Determination of Eligibility (DOE)
NH Division of Historical Resources

Date received:	1/23/06, 2/1/06	Inventory #:	WND0001
Date of group review:	1/25/06, 2/8/06	Area:	--
DHR staff:	Beth / Edna	Town/City:	Windham
Property name:	London Bridge Road Causeway	County:	Rockingham
Address:	London Bridge Road		
Reviewed for:	[X]R&C [ ]PTI [ ]NR [ ]SR [ ]Survey ACOE / Windham High School Project		

Individual Properties

NR	SR
[x]	[x]Eligible
[ ]	[ ]Eligible, also in district
[ ]	[ ]Eligible, only in district
[ ]	[ ]Not eligible
[ ]	[ ]More information needed
[ ]	[ ]Not evaluated for individual eligibility

Districts

NR	SR
[ ]	[ ]Eligible
[ ]	[ ]Not eligible
[ ]	[ ]More information needed
[x]	[x]Not evaluated @ district

Integrity: [X]Location [X]Design [X]Setting [X]Materials [X]Workmanship [X]Feeling [X]Association

Criteria: [x]A. Event [ ]B. Person [x]C. Architecture [x]D. Archaeology [ ]E. Exception

Level: [ ]Local [x]State [ ]National

STATEMENT OF SIGNIFICANCE:

1/25/06 – Although this form is a starting point for evaluating whether the London Bridge is eligible for the National Register, additional information is needed before an informed determination can be made. It has not been shown how the bridge is associated with a significant historical context in an important way or whether it embodies the distinctive characteristics of a type, period or method of construction or represents the work of a master. Outside of an unusual reference to the "gut that must be bridged" in town records, little is known about the bridge's history. Its size and longevity suggest that its construction was well-planned and seriously executed, despite a lack of written records as to its purposes or uses. Historic contexts under which the bridge should be more fully evaluated include early settlement patterns and the nature and extent of early road building in Windham and dry-laid stone construction in general from this period. Comparable analysis is needed, accompanied by images. Information from the heritage commission's survey of other stone structures in town may be helpful, as well as information already forwarded from the NHDHR. In addition to town histories, the county history may provide biographical records on Deacon William Gregg, Joseph Clyde or the Buttrick family, as well as information on the area's geology and geography and the origins of the name "Gold Region" (and whether it relates to Golden Brook or to an early important historical event or resource).

Also, the bridge and its setting must be more completely described and photographed (with 35 mm black and white film, accompanied by a photo key). Splitting or drilling marks should be considered again. The remaining road bed and surrounding vegetation and land and water forms should be described. Also, please clarify which tax parcel applies to this resource (questions 28 and 29). As needed, an eligible boundary should be mapped and justified, based on the resource's significance.

2/8/06 – Additional information submitted by the consultant more firmly establishes the importance of London Bridge Road Causeway within the contexts of early transportation and dry laid stone construction in road building and for "raised land walls," both in Windham and throughout the state. This proliferation, beginning in the 1770s, was due to many reasons, including the growing scarcity of easily harvested wood, the availability of stone, and the ability of established towns and residents to construct more permanent improvements. Despite the permanence of well-engineering stone structures, vast numbers have been updated or demolished to meet the changing transportation needs. Structures such as this one – along abandoned sections of the pre-automobile

road network – have the potential to retain the most historic integrity. Their ability to withstand centuries of weather and use is fortunate; few written records or plans remain to document their design and construction. Only their physical survival illustrates how, when and why they were built. The design of this structure, although only partially visible, underscores the importance of London Bridge Road in Windham's early road network, despite the later significance of other roads such as the Londonderry Turnpike or Mammoth Road. The causeway is eligible for its significance in history, engineering, and for its potential to yield important information about the construction of these types of structures. For example, archeological testing could verify John Wastrom's hypothesis regarding the structure's footings (page 10).

☒ **ENTERED INTO DATABASE**

ACREAGE:	.06+- acres
PERIOD OF SIGNIFICANCE:	c.1799 – NR's fifty year cut-off
AREA OF SIGNIFICANCE:	transportation, engineering, community planning and development
BOUNDARY:	footprint of the structure and approach road, approximately 100'x25'
SURVEYOR:	Preservation Company
FOLLOW-UP:	Notify surveyor and agencies of eligibility, with appreciation for the additional information.

Final DOE approved by: EJC Murphy

FEB 27 2006 (page 1 update)

Rec'd 2/1/06 (form)

INDIVIDUAL INVENTORY FORM **NHDHR INVENTORY NUMBER:** WND0001

Name, Location, Ownership

1. Historic name: London Bridge Road Causeway
2. District or area: ---
3. Street and number: London Bridge Road (abandoned)
4. City or town: Windham
5. County: Rockingham
6. Current owner: Town of Windham

Function or Use

7. Current use(s): (abandoned) Transportation – road related
8. Historic use(s): Transportation – road related

Architectural Information

9. Style: none
10. Architect/builder: Unknown
11. Source: N/A
12. Construction date: ca. 1799/1812
13. Source: Research
14. Alterations, with dates: road abandoned, ca. 1935
15. Moved? no ☒ yes ☐ date: N/A

Exterior Features

16. Foundation: granite
17. Cladding: N/A
18. Roof material: N/A
19. Chimney material: N/A
20. Type of roof: N/A
21. Chimney location: N/A
22. Number of stories: N/A
23. Entry location: N/A
24. Windows: N/A

    Replacement? no ☐ yes ☐ date: N/A

Site Features

25. Setting: forest, rural abandoned road
26. Outbuildings: none
27. Landscape features: woods, wetlands

Photo 1 Direction: NW

This photo is digital, courtesy of IAC (Black and white photos were submitted as Addendum pages A1-A8; see Methods Statement, page 3)

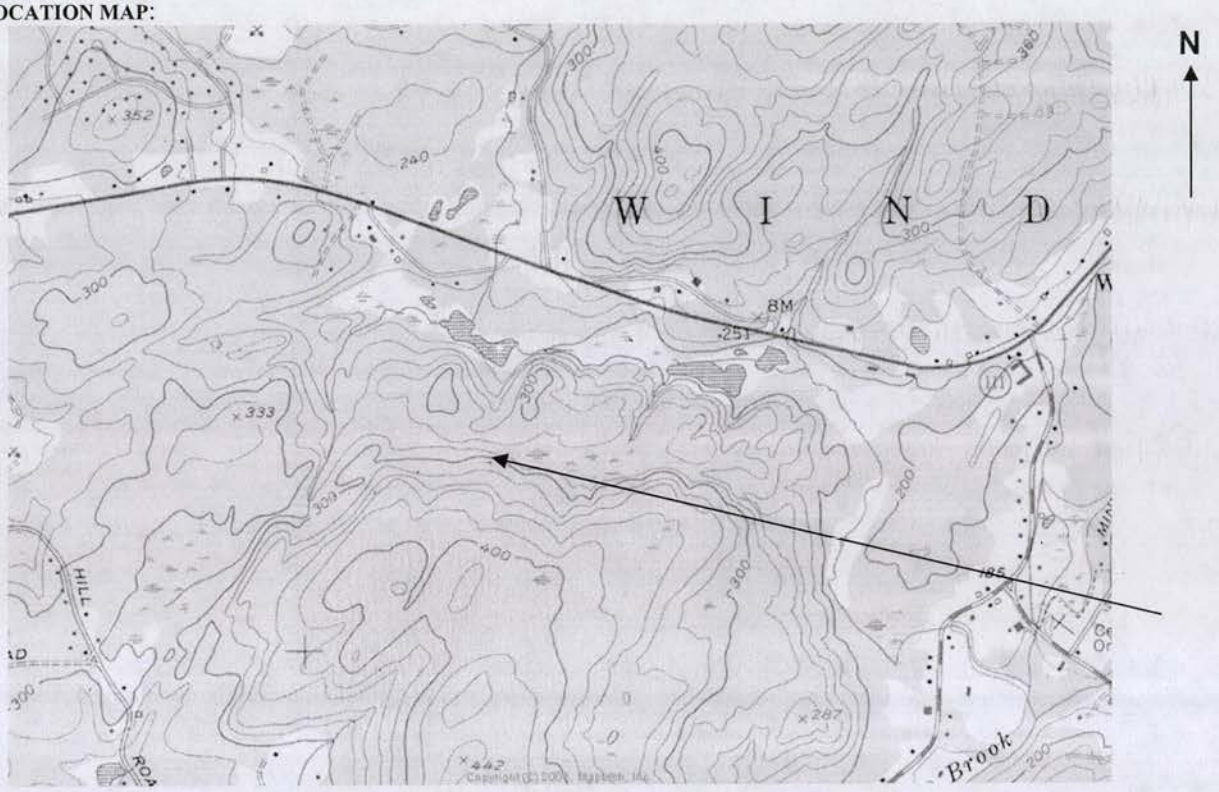
28. Acreages: less than one acre
29. Tax map/parcels: 14-B/2200 and 20-D/1500 (flanking parcels)
30. UTM reference: 19.309790.4740760
31. USGS quadrangle and scale: Windham, 1:24000

Form prepared by

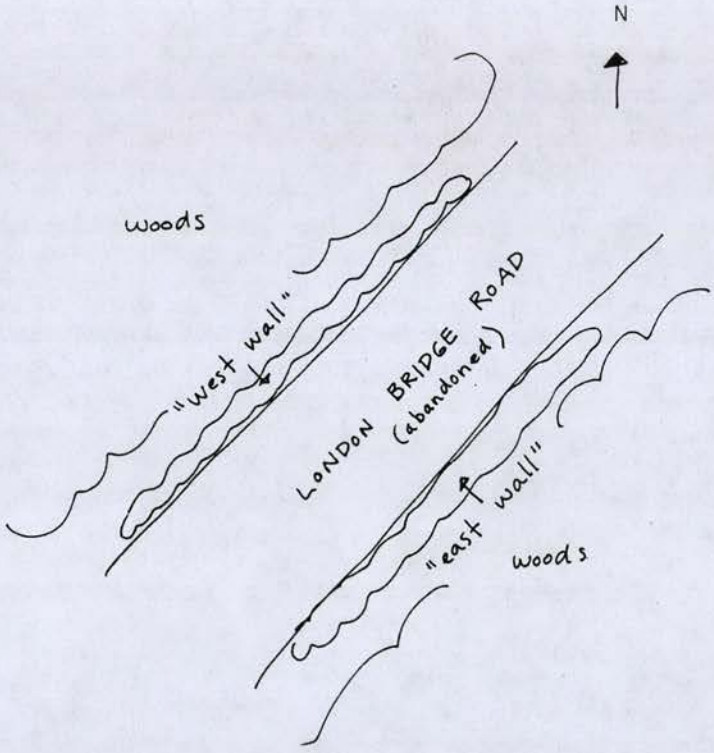
32. Name: Kerry Davis, Lynne Emerson Monroe, Kari Ann Laprey
33. Organization: Preservation Company
34. Date of survey: January 2006

NH STATE PLANE NAD 83 (FT)
X= 1,075,487 Y= 108,713

39. LOCATION MAP:



40. PROPERTY MAP:



Methods

This form was prepared by Preservation Company for Appledore Engineering at the request of the Town of Windham. It is required for compliance with the guidelines of Section 106 of the National Historic Preservation Act of 1966, to determine the National Register eligibility of any historical resources that may be impacted by a qualifying project. The resource in this case is an eighteenth-to-nineteenth century granite rubble causeway, which is to be demolished for the construction of the new road to the campus of the new Windham High School.

Preservation Company visited the site on January 26, 2006. The structure was documented with both digital and black-and-white photography. The digital images are included in this submission; the black-and-white prints will be submitted on continuation sheets upon completion of processing.

In addition, this form uses the field data collected by Independent Archaeological consulting (IAC) on September 1, 2005. Their digital photos have been reproduced on the attached photo sheets. The IAC report has been submitted to NHDHR as part of the review process and should be available to augment this survey form.

Research was conducted at the New Hampshire Historical Society, New Hampshire State Library, New Hampshire State Archives, University of New Hampshire Library, and the Town of Windham. Dr. James Garvin was consulted and directed the research. The earliest available town reports are from 1862. Brad Dinsmore, Windham historian, offered guidance on comparable properties and local research.

Location

The London Bridge Road Causeway is located on the abandoned northern section of what is currently known as London Bridge Road in the southwestern quadrant of the Town of Windham. The London Bridge Causeway carries London Bridge Road across a marshy gully that is part of the Golden Brook drainage. This roadway travels northeast from a sharp bend in Castle Hill Road, departing just east of the former intersection of Heritage Hill Road (formerly Johnny Hill Road), and ends at NH Route 111, halfway between Meetinghouse Road and Lowell Road.

(annotated 1880 map with London Bridge Road locations)

Although the roadway described above is currently known as London Bridge Road, the historical record suggests that the original London Bridge Road traveled northeast from the intersection of Schoolhouse Road and Castle Hill Road, and ended at today's NH Route 111. The southern half of today's London Bridge Road was constructed to meet the original London Bridge Road; the northeast half of today's London Bridge Road is part of the original London Bridge Road.

Meaning? Causeway on northern section

The original roadway was unusually straight for the southwestern two-thirds of its distance until it traveled over the Golden Brook drainage, where the London Bridge Road Causeway was built. The original section of London Bridge Road was abandoned at some point around 1900; by 1953, only the existing section of London Bridge Road was still in use.

41. Historical Background and Role in the Town or City's Development:

Dry Laid Stone Construction

Dry laid stone has been a prevalent form of construction in New England and North America for centuries. Native Americans were building dry stone structures prior to European settlement, while seventeenth-century colonists brought with them ancient stone-building skills and techniques (Murray-Wooley 2001:28). Scottish and Irish immigrants especially drew upon a long history of stone building and were known for their structures. Since the town of Windham was settled by primarily Scottish and, later, Irish immigrants, it is conceivable that many were highly skilled in masonry and dry-laid stone construction.

Dry-laid stone structures are typically extremely sturdy. The absence of mortar does not negatively impact the stability or strength of well-laid masonry – instead, it is the compaction of the stone under gravity, within a general state of compressive stress, which assures that a wall remains steadfast (Heyman 1995:12). Mortar adds rigidity and can actually introduce a multitude of weaknesses, whereas a dry-laid wall will flex to accommodate the movement of the soil it sits upon (Thorson 2002:103).

Causeways, like fences and other rural structures, were traditionally constructed of wood. By the late eighteenth century however, a shortage of lumber (due to overclearing of land), the prohibitive cost of repeatedly replacing wooden structures, and a natural abundance of stone led to the proliferation of stone walls and structures in the region (Thorson 2002:103). That the Windham causeway is a stone structure is in keeping with this development.

The bulk of New England's ubiquitous stone walls are thought to have been built between 1775 and 1825 (Gardner 2001:10). The majority of dry laid stone walls, in rural New England especially, however, are thigh high: men working without any equipment were limited in how high they could lift and place boulders into a wall (Thorson 2002:160). The significant height of the London Bridge Road Causeway speaks to the extensive labor, ingenuity and engineering that went into it. Its size and load-bearing capacity also speak to its intended use. Dry-laid stone "is remarkably durable…withstands fire, water, decay and insects" and even seismic activity (Murray-Wooley 2001:32). While the specific load-bearing capacity of the causeway has not been calculated, the compressive strength of stone is virtually unlimited (Heyman 1995:14). Under ideal conditions, the London Bridge causeway would have been capable of withstanding the heaviest loads. In fact, nineteenth-century dry stone bridges still in use today are capable of "supporting weights unimagined when they were built" (Murray-Wooley 2001:30).

Structure History

The London Bridge Road Causeway was built in the late eighteenth or early nineteenth century on a local road connecting the developing town center with points south and west. The origin of the name London Bridge Road has not been identified. It was known as such by the writing of the town history ca. 1880. At that time, the term London Bridge was apparently used to refer to the causeway structure (Morrison 1883:162).

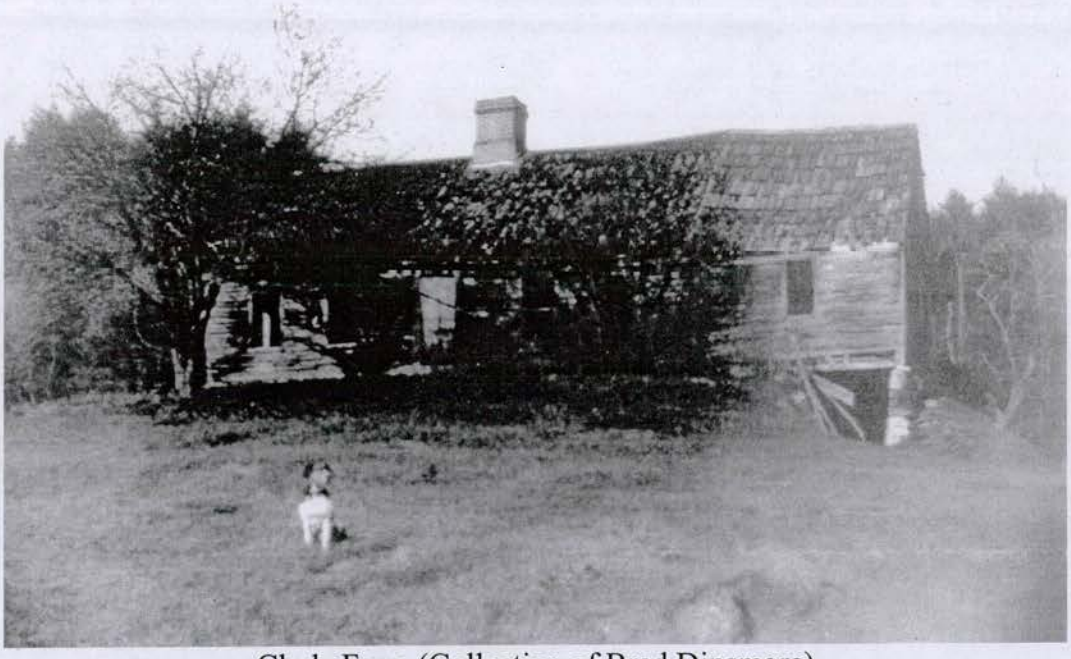
Windham was historically an agricultural community with several small mill sites on the numerous streams and ponds. Settlement patterns consisted of large farms located on the major roads. The town is hilly with large areas of hills and wetlands remaining sparsely settled. Windham was settled in the early 1700s by Scotch-Irish immigrants. It was originally part of the large town of Londonderry, set off as a separate town in 1741. The earliest center of settlement in Windham was southeast of Cobbett's Pond, which became the site of the first meetinghouse and cemetery. Early roads ran on either side of Cobbett's Pond including Range Road and Lowell Road. Mid-eighteenth

century roads (now Johnny Hill Road and Castle Hill Road) also connected to Beaver Brook where mills were located, and paralleled Beaver Brook and the western Windham town line. The first sawmill in town was built by Henry Campbell ca. 1750 on Beaver Brook in what became West Windham. Just over the town line in North Pelham was Butler's gristmill. This was located on Beaver Brook at a natural stone dam with a wooden plank dam on top. The adjacent area in Windham was known as the Stone Dam neighborhood.

In 1798 a new Meetinghouse was built in a central location, which would become Windham's town center. The east-west road, now NH Route 111, became an important route through the region. Taverns and blacksmith shops were located along it.

New roads were built to connect outlying farms to the town center. The road that became known as London Bridge Road was laid out by the Town December 16, 1799. It was described as

> "leading from Deacon William Gregg's (Wellington Russell in 1883) running easterly by an old road to where two roads meet, then by marked trees to a rock by the side of a gut that must be bridged (stated as London Bridge locality in 1883 history); then by marked trees to where there has been an old coal-pit; then through Mr. Joseph Clyde's pasture, crossing a small brook, at an old ford, and out at the north of said Clyde's house."



Clyde Farm (Collection of Brad Dinsmore)

Initially the road was to be three rods wide (Morrison 1883:163). The width was later reduced to two rods. This road (two rods wide) from William Gregg's to Joseph Clyde's was accepted by vote of the Town on October 27, 1800 (Morrison 1883:163). Another road, which forms the surviving southern end of London Bridge Road was laid out October 15, 1800, "leading from Lt. David Gregg's (Charles E. Buttrick's in 1883) to the road leading by Deacon William Gregg's to Joseph Clyde's." It was two rods wide (Morrison 1883:163). Each of these were leading men in Windham – Lt. David Gregg was a Revolutionary War veteran and justice of the peace, Deacon William Gregg was a church deacon and selectman, and Joseph Clyde was a constable.

A bridge or causeway was apparently built over the "gut" when the road was constructed. Causeways or "causeys" were described in Jeremy Belknap's 1792 *History of New Hampshire*. These were usually low structures providing support for roadways that crossed bogs or swamps. They were typically made of felled trees pinned together to make cribs, with the cells filled with rocks to sink the structure. The entire structure was then covered with earth or gravel as a wearing surface (Garvin 2005). Fieldstone causeways were more commonly built by farmers to fill gullies on private land (Garvin 2005). The 1880s history discusses road making of the late eighteenth century saying only the worst obstructions were cleared and the wash-outs filled with rocks, making a rough uneven surface. The marsh places were covered with logs, forming a corduroy road (Morrison 1883:166). The construction of a massive stone causeway to fill the gully, with retaining walls similar to the wing walls of bridge abutments suggests the road-builders intended the road to be used for freighting heavy loads, which draft animals would have difficulty drawing up the slopes (Garvin 2005).

It is not known where exactly the granite for the London Bridge Road Causeway came from. The size and shape, as well as the absence of tooling marks, on the stones contained within the structure indicates that they are glacially deposited granite boulders, rather than quarried stone. The fact that the Windham quarry, which supplied granite for the Manchester-Lawrence Railroad, did not begin operating until the 1840s, much later than the causeway was purportedly constructed, further supports the notion that the stone was harvested or collected from the surrounding landscape. The largest boulders may have been split where they lay and then hauled to the causeway site by wagon or sled.

The existing stone structure may be the second on the site. By 1812, London Bridge had been out of repair for some time. The matter was brought before the Town in several annual meetings and on November 2, 1812, it was voted to build a second bridge. However, it was voted not to raise money for the purpose (Morrison 1883:164). Whether the term London Bridge was used in the original documents or applied by the late nineteenth century historian has not been identified.

The first decades of the nineteenth century were a period of rapid population growth in Windham, with a nineteenth century peak of around 1,000 people in 1830. At the time, important regional north-south roads passed through Windham, initially with the Londonderry Turnpike of 1806 which ran through the eastern edge of town. During this time, traffic between Windham and the Lowell increased, with many Windham men employed to construct the dam and canals and many women working in the mills (Dinsmore 2006). In 1831, Mammoth Road was built from Hooksett to Lowell, Massachusetts, passing through Londonderry along the western edge of Windham through the village at Butler's Mills (Morrison 1883:165).

London Bridge Road was a local connector road between the town center and the south and west areas of town. It connected to the nearby mill village in Pelham and to roads through the southern and western parts of town, and to Mammoth Road and traffic to Lowell. It does not appear to have ever been a major through-road, however the substantial construction of the causeway suggests significant traffic, possibly freight or for hauling for lumber to the nearby mills.

There were other stone structures built in Windham during the same period. The Simpson causeway was located across Simpson's Pond near the mills on the southern edge of town. Remains of several stone dams survive at historic mill sites, such as Seavey's Mill dam and others on Flat Rock Brook (see Comparables Discussion). Stone bridges and culverts include the old stone bridge over Flat Rock Brook, and bridges over Collins Brook, Beaver Brook and Golden Brook, and the culvert over Golden Brook in the heart of Windham village (see Comparable Discussion).

SE of LBRd

Simpson's Mill (Collection of Brad Dinsmore)

At the northern end of London Bridge Road was the farm of the Clyde family occupied by several generations. The only home on the southern part of the road was that of the Buttrick family. Asa and Sally Buttrick purchased a farm in West Windham in 1834. It was inherited by their son Charles Edwin Buttrick who was born in 1841 (Morrison 1883:354-355). The reason for labeling of the area adjacent to the road "Gold region" on the 1880 map is unknown; there is no mention in the town history and local historians have no knowledge of its origin.

Windham contains an abundance of granite, which made areas difficult to farm, but provided building material. When the Manchester and Lawrence Railroad was built through the eastern edge of town in the 1840s, a quarry operated from which split granite was procured to building the arched bridge and another bridge in the vicinity. For a short time in the late 1850s this quarry was operated commercially (Morrison 1883:255).

Windham remained a farming community throughout the nineteenth century. There were a few small-scale industries. The mill site at the south end of Cobbett's Pond developed into a mid-nineteenth century mill village. In the town center mills operated for short periods, first a sawmill and later a tannery. Railroads replaced the turnpikes for transporting farm goods to urban markets. The Nashua-Rochester Railroad was built through the northwest part of town in 1872-1874. It intersected with the Massachusetts and Lawrence Railroad at Windham Depot on the north edge of town.

The historic farmhouses at either end of London Bridge Road were still standing in 1892 (Hurd 1892). They were not shown on the USGS map of 1905. The straight section of the original London Bridge road was eliminated during that period, leaving an unimproved road following what is now known as London Bridge Road. This was still shown on the 1941 USGS map (USGS 1941). In 1935, the discontinuing of London Bridge Road was put to a vote by the town. The outcome of the vote was not recorded, but surveyor's records and maps indicate that it was discontinued, in practice if not officially. By 1953, only the short southern end of London Bridge Road remained (USGS 1953).

42. Applicable NHDHR Historic Contexts:

78. Pre-automobile land travel, 1630-1920.
92. Engineering in New Hampshire, 1623-present.

43. Architectural Description and Comparative Evaluation:

Road Description

London Bridge Road is passable by automobile for 0.3 miles from its intersection with Castle Hill Road, where it travels northeast. This section of paved road is sparsely lined with late-twentieth century residential development. The paved road ends at a private driveway, from which the impassable remnant of London Bridge Road departs to the northeast. At this location there are remnants of a long stone foundation of a barn, possible the remnants of the Buttrick's nineteenth century farmstead.

The abandoned section of London Bridge Road is a narrow rocky road flanked by young, mixed forest on each side. The heavily washed out road would only be passable with a high-clearance, four-wheel-drive vehicle. Approximately 0.5 miles along this road, the original, straight section of London Bridge Road intersects at an acute angle from the southwest. Near this intersection, an unimproved path that does not appear on any available map departs to the northeast.

Approximately 0.2 miles from this intersection, the London Bridge Road Causeway carries the road across a gully formed by part of the Golden Brook drainage. The grade of the southern bank of this gully drops sharply approximately 40', while the northern bank is only about 10'-15' high and less steep. The London Bridge Road Causeway provides a sloped connector between the two banks.

London Bridge Road continues past the Causeway to the northeast, dropping in grade as it approaches Golden Brook, which is a wide, marshy waterway. The road is no longer apparent once it enters the marsh. A stone retaining wall and man-made grading are apparent on the north bank of the marsh where the road would have met what is now NH Route 111. Though no other stone road structures were identified along the road, evidence of man-made grading/drainage is apparent at various locations along its length.

Causeway Description

The causeway supports the road locally known as London Bridge Road for approximately 80' across an unnamed gully that is part of the drainage system of Golden Brook. The dirt road between the walls is approximately 20' wide. The east wall is approximately 100' long and 10' high at the highest point; the west wall is approximately 90' long and 9' high at the highest point.

Using the classification taxonomy of the Stone Wall Initiative (http://stonewall.uconn.edu/Classification.htm), the Causeway is a Raised Land Wall, in the same family as jetties, breakwaters, culvert and stone bridge walls. This family of stone structures is identified by paired, parallel stone walls with a raised earthen bed between them.

The causeway's design and dimensions are directly related to the site's distinct topography, which features a steep gully with banks of very different heights; the grade of the southern bank of this gully is significantly higher than the northern bank. As a result, the causeway is a sloping structure that allows a gentle grade across the obstacle. The profile of the structure assembled by IAC indicates that the slopes of the gully are approximately 35°-55°.

The causeway is composed of random sized granite rubble laid irregularly. There is no evidence of quarry marking (drill holes) on any of the individual pieces. The rubble walls are dry-laid to achieve a relatively flush face using the flat side of the individual units, which are possibly split boulders.

There is considerable space between the largest units, some of which has been chinked with smaller stones. Most of the pieces are angular rather than round.

The stonework walls reach a maximum height of approximately 10' above the ground at the general center of the structure, which tapers toward each end, following the contour of the land. There is no culvert or water passage space at the base of the structure. According to John Wastrom, New Hampshire stone mason and conservation specialist, the builders of this causeway must have dug down to provide footing, or else it would have sunk; possibly using crushed stone and cinders to support and displace the weight.

Comparable causeways in southern New Hampshire

There are no other comparable causeways in the Town of Windham. However, there are at least three known comparable causeways in southern New Hampshire. These include the Hackelboro Road Causeway in Canterbury, the County Farm Bridge causeway in Wilton, and the Dearborn Road causeway in Kensington. Photos and maps of comparables begin on page 58.

C1. The Hackelboro Road Causeway is a sloping stone structure of random sized boulders that crosses Burnham Brook in Canterbury. It leads from Hackelboro Road into a field just south of Orchard Road. The history of this causeway is unknown; its method of construction suggests a late-eighteenth to early nineteenth century construction date.

C2. The County Farm Bridge causeway in Wilton is a 430'-long sloping road structure of random sized boulders that incorporates an arched bridge of cut granite over Whiting Brook. It is located on Old County Farm Road at the southern edge of Burton Highway. The causeway was financed by the Town of Wilton and constructed in 1885 by the Ward Brothers, a Lowell, Massachusetts firm. The structure was listed in the National Register of Historic Places in 1981.

