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United States Department of the Interior
National Park Service

National Register of Historic Places Inventory—Nomination Form

For NPS use only
received JUL 29 1985
date entered SEP 12 1985

See instructions in *How to Complete National Register Forms*
Type all entries—complete applicable sections

1. Name

historic FARMINGTON CANAL (NEW HAVEN AND NORTHHAMPTON CANAL)

and/or common Farmington Canal

2. Location

street & number see continuation sheet N/A not for publication

city, town ___ vicinity of

state Connecticut code 09 county Hartford / New Haven code 003 / 009

3. Classification

Category	Ownership	Status	Present Use	
X district	___ public	N/A occupied	___ agriculture	___ museum
___ building(s)	___ private	___ unoccupied	___ commercial	X park
___ structure	X both	___ work in progress	___ educational	___ private residence
___ site	**Public Acquisition**	**Accessible**	___ entertainment	___ religious
___ object	___ in process	X yes: restricted	___ government	___ scientific
	___ being considered	___ yes: unrestricted	___ industrial	___ transportation
	N/A	___ no	___ military	X other: underground cable

4. Owner of Property

name Multiple ownership

street & number

city, town ___ vicinity of state

5. Location of Legal Description

courthouse, registry of deeds, etc. see continuation sheet

street & number

city, town state

6. Representation in Existing Surveys

title State Register of Historic Places has this property been determined eligible? see continuation sheet ___ yes ___ no

date 1985 ___ federal X state ___ county ___ local

depository for survey records Connecticut Historical Commission

city, town 59 South Prospect Street, Hartford state Connecticut 06106

7. Description

Condition		Check one	Check one
___ excellent	_X_ deteriorated	___ unaltered	_X_ original site
___ good	_X_ ruins	_X_ altered	___ moved date _____
___ fair	___ unexposed		

Describe the present and original (if known) physical appearance

SUMMARY OF ORIGINAL CONSTRUCTION

The Farmington Canal Company, incorporated by the Connecticut legislature in 1822, built the Farmington Canal from the Massachusetts border in Suffield to tidewater at New Haven between 1825 and 1829. In Massachusetts, the Hampshire and Hampden Canal Company built the Hampshire and Hampden Canal between 1826 and 1835 as the northern extension of the original project, a single transportation canal from New Haven to Northampton. After a corporate reorganization in 1836, the New Haven and Northampton Company operated both parts of the route. The two original companies or their promoters used common engineering personnel and methods. Benjamin Wright, chief engineer of the Erie Canal, and his son Henry made preliminary surveys and detailed cost estimates in 1822 and 1823. Davis Hurd, a former resident engineer on the Erie Canal who served both companies as chief engineer from 1825 to about 1829, surveyed the Farmington Canal as built, and prepared or approved all engineering details. Connecticut canal commissioners charged with route approval, notably Simeon Baldwin, assisted in determining the route finally chosen, along with some Farmington Canal Company directors. Henry Farnam, chief engineer from about 1830 to the company's replacement of the canal by a railroad between 1847 and 1849, oversaw all subsequent repairs and modifications.[1]

The canal completed in 1829 ran just under fifty- six miles from the Congamond Ponds outlet at the state line to a fourteen- acre basin next to New Haven harbor's Long Wharf. Twenty-eight lift locks -- all ninety by twelve feet in the clear, and most with lockkeeper's houses -- accounted for 213 of the 230 feet in the single descent from Suffield, and punctuated the canal into five major segments.[2] From the state line, the canal ran about four miles to a flight of six locks in Granby, dropped some thirty-seven feet to begin a twenty-eight mile level running to Lock 7 in Southington, fell another twenty-five feet over about three miles between locks 7 and 9 in Southington, cut through a level of about five miles in Cheshire north of Lock 10, and descended 150 feet in the last fifteen miles to New Haven harbor through nineteen locks (Figure 1). Except for the vertical masonry walls of the last mile and a quarter in New Haven, the canal had an earthen, generally unlined, and prismatic cross section designed to hold water four feet deep and about thirty-five feet wide at the surface (Figure 2). A feeder canal of similar cross section ran nearly three miles from a stone dam on the Farmington River at Unionville to the main line immediately west of the largest structure on the Farmington Canal, an 280-foot-long aqueduct over the same river. The feeder, originally intended as the beginning of a unbuilt branch canal from Farmington to New Hartford, supplied much of the water to the lower thirty-five miles of the canal. Congomond Ponds, subsequently replaced as a source by a Salmon Brook tributary in Granby, sufficed for most of the upper twenty miles. Some twenty-six other streams or rivers crossed by the canal entered it as additional feeders, especially in Southington, Cheshire, and Hamden below the longest level, but an equal number -- including most of the largest --

