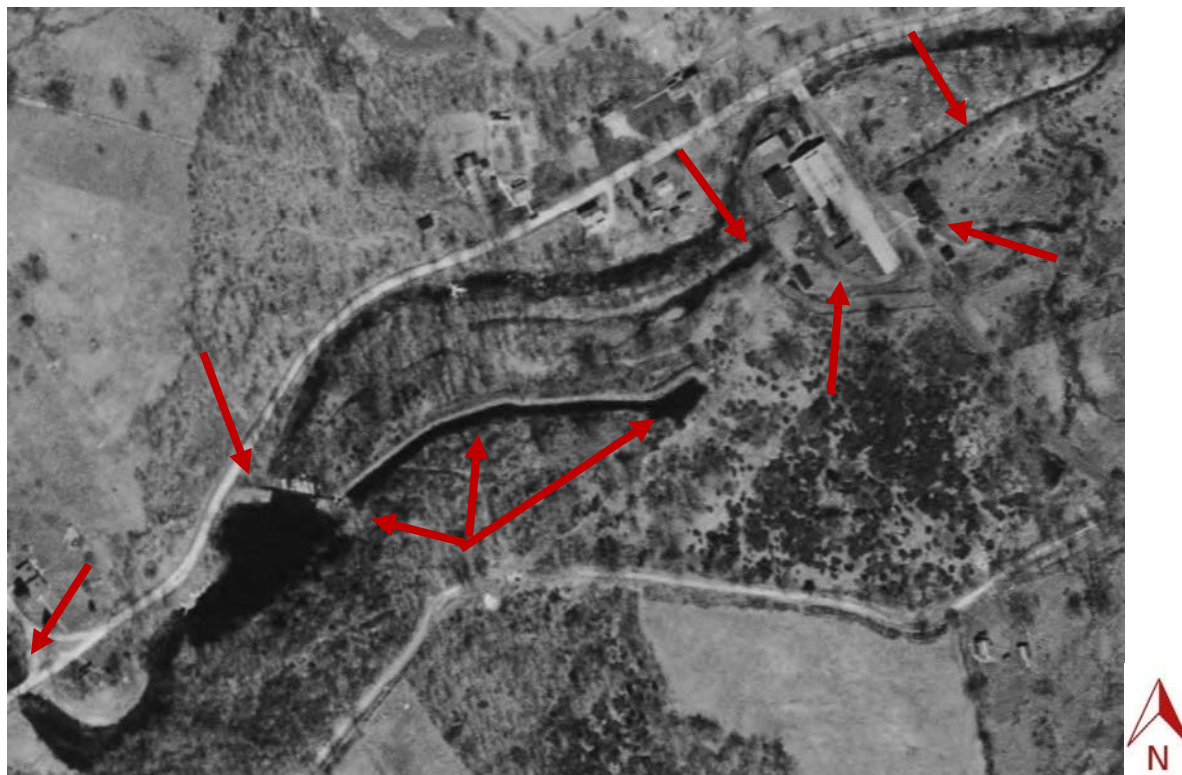


Figure 28. 1934 Aerial Survey close-up Mill #3 and office. From left: brook entering pond from Mill #2; dam; infrastructure of reservoir canal; head race entering engine block; Mill #3 complex; office/storage building; tail race.

D & H Scovil Industrial District
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Figure 29. 1965 Aerial Survey close-up, Mill #3. Note new Route 9 at upper right corner.



Figure 30 a & b. a. Interior of Polish Room showing the metal truss system in c.1905 extension. b. belt and pulley system in forge block. Photographs taken by Ronald Denmam c.2005 after purchase Mill #3 and the Office/Storage properties.

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Mill #4 Lower factory



Figure 31. D & H Scovil inset of Mill #4 site (prior to Scovil purchase) in *Beers County atlas of Middlesex, Connecticut, from actual surveys, 1874.*



Figure 32. Inset rendering of Mill #4. *Bailey's View of Higganum, Connecticut 1881.*

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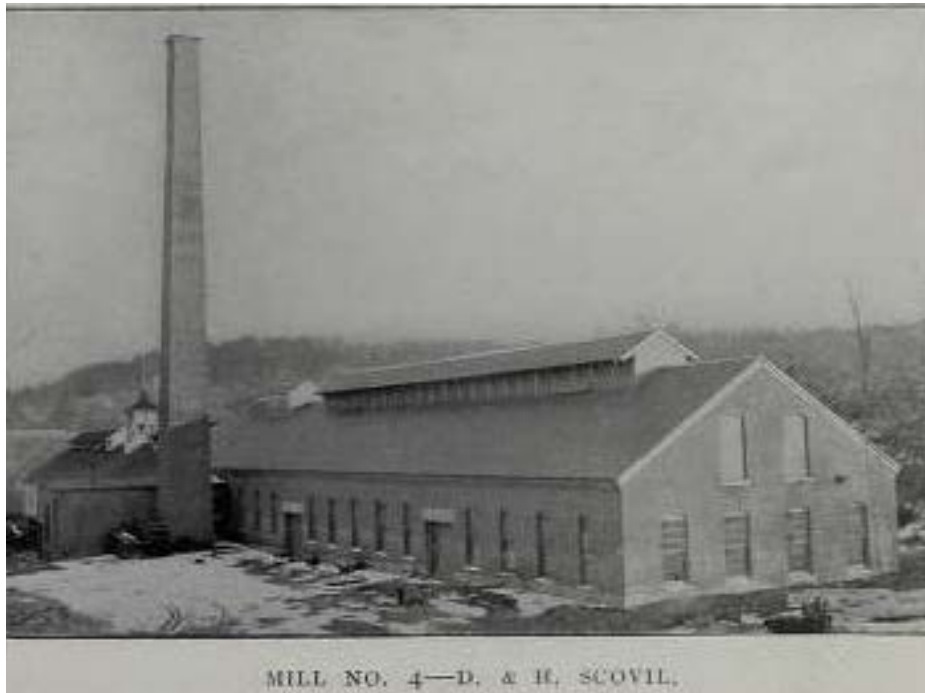


Figure 33. Mill 4 c.1889 block, and end of spar mill, c1895 Middletown Souvenir Edition