C3. The Dearborn Road Causeway in Kensington is approximately 75' in length and 7' in-height. It is constructed of random-sized field stones and has no culvert or water passage at its base. The road is raised above the stone foundation with no retaining walls. The north section of Dearborn Road is roughly one mile in length. It was initially a private road that became a town road in 1812. The road was closed to vehicular traffic in the second half of the twentieth century. There is a comparable section to the south where there is reported to be a second similar causeway.

Comparable dry-laid stone structures in Windham

The Town of Windham Historic District Commission has compiled a thorough list of archaeological sites, from which a list of potentially comparable stone structures in the Town of Windham was drawn. Additional comparable structures were identified by local historian Brad Dinsmore.

Eleven structures were identified as the most promising for comparison, and the sites were visited on January 26, 2006. Four were inaccessible (private property/impassable road), and two were found to be not comparable as they were mortared stonework that had been replaced with concrete structures. The five remaining comparable structures are discussed in this report.There are no comparable dry-laid stone causeways in Windham that feature the same construction technique or topographical context. The only other historic causeway in Windham is a low-slung rock and earth causeway (C4) across the west section of Moeckel Pond that features a small concrete bridge section.

There are at least four comparable dry-laid stone structures located throughout Windham that include two dams (C5, C6), two culverts (C5, C7), and a 'beehive structure' (C8) of unknown historic function. Each of these structures has good to fair integrity.

C4. The causeway on Moeckel Road is a low-slung rock and earth causeway across the west section of Moeckel Pond that features a small concrete bridge section. Its construction date is unknown,

however its proximity to site of the ca. 1788 Simpson's Mill suggests it is what is locally known as the late eighteenth/early nineteenth century Simpson's Causeway.

C5. The dam remnant and culvert on Flat Rock Brook across Route 28 from at Roulston Road are from an early nineteenth century saw mill on this waterway. Both structures are dry-laid and the culvert features the typical broad lintel stones.

C6. The dam across Flat Rock Brook at Seavey Road is what remains of Seavey's nineteenth century saw mill. The dry-laid stone structure is a low, flat dam with an open channel water outlet toward the west end.

C7. The culvert across Golden Brook on Church Street is an example of a common late eighteenth and early nineteenth century bridge solution to a narrow waterway. This culvert features typical raised bed abutment walls and a broad lintel stone. Located in the heart of the village of Windham, this structure allowed all-season passage into the town center.

C8. The 'beehive' structure located on Beacon Hill Road is a semi-subterranean 'dug-out' of dry-laid stone walls with a broad lintel stone and domed roof. The rounded, oblong structure and conical form resembles a 'beehive.' This is the last remaining of several that existed in Windham up until the demolition of a cluster of them in the 1960s construction of I-93 and the demolition of another for residential development in the 1980s. The original function of these structures is unknown; some local historians believe they are early settlement shelters built by Irish immigrants who were adept with stonework, a standard means of construction in their home country.

Comparable historic properties in Windham

There are structures shown in historic photographs supplied by Brad Dinsmore. These were not field checked for relevance as there was thought that they were gone or deteriorated and the snow cover made discovery difficult. The photos show the extent of stone expertise at a time relevant to the construction of the causeway.

44. National or State Register Criteria Statement of Significance:

The London Bridge Road Causeway is eligible for the National Register of Historic Places under Criterion A as an excellent and unusual example of an engineering structure used in the construction of the earliest roads in the settlement of the town of Windham; and under Criterion C as a significant example of early causeway construction, highly unusual in its size and use of granite masonry. It maintains excellent integrity and is able to fully document its historic associations.

Criterion A: The London Bridge Road Causeway is rare, intact example of early road construction in the Town of Windham and provides important information about the late-eighteenth and early-nineteenth century development of transportation routes across the town.

Criterion C: The London Bridge Road Causeway is a well-preserved example of late-eighteenth to early nineteenth century, road related masonry construction. It illustrates a common contemporary solution to a steep, broad obstacle that did not require a bridge to cross deep water. Causeways were the earliest methods by which road builders of the eighteenth and nineteenth centuries carried their highways across wetlands and steep gullies (Garvin 2006).

The London Bridge Road Causeway is relatively uncommon in that most causeways were constructed of logs, rock, and earth. Most of such causeways do not survive; the few surviving stone causeways in southern New Hampshire share the same method of

construction, design, and materials. "Windham's causeway represents an immense investment of labor in an age when less permanent road construction was the rule... The London Bridge Road cause-way was never altered, leaving the structure as a museum piece of early transportation history" (Garvin 2006).

45. Periods of Significance:

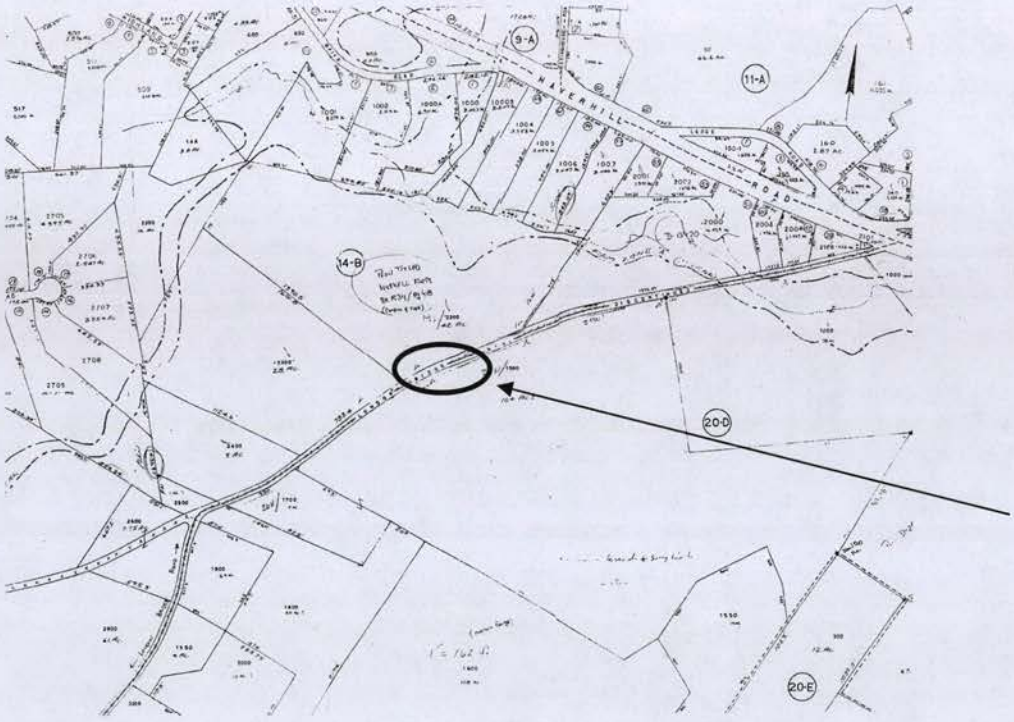
ca. 1799/1812 – ca. 1935

46. Statement of Integrity:

The London Bridge Road Causeway maintains a high degree of integrity of location, design, setting, materials, workmanship, feeling and association. It is in good condition despite some shifting of stones over time.

47. Boundary Discussion:

The boundary of the eligible property associated with the London Bridge Road Causeway is the footprint of the structure and approach road, approximately 100' x 25'. The causeway is located between map/parcels 14-B/2200 and 20-D/1500 on the abandoned London Bridge Road.



48. Bibliography and/or References:

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Maps

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http://docs.unh.edu/towns/WindhamNewHampshireMapList.htm

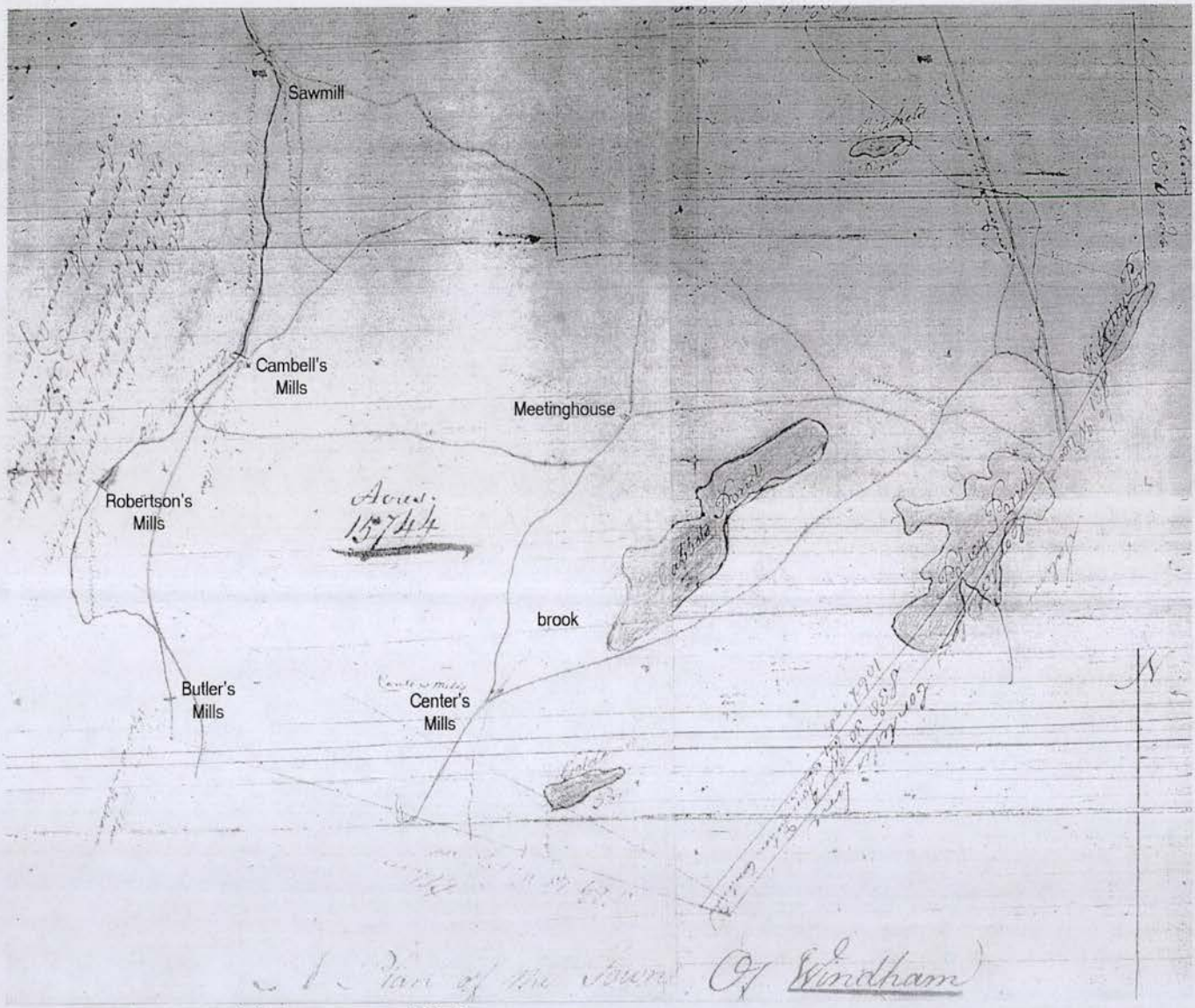
Historic Photos

Collection of Brad Dinsmore, Windham, local historian.

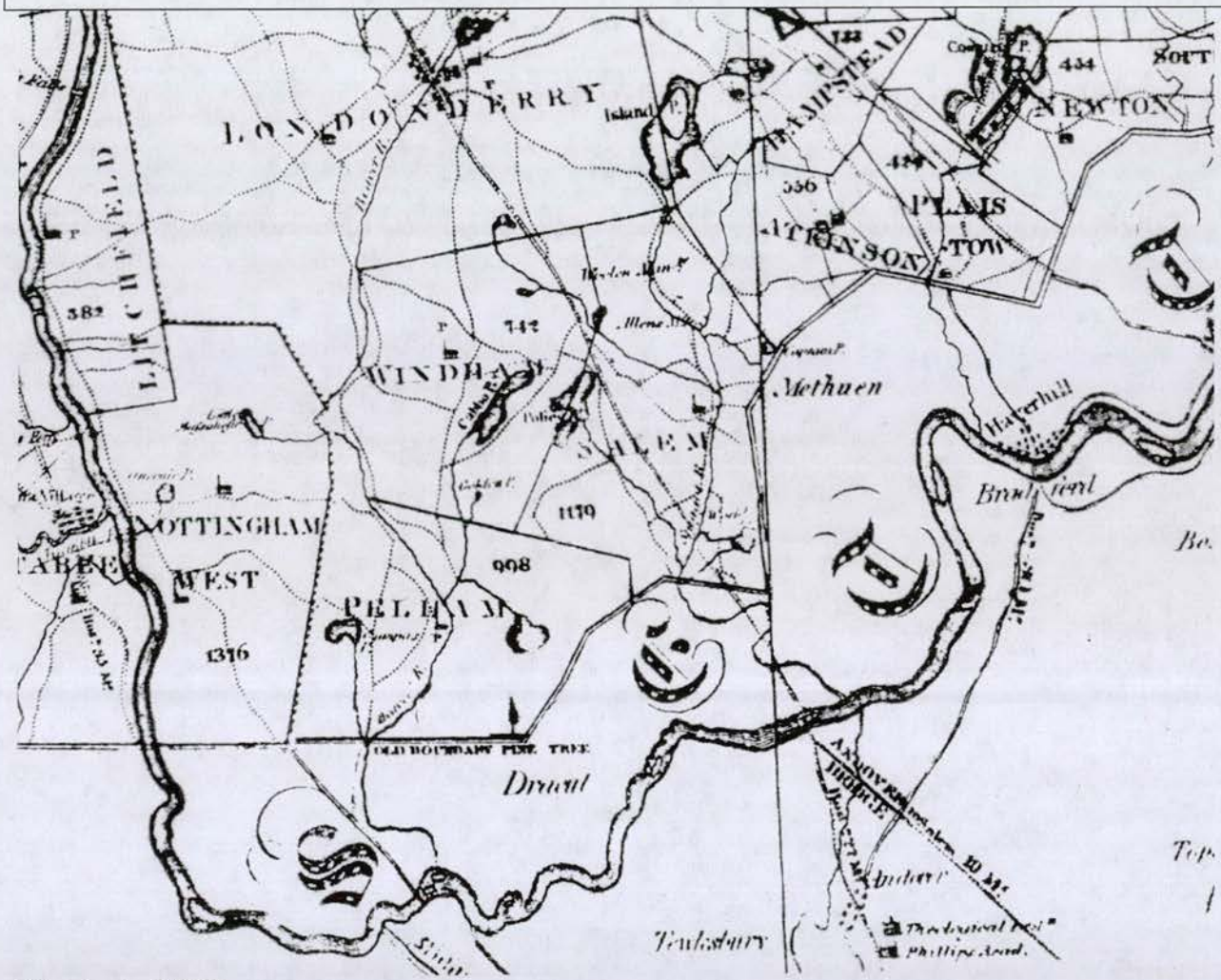
Surveyor's Evaluation

NR listed:	individual	☐	NR eligible:		NR Criteria:	A	☒
	within district	☐		individual ☒		B	☐
				within district ☐		C	☒
Integrity:	yes	☒		not eligible ☐		D	☐
	no	☐		more info needed ☐		E	☐

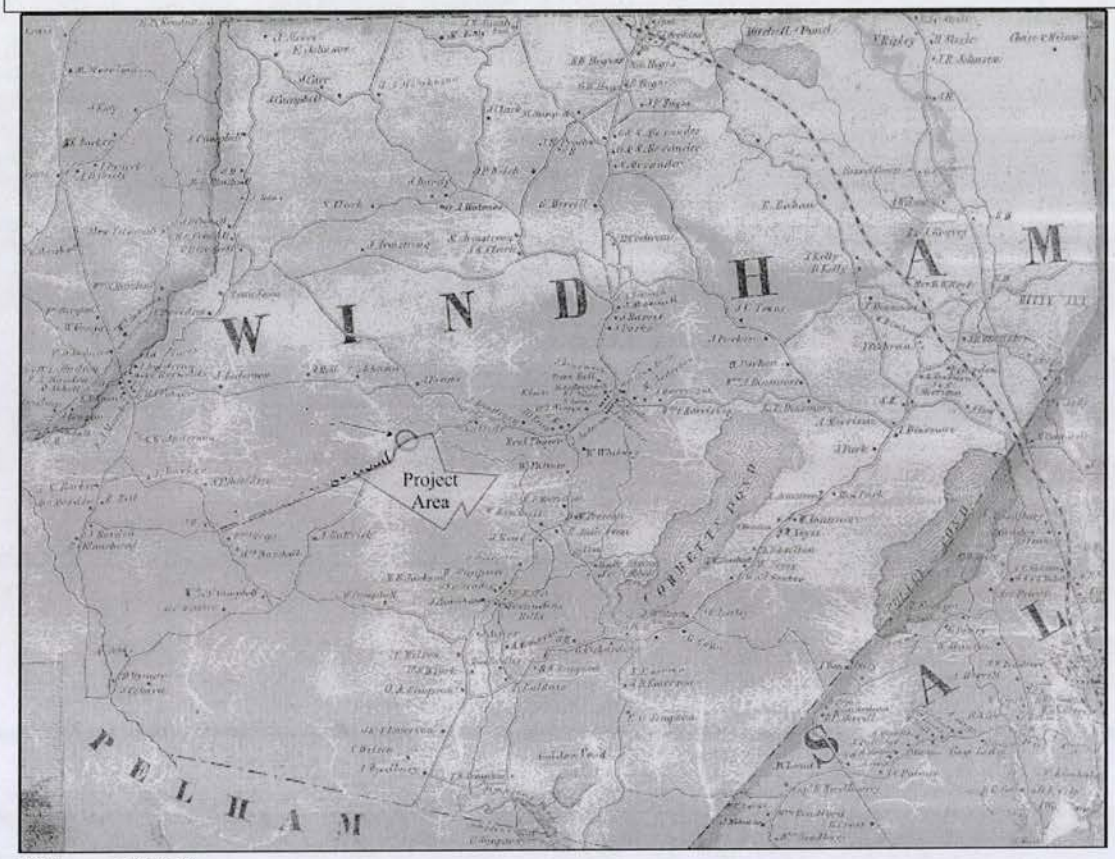
Maps



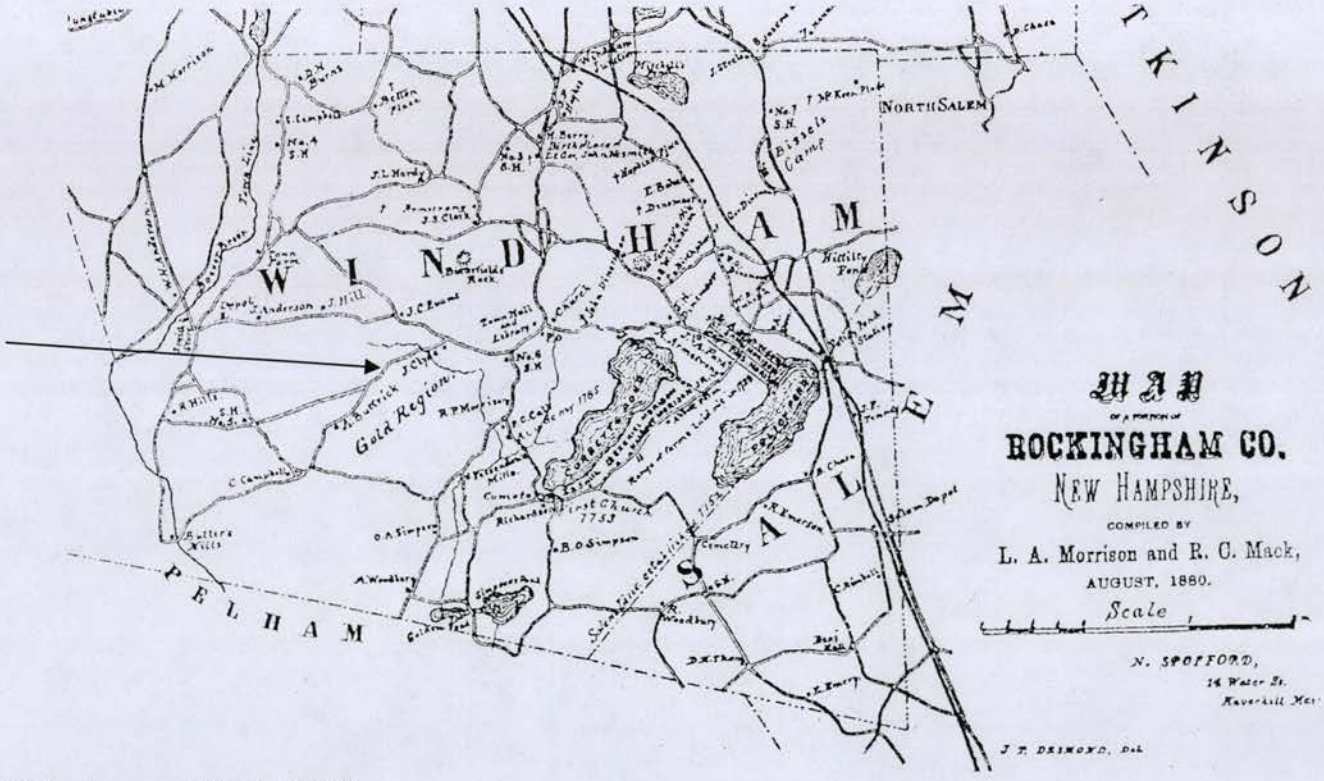
1805 map, annotated (Anonymous 1805)



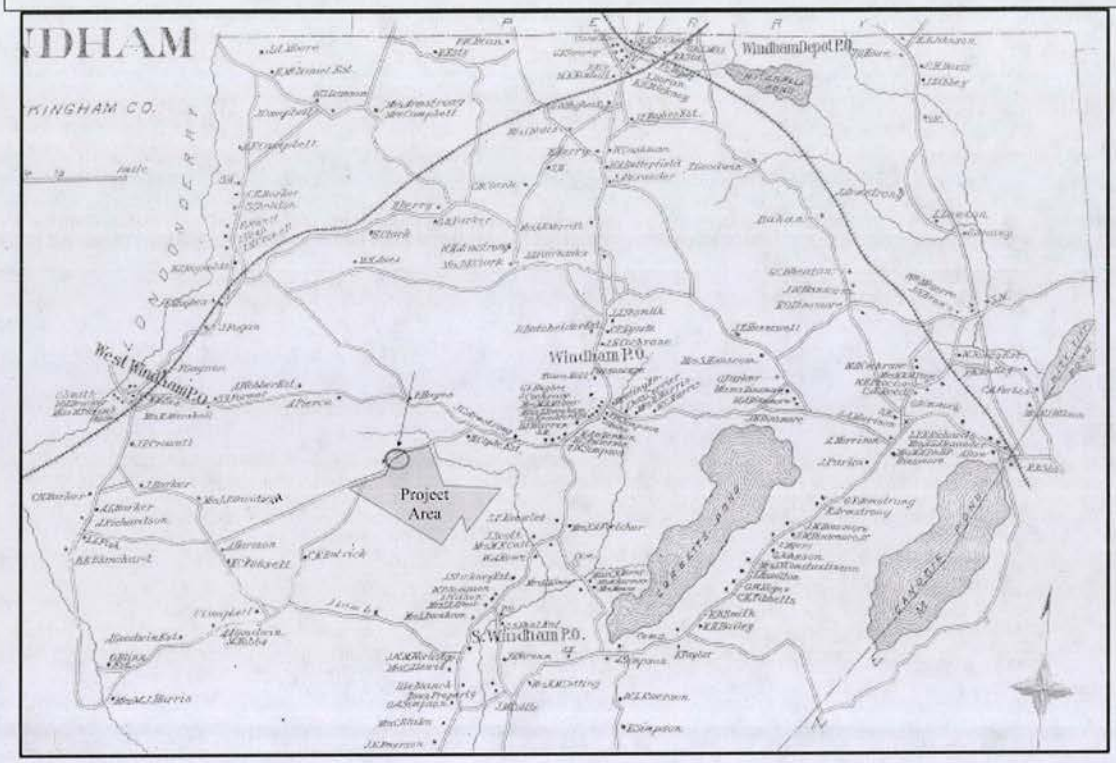
(Carrigain 1816)



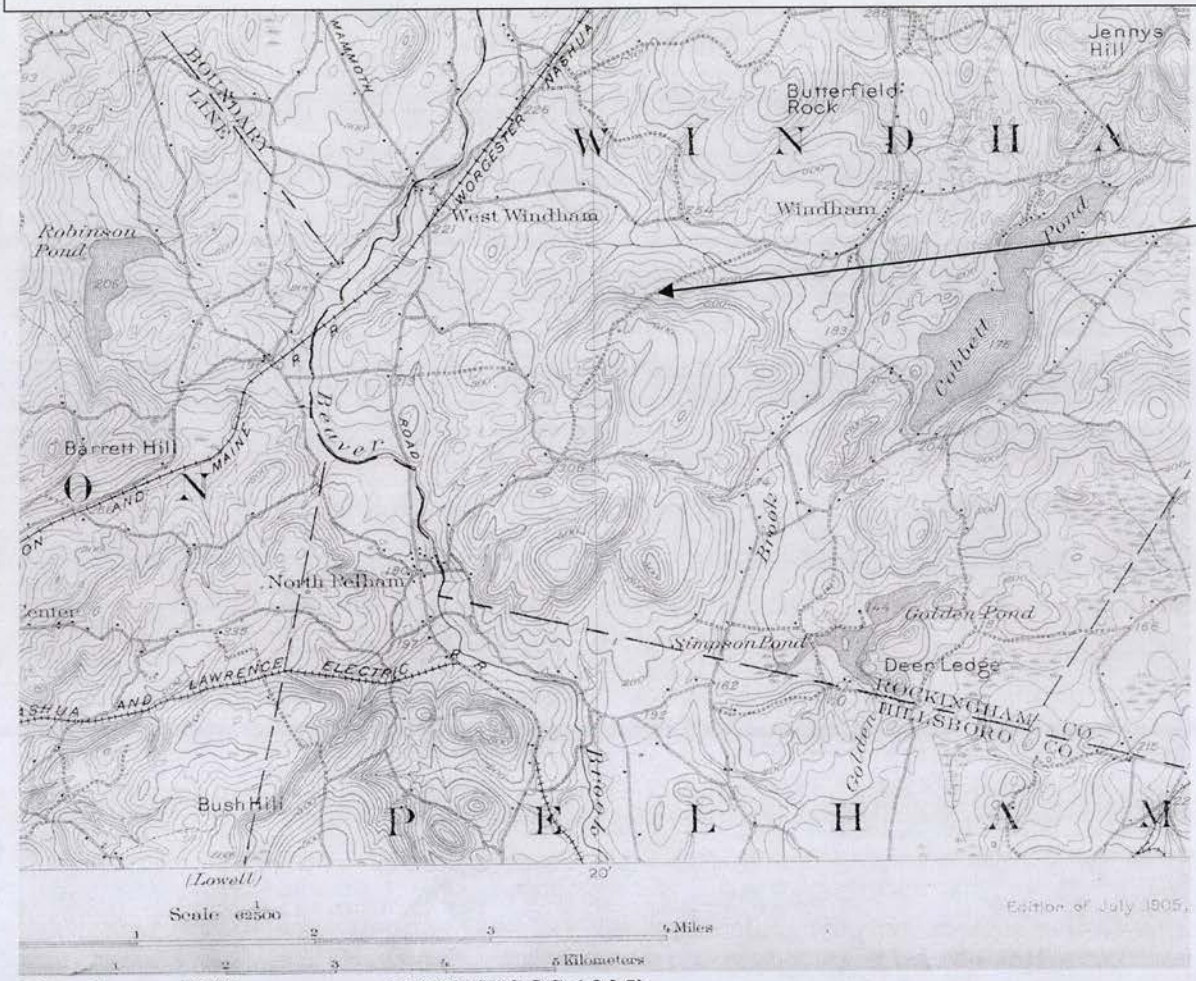
(Chace 1857)