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passed under the canal through masonry culverts of two classes: a dozen single arch culverts with spans of four to forty feet took the canal over larger waterways on high embankments across floodplains, and perhaps fourteen smaller drains ran under more typical canal sections. Anxious about water supply, canal operators evidently included only eight waste wiers to drain excess water, some of these only being added in the 1840s during the a final period of major repair and rebuilding. Winding along contours at or near the edges of floodplain terraces in the Farmington and Quinnipiac river basins, the canal took a sinuous course through about a dozen town or village centers. This route through a settled agrarian landscape required about ninety road and forty-five farm bridges. Most centers had at least one privately owned basin for canal freight transhipment, travel and commercial facilities, or boat building. Freight or passenger boats about seventy-four by eleven feet in area, with twenty-five ton capacities, used at least six other basins near locks and the aqueduct to await turns for passage through these narrow points.[3]

NOMINATION STUDY PROCEDURES

Selection of the discontinuous district sections presented below followed from a detailed field study of the entire Farmington Canal route through Connecticut. Transposing the canal elements shown on maps of 1828 and c.1847 to U.S. Geological Survey quadrangle sheets proved to be a highly accurate means of locating canal routes and feature locations, especially when amplified by 1980 aerial photographs.[4] A walkover survey of the route with these data in hand verified the location and condition of all remains directly associated with Farmington Canal engineering features, as of April 1984. Field methods included measurement of selected prism profiles (see Figure 2) and previously undocumented masonry structures. Subsequent compilation of information on original and existing canal elements incorporated previous archaeological studies made for several points along the route, the limited original design or repair data, and geological maps pertinent to canal routing and construction.[5] These methods allowed for detailed assessments of integrity for all surviving canal prism segments and other classes of engineering features, and precluded the need for additional subsurface investigations. Documentary and field data on Farmington Canal prism construction or repair strongly suggested the absence of significant new information within prism sections. Field survey for this nomination indicated that some partially intact masonry structures are now buried by debris and silt, but available evidence of original construction and design for all types of such structures allows for detailed prediction of most buried information. The destruction of additional canal remains to recover previously undocumented construction details was neither necessary to establish the significance and extent of district resources, nor practical

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from standpoints of expense and personal safety. Discussions of original canal design and construction methods appear below.

SUMMARY OF DISTRICT EXTENT AND CONTENTS

The proposed Farmington Canal district encompasses remains of canal prism and other features built by the Farmington Canal Company or the New Haven and Northampton Company as part of a single engineering project. Except for one culvert and one bridge abutment far removed from any nearby prism sections, the condition and extent of canal prism defines most district boundaries. There are two principal criteria for inclusion of canal remains within the district: both sides of the prism are substantially intact, visually indicating the full profile as well as the course of the canal; and no later intrusions significantly detract from this visual indication. These criteria exclude visible segments of canal route with only one or no prism sides, or with modern structures inserted into the prism. District prism segments generally include other features such as remains of locks and bridge abutments within prism limits; some remains of feeder entry points or basins extend beyond such limits, as do several lockkeepers' houses. Very short intervals of demolished canal along otherwise intact sections become, within these criteria, minor non-contributing elements. There are also very short sections of intact prism within long stretches of demolished sections which are excluded from the district unless they contribute substantially to understanding particular problems of canal construction. The detailed description of district sections presented below identifies these short sections. With a comprehensive emphasis on canal design, construction, and maintenance, the district does not include other private commercial, residential, or industrial structures dating to the canal era and possibly related to canal use.[6] None of the handful of small industrial sites which used canal water during the canal era survive. At several points, district boundaries include isolated instances of non-destructive, nineteenth century re-use of canal elements after 1847.