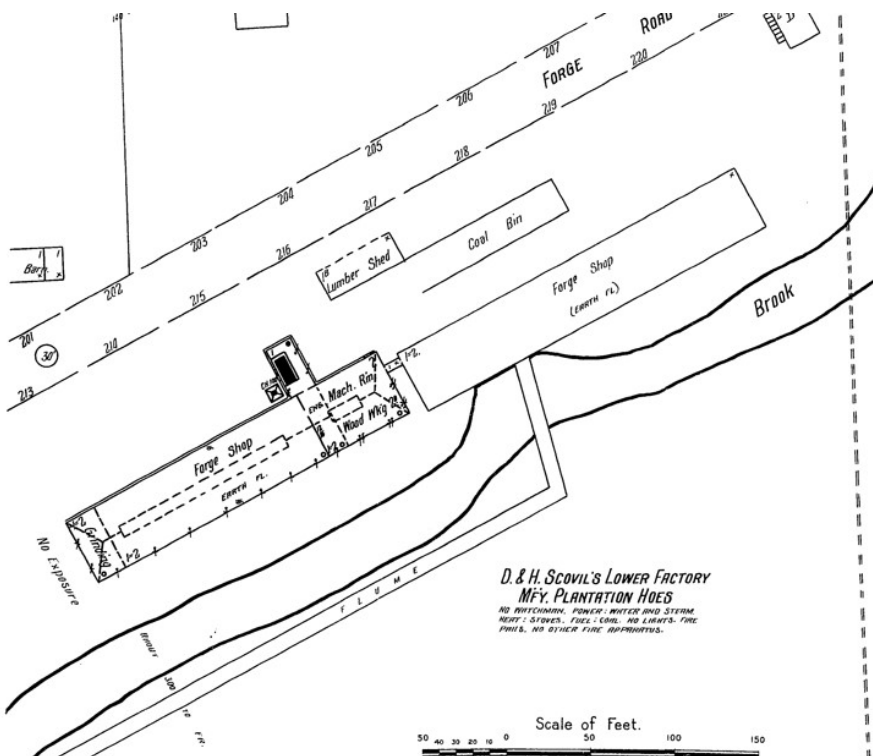


Figure 34. D & H Scovil Lower Factory (#4), 1901 Sanborn Fire Insurance Map from Higganum, Middlesex County, Connecticut.

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Name of Property

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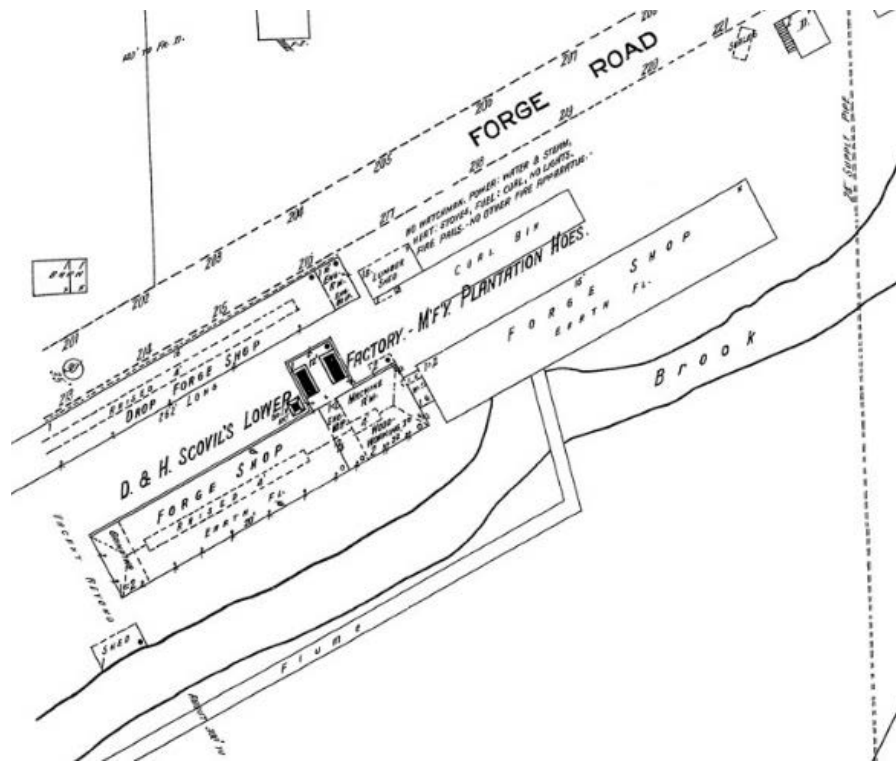


Figure 35. D & H Scovil Lower Factory (#4), 1914 Sanborn Fire Insurance Map from Higganum, Middlesex County, Connecticut.



Figure 36. Undated photograph of workers at c.1905 block of Mill #4. Haddam Historical Society.

D & H Scovil Industrial District
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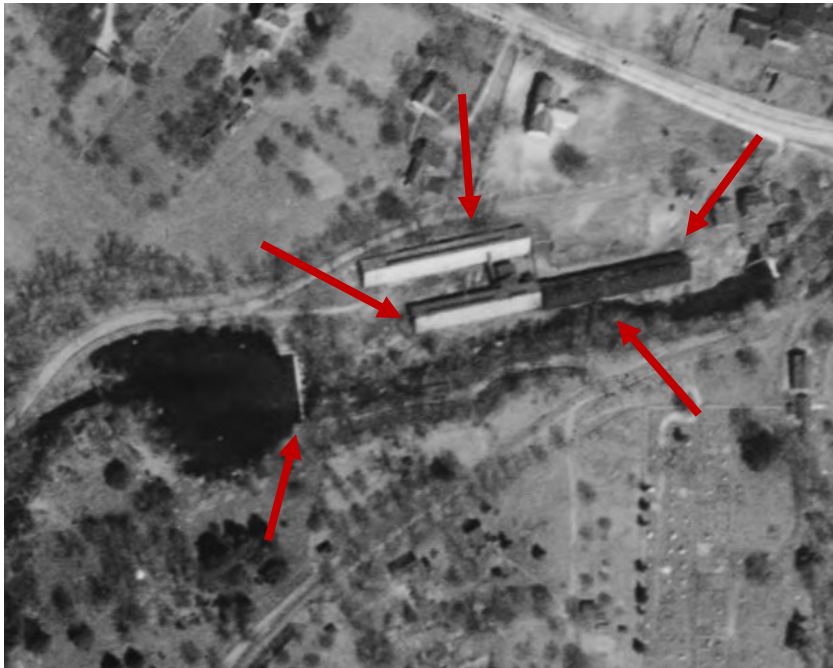


Figure 37. 1934 Aerial Survey close-up, Mill #4. From left: dam; c.1889 Scovil forge building; c.1905 Scovil forge building; flume crossing back over brook; former 1886 spar mill building.



Figure 38. 1965 Aerial Survey close-up, Mill #4.

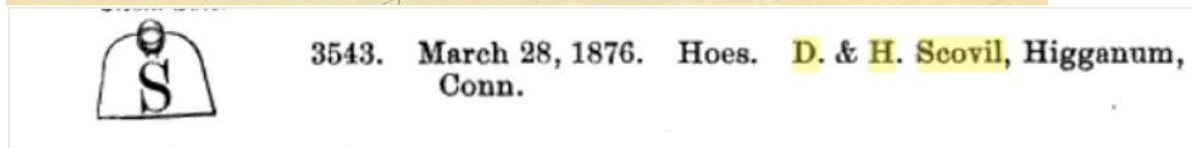
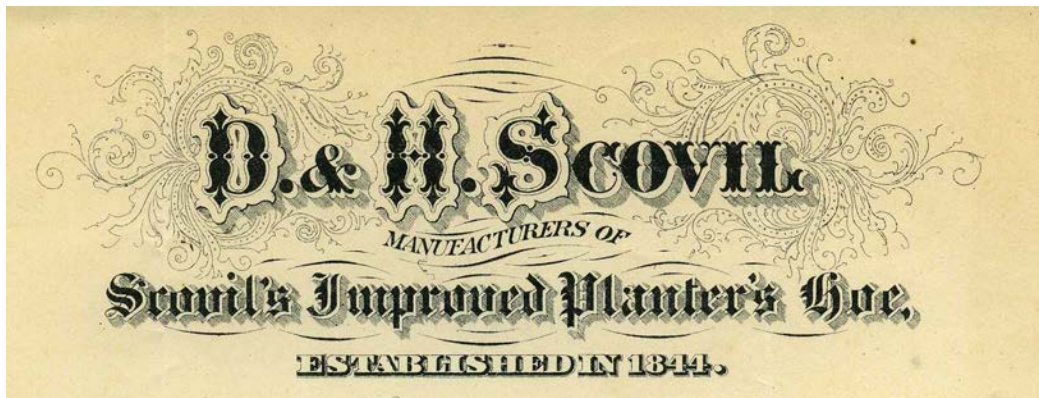
D & H Scovil Industrial District
Name of Property