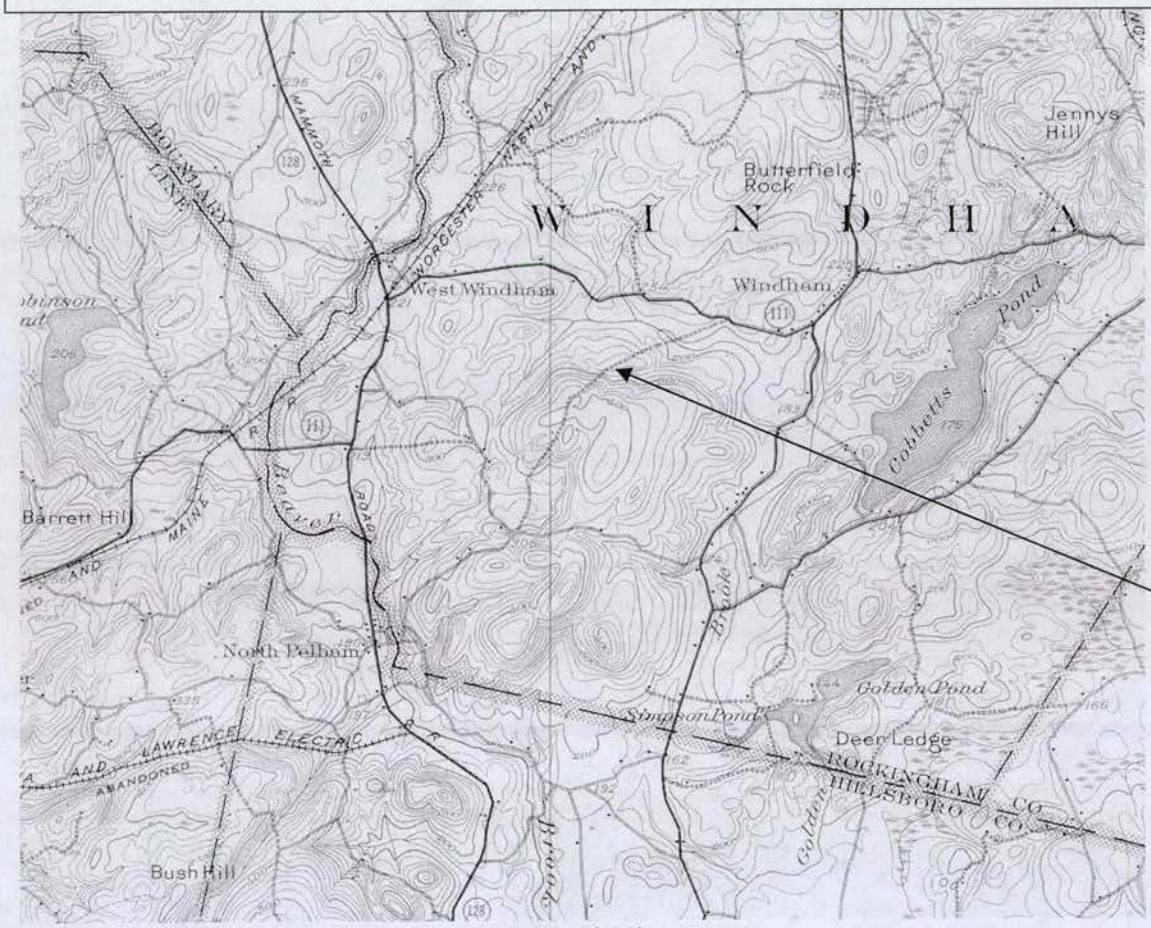
(Morrison and Mack 1880)


Windham Depot P.O.
Windham P.O.
West Windham P.O.
S. Windham P.O.
Project Area

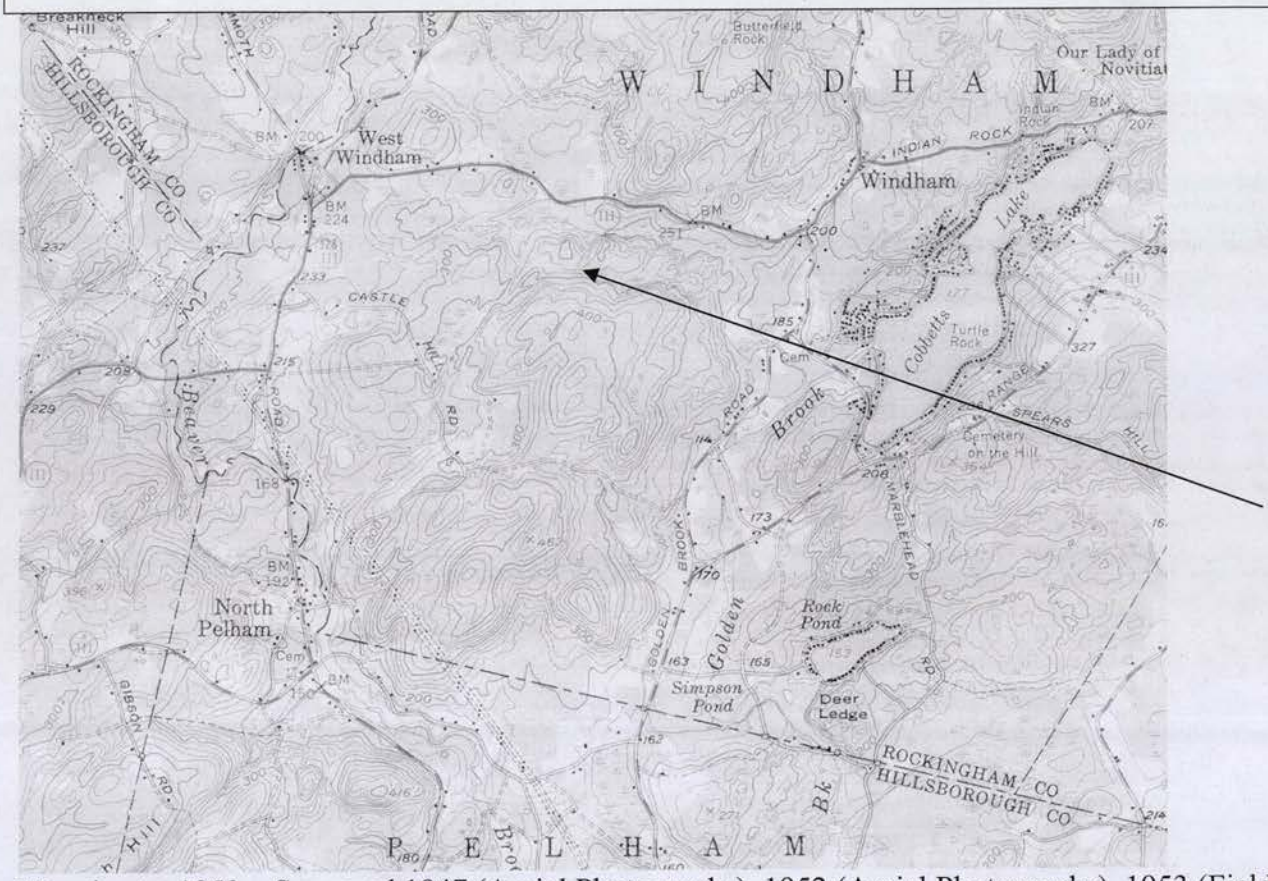
(Hurd 1892)



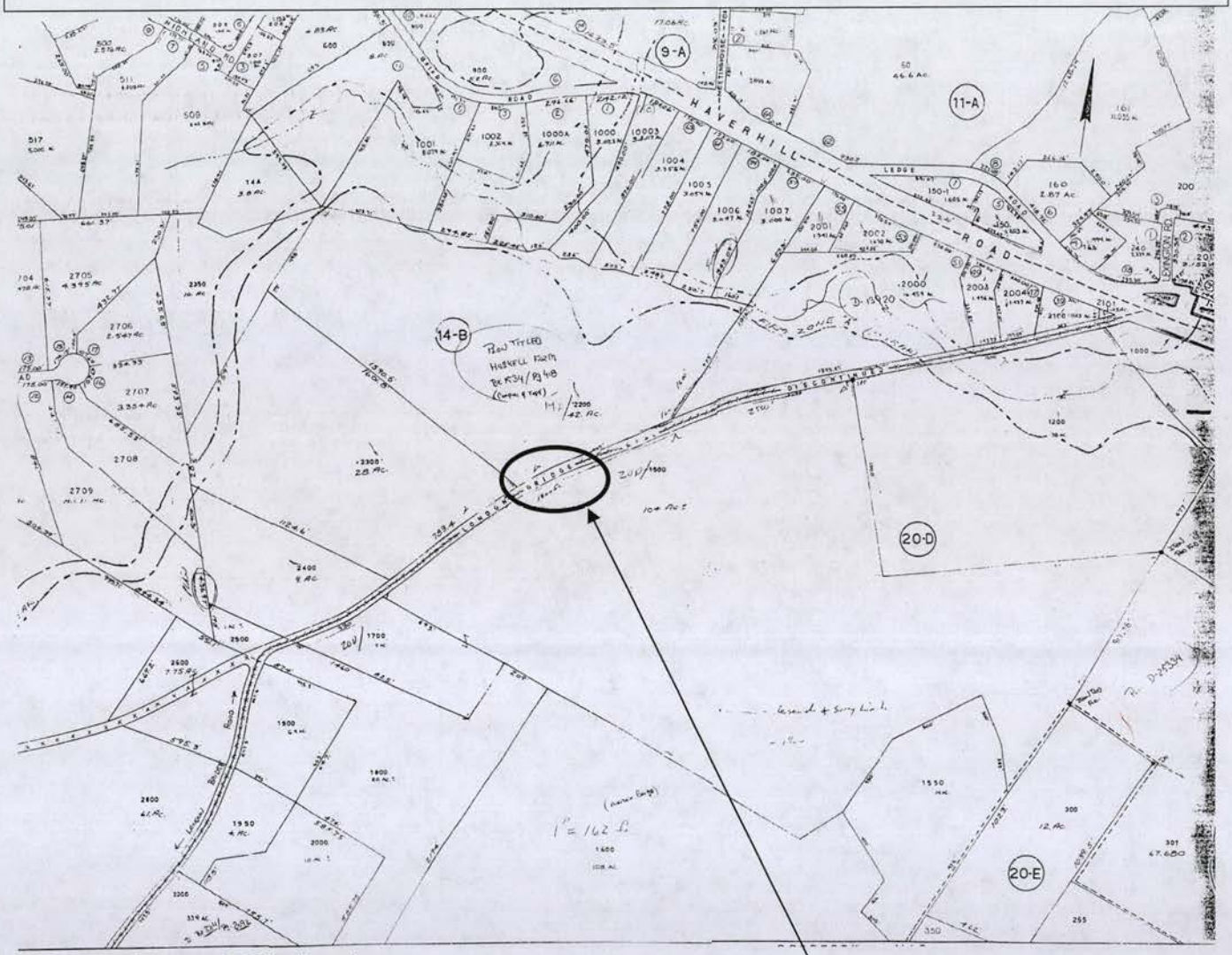
Manchester 1905 – surveyed 1903 (USGS 1905)



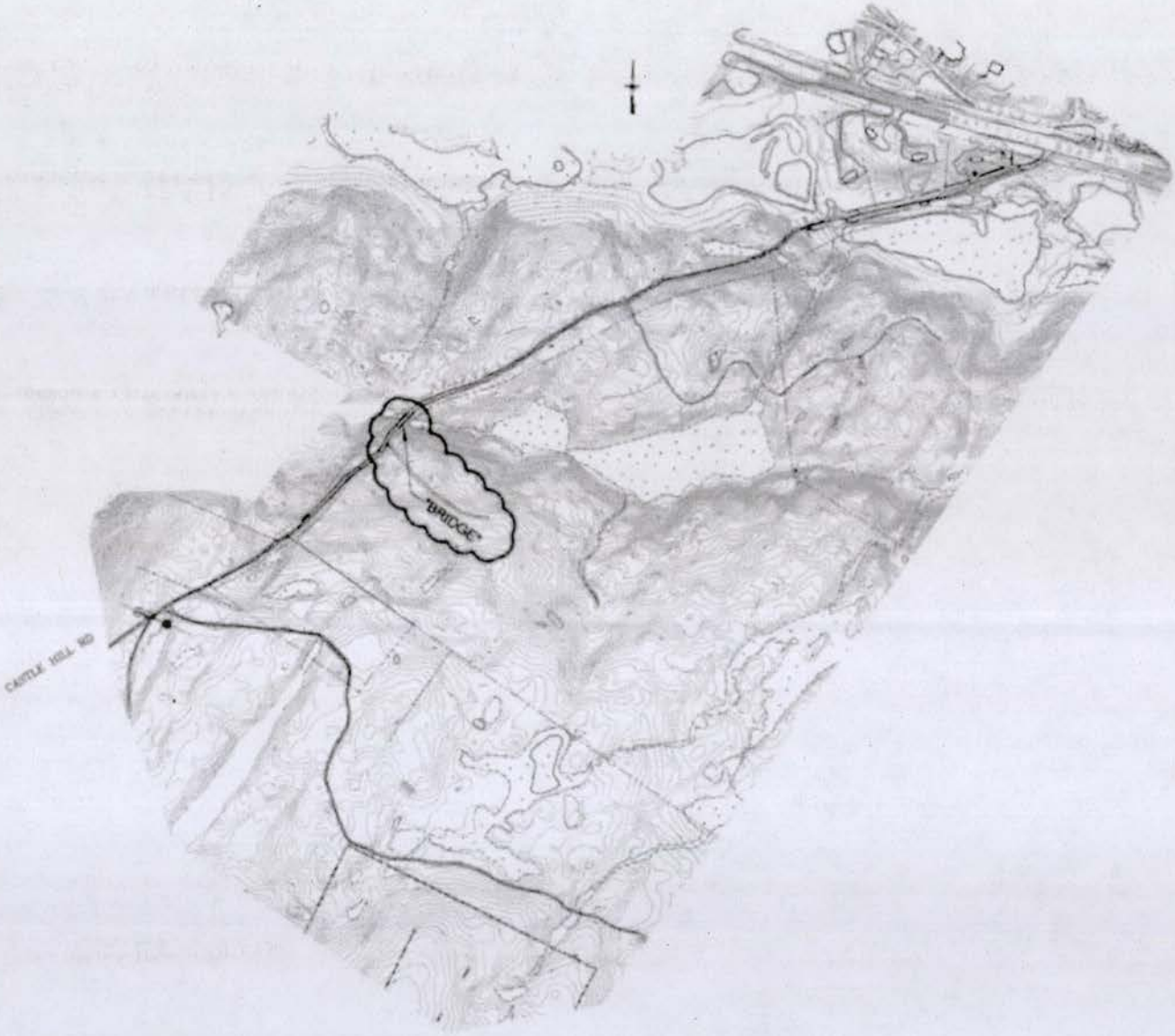
Manchester 1941 – surveyed 1930 (USGS 1941)



Manchester 1953 – Surveyed 1947 (Aerial Photographs), 1952 (Aerial Photographs), 1953 (Field Check) (USGS 1953)

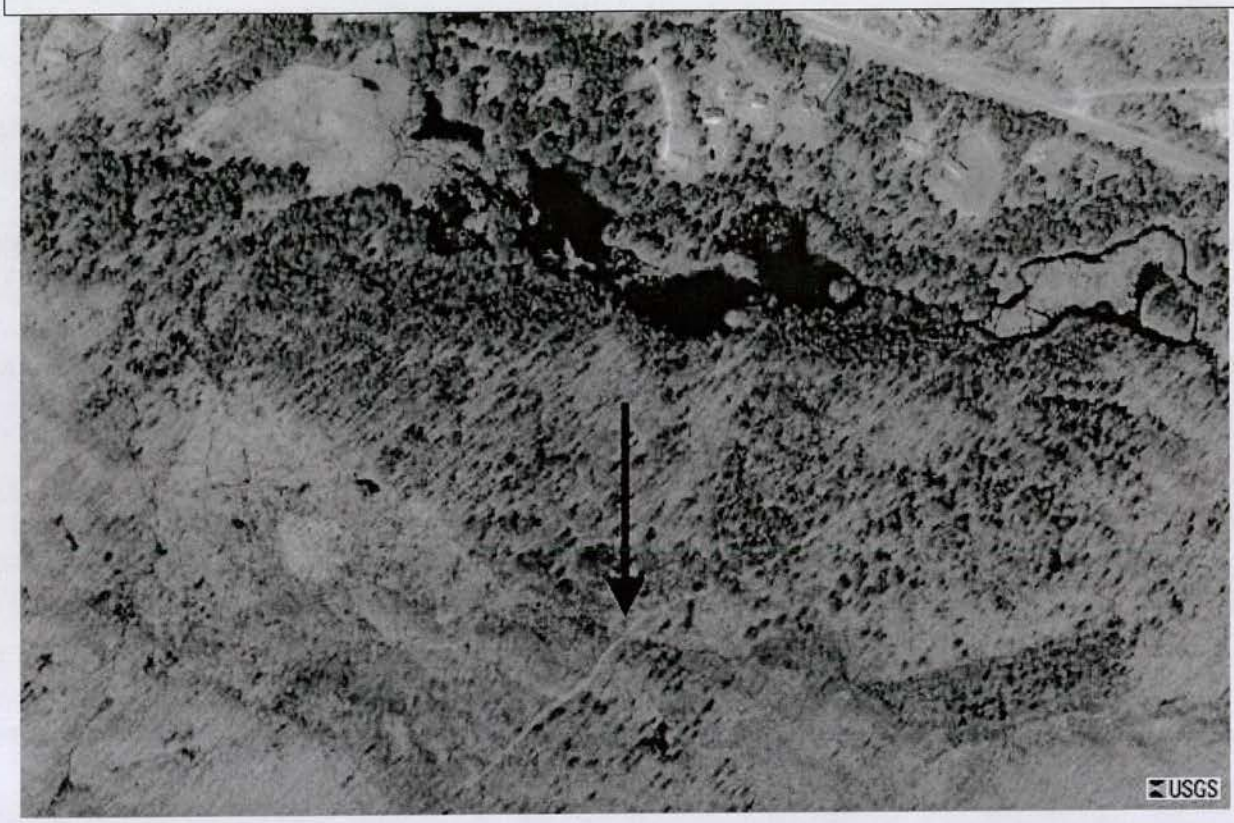


Tax map (Town of Windham)



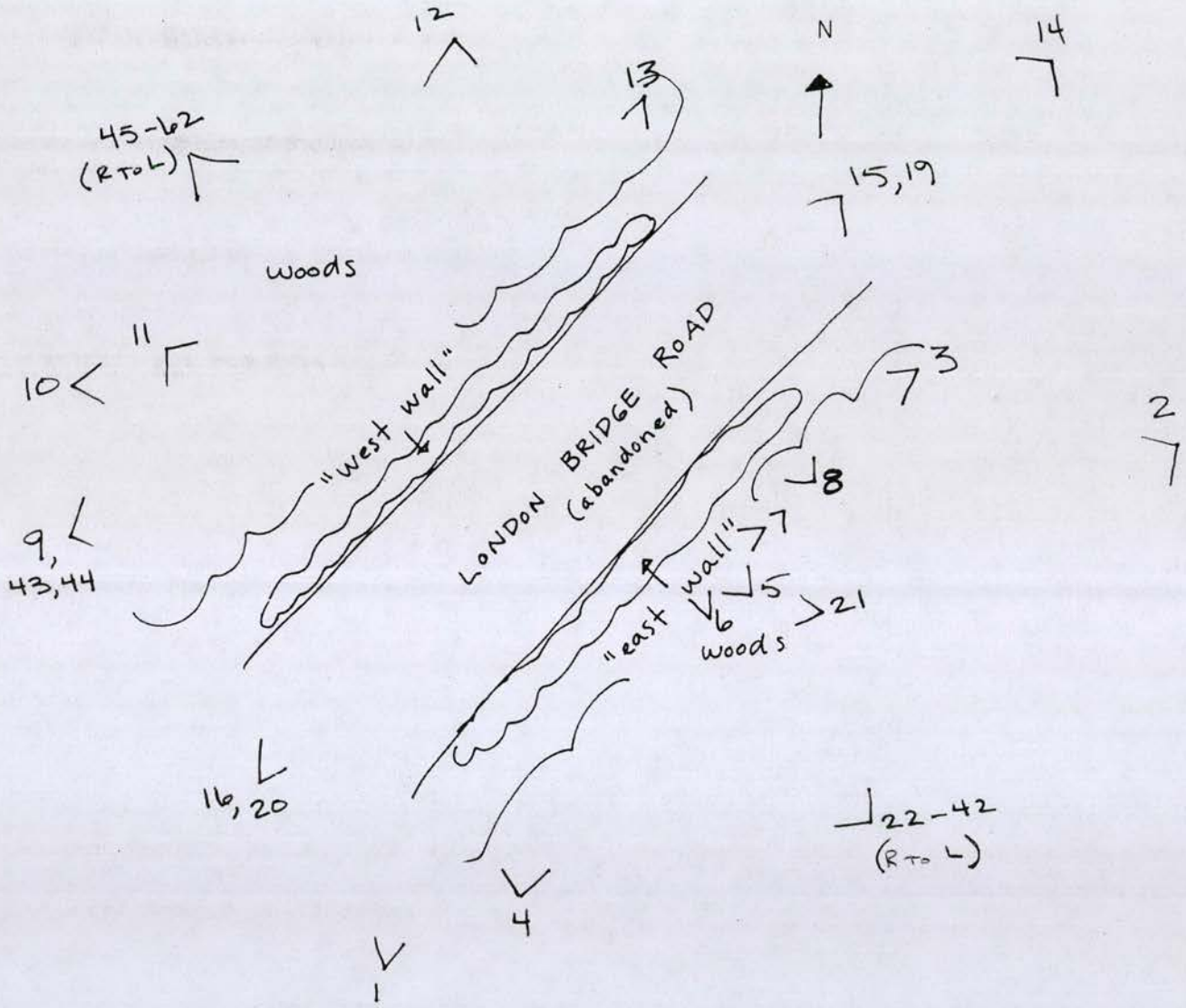
Site of Causeway (Appledore Engineering)

Site of Causeway (Appledore Engineering)



(Terraserver-USA 2005)

Photo Key


12
N
14
13
45-62
(R to L)
15,19
woods
11
10
"west wall"
LONDON BRIDGE ROAD
(abandoned)
3
2
8
9,
43,44
"east wall"
7
5
6
21
woods
16, 20
22-42
(R to L)
4
1

Photographs

Photographs 2 through 18 were taken by Kerry Davis of Preservation Company on January 26, 2006.

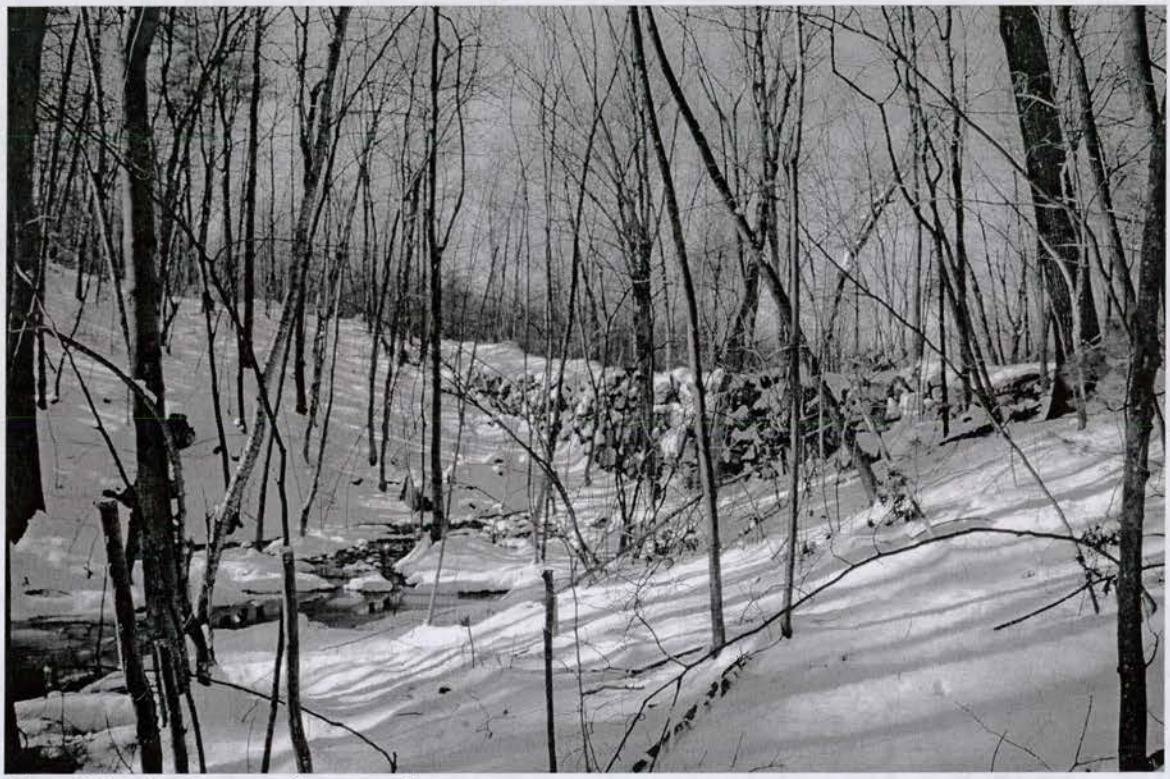


Photo 2) view west of east wall

Photo 3) view west of east wall

Photo 4) view northeast of east wall

Photo 5) detail of east wall

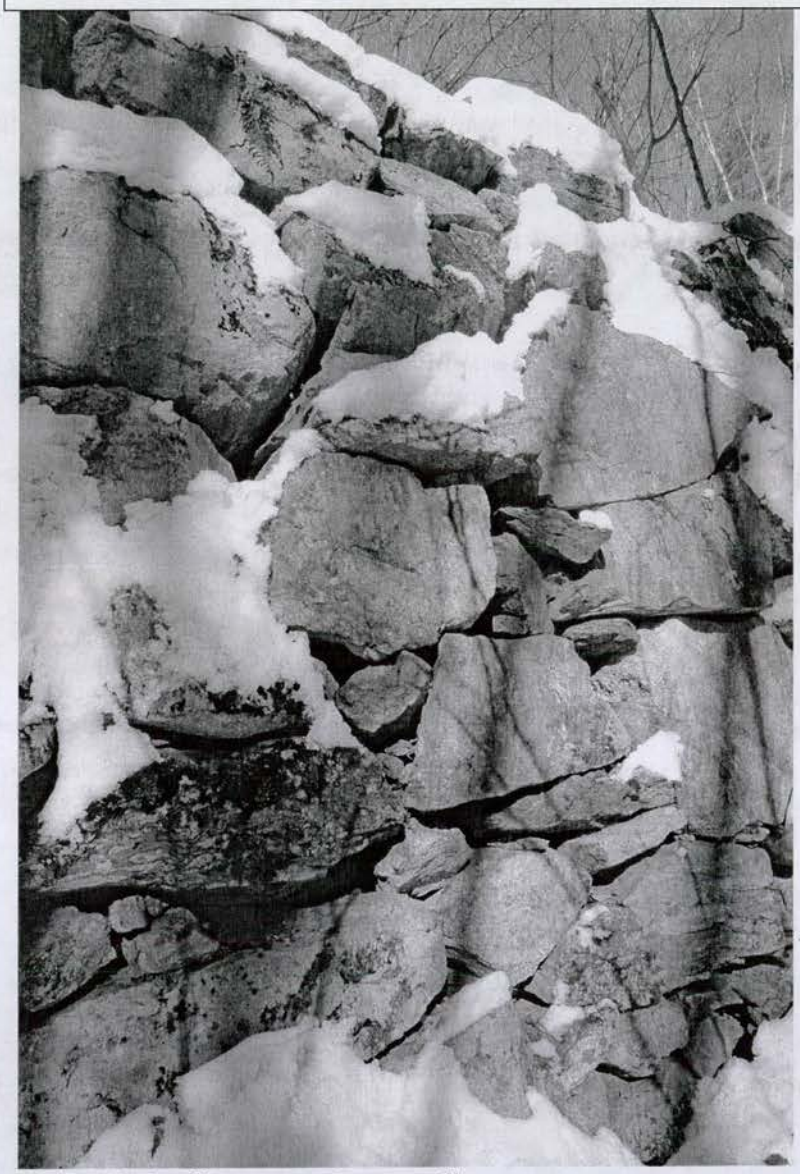


Photo 6) detail, center of east wall

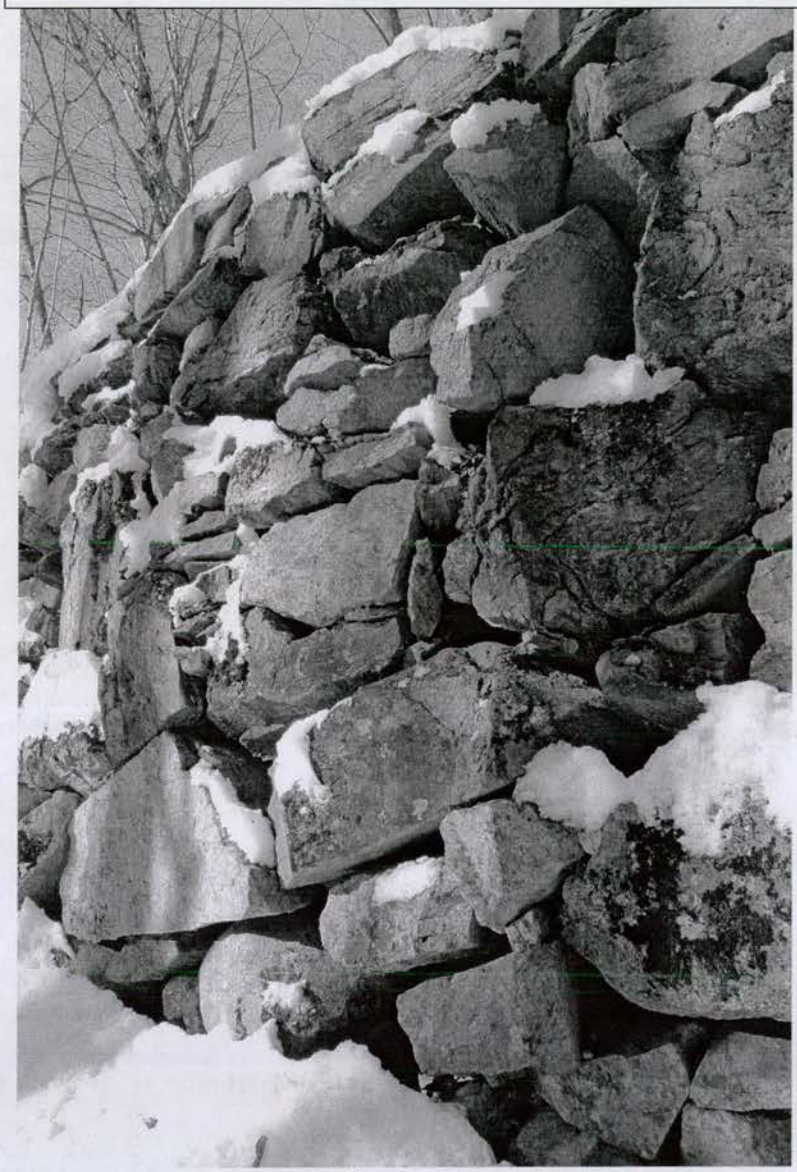


Photo 7) detail of east wall

Photo 8) detail of east wall

Photo 9) view northeast of west wall

Photo 10) view east of west wall

Photo 11) view southeast of west wall

Photo 12) view south of west wall

Photo 13) view southwest of west wall

Photo 14) view southwest across causeway

Photo 15) view southwest up slope of causeway

Photo 16) view northeast down slope of causeway

Photo 17) view southwest of intersection of original London Bridge Road (right) with today's London Bridge Road (left)

Photo 18) view of stone foundations at the beginning of the abandoned section of London Bridge Road

Photographs 19 through 62 were taken by Kathleen Wheeler of Independent Archeological Consulting (IAC) on September 5, 2005.