There are twenty-five discontinuous canal sections in the district, totalling over 23.52 miles in length and encompassing some 248 acres. Sections range in length from .19 to 4.57 miles. Twenty-two of these sections, together just over twenty-two miles long, are on the main line while the remaining three sections are on the Farmington River feeder. About forty percent of original Farmington Canal prism thus survives with some integrity, albeit generally altered by erosion and sedimentation, attesting to the durability of this enormous landscape feature despite the vulnerability of its generally earthen structure to modern development (Photographs 1 through 5). New Haven and Northampton Railroad construction in parts of the canal right of way have both preserved and destroyed prism integrity, with

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Cheshire and Hamden today having the longest examples of prism survival in this context. Other canal features have resisted 135 years of cultural and natural assaults with more varied results, as detailed in Table 1. The large culverts, some of which continue to serve their original function, remain the best preserved class of the masonry structures: six of them -- half the original total -- survive today in some form. The Ten Mile River culvert in Cheshire, originally the second largest, is by far the best preserved with virtually intact original masonry and most of its imposing prism embankment (Photograph 6). Four other large culverts in Simsbury, Avon, and Hamden retain arched forms in various states of preservation, while substantial sections of one side of the Salmon Brook culvert in East Granby mark the site of the longest Farmington Canal river crossing except at the aqueduct (Photographs 7 through 10). One of the smaller drains survives, with excellent integrity, in Simsbury (Photograph 11). The lone aqueduct site, in northern Farmington, lacks all trunk and virtually all pier components but has large portions of both abutments (Photograph 12). There are masonry remains at eleven of the twenty-eight original lock sites. Lock preservation ranges widely: limited fragments survive at numbers 4 in Granby and 7 in Southington; more substantial wall segments appear at numbers 2 and 6 in Granby, 8 in Southington, 10 and 11 in Cheshire, and 15 in Hamden; while numbers 12 in Cheshire and 13 and 14 in Hamden retain most or all of their original masonry (Photographs 13-14). Of the latter three, numbers 12 (restored, with an original lockkeeper's house) and 13 (with partial lockkeeper's house foundations) are already listed on the National Register, and number 14 also has a small 2 1/2 story vernacular frame lockkeeper's house (Photograph 15).

Other classes of district canal structures have less substantial representation. No original wooden bridge components survive, and continual road maintenance and rebuilding has destroyed most of the stone abutments. The district includes well preserved remains of single abutments at only two of the original ninety road bridge sites, in Granby and Farmington, and fragmentary abutment remains of three other such sites in Granby, Southington, and New Haven (Photographs 16-17). Of the forty-five farm bridge sites, twin abutments survive at two confirmed sites in Granby and Hamden, and at one possibly post-canal site in the latter town. Hamden also retains another well preserved single farm bridge abutment. Very fragmentary abutment remains appear at one farm bridge and two towpath crossover bridge sites in Southington, and at one crossover bridge site in Plainville. The commercial basins and the tidewater basin in New Haven retain no surface expression in urban fill environments, but there are topographic vestiges of four basins in Granby and Hamden at which streams entered the canal and/or boats awaited lock turns. Four open channels entering the canal in Cheshire and Hamden also correspond to feeder sites, as perhaps do a few stones in northern Granby. Three of the original eight waste wier sites appear today

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as a few stones near the Eight Mile River in Southington, as a completely rebuilt railroad feature in Cheshire, and as a rubble wall fragment with possible original hardware remnants in Hamden (Photograph 18). Table 1 summarizes information on these forty-four non-prism features, along with a post-canal spring factory site within a prism section in Hamden (Photograph 19).

DESIGN, CONSTRUCTION, AND ORIGINAL APPEARANCE OF DISTRICT CANAL STRUCTURES

Farmington Canal structures reflected a small number of initial decisions on route, prism size, and lock and bridge design made prior to construction, and a much larger number of decisions on actual dimensions and placement of prism, embankments, locks, culverts, feeders, waste wiers, basins, and bridges made during construction or maintenance. The canal commissioners' final selection of route, elevations, and prism size in 1825-26 was fundamental to most subsequent construction decisions. Elevation affected choices in lockage points, location and size of the Farmington River aqueduct, streams to be captured or passed over, feeder length, and prism or embankment construction methods. Canal company financial constraints shaped selection of lock and bridge designs, contracting and construction procedures, canal water management, and eventually the nature and frequency of repairs.