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EPHEMERA



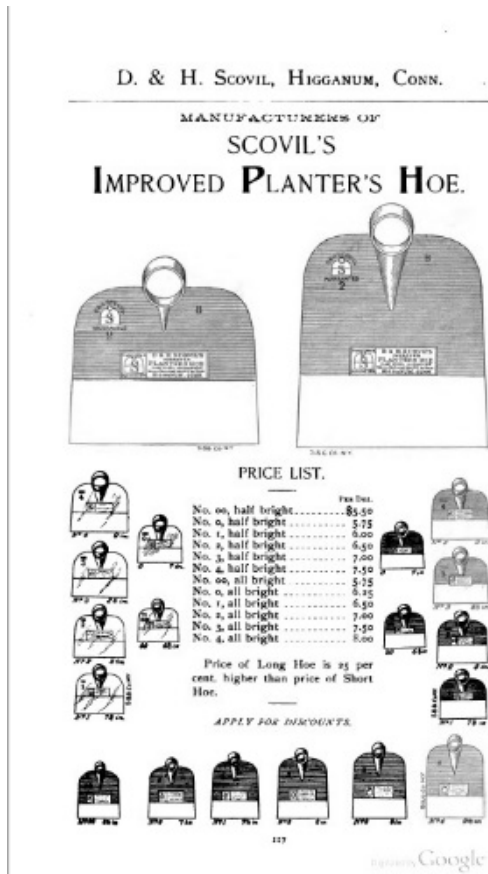
Figure 39. Undated D & H Scovil sign; photograph courtesy Haddam Historical Society. Note that the sign painters, Preston & Kenyon, operated from Hartford c.1875 to at least 1930.



Figures 40a and b. Top is a 19th c label from Haddam Historical Society collection; bottom is a listing from Bartlett's 1893 *Digest of Trade-Marks for Machines*.

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(L) Figure 41. 1890 product line and price list from *Seeger and Guernsey's Cyclopaedia of the Manufactures and Products of the United States*, second edition (1890).

(R) Figure 42. 1900 D & H Scovil advertisement: "Beware of "Scovil Patterns," so called."

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 Name of Property

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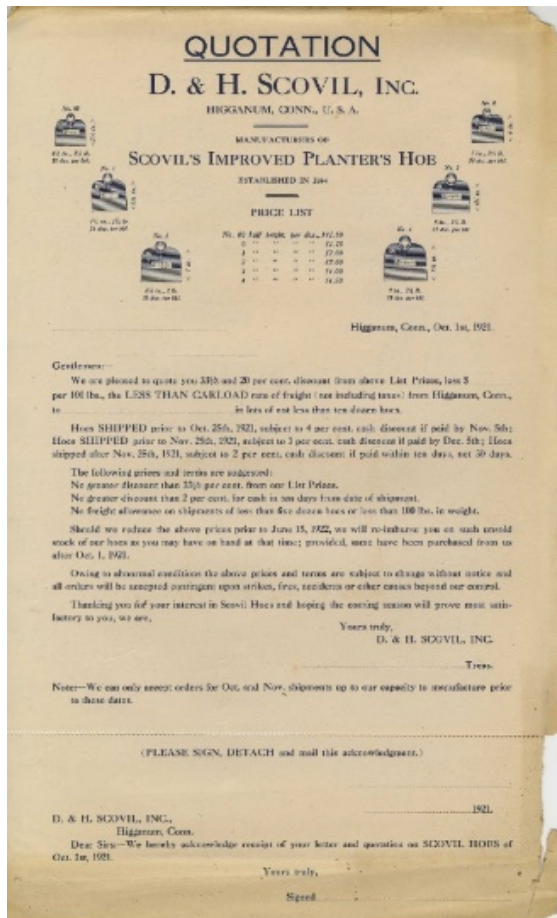


Figure 43. 1921 D & H Scovil product line & price list, Haddam Historical Society.



Figure 44. Cover (L) and inside copy (R) of 1934 fold-over marketing piece, Haddam Historical Society. By this time, Scovil hoed are now made entirely of steel and so advertised.