Photo 19) London Bridge Road.

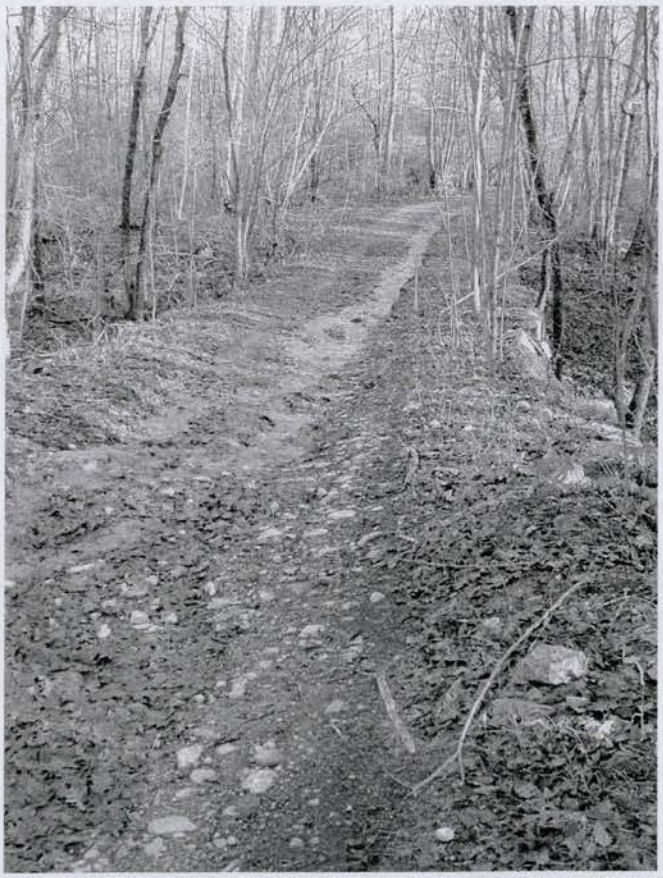


Photo 20) 23-12-1-2005 London Bridge Road View N

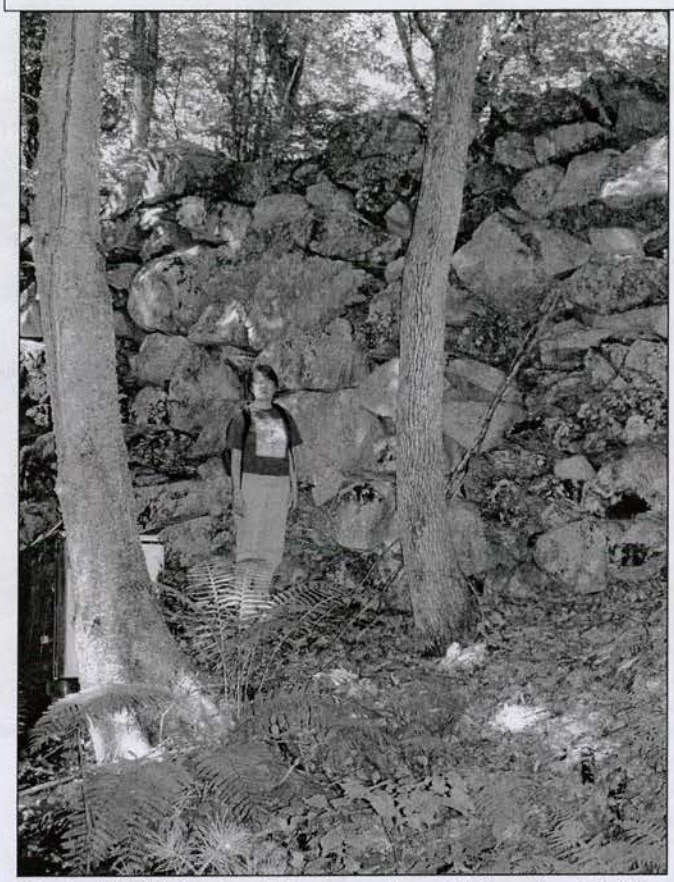
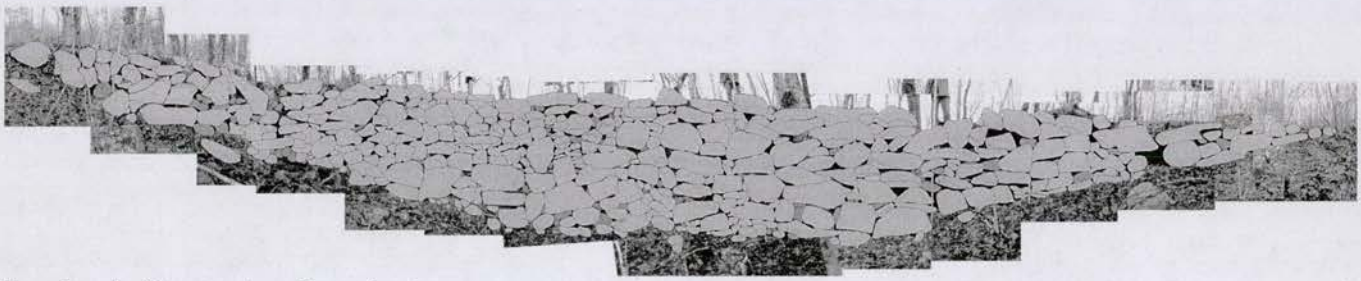


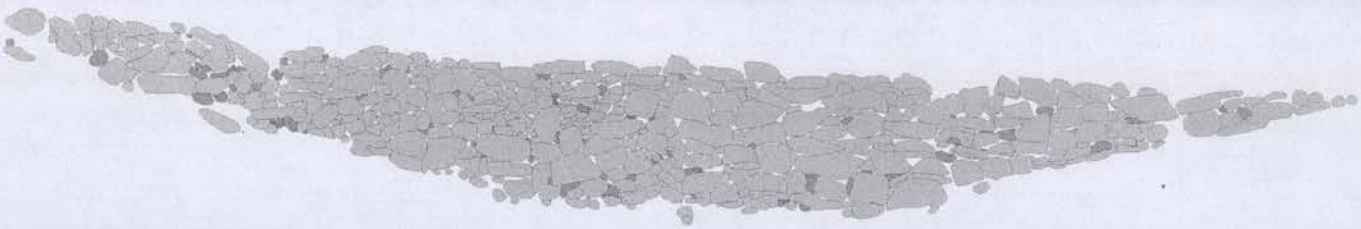
Photo 21) Massive Stoneworks of "London Bridge."

The "East Wall"

East Wall photos only



London bridge east wall w photos



London bridge east

The "East Wall"

Photo 22 through 42 (Right to Left)

Photo 22) 1-12-1-2005 London Bridge E wall North to South, Section 1A View W

Photo 23) 2-12-1-2005 London Bridge E wall North to South, Section 1B View W

Photo 24) 3-12-1-2005 London Bridge E wall North to South, Section 3 View W

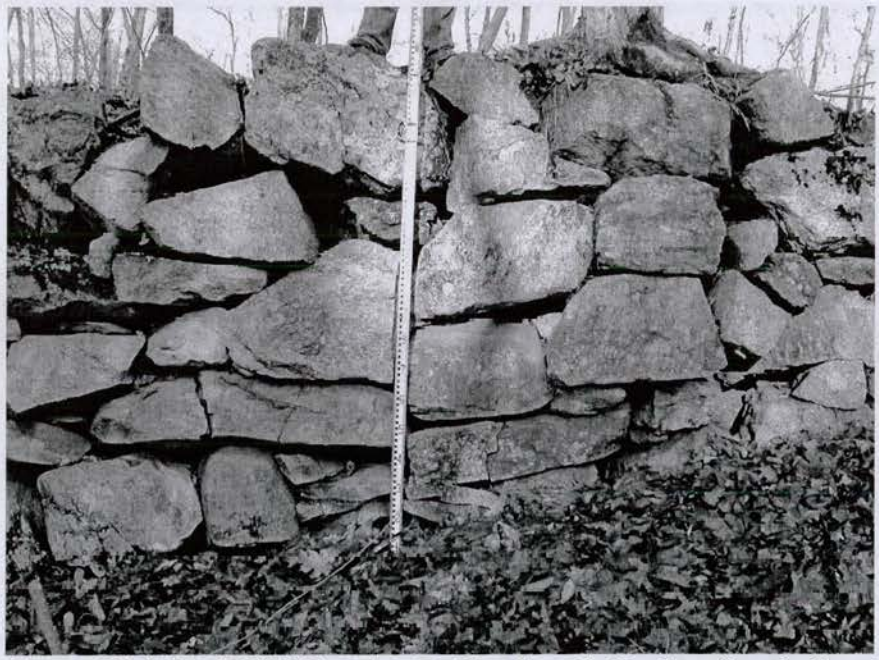


Photo 25) 4-12-1-2005 London Bridge E wall North to South, Section 4 View W

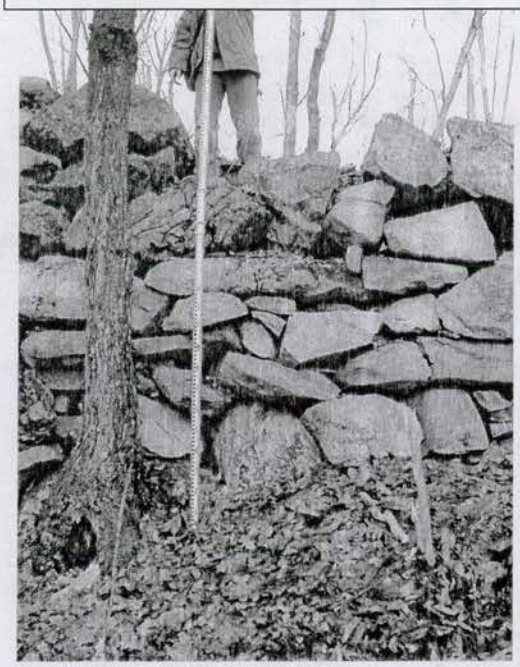


Photo 26) 5-12-1-2005 London Bridge E wall North to South, Section 5 View W

Photo 27) 6-12-1-2005 London Bridge E wall North to South, Section 2 View W

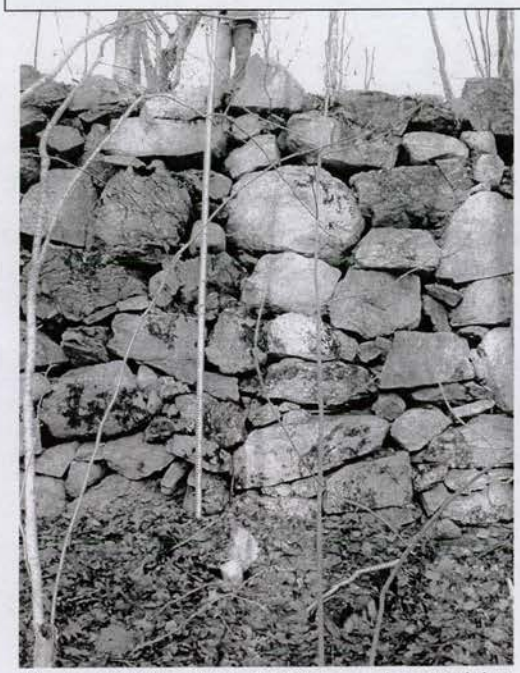


Photo 28) 7-12-1-2005 London Bridge E wall, North to South, 8A View W

Photo 29) 8-12-1-2005 London Bridge E wall, North to South, Section 6A View W

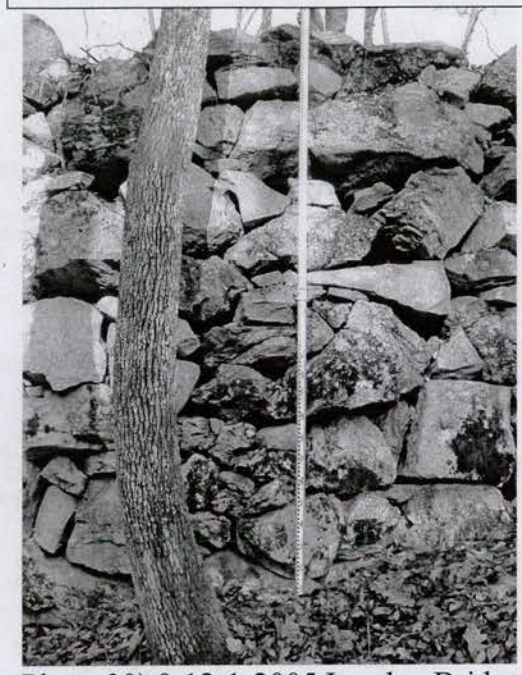


Photo 30) 9-12-1-2005 London Bridge E wall, North to South, Section 6B View W

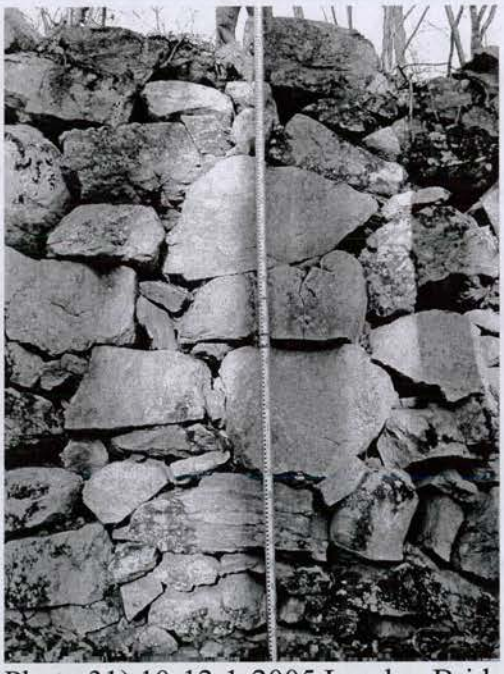


Photo 31) 10-12-1-2005 London Bridge E wall, North to South, Section 7A View W

Photo 32) 11-12-1-2005 London Bridge E wall, North to South, Section 7B View W

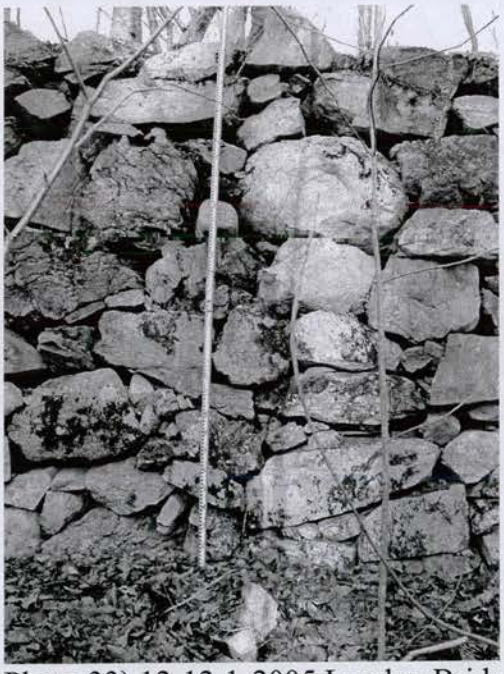


Photo 33) 12-12-1-2005 London Bridge E wall, North to South, Section 8B View W

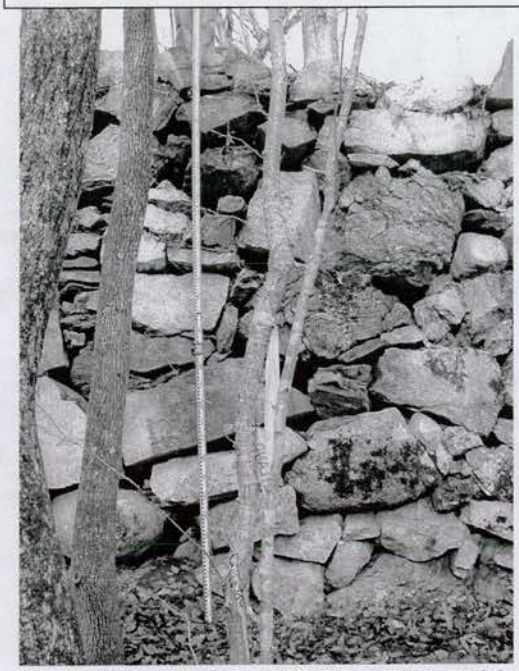


Photo 34) 13-12-1-2005 London Bridge E wall, North to South, Section 9A View W

Photo 35) 14-12-1-2005 London Bridge E wall, North to South, Section 9B View W

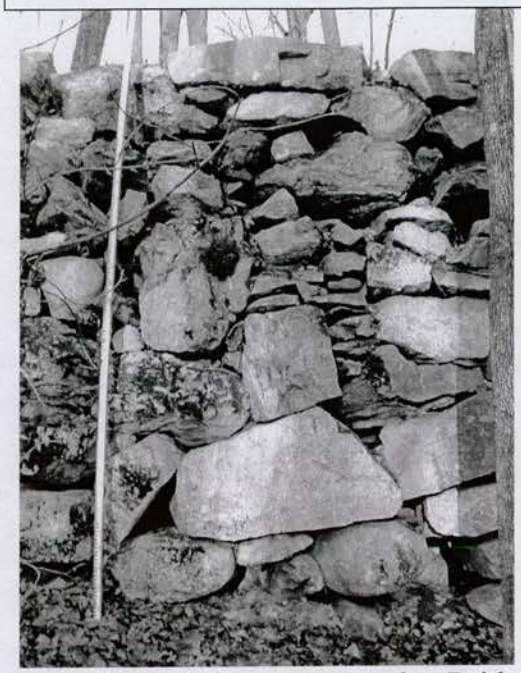


Photo 36) 15-12-1-2005 London Bridge E wall, North to South, Section 10 View W

Photo 37) 16-12-1-2005 London Bridge E wall, North to South, Section 11 View W

Photo 38) 17-12-1-2005 London Bridge E wall, North to South, Section 12 View W

Photo 39) 18-12-1-2005 London Bridge E wall, North to South, Section 13 View W

Photo 40) 19-12-1-2005 London Bridge E wall, North to South, Section 14 View W

Photo 41) 20-12-1-2005 London Bridge E wall, North to South, Section 15 View W

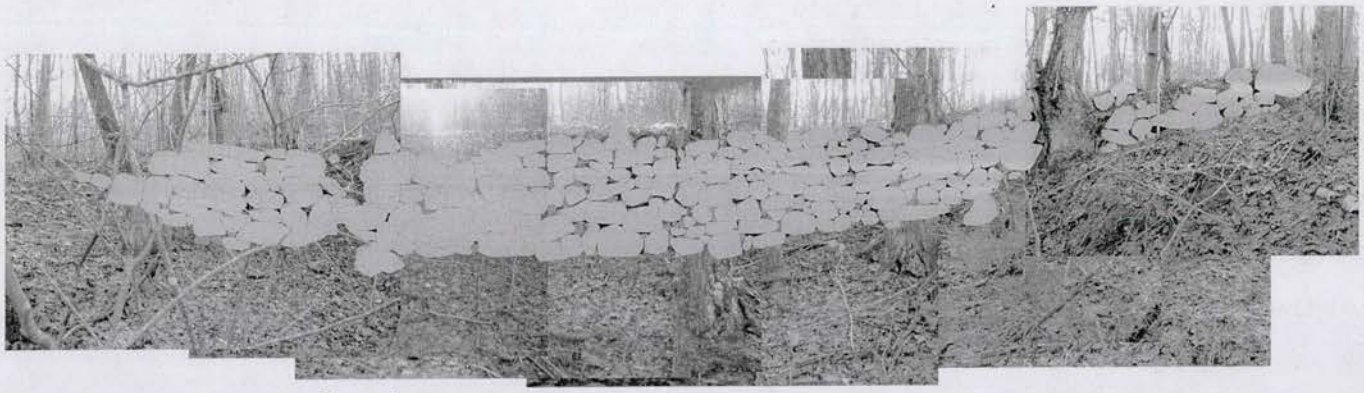
Photo 42) 21-12-1-2005 London Bridge E wall, North to South, Section 16 View W

Photos from southwest end of bridge:

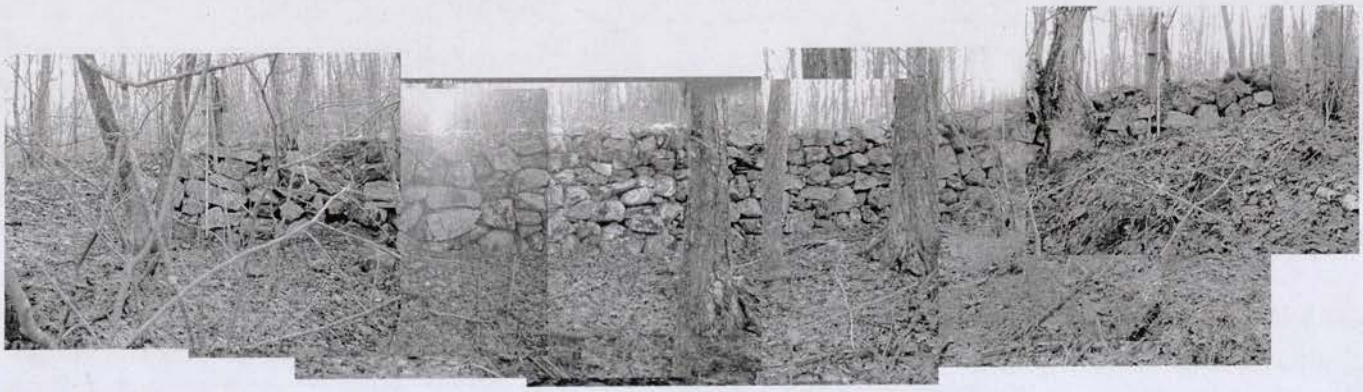
Photo 43) 24-12-1-2005 London Bridge W wall overview View NE (1)

Photo 44) 25-12-1-2005 London Bridge W wall overview View NE

The "West Wall"



London bridge West wall w photos



West wall photos only

The "West Wall"

Photo 45 through 62 (Right to Left)

Photo 45) 26-12-1-2005 London Bridge W wall, North to South, Section 2A View E

Photo 46) 27-12-1-2005 London Bridge W wall, North to South, Section 1B View E

Photo 47) 28-12-1-2005 London Bridge W wall, North to South, Section 2B View E

Photo 48) 29-12-1-2005 London Bridge W wall, North to South, Section 3A View E

Photo 49) 30-12-1-2005 London Bridge W wall, North to South, Section 3B View E

Photo 50) 31-12-1-2005 London Bridge W wall, North to South, Section 4A, View E

Photo 51) 32-12-1-2005 London Bridge W wall, North to South, Section 4B View E

Photo 52) 33-12-1-2005 London Bridge W wall, North to South, Section 5 View E

Photo 53) 34-12-1-2005 London Bridge W wall, North to South, Section 6A View E

Photo 54) 35-12-1-2005 London Bridge W wall, North to South, Section 6B View E

Photo 55) 36-12-1-2005 London Bridge W wall, North to South, Section 6C View E

Photo 56) 37-12-1-2005 London Bridge W wall, North to South, Section 7A View E

Photo 57) 38-12-1-2005 London Bridge W wall, North to South, Section 7B View E

Photo 58) 39-12-1-2005 London Bridge W wall, North to South, Section 8A View E

Photo 59) 40-12-1-2005 London Bridge W wall, North to South, Section 8B View E

Photo 60) 41-12-1-2005 London Bridge W wall, North to South, Section 8C View E

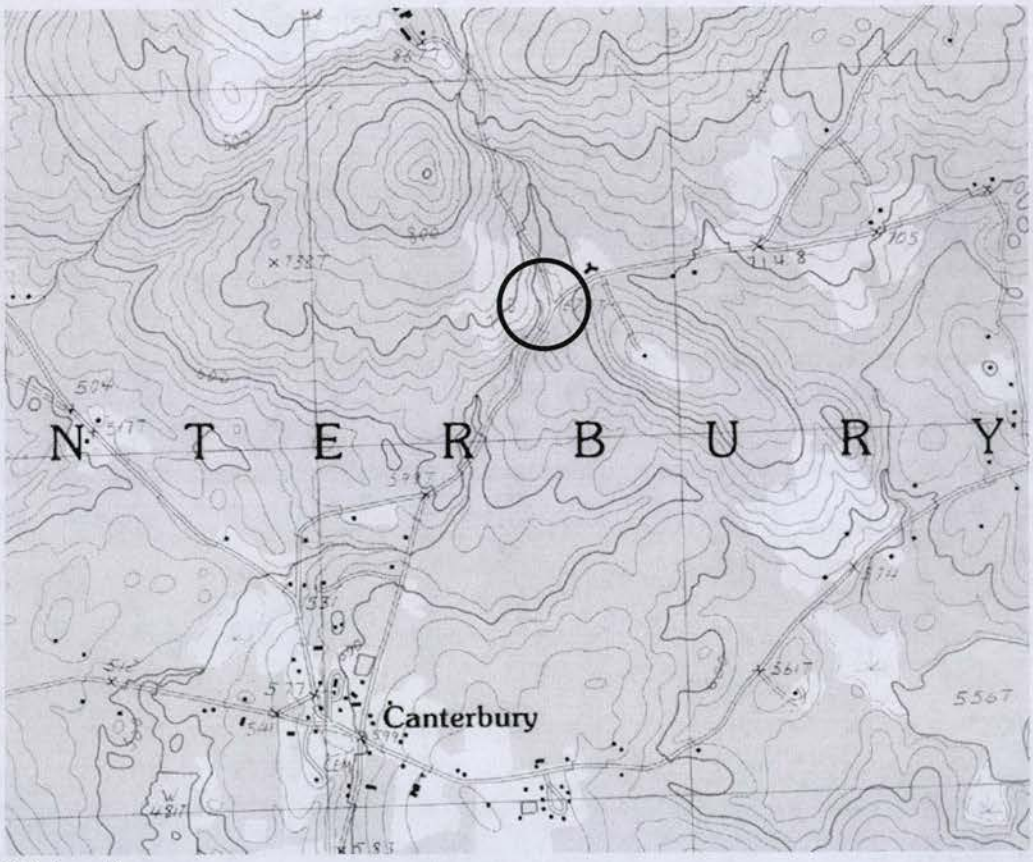
Photo 61) 42-12-1-2005 London Bridge W wall, North to South, Section 8D View E

Photo 62) 43-12-1-2005 London Bridge,W wall, North to South, Section 1A View E

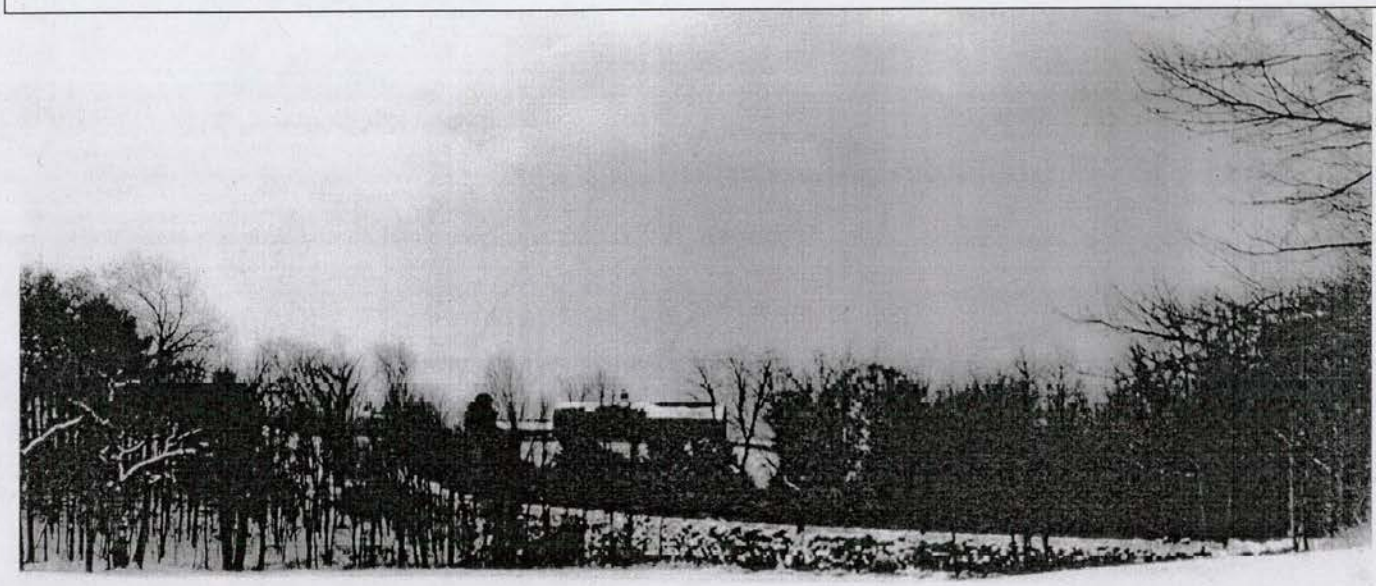
Comparable Properties

Comparable causeways in southern New Hampshire (Comparables C1-C3)

Comparable C1: Rock culvert and causeway, Hackelboro Road entrance to farm field, Canterbury

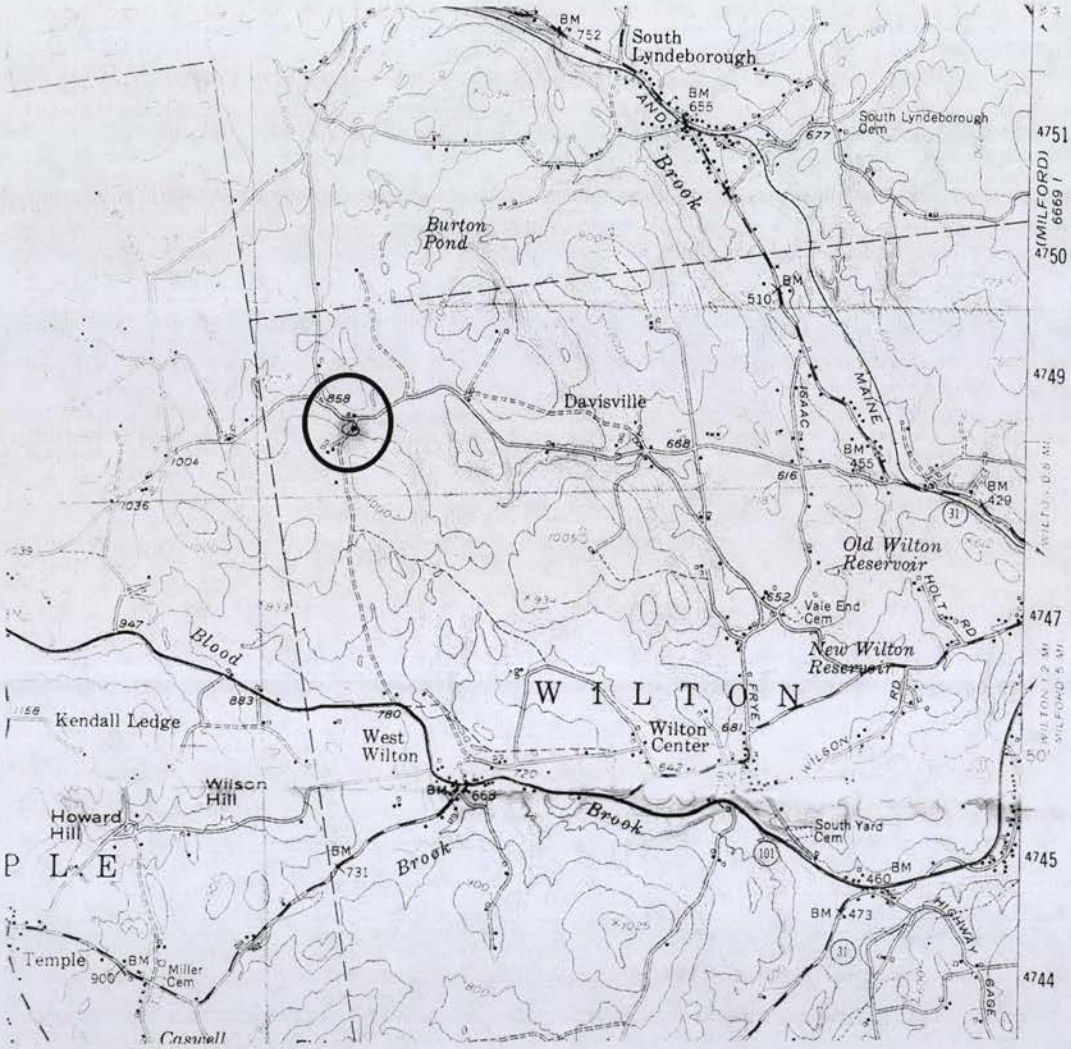


C1 location map



Comparable C2: County Farm Bridge, Wilton

Comparable C2: County Farm Bridge, Wilton

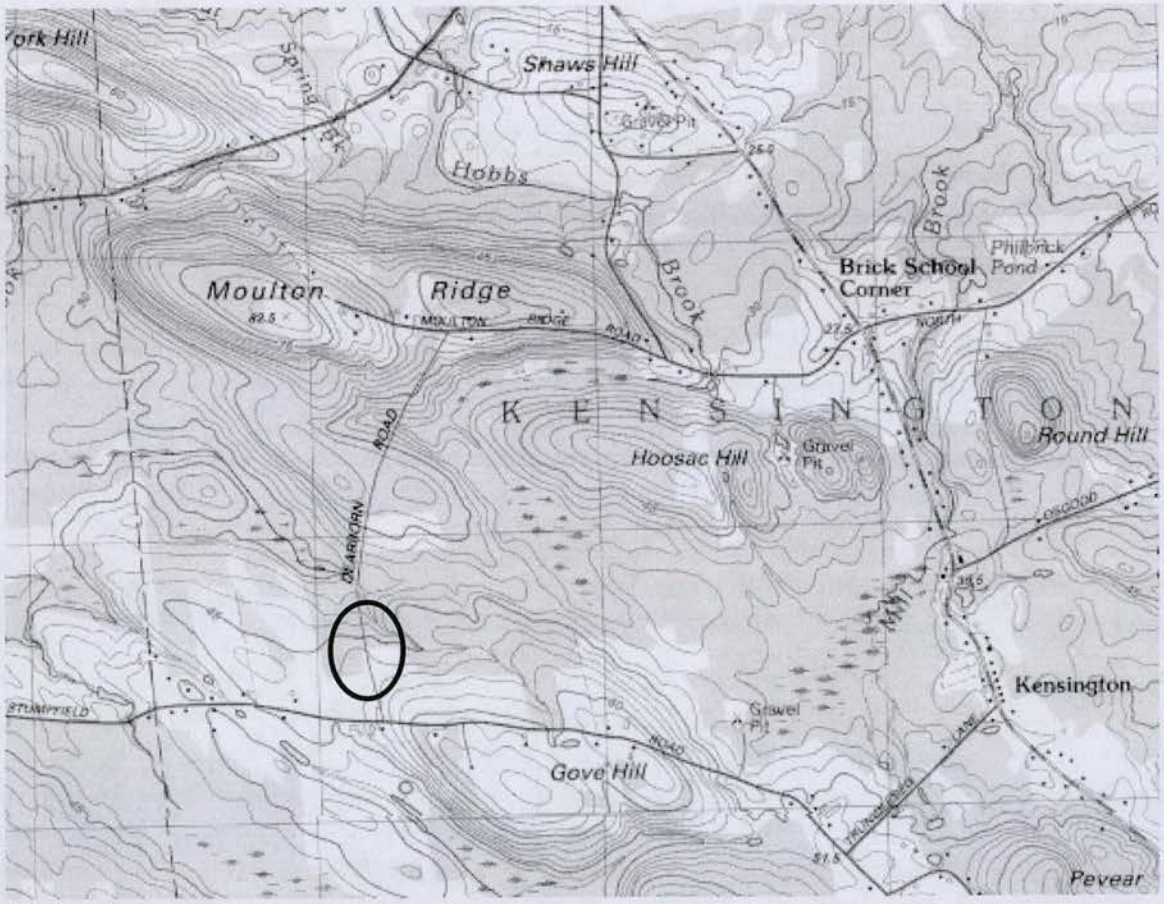


Comparable C2 location map

Comparable C3: Dearborn Road, Kensington, view northwest of east wall

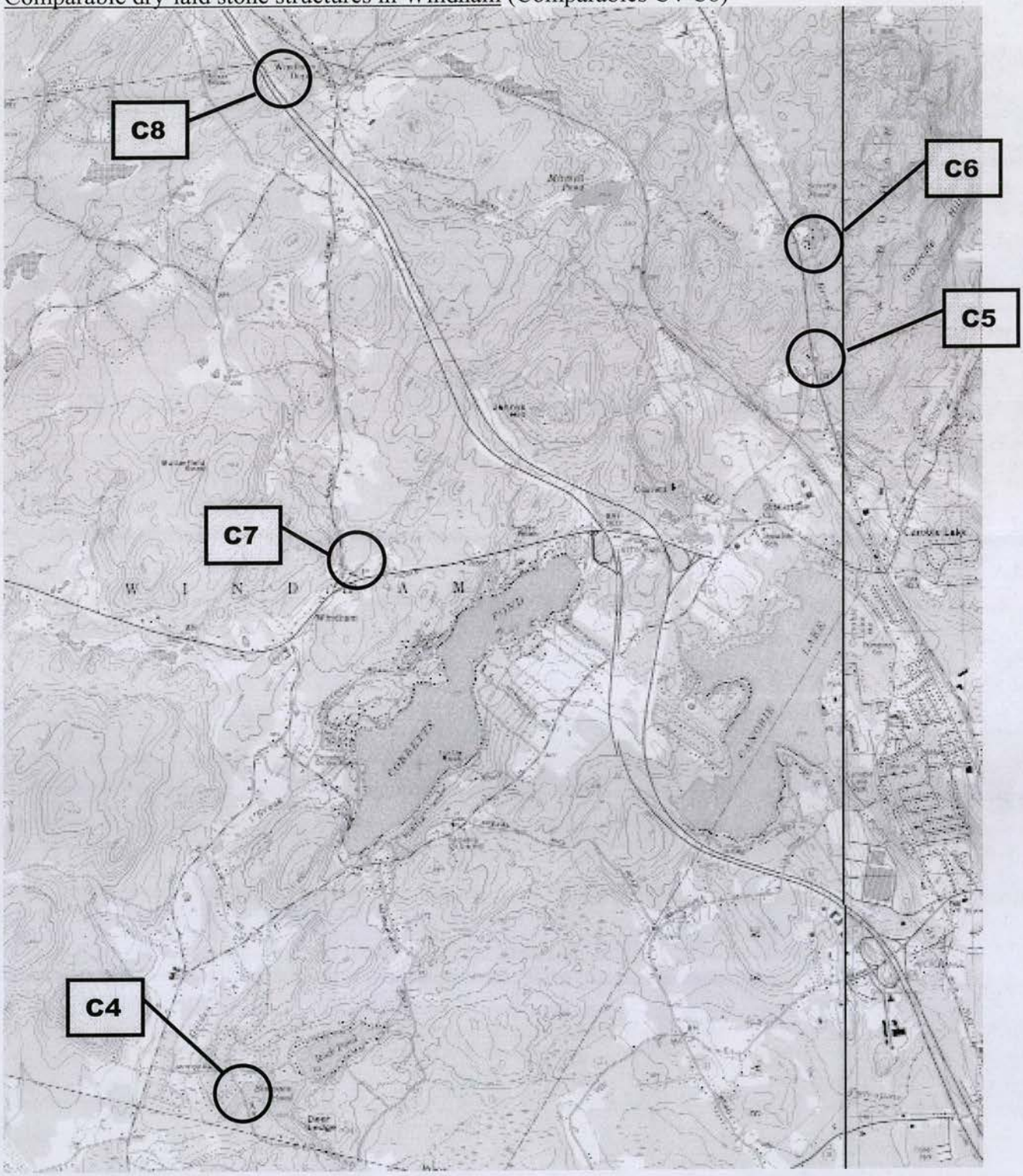
Comparable C3: Dearborn Road, Kensington, view of east wall

Comparable C3: Dearborn Road, Kensington, view north



C3 location map

Comparable dry-laid stone structures in Windham (Comparables C4-C8)



Location of comparables in Windham

Comparable C4: Simpson's Causeway – view south across roadway

Comparable C4: view southeast

Comparable C5: Dam remnant, view northeast

Comparable C5: view northwest of culvert

Comparable C6: view north of Seavey's mill dam

Comparable C7: view of culvert over Golden Brook in the heart of Windham Village

Comparable C8: Beehive on Beacon Hill Road

Comparable historic properties in Windham

The existence and condition of these properties were not confirmed. All photographs are Collection of Brad Dinsmore.

Mammoth Road Bridge, photo ca. 1880

Mammoth Road Bridge, photo ca. 1880

Kendall's Mill Bridge, photo ca. 1880

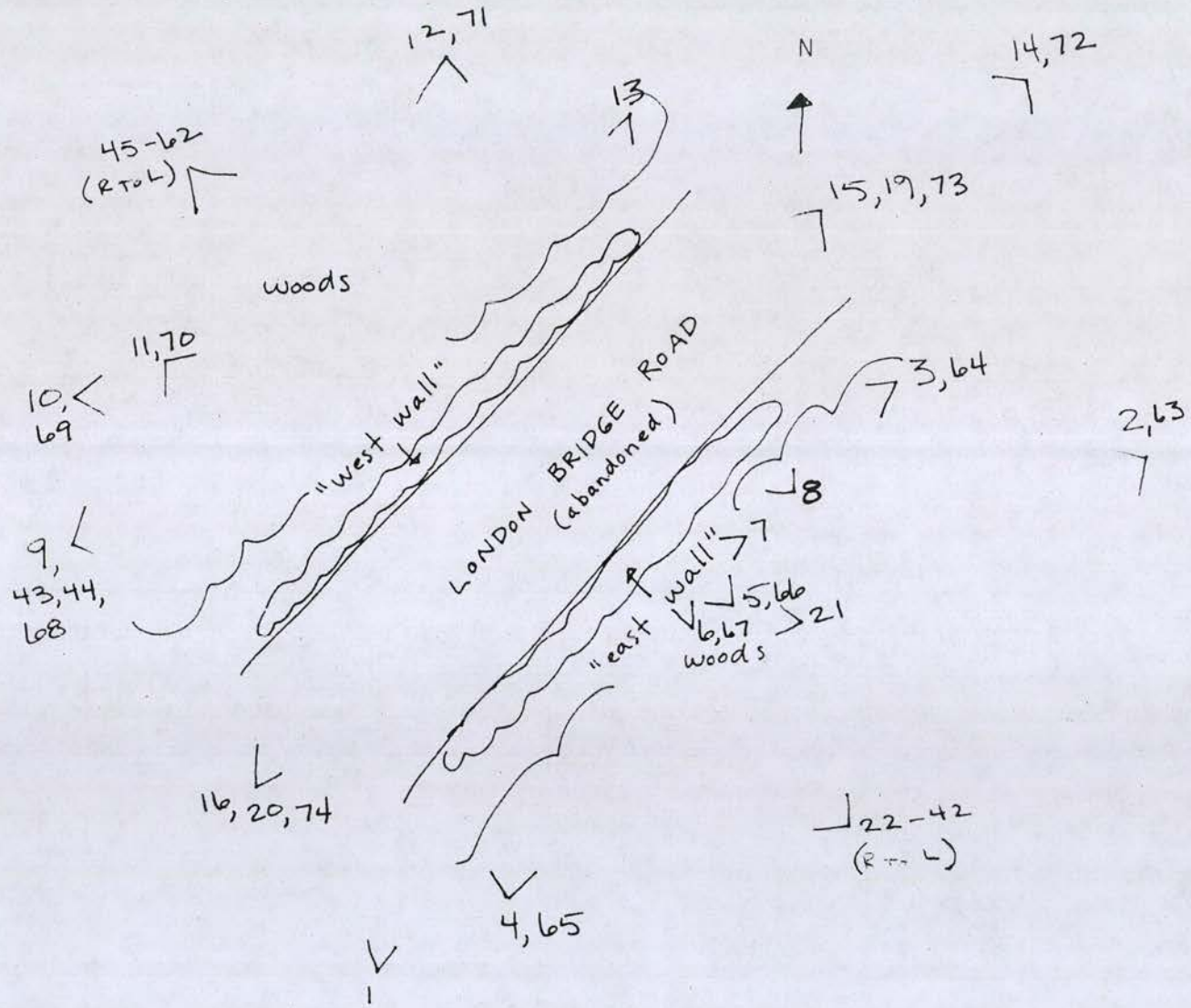
Kendall's Mill Bridge, photo ca. 1880

Fessenden Dam, photo ca. 1910

Rec'd 2/27/06

Addendum – Black and white photographs 63 through 74 were taken by Kerry Davis of Preservation Company on January 26, 2006. All negatives are stored at NHDHR.

NEW Photo Key



Photographs

Photo 63) view west of east wall Roll: 1 Frame: 4 Direction: W

Photo 64) view west of east wall Roll: 1 Frame: 5 Direction: ~~W~~ SW

Photo 65) view northeast of east wall Roll: 1 Frame: 8 Direction: NW

Photo 66) detail of east wall Roll: 1 Frame: 6 Direction: ~~E~~ NW

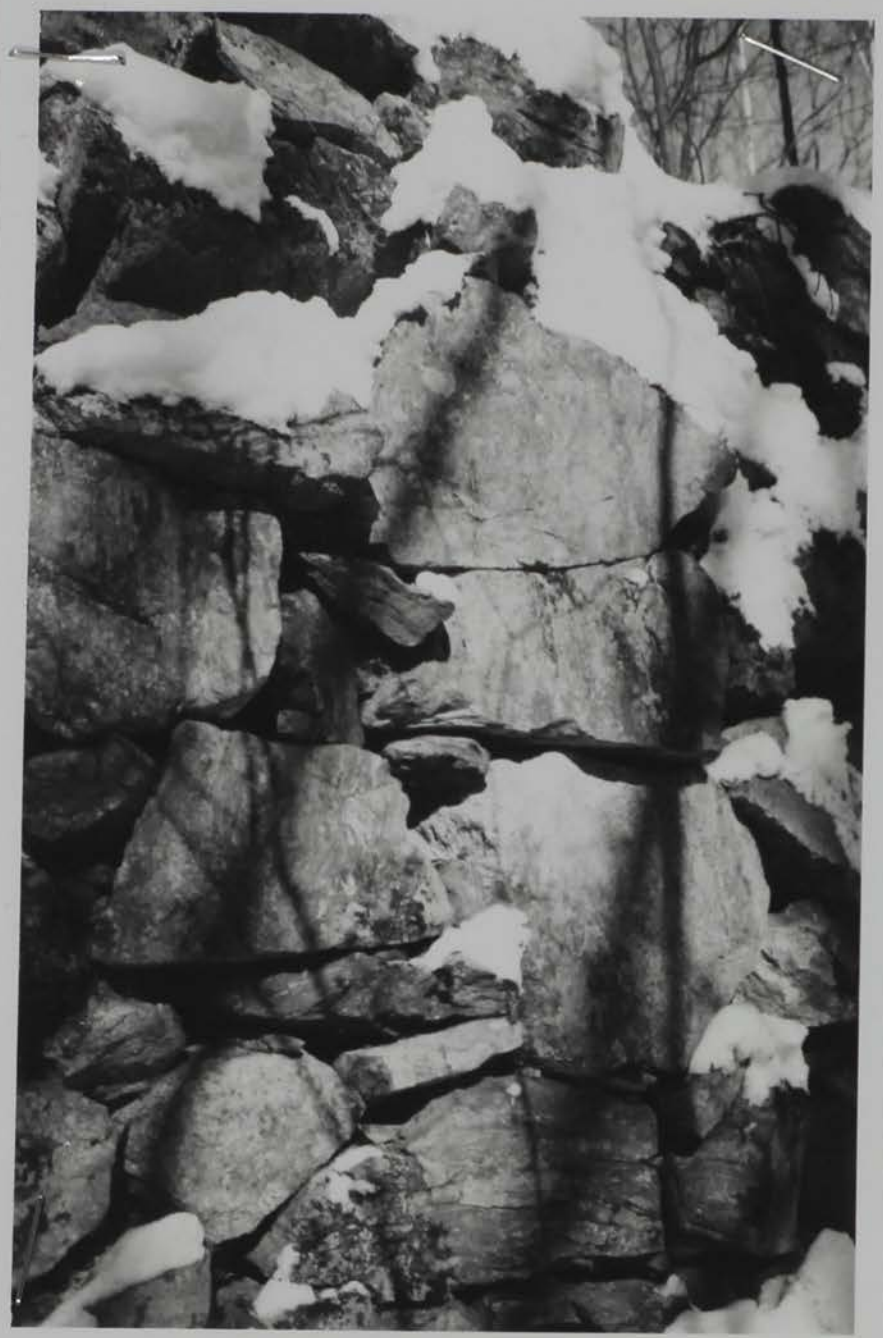


Photo 67) detail, center of east wall Roll: 1 Frame: 7 Direction: NW

Photo 68) view northeast of west wall Roll: 1 Frame: 10 Direction: ~~NW~~ NE

Photo 69) view east of west wall Roll: 1 Frame: 11 Direction: E

Photo 70) view southeast of west wall Roll: 1 Frame: 12 Direction: SE

Photo 71) view south of west wall Roll: 1 Frame: 13 Direction: S

Photo 72) view southwest across causeway Roll: 1 Frame: 3 Direction: SW

Photo 73) view southwest up slope of causeway Roll: 1 Frame: 2 Direction: SW

Photo 74) view northeast down slope of causeway Roll: 1 Frame: 9 Direction: NE

Determination of Eligibility (DOE)
NH Division of Historical Resources

Date received:	January 23, 2006	Inventory #:	WND0001
Date of group review:	January 25, 2006	Area:	
DHR staff:	Beth	Town/City:	Windham
Property name:	London Bridge	County:	Rockingham
Address:	London Bridge Road		
Reviewed for:	[X]R&C [ ]PTI [ ]NR [ ]SR [ ]Survey ACOE / Windham High School Project		

Individual Properties

NR	SR
[ ]	[ ]Eligible
[ ]	[ ]Eligible, also in district
[ ]	[ ]Eligible, only in district
[ ]	[ ]Not eligible
[x]	[x]More information needed
[ ]	[ ]Not evaluated for individual eligibility

Districts

NR	SR
[ ]	[ ]Eligible
[ ]	[ ]Not eligible
[ ]	[ ]More information needed
[x]	[x]Not evaluated @ district

Integrity: [X]Location [X]Design [X]Setting [X]Materials
[X]Workmanship [X]Feeling [X]Association

Criteria: [ ]A. Event [ ]B. Person [ ]C. Architecture
[ ]D. Archaeology [ ]E. Exception

Level: [ ]Local [ ]State [ ]National

STATEMENT OF SIGNIFICANCE:
Although this form is a starting point for evaluating whether the London Bridge is eligible for the National Register, additional information is needed before an informed determination can be made. It has not been shown how the bridge is associated with a significant historical context in an important way or whether it embodies the distinctive characteristics of a type, period or method of construction or represents the work of a master.
Outside of an unusual reference to the "gut that must be bridged" in town records, little is known about the bridge's history. Its size and longevity suggest that its construction was well-planned and seriously executed, despite a lack of written records as to its purposes or uses. Historic contexts under which the bridge should be more fully evaluated include early settlement patterns and the nature and extent of early road building in Windham and dry-laid stone construction in general from this period. Comparable analysis is needed, accompanied by images. Information from the heritage commission's survey of other stone structures in town may be helpful, as well as information already forwarded from the NHDHR. In addition to town histories, the county history may provide biographical records on Deacon William Gregg, Joseph Clyde or the Buttrick family, as well as information on the area's geology and geography and the origins of the name "Gold Region" (and whether it relates to Golden Brook or to an early important historical event or resource).
Also, the bridge and its setting must be more completely described and photographed (with 35 mm black and white film, accompanied by a photo key). Splitting or drilling marks should be considered again. The remaining road bed and surrounding vegetation and land and water forms should be described. Also, please clarify which tax parcel applies to this resource (questions 28 and 29). As needed, an eligible boundary should be mapped and justified, based on the resource's significance.

☒ **ENTERED INTO DATABASE**

ACREAGE:	to be determined
PERIOD OF SIGNIFICANCE:	to be determined
AREA OF SIGNIFICANCE:	to be determined
BOUNDARY:	to be determined
SURVEYOR:	Preservation Company
FOLLOW-UP:	Notify surveyor and agencies.

Final DOE approved by: EJE Murray (MI)

INDIVIDUAL INVENTORY FORM **NHDHR INVENTORY NUMBER:** WND0001

Name, Location, Ownership

1. Historic name: London Bridge Road Causeway
2. District or area: ---
3. Street and number: London Bridge Road (abandoned)
4. City or town: Windham
5. County: Rockingham
6. Current owner: Town of Windham

Function or Use

7. Current use(s): (abandoned) Transportation – road related
8. Historic use(s): Transportation – road related

Architectural Information

9. Style: none
10. Architect/builder: Unknown
11. Source: N/A
12. Construction date: ca. 1799/1812
13. Source: Research
14. Alterations, with dates: road abandoned, ca. 1935
15. Moved? no ☒ yes ☐ date: N/A

Exterior Features

16. Foundation: granite
17. Cladding: N/A
18. Roof material: N/A
19. Chimney material: N/A
20. Type of roof: N/A
21. Chimney location: N/A
22. Number of stories: N/A
23. Entry location: N/A
24. Windows: N/A

    Replacement? no ☐ yes ☐ date: N/A

Site Features

25. Setting: forest, rural abandoned road
26. Outbuildings: none
27. Landscape features: woods, wetlands

Photo 1 Direction: NW

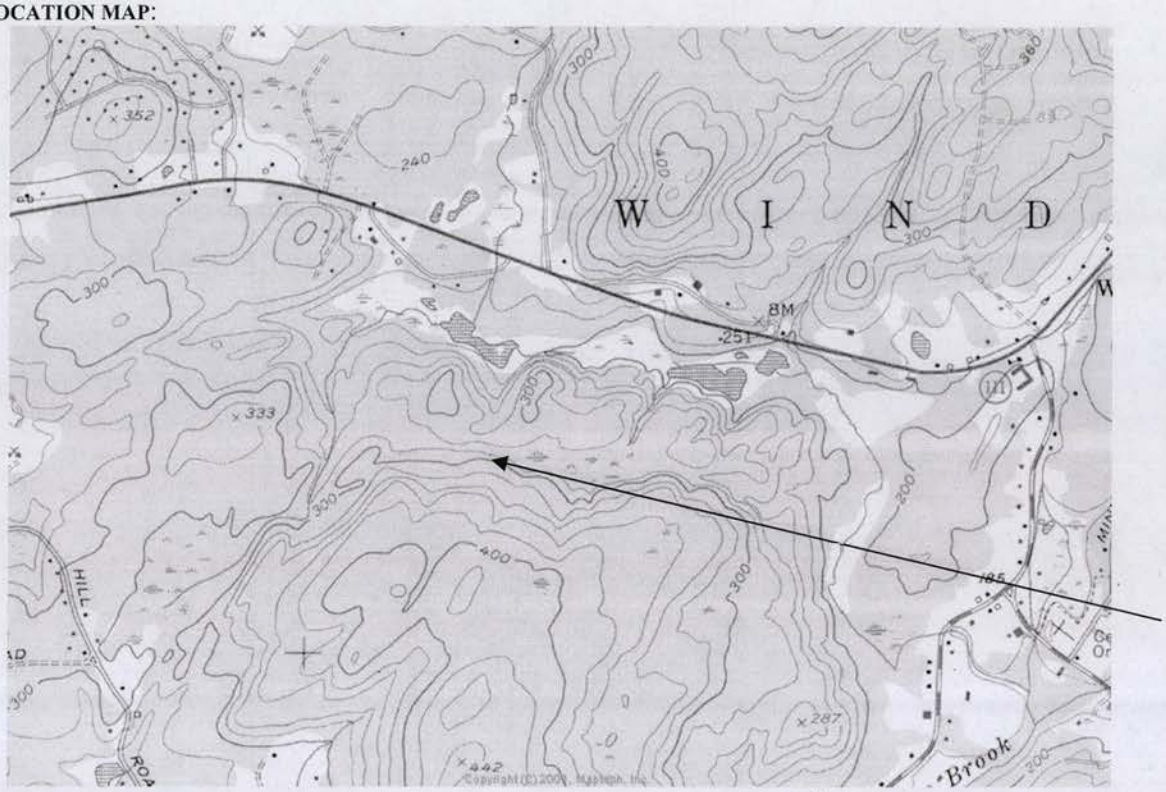
All photos are digital, courtesy of IAC (see Methods Statement, page 3)

28. Acreages: 104, 42, 28, 9 and 7 acres
29. Tax map/parcels: 14B/1500, 2200, 2300, 2400 and 1700
30 UTM reference: 19.309790.4740760
31. USGS quadrangle and scale: Windham, 1:24000

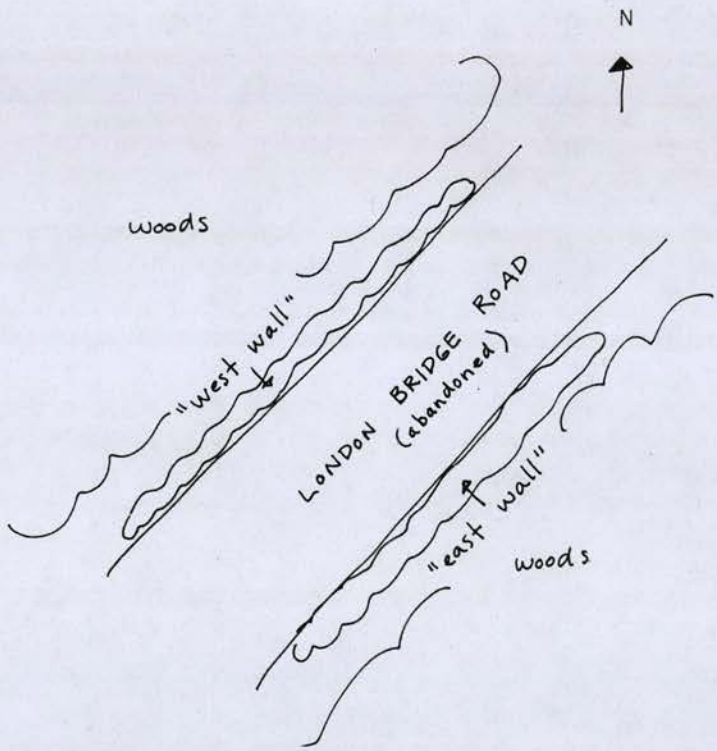
Form prepared by

32. Name: Kerry Davis, Lynne Emerson Monroe, Kari Ann Laprey
33. Organization: Preservation Company
34. Date of survey: January 2006

39. LOCATION MAP:



40. PROPERTY MAP:



Methods

This form was prepared by Preservation Company for Appledore Engineering at the request of the Town of Windham. It is required for compliance with Section 106 guidelines to determine the National Register eligibility of any historical resources which may be impacted by a qualifying project. The resource in this case is an eighteenth-to-nineteenth century granite rubble causeway, which is to be demolished for building the new road to the campus of the new Windham High School.