D & H Scovil Industrial District
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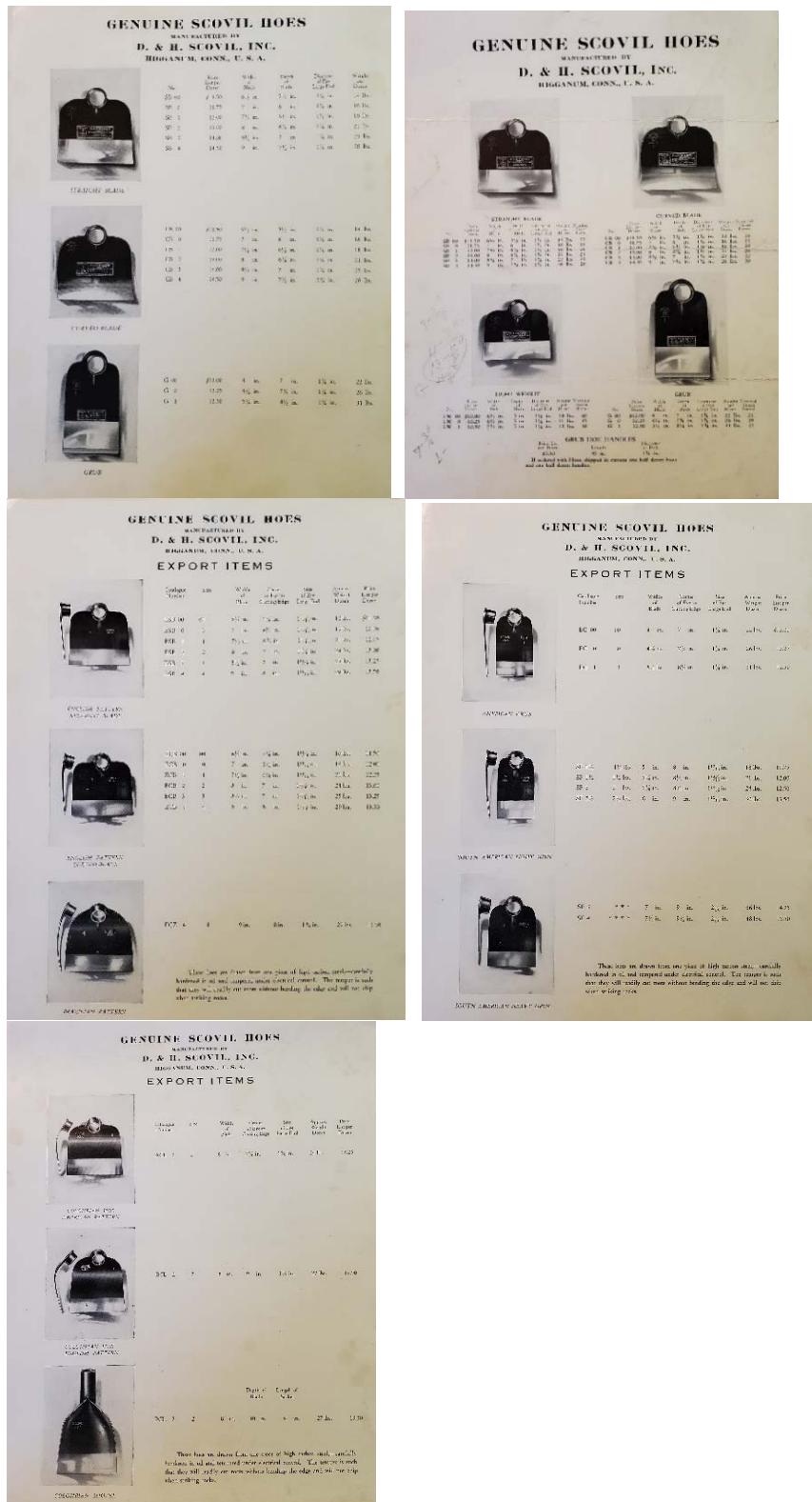
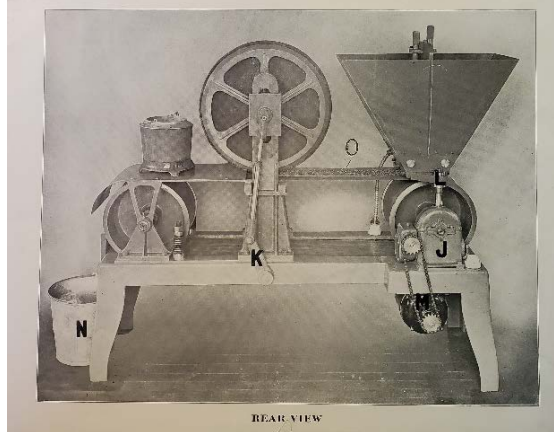
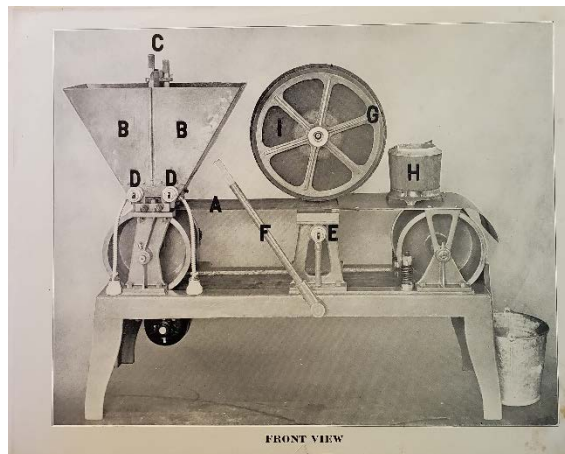
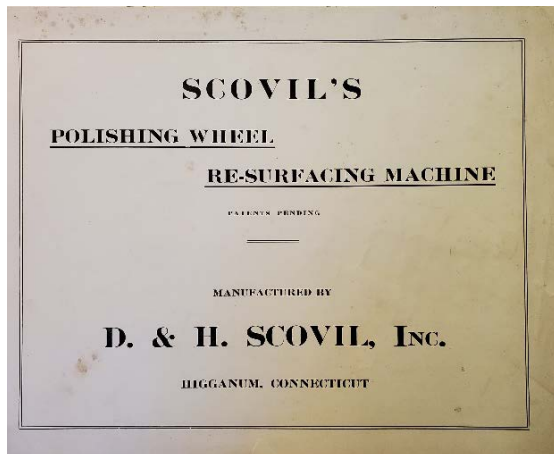


Figure 45. (5 sheets) c.1940 Product line and price sheets for the US and export markets, Haddam Historical Society.

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DESCRIPTION OF MACHINE

<p>FRONT VIEW</p> <p>A. 8 in. steel cover for belt. B. Tanks to hold abrasive. C. Valves to cut off flow of abrasive to belt. D. Abrasive feeder switches. E. Motor starting switch. F. Hand lever to lift wheel free of belt. G. Clamp clamps to hold side wheels to original width. H. Electric glue pot (not furnished). I. Polishing wheel (20 in. x 3 in. thickness).</p>	<p>REAR VIEW</p> <p>J. Reduction gear. K. Filing jack with adjustment for different size wheels. L. Adjustment for regulating thickness of abrasive delivered to belt. M. 1/2 H.P. driving motor. N. Receptacle to catch excess abrasive which is returned to tank. O. Abrasive stream.</p>
---	---

Floor Space 20 in. x 36 in. Shipping Weight 800 lbs.

WHAT THE MACHINE WILL DO

Produce wheels with feet true to axis.
 Machine soft wheels to original width.
 Save Abrasive
 Save Glue
 Save Labor
 Produce wheels of longer life.

This machine should be of especial interest to users of automatic polishing machinery and plants where a large number of wheels of same size are being used. The machine will handle wheels from twelve inches to twenty-four inches in diameter and up to one inch thick, and will set up either soft or hard wheels, the clamps not being necessary in the case of hard wheels.

The machine was developed some three years ago for setting up wheels to be used for polishing the Hoosier manufactures, and was such an improvement and saving over the old method of setting the wheels that we decided to put the machine on the market.

PRICE \$150.00
 F. O. B. HIGGANUM

D. & H. SCOVIL, INC.
 MANUFACTURERS OF
 Scovil's Improved Planter's Hoe

Figure 46. Undated pamphlet for D & H Scovil Polishing Wheel, Re-Surfacing Machine c.1935, Haddam Historical Society. Made to improve internal production, it was then marketed and sold.

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Figure 47. Undated D & H Scovil hoe label, mid 20th c, courtesy Ronald Denman.



Figure 48. Photograph of sample hoe collection, courtesy Haddam Historical Society.

D & H Scovil Industrial District
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Photographs

Submit clear and descriptive photographs. The size of each image must be 1600x1200 pixels (minimum), 3000x2000 preferred, at 300 ppi (pixels per inch) or larger. Key all photographs to the sketch map. Each photograph must be numbered and that number must correspond to the photograph number on the photo log. For simplicity, the name of the photographer, photo date, etc. may be listed once on the photograph log and doesn't need to be labeled on every photograph.