Preservation Company was unable to do the field work in late December as the site was inaccessible due to snow and the height of Golden Brook, which had to be crossed. Therefore, this form uses the field data collected by Independent Archaeological consulting (IAC) on September 1, 2005. Their digital photos have been reproduced on the attached photo sheets. The IAC report has been submitted to NHDHR as part of the review process and should be available to augment this survey form.

The Town of Windham website has a thorough list of archaeological sites, many of which are listed as stone, but it was not possible to make an investigation of comparable sites in time for this report. Unfortunately, no one from the Heritage Commission or Historical Society was available to offer guidance. The earliest town reports that were available were from 1862, so while others may exist in the town, but they were not available on our visit.

Research was conducted at the New Hampshire Historical Society, New Hampshire State Library, New Hampshire State Archives, University of New Hampshire Library, and the Town of Windham. Dr. James Garvin was consulted and directed the research.

Location

The London Bridge Road Causeway is located on the abandoned northern section of what is currently known as London Bridge Road in the southwestern quadrant of the Town of Windham. The London Bridge Causeway carries London Bridge Road across a marshy gully that is part of the Golden Brook drainage. This roadway travels northeast from a sharp bend in Castle Hill Road, departing just east of the former intersection of Heritage Hill Road (formerly Johnny Hill Road), and ends at NH Route 111, halfway between Meetinghouse Road and Lowell Road.

annotated 1880 map with London Bridge Road locations

Although the roadway described above is currently known as London Bridge Road, the historical record suggests that the original London Bridge Road traveled northeast from the intersection of Schoolhouse Road and Castle Hill Road, and ended at today's NH Route 111. The southern half of today's London Bridge Road was constructed to meet the original London Bridge Road; the northeast half of today's London Bridge Road is part of the original London Bridge Road.

The original roadway was unusually straight for the southwestern two-thirds of its distance until it traveled over the Golden Brook drainage, where the London Bridge Road Causeway was built. The original London Bridge Road was abandoned at some point around 1900.

41. Historical Background and Role in the Town or City's Development:

The London Bridge Road Causeway was built in the late 18th or early 19th century on a local road connecting outlying areas with the developing town center. The origin of the name London Bridge Road has not been identified. It was known as such by the writing of the town history ca. 1880. At that time, the term London Bridge was apparently used to refer to the causeway structure (Morrison 1883:162).

Windham was historically an agricultural community with several small mill sites on the numerous streams and ponds. Settlement patterns consisted of large farms located on the major roads. The town is hilly with large areas of hills and wetlands remaining sparsely settled. Windham was settled in the early 1700s by Scotch-Irish immigrants. It was originally part of the large town of Londonderry, set off as a separate town in 1741. The earliest center of settlement in Windham was southeast of Cobbett's Pond, which became the site of the first meetinghouse and cemetery. Early roads ran on either side of Cobbett's Pond including Range Road and Lowell Road. Mid-18th century roads (now Johnny Hill Road and Castle Hill Road) also connected to Beaver Brook where mills were located, and paralleled Beaver Brook and the western Windham town line. The first sawmill in town was built by Henry Campbell ca. 1750 on Beaver Brook in what became West Windham. Just over the town line in North Pelham was Butler's gristmill. This was located on Beaver Brook at a natural stone dam with a wooden plank dam on top. The adjacent area in Windham was known as the Stone Dam neighborhood.

In 1798 a new Meetinghouse was built in a central location, which would become Windham's town center. The east-west road, now NH Route 111, became an important route through the region. Taverns and blacksmith shops were located along it.

New roads were built to connect outlying farms to the meetinghouse. The road that became known as London Bridge Road was laid out by the Town December 16, 1799. It was described as "leading from Deacon William Gregg's (Wellington Russell in 1883) running easterly by an old road to where two roads meet, then by marked trees to a rock by the side of a gut that must be bridged (stated as London Bridge locality in 1883 history); then by marked trees to where there has been an old coal-pit; then through Mr. Joseph Clyde's pasture, crossing a small brook, at an old ford, and out at the north of said Clyde's house." Initially the road was to be three rods wide (Morrison 1883:163). The width was later reduced to two rods. This road (two rods wide) from William Gregg's to Joseph Clyde's was accepted by vote of the Town on October 27, 1800 (Morrison 1883:163). Another road, which forms the surviving southern end of London Bridge Road was laid out October 15, 1800, "leading from Lt. David Gregg's (Charles E. Buttrick's in 1883) to the road leading by Deacon William Gregg's to Joseph Clyde's." It was two rods wide (Morrison 1883:163).

A bridge or causeway was apparently built over the "gut" when the road was constructed. Causeways or "causeys" were described in Jeremy Belknap's 1792 *History of New Hampshire*. These were usually low structures providing support for roadways that crossed bogs or swamps. They were typically made of felled trees pinned together to make cribs, with the cells filled with rocks to sink the structure. The entire structure was then covered with earth or gravel as a wearing surface (Garvin 2005). Fieldstone causeways were more commonly built by farmers to fill gullies on private land (Garvin 2005). The 1880s history discusses road making of the late 18th century saying only the worst obstructions were cleared and the wash-outs filled with rocks, making a rough uneven surface. The marsh places were covered with logs, forming a corduroy road (Morrison 1883:166). The construction of a massive stone causeway to fill the gully, with retaining walls similar to the wing walls of bridge abutments suggests the road-builders intended the road to be used

for freighting heavy loads, which draft animals would have difficulty drawing up the slopes (Garvin 2005).

Windham contains an abundance of granite, which made areas difficult to farm, but provided building material. When the Manchester and Lawrence Railroad was built through the eastern edge of town in the 1840s a quarry operated from which split granite was procured to building the arched bridge and another bridge in the vicinity. For a short time in the late 1850s this quarry was operated commercially (Morrison 1883:255).

The existing stone structure may be the second on the site. By 1812, London Bridge had been out of repair for some time. The matter was brought before the Town in several annual meetings and on November 2, 1812, it was voted to build a second bridge. However, it was voted not to raise money for the purpose (Morrison 1883:164). Whether the term London Bridge was used in the original documents or applied by the late 19th century historian has not been identified. There were other stone structures built in Windham during the same period. The Simpson causeway was located across Simpson's Pond near the mills on the southern edge of town. Remains of several stone dams survive at historic mill sites. Stone bridges include the old stone bridge over Flat Rock Brook, and bridges over Collins Brook, Beaver Brook and Golden Brook.

Windham Center's role as a center of municipal activity increased with the construction ca. 1834 of a new separate Presbyterian Church near the old meetinghouse. London Bridge Road was always a local connector road, between farmhouses and the town center. It connected to the nearby mill village in Pelham and to roads through the southern part of town. It does not appear to have ever been a significant through-road, although the substantial construction of the causeway suggests freight traffic, possibly for hauling for lumber to the nearby mills. Important regional north-south roads passed through Windham, beginning with the Londonderry Turnpike of 1806 when ran through the eastern edge of town. In 1831, Mammoth Road built from Hooksett to Lowell, Massachusetts. It passed through Londonderry along the western edge of Windham through the village at Butler's Mills (Morrison 1883:165).

At the northern end of London Bridge Road was the farm of the Clyde family occupied by several generations. The only home on the southern part of the road was that of the Buttrick family. Asa and Sally Buttrick purchased a farm in West Windham in 1834. It was inherited by their son Charles Edwin Buttrick who was born in 1841 (Morrison 1883:354-355). The reason for labeling of the area adjacent to the road "Gold region" on the 1880 map has not been determined; there is no mention in the town history.

Windham remained a farming community. There were a few small-scale industries. The mill site at the south end of Cobbett's Pond developed into a mid-19th century mill village. In the town center mills operated for short periods, first a sawmill and later a tannery. Railroads replaced the turnpikes for transporting farm goods to urban markets. The Nashua-Rochester Railroad was built through the northwest part of town in 1872-1874. It intersected with the Massachusetts and Lawrence Railroad at Windham Depot on the north edge of town.

The historic farmhouses at either end of London Bridge Road were still standing in 1892 (Hurd 1892). They were not shown on the USGS map of 1905. The straight section of the original London Bridge road was eliminated during that period, leaving an unimproved road following what is now known as London Bridge Road. This was still shown on the 1941 USGS map (USGS 1941). In 1935, the discontinuing of London Bridge Road was put to a vote by the town. The outcome of the vote was not recorded, but surveyor's records and maps indicate that it was discontinued, in practice

if not officially. By 1953, only the short southern end of London Bridge Road remained (USGS 1953).

42. Applicable NHDHR Historic Contexts:

78. Pre-automobile land travel, 1630-1920.

92. Engineering in New Hampshire, 1623-present.

43. Architectural Description and Comparative Evaluation:

Description

The causeway supports the road locally known as London Bridge Road for approximately 80' across an unnamed gully that is part of the drainage system of Golden Brook. The dirt road between the walls is approximately 20' in-width. The east wall is approximately 80' long and 8.6' high at the highest point; the west wall is approximately 71' long and 7.9' high at the highest point.

The causeway is composed of granite rubble in large pieces randomly laid. There is no evidence of quarry marking (drill holes) on any of the individual pieces. The rubble walls are dry-laid to achieve a flush face using the flat side of the individual units. There is considerable space between the largest units, some of which has been chinked with smaller stones. Most of the pieces are angular rather than round.

The road bed is exceptionally flat and even for the length of the causeway. The profile assembled by IAC indicates that the slopes of the gully are approximately 35°-45°. The stonework increases in height/depth to a maximum elevation of 8'–6" above the ground in the center and tapers again at the opposite end. There is no space for water to pass beneath the causeway.

44. National or State Register Criteria Statement of Significance:

The London Bridge Road Causeway is eligible for the National Register of Historic Places under Criterion A as an excellent and unusual example of an engineering structure used in the construction of the earliest roads in the settlement of the town of Windham; and under Criterion C as a significant example of early causeway construction, highly unusual in its size and use of granite masonry. It maintains excellent integrity and is able to fully document its historic associations.

Dr. James Garvin, State Historian, has offered the following context for significance:

> Causeways were the earliest methods by which road builders of the eighteenth and nineteenth centuries carried their highways across wetlands and steep gullies. Innumerable references in New Hampshire town records and other documents attest to the difficulties that faced early settlers as they struggled to build roads across obstacles which threatened to stop travel by wheeled vehicles. Causeways not only provided an even surface for carts and wagons, but also eased the strain on draft animals by eliminating steep grades.
>
> While causeways were essential structures in early road-building, they were created only with great labor and difficulty in an age when construction materials were moved and placed solely by the muscular power of men and animals. Very few causeways were built of stone.

Writing before 1800, Jeremy Belknap, New Hampshire's first historian, described the usual causeway of the period as "built of large logs, on which they lay rocks, so as to sink the logs into the mud, and form a durable road."

Windham's causeway represents an immense investment of labor in an age when less permanent road construction was the rule. Windham is noted for its stone remains, and this structure is another example of the tenacity with which the town's settlers made use of the material that abounded on their land. While other causeways of similar scale and volume were probably built in southern New Hampshire, most of these structures were destroyed or buried by road widening after the advent of the automobile. The London Bridge Road cause-way was never altered, leaving the structure as a museum piece of early transportation history. (Garvin 2005)

45. Periods of Significance:

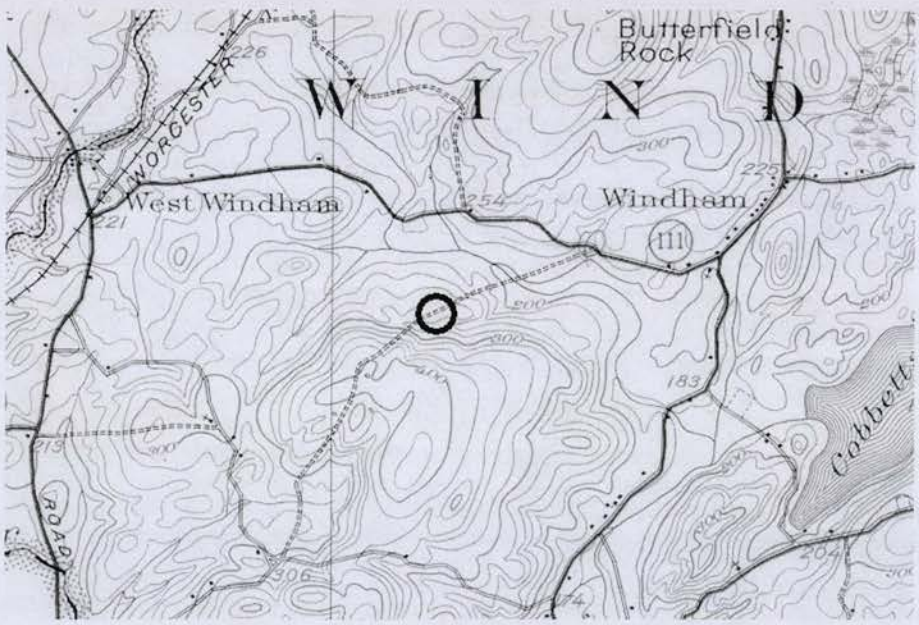
ca. 1799/1812 – ca. 1935

46. Statement of Integrity:

The London Bridge Road Causeway maintains a high degree of integrity of location, design, setting, materials, workmanship, feeling and association. It is in good condition despite some shifting of stones over time.

47. Boundary Discussion:

The boundary of the eligible property associated with the London Bridge Road Causeway is the footprint of the structure and approach road, approximately 100' x 25'.



48. Bibliography and/or References:

James Garvin (NH State Historian) to Windham Historic District/Heritage Commission, 28 November 2005

Monroe, Lynne Emerson, T. Kirker Hill and Kari Federer
1991 "Windham Townwide Area Form," on file at New Hampshire Division of Historical Resources (NHDHR), Concord.

Morrison, Leonard Allison
1883 *The History of Windham in New Hampshire (Rockingham County) 1719-1883.* Canaan, NH Reprinted by Phoenix Publishing Company, 1975.

Morrison, Leonard Allison
1892 *Supplement to the History of Windham, New Hampshire.* Boston: Damrell and Upham.

New Hampshire Highway Department
"Right of Way Source Records" on file at New Hampshire State Archives

Town History Committee
1975 *Rural Oasis: History of Windham, New Hampshire, 1883-1975.* Cannan, NH: Phoenix Publishing Company.

Maps

Anonymous
1805 Microfilm Collection of the New Hampshire Historical Society, Concord, NH.

Carrigain
1816 "Map of New Hampshire".

Chace, J., Jr.
1857 *Map of Rockingham County, New Hampshire.* Smith and Coffin, Philadelphia. Collection of the New Hampshire Historical Society, Concord.

Holland, Samuel, Esq.
1784 "Topographical Map of the State of New Hampshire"

Hurd, D. Hamilton
1892 *Town and City Atlas of the State of New Hampshire*, D.H. Hurd, Boston

Morrison, L.A. and R. C. Mack
1880 "Map of a Portion of Rockingham Co. New Hampshire"

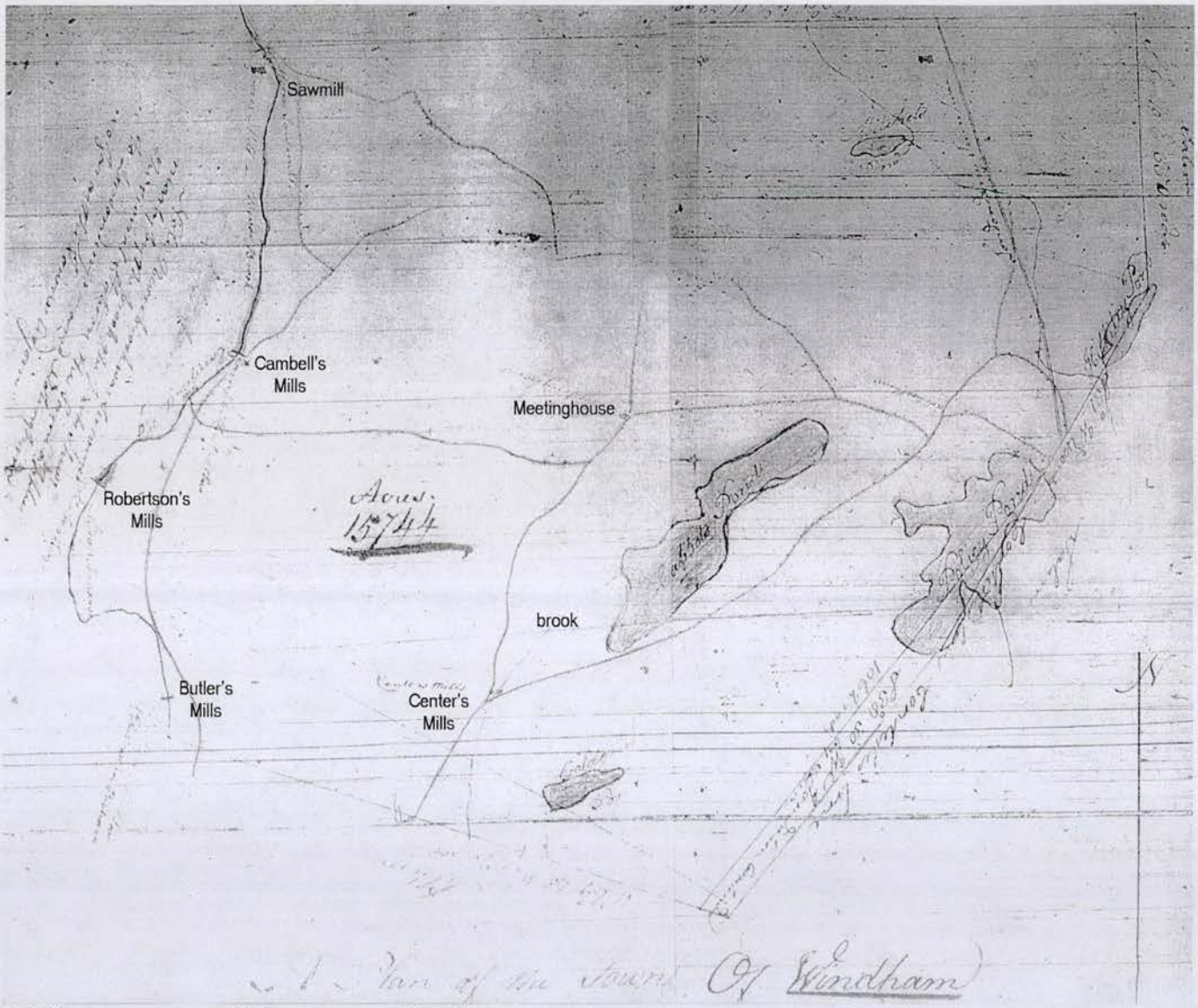
Terraserver-USA
2005 "Windham, NH, US Aerial Photo 4/11/1998." Available from http://terraserver.microsoft.com/default.aspx. Accessed 20 January 2006.

USGS
1905, 1941 and 1953
Manchester Quadrangle, UNH Dimond Library, available on line at:
http://docs.unh.edu/towns/WindhamNewHampshireMapList.htm

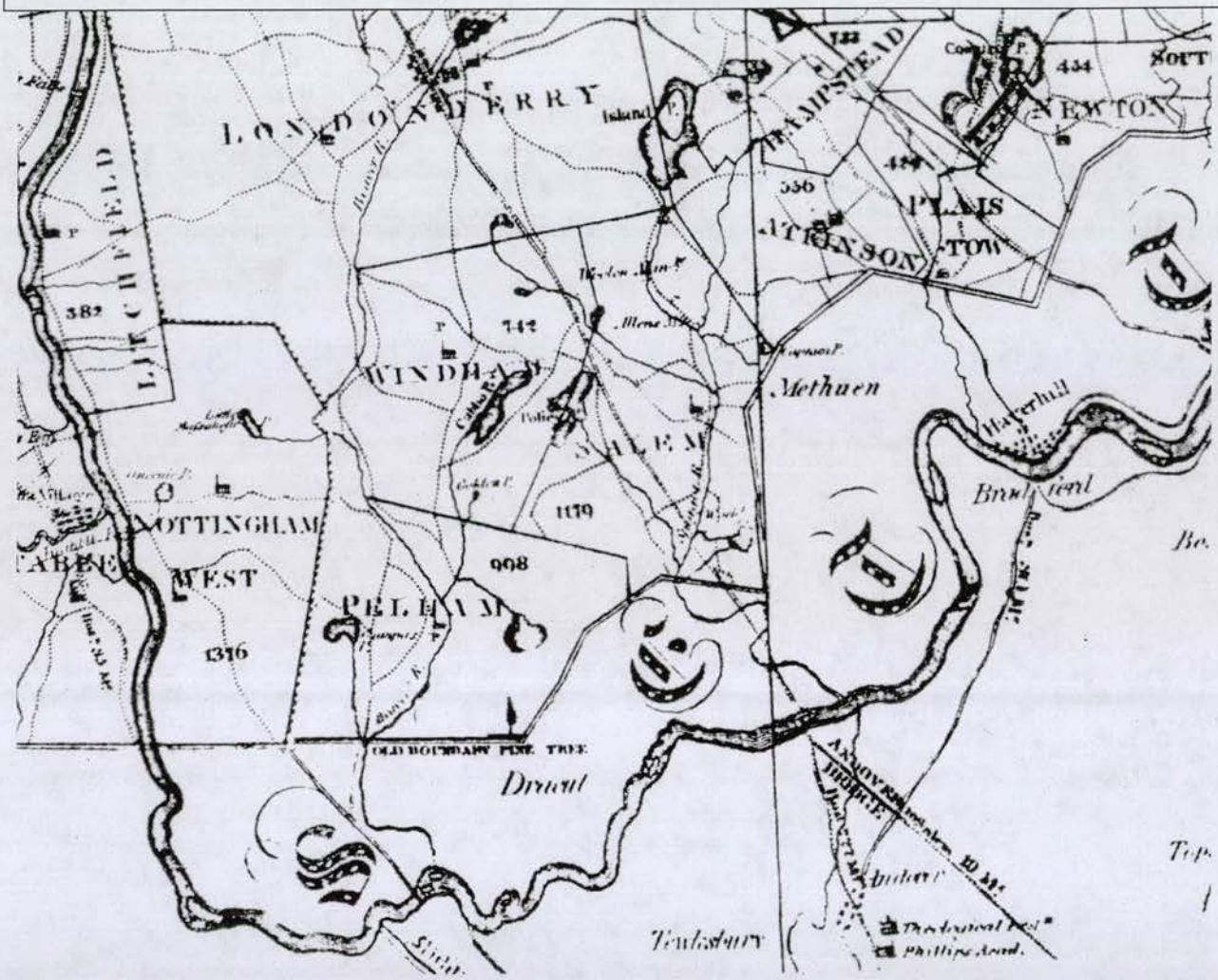
Surveyor's Evaluation

NR listed:	individual	☐	NR eligible:		NR Criteria:	A	☒
	within district	☐	individual	☒		B	☐
			within district	☐		C	☒
Integrity:	yes	☒	not eligible	☐		D	☐
	no	☐	more info needed	☐		E	☐

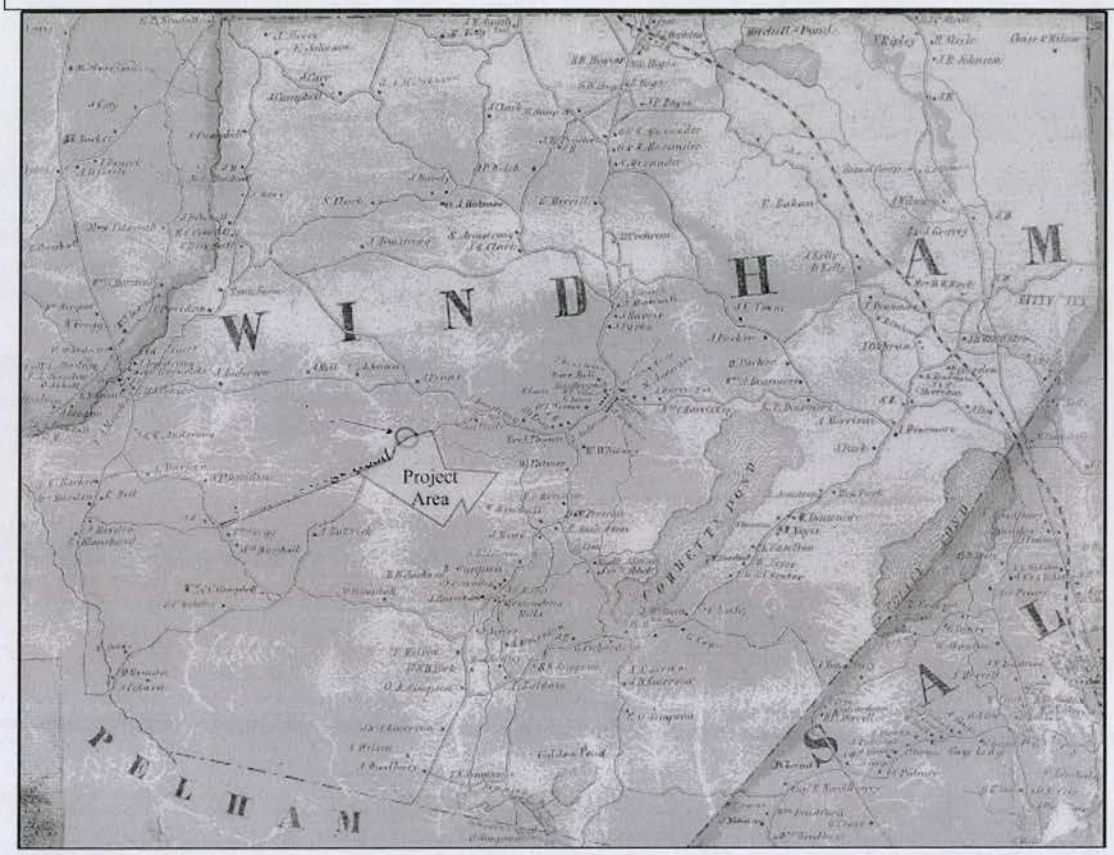
Maps



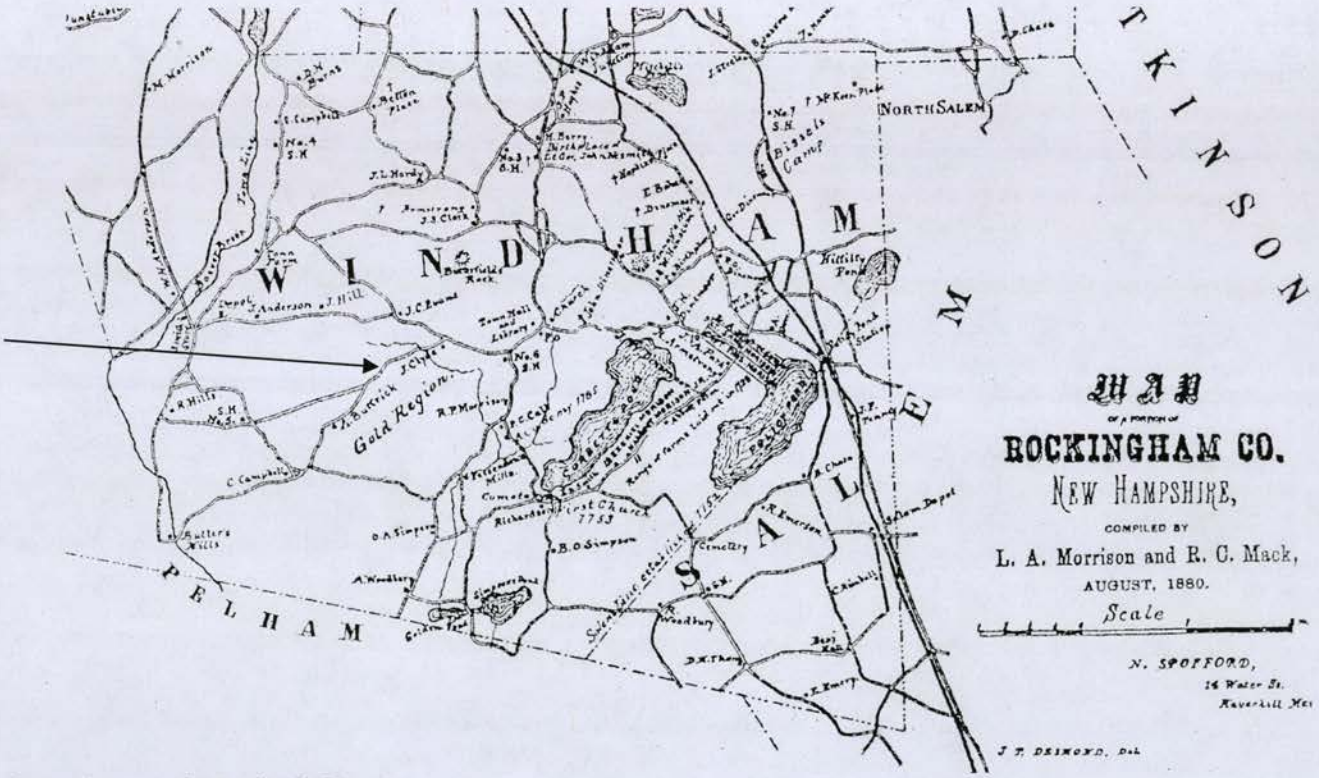
1805 map, annotated (Anonymous 1805)



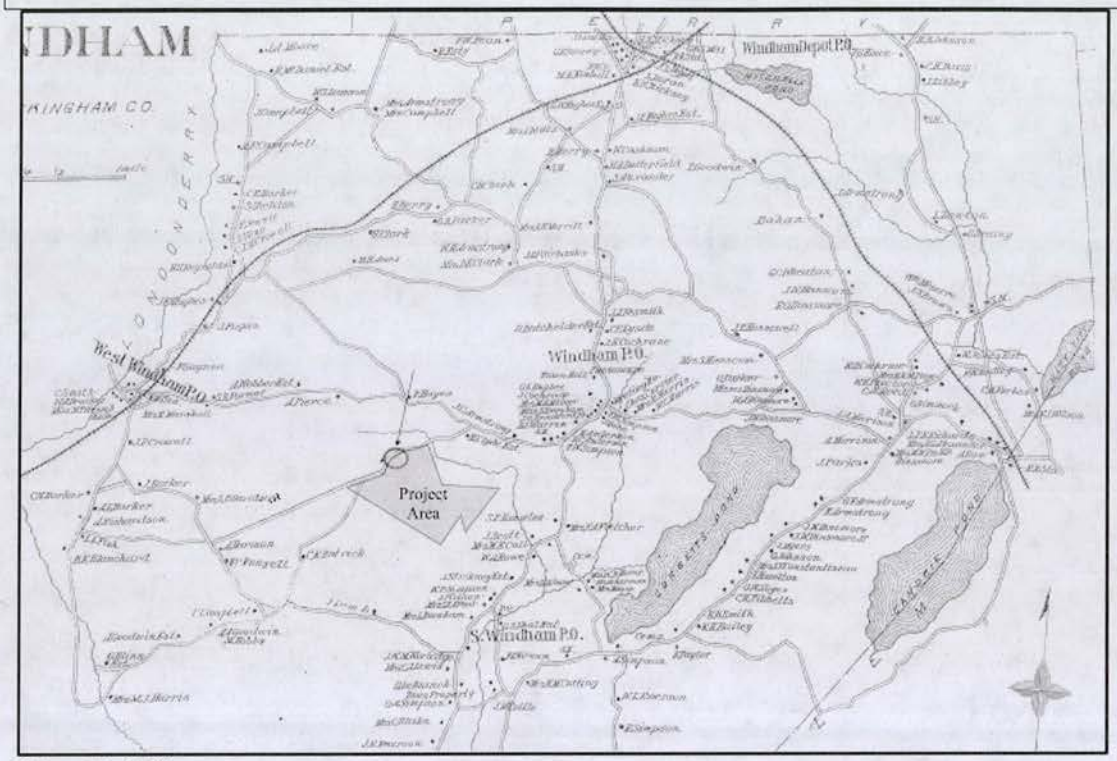
(Carrigain 1816)



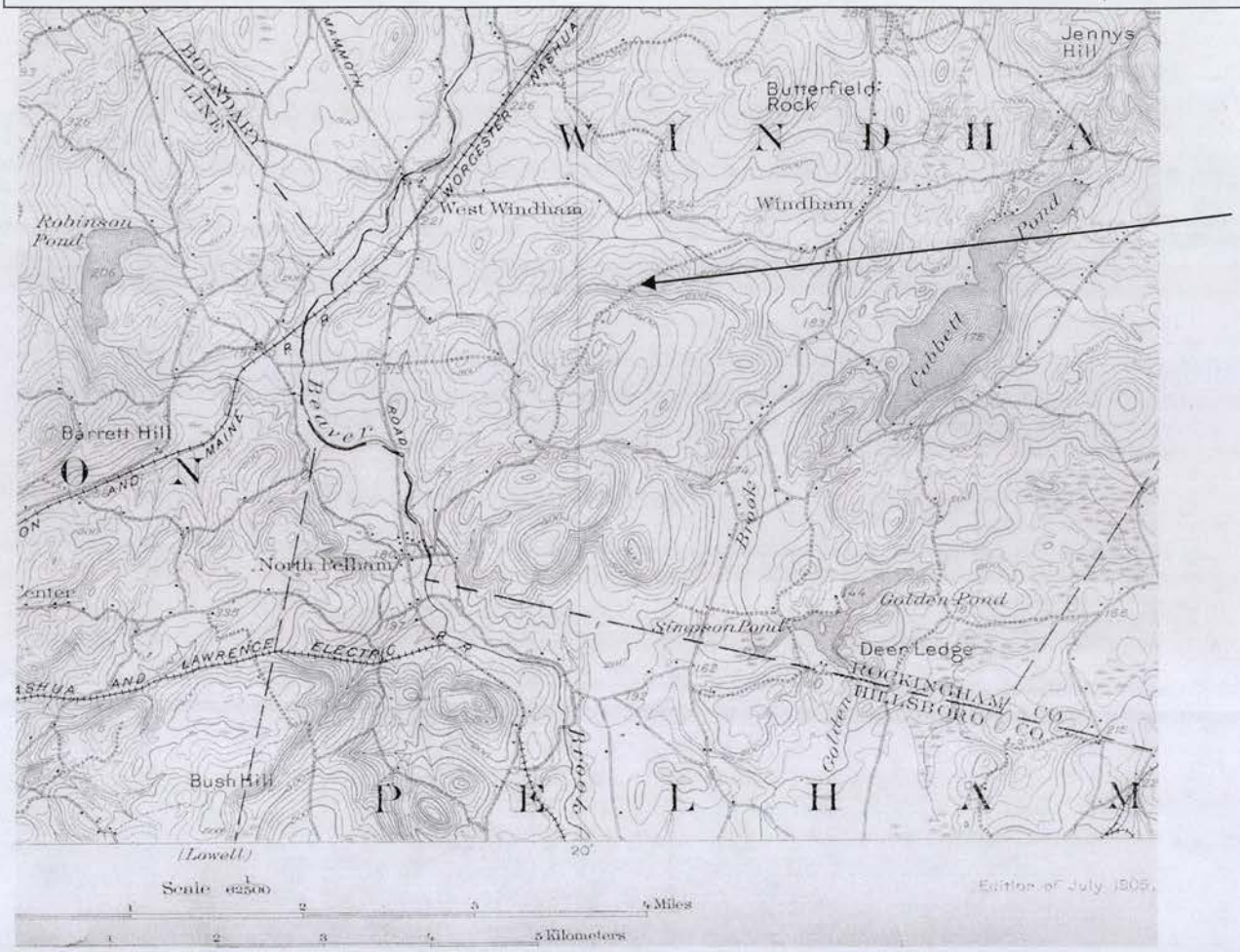
(Chace 1857)



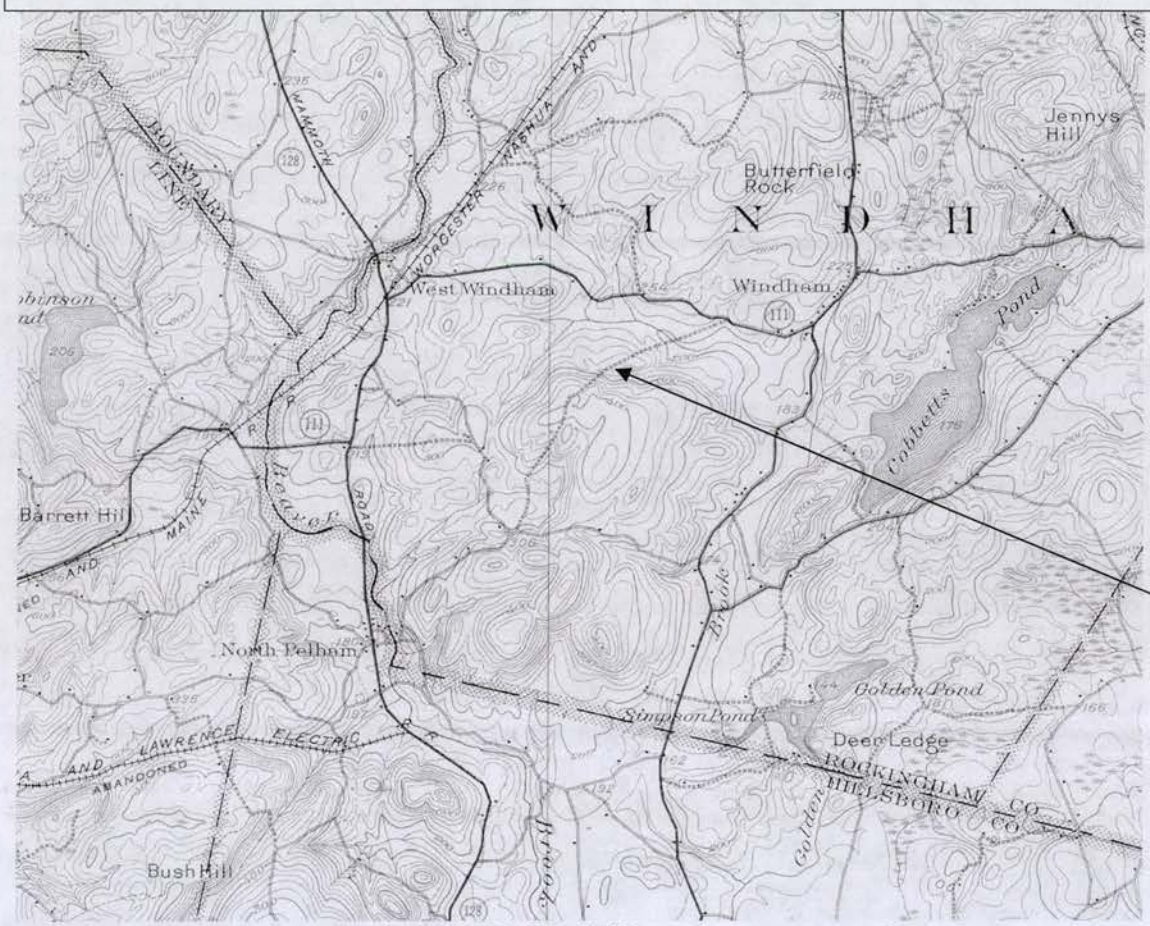
(Morrison and Mack 1880)


Windham Depot P.O.
Windham P.O.
S. Windham P.O.
West Windham P.O.
Project Area
LONDONDERRY

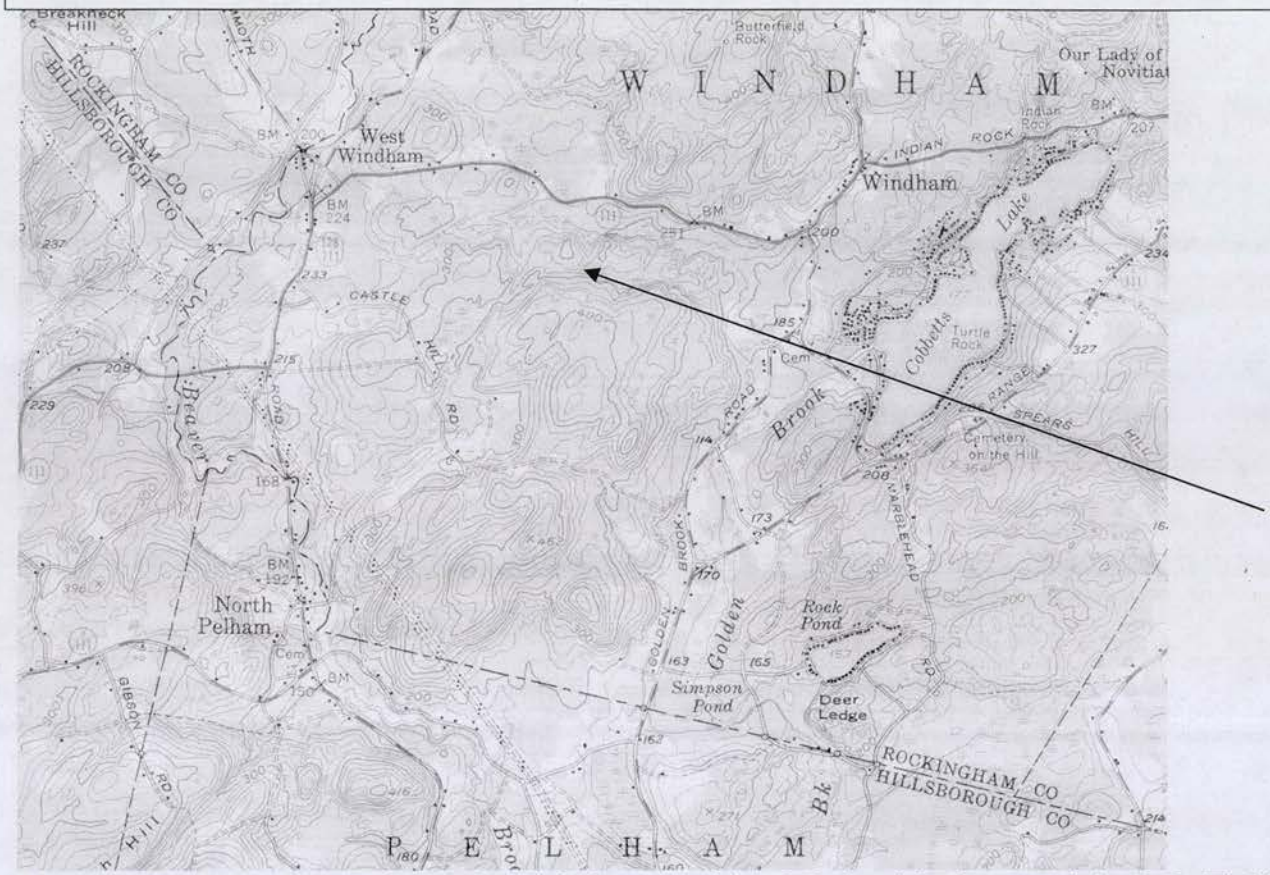
(Hurd 1892)



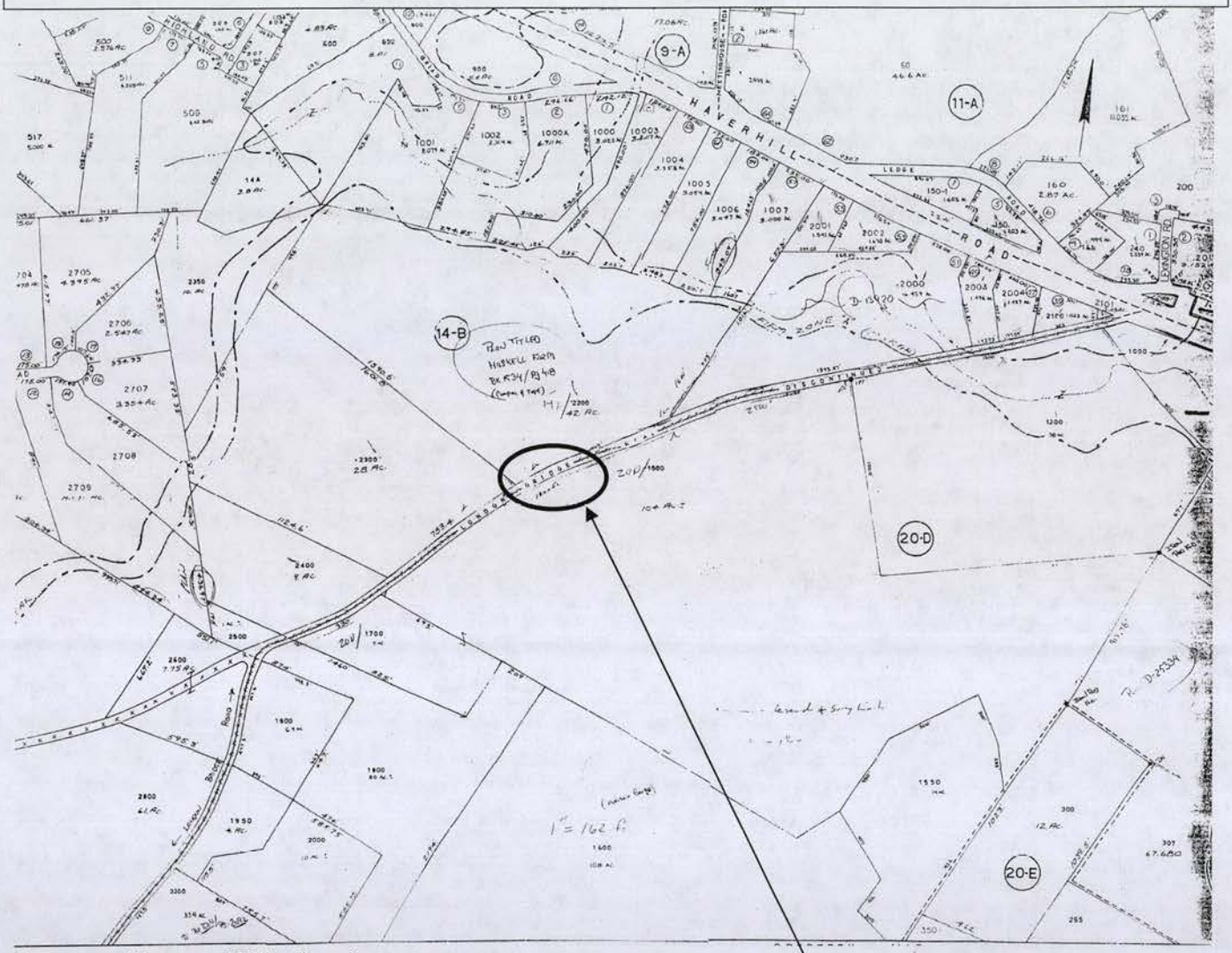
Manchester 1905 – surveyed 1903 (USGS 1905)



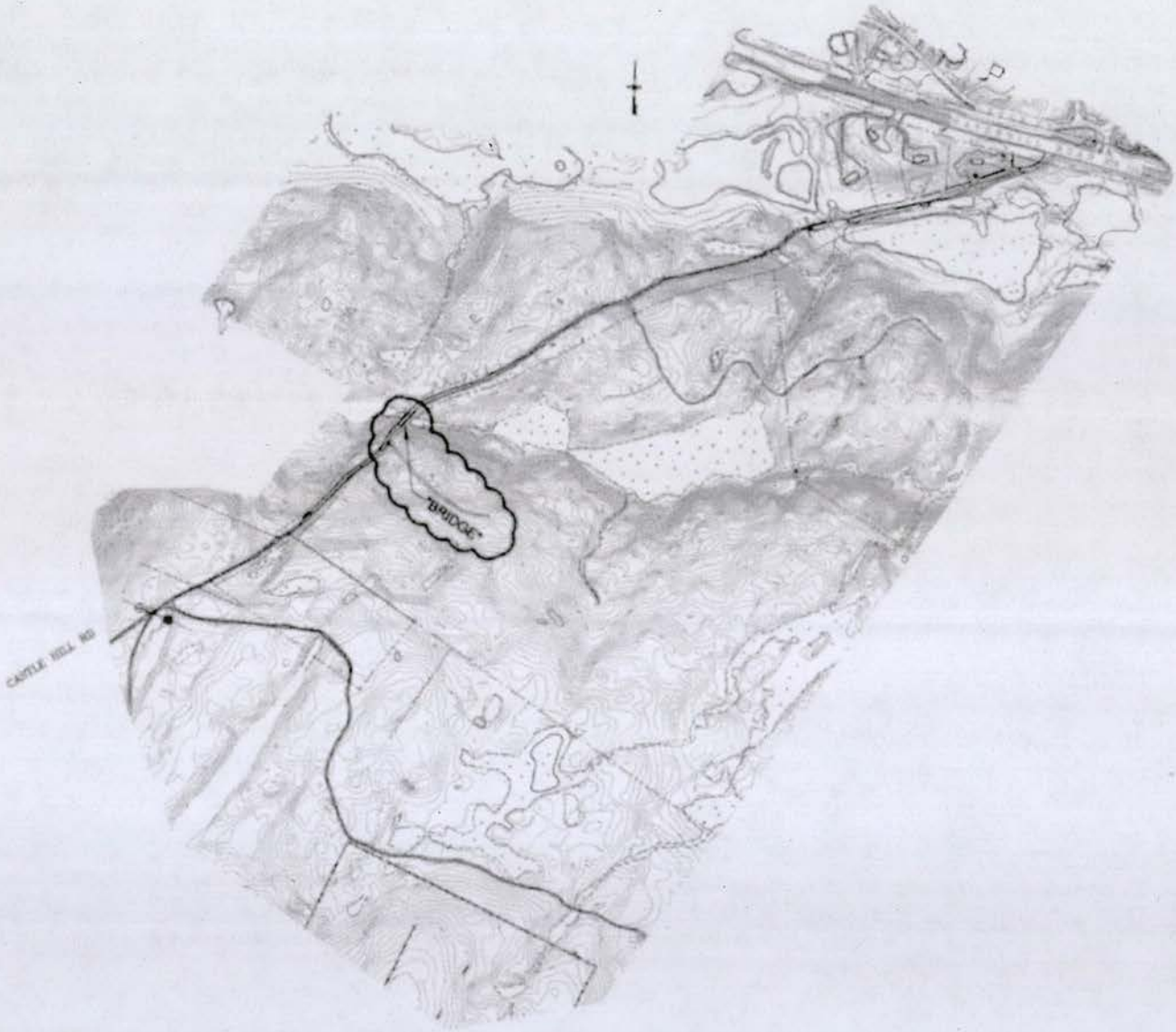
Manchester 1941 – surveyed 1930 (USGS 1941)



Manchester 1953 – Surveyed 1947 (Aerial Photographs), 1952 (Aerial Photographs), 1953 (Field Check) (USGS 1953)

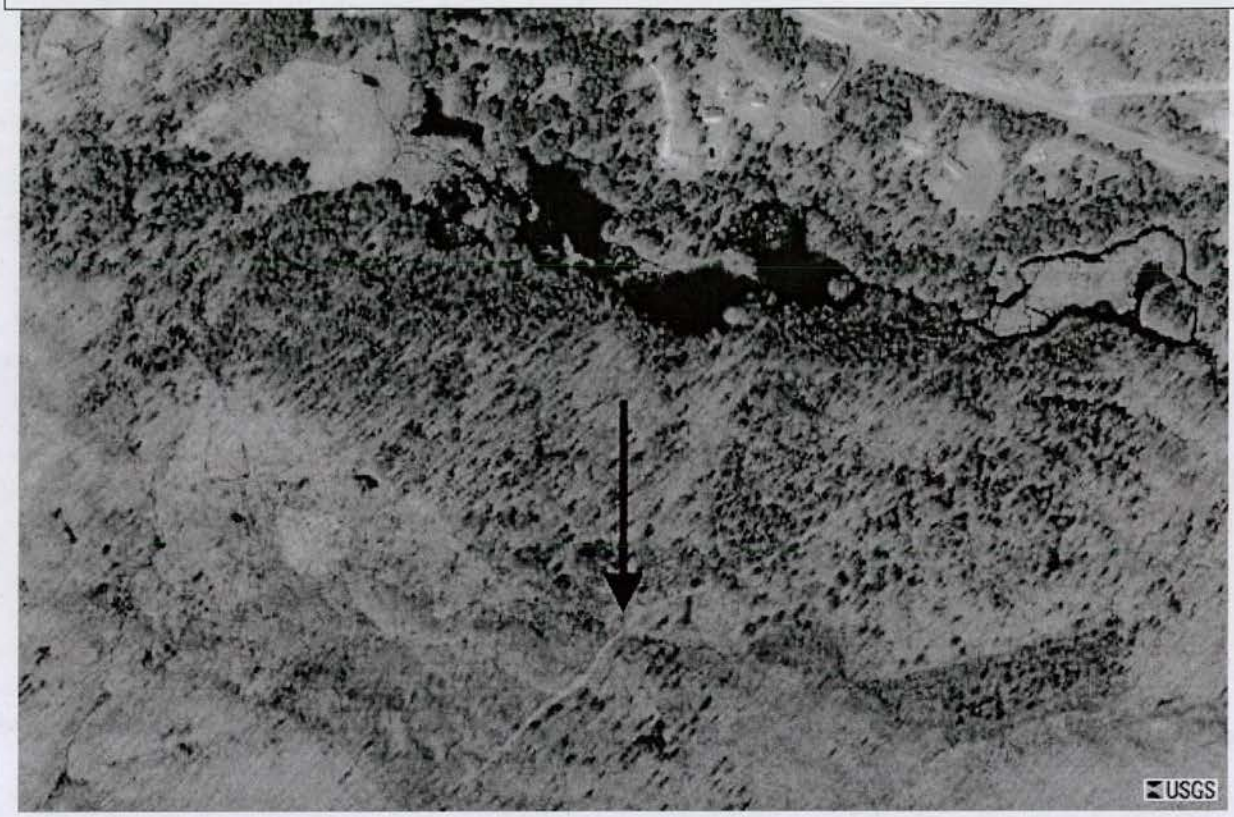


Tax map (Town of Windham)



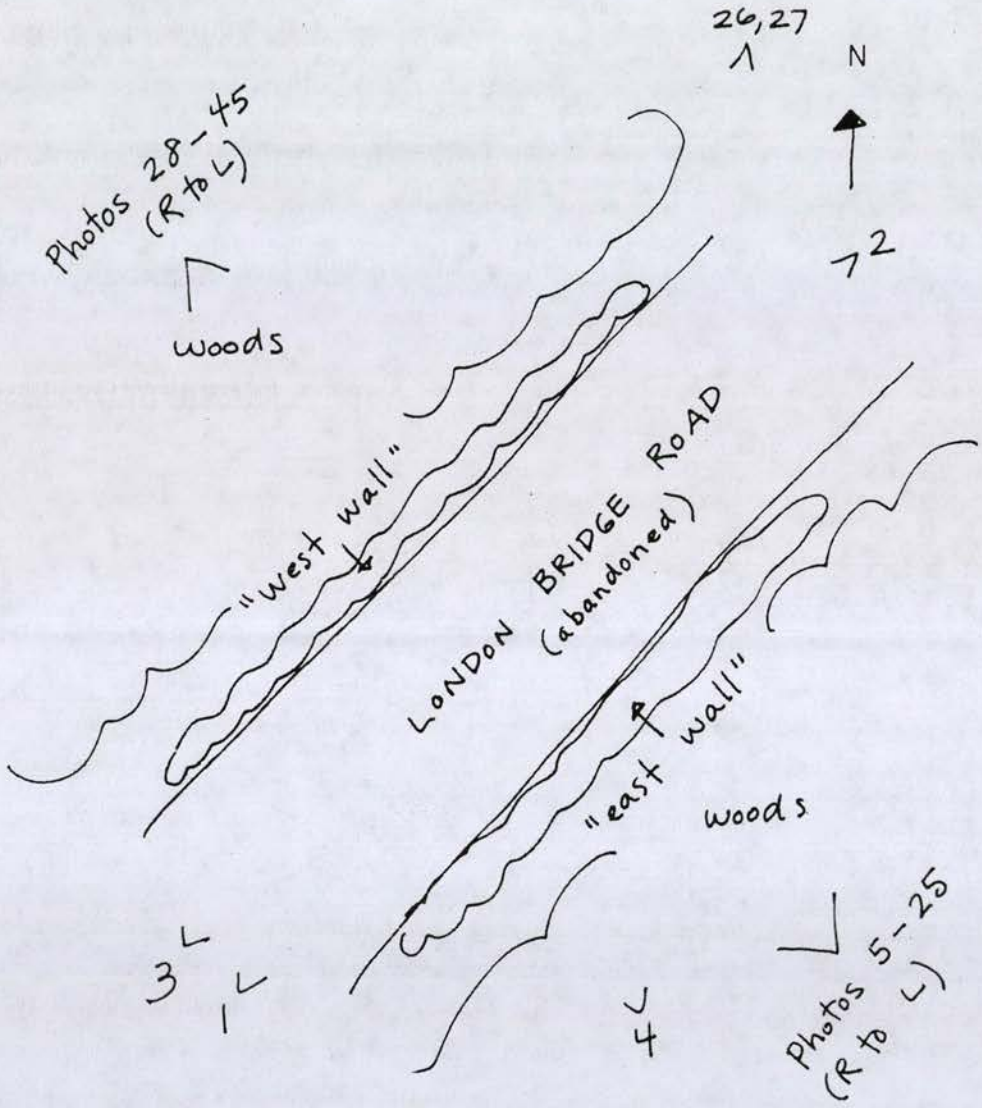
Site of Causeway (Appledore Engineering)

Site of Causeway (Appledore Engineering)



(Terraserver-USA 2005)

Photo Key


26,27
N
Photos 28-45
(R to L)
woods
2
"west wall"
LONDON BRIDGE ROAD
(abandoned)
"east wall"
woods
3
1
4
Photos 5-25
(R to L)

Photographs

All photographs were taken by Kathleen Wheeler of Independent Archeological Consulting (IAC) on September 5, 2005.