Photo Log

Name of Property: D & H Scovil Industrial District

City or Vicinity: Haddam

County: Middlesex

State: CT

Photographer: Renee Tribert

Date Photographed: November 2023

Description of Photograph(s) and number, include description of view indicating direction of camera:

1 of 109 (see attached photo sheets)

D & H Scovil Industrial District
Name of Property

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PHOTO KEYS

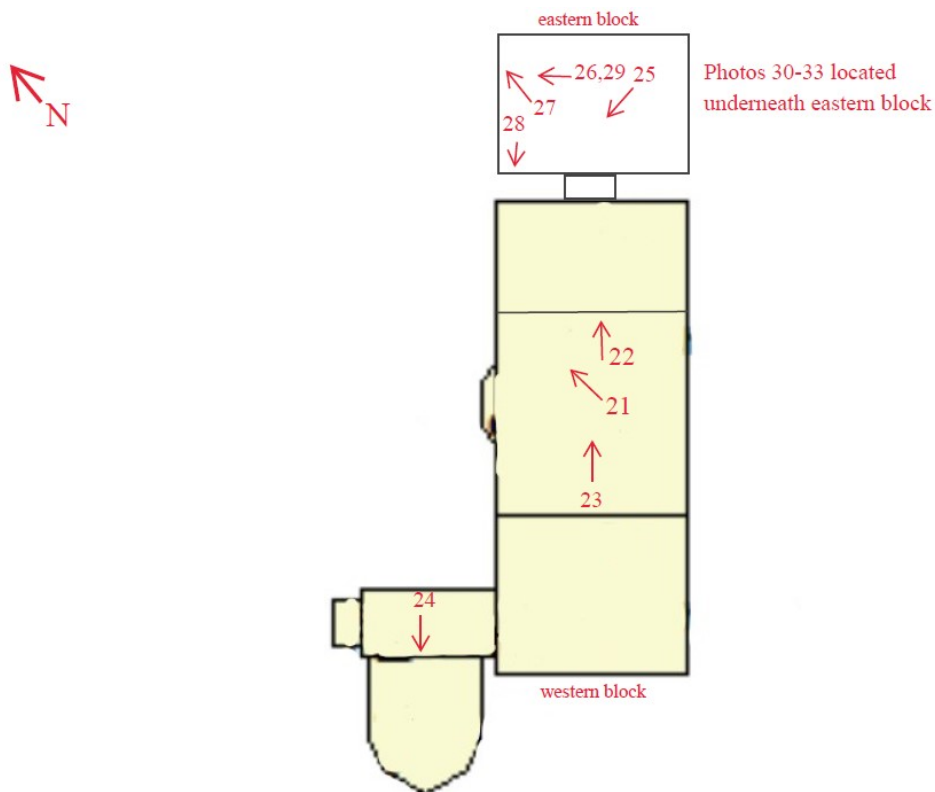
Mill #1/Upper factory site



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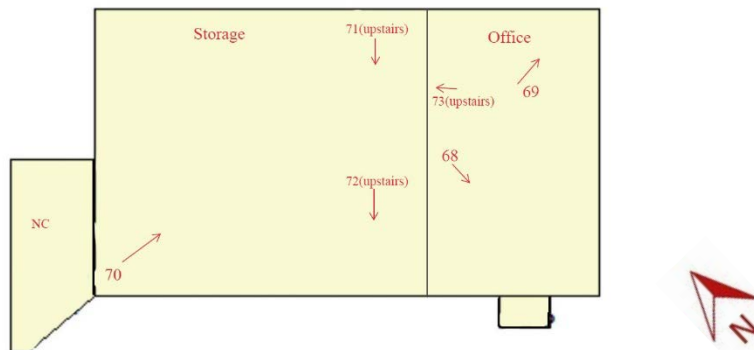
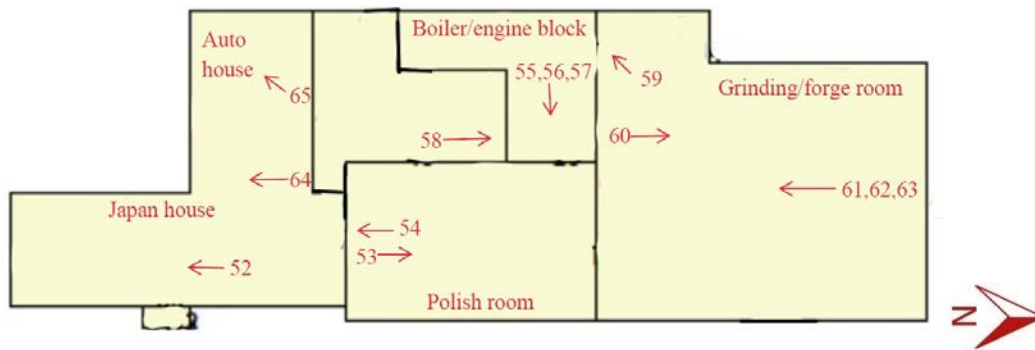
Mill #2/Bell factory site



D & H Scovil Industrial District
Name of Property

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Mill #3/Grinding mill site



Mill #4/Lower factory site

D & H Scovil Industrial District
 Name of Property

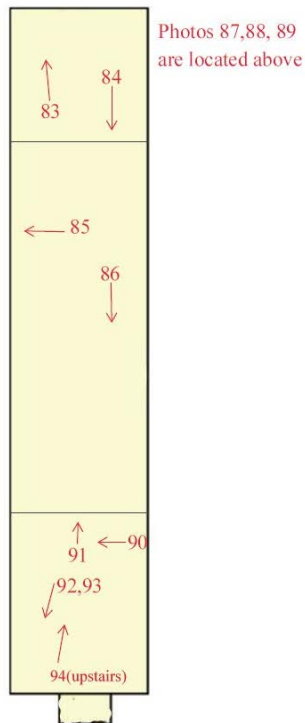
Middlesex County, CT
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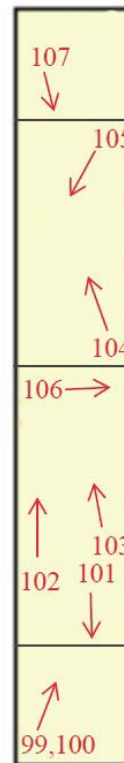
c.1889 Forge Shop

c.1905 Drop Forge Building

N →



N →



Photos 108 & 109 are located above

D & H Scovil Industrial District
Name of Property

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Paperwork Reduction Act Statement: This information is being collected for nominations to the National Register of Historic Places to nominate properties for listing or determine eligibility for listing, to list properties, and to amend existing listings. Response to this request is required to obtain a benefit in accordance with the National Historic Preservation Act, as amended (16 U.S.C.460 et seq.). We may not conduct or sponsor and you are not required to respond to a collection of information unless it displays a currently valid OMB control number.

Estimated Burden Statement: Public reporting burden for each response using this form is estimated to be between the Tier 1 and Tier 4 levels with the estimate of the time for each tier as follows:

- Tier 1 – 60-100 hours
- Tier 2 – 120 hours
- Tier 3 – 230 hours
- Tier 4 – 280 hours

The above estimates include time for reviewing instructions, gathering and maintaining data, and preparing and transmitting nominations. Send comments regarding these estimates or any other aspect of the requirement(s) to the Service Information Collection Clearance Officer, National Park Service, 1201 Oakridge Drive Fort Collins, CO 80525.

HADDAM D&H SCOVIL CO. INDUSTRIAL HISTORIC DISTRICT NOMINATION - photos
2/21/2024

Photographs are presented by mill site. Each section starts with relevant photo keys, followed by exterior photos in order walking around the building or complex, and ending with interior photos.

Mill #1/Upper factory site



Photograph 1 of 109. Looking southwest from canal berm toward dam; canal and headgate at right. The dam wall, though shallow extends northward (to the right) some 60-70 feet; the wall to the south/left was the main face, some 50 feet above the brook bed and approximately 100 feet to the south/southeast. See also Figure 13.



Photograph 2. Close-up of headgate mechanism.



Photograph 3. Looking down head race canal from dam toward forge; camera facing northeast.



Photograph 4. Granite foundation of north/south forge shop; camera facing west toward canal. Flume pipe returns water to the brook.



Photograph 5. Another flume discharge at the south end of the main forge ruins; camera facing west/southwest.



Photograph 6. Granite foundation walls of east/west forge at left and north/south forge at right; camera facing north.



Photograph 7. Flume exiting south wall of north/south forge shop, with a metal diverter possibly allowing water to power a shaft to the east/west forge shop and iron cutting building beyond, or back to the brook; camera facing north/northwest.



Photograph 8. Several of many small grindstones throughout the site used in working iron into hoes; these sit atop the north foundation wall of the north/south forge shop. They were approximately 6 feet in diameter when first used and changed out when reduced to 2-3 feet in diameter.



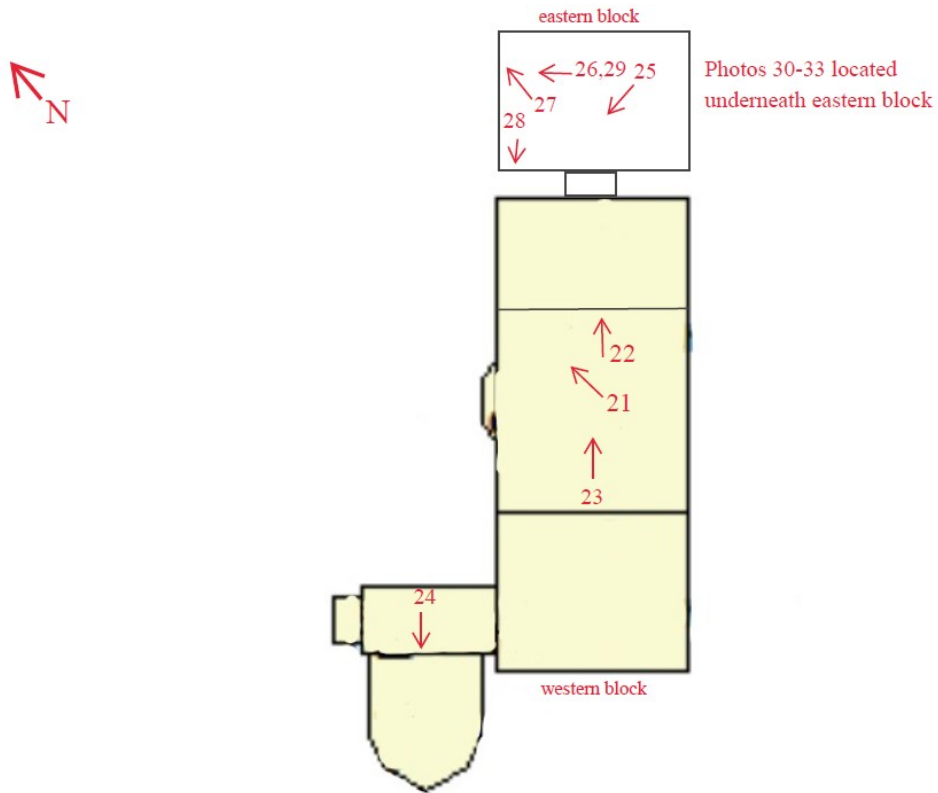
Photographs 9, 10. Elements from building, waterpower infrastructure and processing found above ground at Mill #1.



Photograph 11. Stone header for tailrace/brook beneath drive on east side of mill ruins in background; camera facing west.

Mill #2/Bell factory site





Photograph 12. Bridge over brook water where it connects with the pond; camera facing north.



Photograph 13. View down the drive from the waste gate toward mill #2 in the background; camera facing east.



Photograph 14. Concrete wall section generally corresponds to the location of the former head race intake for the turbine. Granite block retaining wall runs from the pond to the barn, which sits on the granite foundation of a former horse shed.



Photograph 15. East and north elevations, camera facing southwest; ell is located at far end of buildings, and the pond and drive to Mill #1 just beyond right edge of Photograph.



Photograph 16. North and west elevations of eastern block; camera facing east.



Photograph 17. West elevation with chapel addition off ell at left; camera facing northeast.



Photograph 18. South elevation; camera facing northeast.



Photograph 19. Bell tower connection between blocks as seen on south elevation.



Photograph 20. South elevation of extant section of east block. Note massive sill, comprised of two pieces of granite, that supports the south wall above the tail race, and the granite walls of tail race channel.



Photograph 21. Interior of center space in western block; note how trusses sits on brick corbels in the load bearing brick walls.



Photograph 22. Truss configuration and plank ceiling originally open to clerestory.



Photograph 23. Newer framing in attic corresponding to removal of clerestory and refinishing as gable roof.



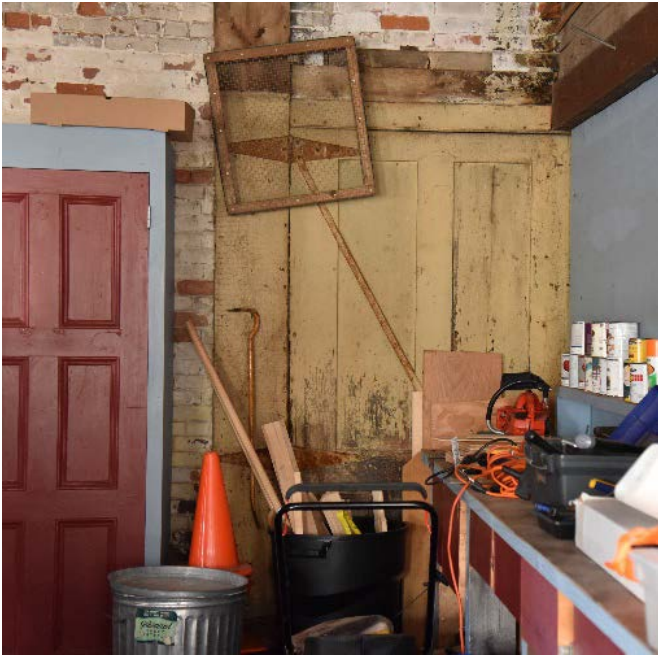
Photograph 24. Interior of chapel addition.



Photograph 25. Interior view of first floor of eastern block; note tin ceiling.



Photograph 26. A vertical bead board stair leads to second level.