Photo 2) London Bridge Road.

Photo 3) 23-12-1-2005 London Bridge Road View N

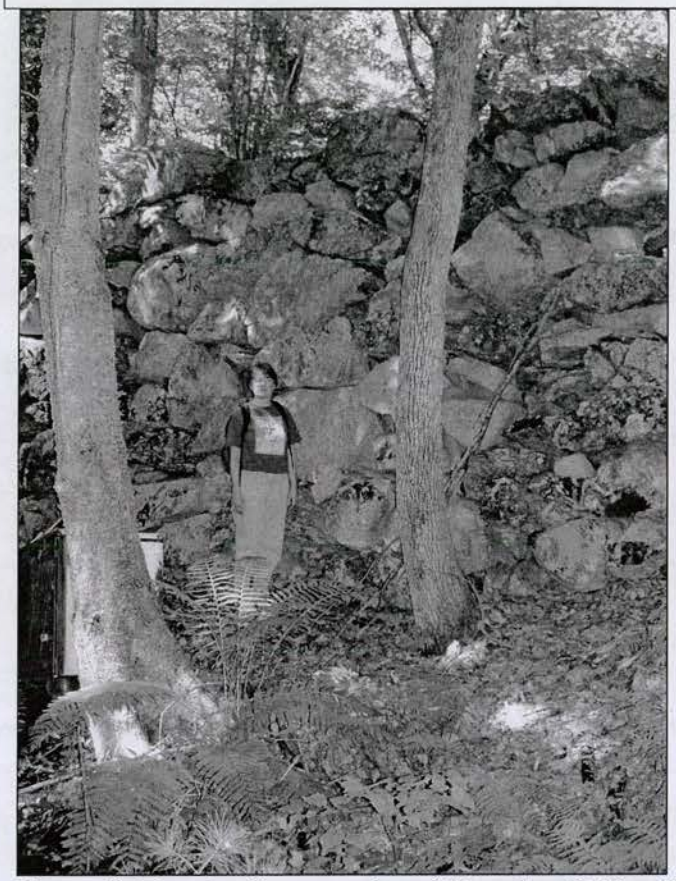
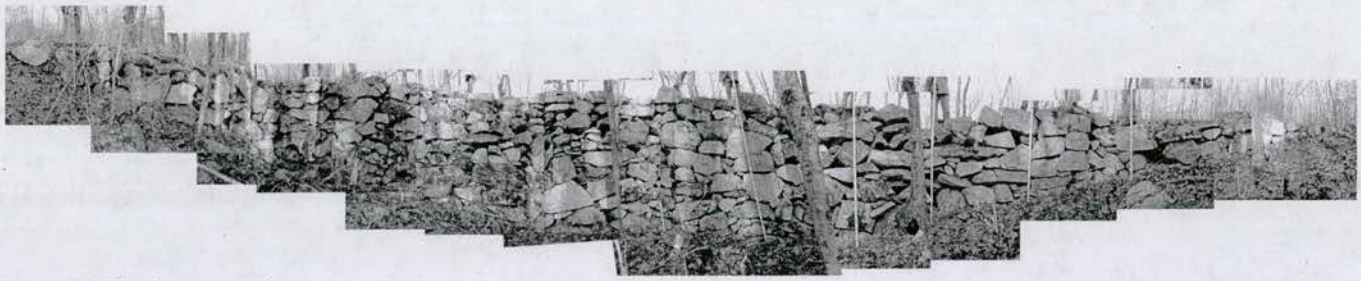
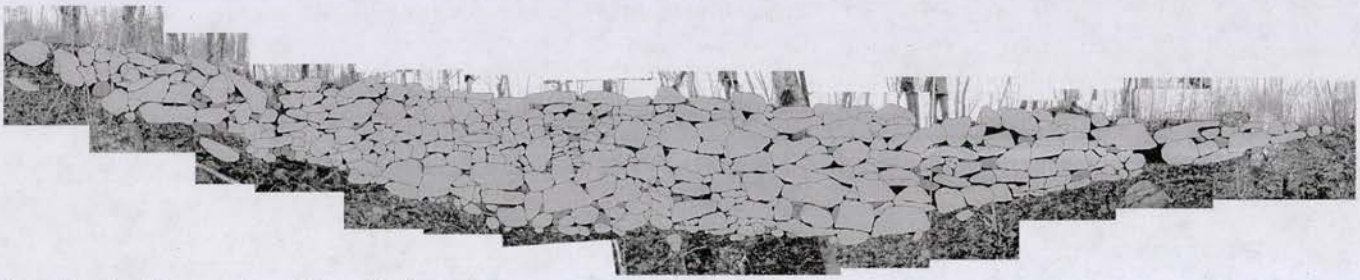


Photo 4) Massive Stoneworks of "London Bridge."

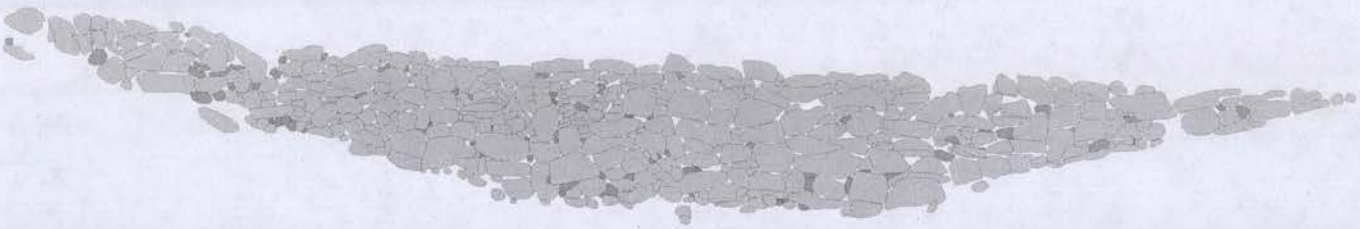
The "East Wall"



East Wall photos only



London bridge east wall w photos



London bridge east

The "East Wall"

Photo 5 through 25 (Right to Left)

Photo 5) 1-12-1-2005 London Bridge E wall North to South, Section 1A View W

Photo 6) 2-12-1-2005 London Bridge E wall North to South, Section 1B View W

Photo 7) 3-12-1-2005 London Bridge E wall North to South, Section 3 View W

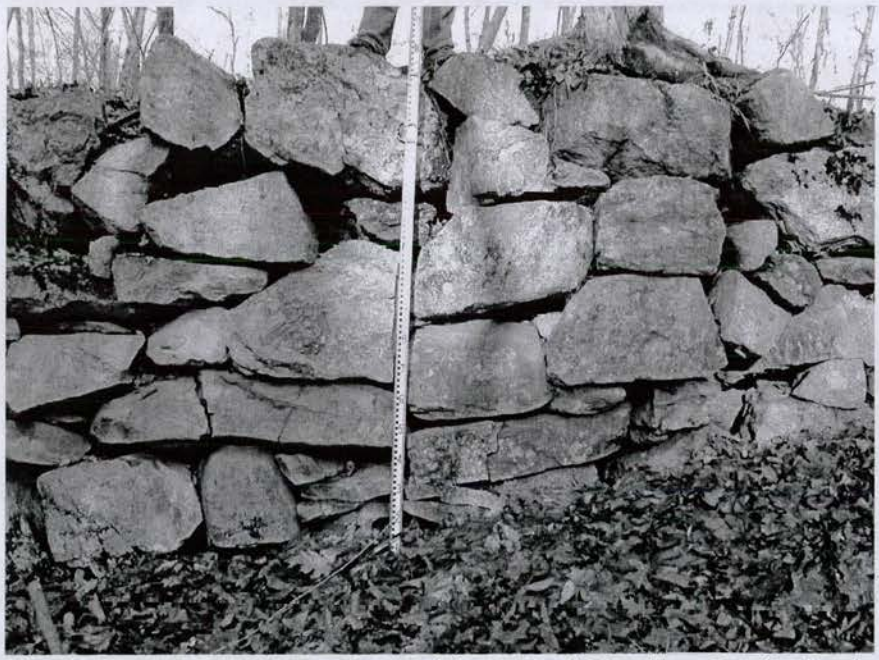


Photo 8) 4-12-1-2005 London Bridge E wall North to South, Section 4 View W

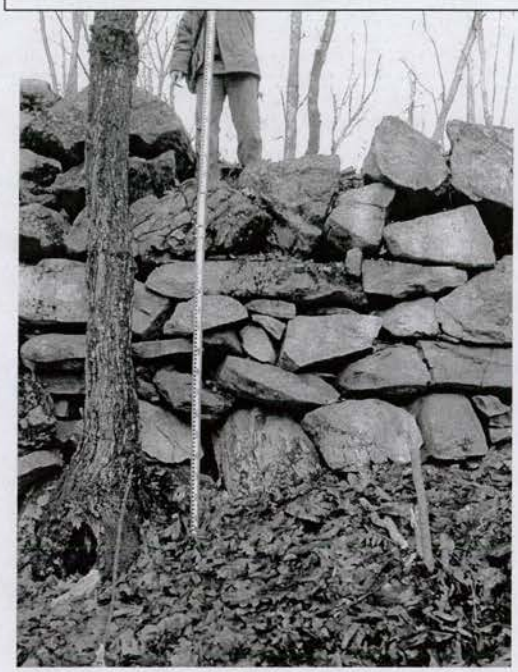


Photo 9) 5-12-1-2005 London Bridge E wall North to South, Section 5 View W

Photo 10) 6-12-1-2005 London Bridge E wall North to South, Section 2 View W

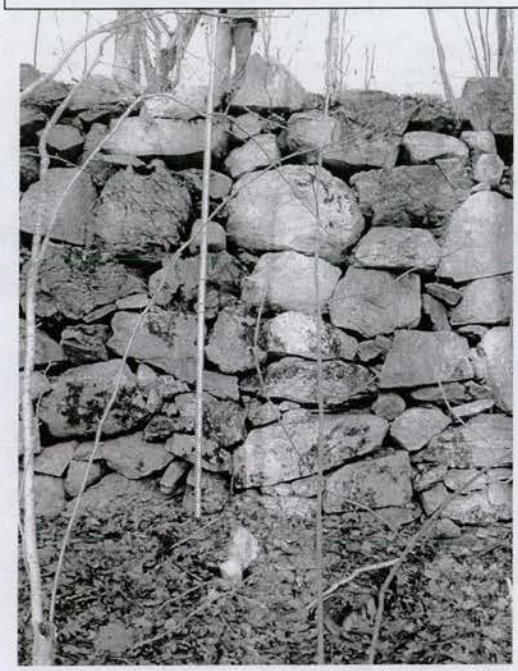


Photo 11) 7-12-1-2005 London Bridge E wall, North to South, 8A View W

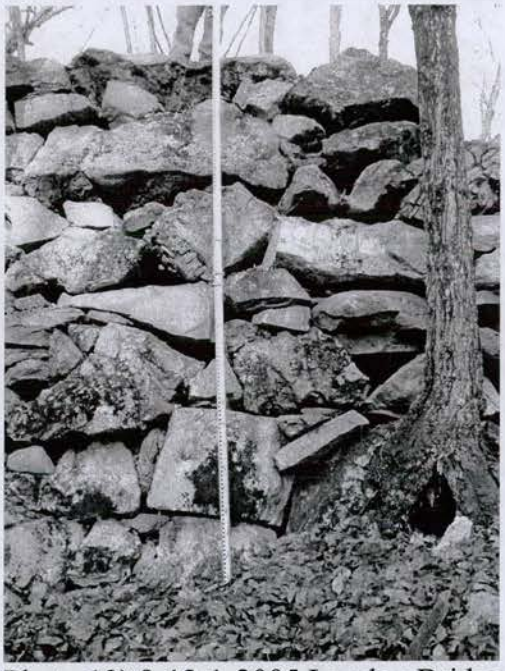


Photo 12) 8-12-1-2005 London Bridge E wall, North to South, Section 6A View W

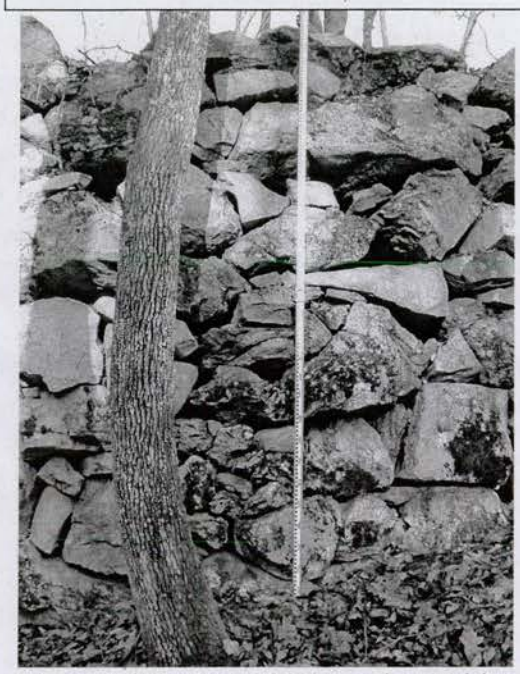


Photo 13) 9-12-1-2005 London Bridge E wall, North to South, Section 6B View W

Photo 14) 10-12-1-2005 London Bridge E wall, North to South, Section 7A View W

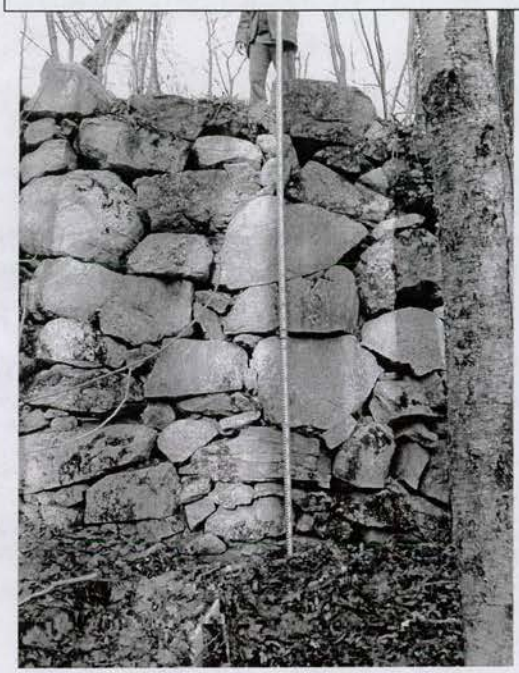


Photo 15) 11-12-1-2005 London Bridge E wall, North to South, Section 7B View W

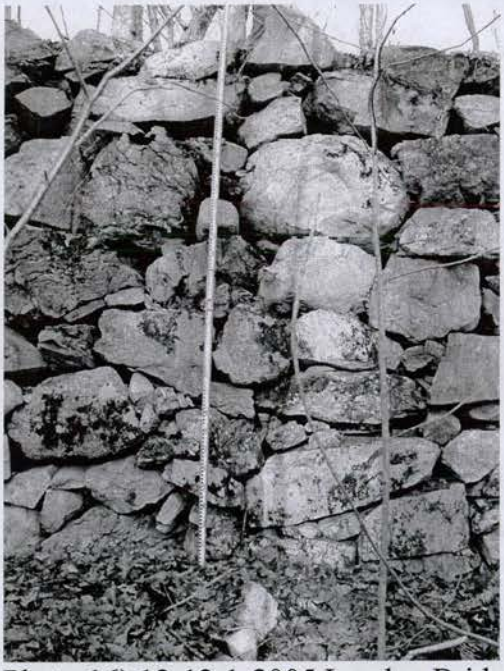


Photo 16) 12-12-1-2005 London Bridge E wall, North to South, Section 8B View W

Photo 17) 13-12-1-2005 London Bridge E wall, North to South, Section 9A View W

Photo 18) 14-12-1-2005 London Bridge E wall, North to South, Section 9B View W

Photo 19) 15-12-1-2005 London Bridge E wall, North to South, Section 10 View W

Photo 20) 16-12-1-2005 London Bridge E wall, North to South, Section 11 View W

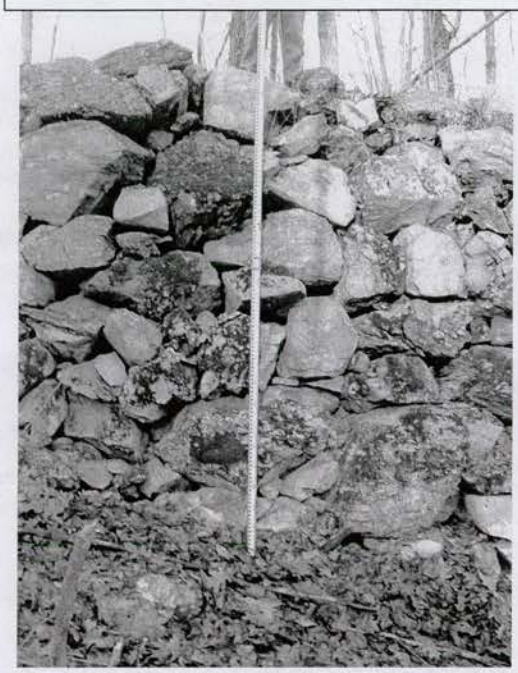


Photo 21) 17-12-1-2005 London Bridge E wall, North to South, Section 12 View W

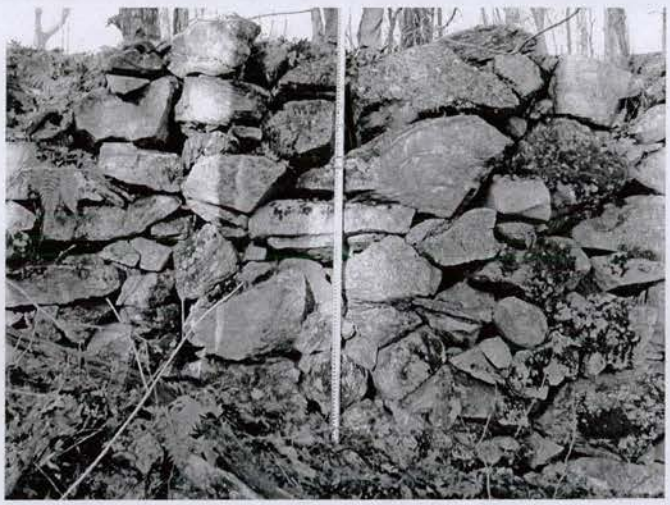


Photo 22) 18-12-1-2005 London Bridge E wall, North to South, Section 13 View W

Photo 23) 19-12-1-2005 London Bridge E wall, North to South, Section 14 View W

Photo 24) 20-12-1-2005 London Bridge E wall, North to South, Section 15 View W

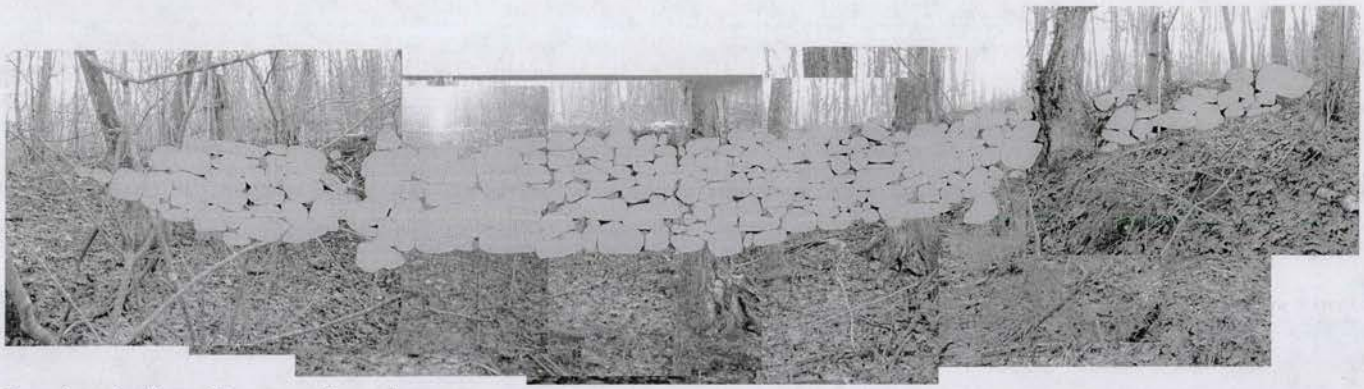
Photo 25) 21-12-1-2005 London Bridge E wall, North to South, Section 16 View W

Photos from north end of bridge:

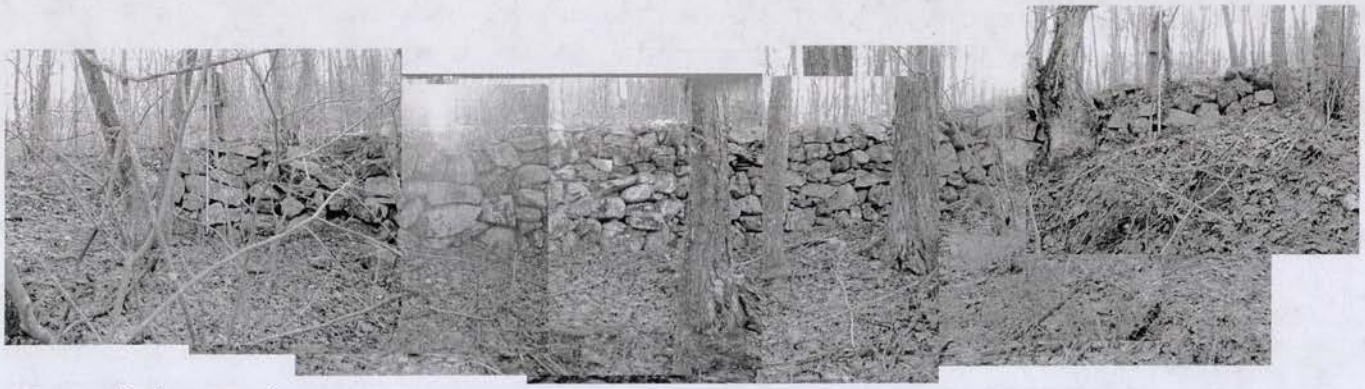
Photo 26) 24-12-1-2005 London Bridge W wall overview View NE (1)

Photo 27) 25-12-1-2005 London Bridge W wall overview View NE

The "West Wall"



London bridge West wall w photos



West wall photos only

The "West Wall"

Photo 28 through 45 (Right to Left)

Photo 28) 26-12-1-2005 London Bridge W wall, North to South, Section 2A View E

Photo 29) 27-12-1-2005 London Bridge W wall, North to South, Section 1B View E

Photo 30) 28-12-1-2005 London Bridge W wall, North to South, Section 2B View E

Photo 31) 29-12-1-2005 London Bridge W wall, North to South, Section 3A View E

Photo 32) 30-12-1-2005 London Bridge W wall, North to South, Section 3B View E

Photo 33) 31-12-1-2005 London Bridge W wall, North to South, Section 4A, View E

Photo 34) 32-12-1-2005 London Bridge W wall, North to South, Section 4B View E

Photo 35) 33-12-1-2005 London Bridge W wall, North to South, Section 5 View E

Photo 36) 34-12-1-2005 London Bridge W wall, North to South, Section 6A View E

Photo 37) 35-12-1-2005 London Bridge W wall, North to South, Section 6B View E

Photo 38) 36-12-1-2005 London Bridge W wall, North to South, Section 6C View E

Photo 39) 37-12-1-2005 London Bridge W wall, North to South, Section 7A View E

Photo 40) 38-12-1-2005 London Bridge W wall, North to South, Section 7B View E

Photo 41) 39-12-1-2005 London Bridge W wall, North to South, Section 8A View E

Photo 42) 40-12-1-2005 London Bridge W wall, North to South, Section 8B View E

Photo 43) 41-12-1-2005 London Bridge W wall, North to South, Section 8C View E

Photo 44) 42-12-1-2005 London Bridge W wall, North to South, Section 8D View E

Photo 45) 43-12-1-2005 London Bridge,W wall, North to South, Section 1A View E

Muzzey, Elizabeth

From: Muzzey, Elizabeth

Sent: Friday, March 03, 2006 3:33 PM

To: 'Carol Pynn'

Cc: Wilson, Linda; Feighner, Edna; Paulus, Emily; Rankie, Christine Fonda; Gagne, Deborah; Garvin, James

Subject: RE: Windham causeway

Carol,

For the London Bridge Road Causeway, the inventory form prepared by the Preservation Company would also serve as the nomination form to the State Register. It's quite extensive; no further research or documentation would be needed.

However, we would need the owner's consent and signature to list the causeway. I have a fairly standard letter that I send out to property owners, who sign the letter at the bottom and return it. The nomination then goes to our State Historical Resources Council for final approval and listing. The Council meets quarterly, next on April 24th, then at the end of July.

The inventory form lists the Town of Windham as the owner of the bridge. For town-owned properties, the chair of the Select Board usually signs the letter; once in a while the town's legal counsel or a town administrator signs as well.

I would be glad to send such a letter out, when or if the town is interested in listing the causeway. Just let me know.

Beth

Elizabeth H. Muzzey
State Survey Coordinator
NH Division of Historical Resources
603-271-8850
elizabeth.muzzey@dcr.nh.gov

-----Original Message-----
From: Garvin, James
Sent: Friday, March 03, 2006 11:12 AM
To: 'Carol Pynn'
Cc: Wilson, Linda; Feighner, Edna; Paulus, Emily; Rankie, Christine Fonda; Gagne, Deborah; Muzzey, Elizabeth
Subject: Windham causeway

Dear Carol,

Your Fax on wetlands and wetland mitigation just came through, and we appreciate it very much. We have a hard time getting copies of local press coverage for the Windham area.

I was very glad that I was in the office when Jenna Russell called from the *Globe* regarding the causeway. In addition to talking at length with her, I gave her Rich Roach's number at the Corps of Engineers, with the hope that Rich could give an authoritative explanation of the Section 106 process from the standpoint of the responsible federal agency.

Muzzey, Elizabeth

From: Muzzey, Elizabeth
Sent: Monday, September 11, 2006 3:34 PM
To: 'CPR1741@aol.com'
Cc: Wilson, Linda
Subject: London Bridge Causeway

Hi Carol,

Linda forwarded your e-mail below to me, since the last part asked about the causeway and National Register listing. As things were left with our review of the causeway, in February 2006 DHR reviewed an inventory form on the structure submitted by the Preservation Co. and determined that it is eligible for listing on both the State and National Registers. Federal preservation regulations -- Section 106 -- required this review as part of the school's expansion plans. Under Section 106, "eligible" resources are offered the same protection as "listed" resources. Properties are rarely actually listed on the Register as part of the Section 106 process. Properties are surveyed because they may be impacted by a federally-assisted project, not because a property owner is interested in the National Register.

If the town was interested in listing the causeway on the National Register, it could engage a consulting architectural historian to prepared a nomination and submit it to our office. Christine Fonda Rankie is our National Register coordinator -- she would work with this consultant to move the causeway through the process.

State Register listing is an easier task. The inventory form prepared by the Preservation Co. could also serve as the nomination form to the State Register. I would just need to write a letter to the town, as property owner, asking for the town's signature approving the listing. Then the causeway would go on the agenda for the next meeting of our State Historical Resources Council, which makes the final decision regarding listing.

If you think town is interested in the State Register, just let me know to whom I could address a "Congratulations, please sign below" letter. A sample letter, for a property in Berlin, is attached. I don't usually send these letters out, unless a property owner is interested. You can also find more information on the benefits of State Register listing on our web site at http://www.nh.gov/nhdhr/barnstatereg.html.

Hope this answers your question. If not, please feel free to call or e-mail again.

Beth

Elizabeth H. Muzzey
State Survey Coordinator
NH Division of Historical Resources
603-271-8850
elizabeth.muzzey@dcr.nh.gov

Berlin, Mt. Forist Cem.doc

-----Original Message-----
From: CPR1741@aol.com [mailto:CPR1741@aol.com]
Sent: Thursday, September 07, 2006 9:39 AM
To: Wilson, Linda
Subject: Re: [HP-NH] FW: September Enews - Northeast Office

Good morning Linda,

I just read the Sept E-news and am interested in learning more about the grant opportunities as regards the Searles Watch Tower. I did not receive page 2 where it should describe this.

On another subject entirely, I have not had any luck regarding submitting the "London Bridge" causeway for National Register listing. It's been quite some time since my last inquiry. Could you please let me know. It appears there might be a "snag".

As always, thank you

Carol Pynn