Photographs 27, 28. Early doors in north wall (L; red door is a cabinet) and west wall (R).



Photograph 29. Hatch to turbine chamber.



Photograph 30. Remnants of turbine (or steel water wheel).



Photograph 31. Concrete block in north wall closing off head race; note large granite blocks to carry building across head race.

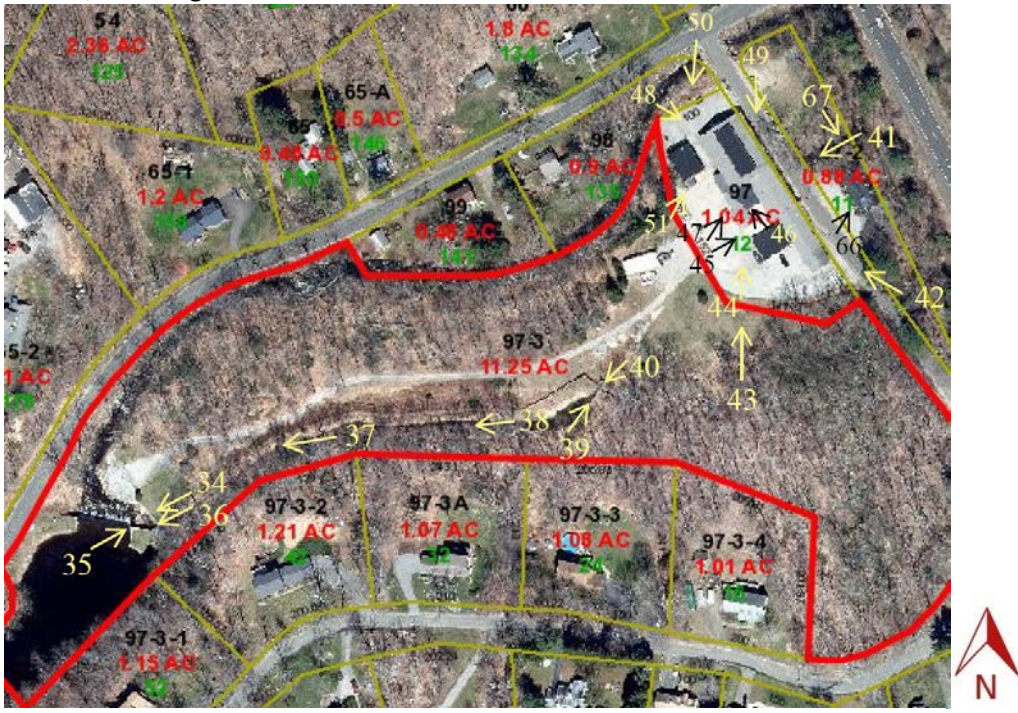


Photograph 32. Flume discharge for water exiting turbine.

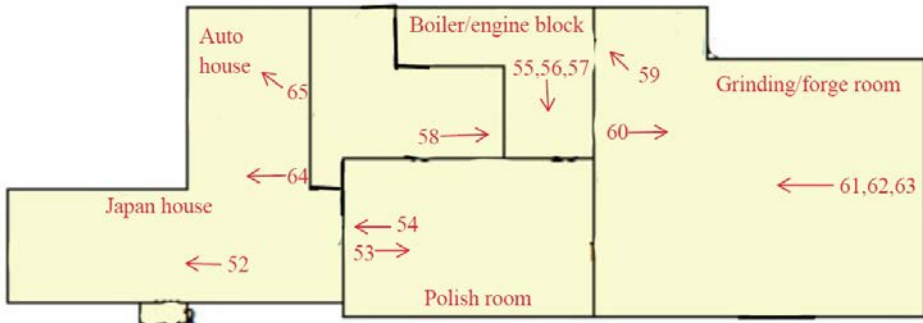


Photograph 33. Bay over turbine chamber and tail race; camera facing south.

Mill #3/Grinding mill site



N →





Photograph 34. Dam at mill pond for Mill #3; camera facing west. The headgate to the canal is to its left. Candlewood Hill Road is on the north (back) side of the pond.



Photographs 35 & 36. Modern headgate for reservoir canal within stone wall structure; camera facing northeast (L), downstream side of headgate; camera facing southwest (R).



Photographs 37 & 38. Two views from berm along reservoir canal: toward dam and pond (L), and further east; camera facing west/southwest.



Photographs 39 & 40. Interior view of reservoir canal stone retaining walls and sluce gate at its east end (L), exterior of reservoir canal stone retaining walls; camera facing southwest (R).



Photograph 41. After passing beneath the engine room, the tail race exits to the east, beneath Scovil Road north of the office, to rejoin the brook which runs along Candlewood Hill Road. A close look shows the bridge wall made partly of used grindstones.

Photographs of the exterior of the complex are in order as one walks around it starting at the southern end.



Photograph 42. South and front/east elevations of Mill #3 complex along Scovil Road; camera facing north/northwest.



Photograph 43. Rear/west elevation of complex; camera facing northeast.



Photograph 44. From left: south elevation of auto house, connector to japan house, west and south elevations of japan house.



Photograph 45. From left: south end of boiler block, south end of polish room, northernmost bay of japan house, north and west elevations of auto house; camera facing east.



Photograph 46. From left: east elevation of engine block, south elevation of boiler block (with modern garage door), with west wall of polish room at R; camera facing north.



Photograph 47. West and south elevations of engine & boiler blocks with concrete block extension at far left; camera facing north/northeast. The architectural features of the boiler block distinguish it as a different construction date than the engine block.



Photograph 48. South and west elevations of grinding/forge room (concrete block extension at right); camera facing south/southeast.



Photograph 49. East elevation of grinding/forge room (R) where it joins the polish room (L); camera facing south.



Photographs 50 & 51. East and north elevations (L; camera facing southwest) and west and south elevations (R; camera facing north) of free standing machine shop.

Interior



Photograph 52. Japan house interior with exposed brick perimeter walls and non-structural partition walls.



Photograph 53. Interior of polish room with partially exposed truss framing and east end of engine block in left background; camera facing north. The framing is built into the engine wall at the far end indicating its construction or expansion postdates the engine block.



Photograph 54. Common wall between the japan house and polish room, taken from inside the latter; camera facing south. Note shadow line of prior building configuration as well as exposed ends of steel truss framing in Japan house.



Photographs 55 & 56. Inside the engine block: partial view of turbine pit and outflow flume toward street (L), and power shaft coming off turbine (R).



Photographs 57 & 58. Belt shaft and pulley system above turbine pit against far (east) wall in engine block, with additional equipment visible in foreground (L); belt shaft emerging from north wall of engine block into polish room (R).



Photograph 59. One of only a couple of extant wood doors, between west end of engine room wall and south wall of grinding/forge room.



Photograph 60. Western side of ground floor of grinding/forge room; camera facing north. Timber frame sits on stones sets in brick bearing wall. Brick columns run down the center of the ground floor to carry the framing load above; non-structural walls between columns separate the eastern half of the space.



Photograph 61. Grinding/forge room, upper level, looking toward south wall. Note hardware for opening clerestory windows for venting.

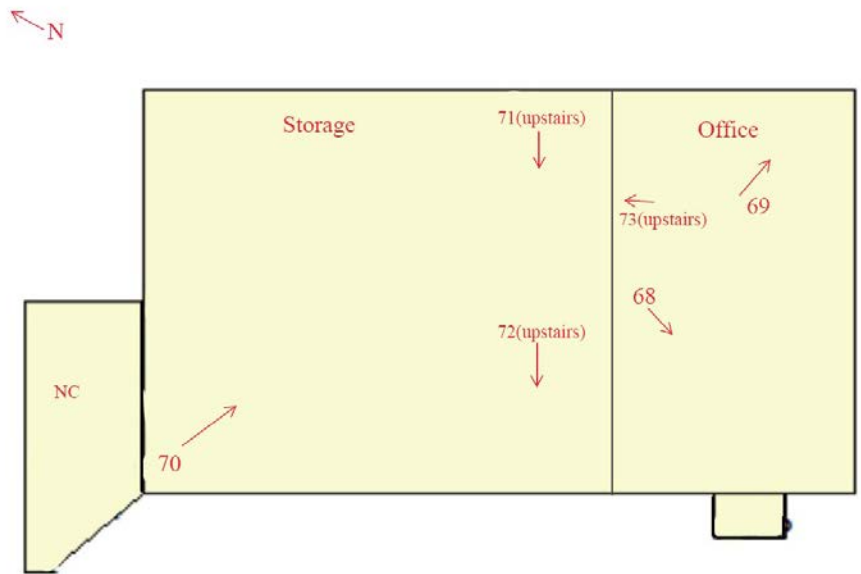


Photographs 62 & 63. Truss detail showing at least two periods of construction, from top, mortise and tenon joints, later toe-nailed supports, and notched joints with tie rods (L); main roof rafters seated on plate atop brick bearing wall with bird's mouth joint (R).



Photographs 64 & 65. Interior of connector between japan house and auto house (L) and of auto house (R). Note steel I-beams.

Office/Storage site
(See Mill #3 photo key for exterior locations)



Photograph 66. West elevation with entrance to storage and loft door at center and office entry at right; camera facing east.



Photograph 67. East/rear and part of south elevation showing granite block foundation; camera facing south. Ground slopes down behind building.



Photographs 68 & 69. Front office room and rear of paneled entry door (L); rear office room.



Photographs 70 & 71. Storage area interior: first floor space with extra timbers for movement of material (L); looking down hatch opening from loft (R).



Photographs 72 & 73. Extant equipment and features for the movement of material in loft (L); writing on south side of brick wall in loft, date about a year after construction: "Al[bert?] P M[illegible]/ 11-1880" (R).

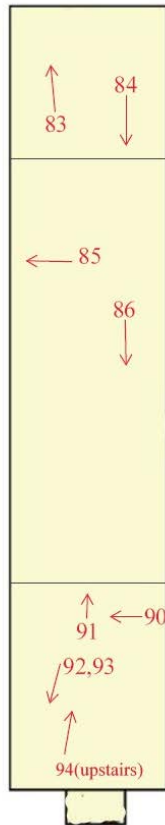
Mill #4/Lower factory site



c.1889 Forge Shop

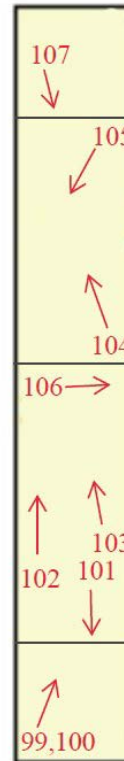
N →

c.1905 Drop Forge Building



Photos 87,88, 89
are located above

N →



Photos 108 & 109
are located above



Photographs 74 & 75. The dam wall visible lower right at (L), and the concrete flume channel across the brook at non-contributing archaeological site at Mill #4.



Photographs 76 & 77. Stone embankment wall on south side of brook where flume traveled (L) and stone pillars that carried the flume across the brook from the south bank to the 1886 mill (R) at non-contributing archaeological site at Mill #4.



Photograph 78. Cut stone retaining wall on mill/north side of brook near flume crossing.



Photograph 79. The two forge buildings between Candlewood Hill Road to the left and the brook to the right; camera facing east from the location of former mill pond.

Forge shop c.1889



Photograph 80. North elevation of c.1889 forge shop, camera facing east.



Photograph 81. East and south elevations of c.1889 forge shop; camera facing southwest. Garage door opens into former engine room.



Photograph 82. West and south elevations of c.1889 forge shop; camera facing east. Openings on south wall, along brook, have not been altered.



Photographs 83 & 84. Open forge shop area at west end; note stair at far wall which provides access to a storage area above the joists. View of non-structural partition wall and plank covered trench or basin looking east from same space (R).



Photographs 85 & 86. Looking toward south wall and early door/door opening (L); interior of central section where area above ceiling joists was closed off in mid-20th century.



Photographs 87 & 88. Upper storage area at west end of building (L); truss and detail of framing sitting in load bearing brick wall (R).



Photograph 89. Monitor framing above upper storage area.



Photographs 90 & 91. Former engine room with elevated concrete floor and firewall at right (L). Detail showing extant monitor framing supported by brick corbels on fire wall (R).



Photograph 92. Ground floor machine room open to engine room and enclosed woodworking room above.



Photograph 93. Floor framing for woodworking room with double tenon joints and closely spaced joists.



Photograph 94. Woodworking room looking toward firewall; section of newer roof framing at the ridge line is in place of former monitor.

Drop forge c.1905



Photograph 95. South and east elevations of drop forge building; camera facing northwest. Fenestration on east wall is unchanged.



Photograph 96. North elevation of drop forge building; camera facing southwest. Openings on north wall, against Candlewood Hill Road embankment, have not been altered.



Photograph 97. West and south elevation of drop forge building.



Photograph 98. Door and window openings on north elevation; camera facing east.



Photographs 99 & 100. Fireplace in office space (L); office wall and ceiling panel treatment visible above mid-20th century drop ceiling (R).



Photograph 101. Brick firewall separating office space from workspace and non-structural partition walls in eastern end of building; camera facing east.



Photographs 102 & 103. Open workspace adjacent to office: camera facing west (L) with another brick firewall in background, and camera facing east (R) with non-structural mid-20th century wall creating added office space at east end adjacent to office. Ceiling has same treatment as office.



Photographs 104 & 105. Center open workspace between brick firewalls: camera facing west with brick chimney base against west wall (L), and camera facing east with heavy lift track on timber framing of upper level (L). Ceiling here is wood plank.



Photographs 106 & 107. Exterior door on north wall (L), and one of three metal clad sliding fire doors on brick firewalls in workspace areas.



Photographs 108 & 109. Truss system and brick fire wall in background (L), and monitor truss (R).



Photograph 110. Metal artifacts found in November 4, 2023, judgmental test pit at Mill #1 archaeological site.



Photograph 111. Dam ruins of non-contributing archaeological site at Mill #3; camera facing north.



Photograph 112. Wheel pit or chamber at non-contributing archaeological site at Mill #3; camera facing west.

End of Photographs.