Routing, Prism, and Embankments

Canal planners maximized use of existing topography to minimize construction costs. There were three basic means of meeting ideal canal dimensions: cutting into a natural slope and creating one artificial bank with the excavated material; excavating into a level surface and, depending on desired prism bottom elevation, sometimes banking up one or both sides with excavated material; and building the entire profile above an existing surface. The first method generally allowed for the least excavation and bank building, the narrowest total canal width, and the lowest damage awards to abutting landowners. The third method was least desirable within these same criteria, but was unavoidable in crossing large streams or low lying swamps (see Figure 2 for comparative examples).[7]

Running their route through lowlands west of the great traprock Metacomet Ridge in Connecticut's Central Valley, Davis Hurd and the canal commissioners used side hills wherever possible. Sloping edges of glacial ground moraine or outwash terraces above relatively level glacial drift deposits, and sloping edges of drift deposits above alluvial floodplains, define much of the canal route. In the context of canal contracting and

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construction procedures, the generally sandy soils in such parts of the Farmington and Quinnipiac basins tended to define embankment materials (Photographs 20). The cash poor canal company contracted for prism construction in half mile sections, with local men and one or more itinerant bands of Irish immigrants using only immediately available material. There were no initial provisions for layered rolling of prism slopes, or for any lining to increase prism water retention, although subsequent repairs to breached or overly porous sections included generally undocumented lining efforts.[8] Limited bank reinforcement, possibly added in later years of canal operation, appears in the form of low rubble walls along upper, inner edges of prism subject to erosion or bank wash. Placement of large rubble within embankments subject to unusual hydraulic assaults was a very occasional and probably rather ineffective means of reinforcement (Photograph 21).[9]

The route chosen at the extreme southern end of the canal was the channel of a small creek flowing into a marsh above New Haven's Long Wharf. For about the last two miles above the basin in the harbor, the canal through the channel consisted of vertical dry rubble walls. Limited remains of this section, which was unique on the Farmington Canal, suggest the walls were ten to twelve feet high and twenty-five feet apart, leaving just enough room for two boats to edge past each other.

Aqueduct

The location and size of this 280-foot-long structure allowed canal planners to maintain the long level between locks 6 and 7, and reflects a change in Henry Wright's original recommendation for a shorter structure accompanied by an additional lock west of the Farmington River. Few structural details survive in material or documentary form. There were originally at least four major components: two angled, three-sided stone abutments wrapped around the ends of adjacent earthen prism (Photograph 12); six stone piers, each about sixteen by six feet at the base and perhaps forty feet high, which carried the aqueduct trunk between the abutments; the long-vanished wood trunk, at least twelve feet wide and five or six feet deep, seated on an unknown truss system; and a wooden towpath bridge, probably connected to the south side of the trunk.[10]

Locks

The canal company let a single contract with Stephen Walkley and Leonard Johnson of Southington for construction of all twenty-eight locks, to Davis Hurd's specifications. Completed between 1826 and 1829, the locks featured chestnut and oak chambers fifteen feet high, twelve feet wide in the clear, and ninety feet long with mitered wooden gates leaving clear lengths of eighty feet. Dry laid masonry walls about twelve feet high and three feet

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wide, usually of sandstone, separated the chambers from earthen canal banks with stone headers arrayed vertically at intervals of eight to thirteen feet (Photographs 13-14). Lift heights varied between about six and ten feet. The company built wooden locks to avoid use of then-costly hydraulic cement, but rebuilt at least some locks in stone and cement after repeated problems with leakage and rotting.[11]

Water Supply, Feeders, and Basins

The canal commissioners allowed the canal company to appropriate for potential water supply virtually all streams and rivers crossed by the canal, after Davis Hurd made spot measurements of low water on a dozen such bodies in the fall of 1825. Any pre-construction calculations relating supply to demand have not survived, but probably involved only lockage requirements and ignored problems of leakage. Desired canal levels, determined after the initial water appropriations, placed the prism above most of the larger channels. Probably to avoid the cost of building feeder canals, needed to tap such channels at higher elevations for gravity flow into the main canal, the company ran most larger streams under the canal and thus took less water than originally planned. Aside from the Farmington River feeder canal, intercepted waters included only three or four of the nearly two dozen large streams along the route and between eight and twenty-three smaller tributaries. Whether planned or not, the supply of these sources was apparently more than adequate when there were no extremely leaky or breached canal sections, although understandable company qualms about water loss problems led to very limited waste wier construction.[12]

Water supply structures or facilities evidently corresponded to the three classes of intercepted waters. The Farmington River feeder, supplying perhaps two thirds of the water entering the entire canal in Connecticut, was an earthen canal identical in prism size to the main line. The Eight Mile River in Southington and two large tributaries of the Mill River in Cheshire entered the canal as open streams, immediately below locks 7, 11, and 12 which dropped the canal into marshy areas to tap these sources at natural channel elevations. A few of the smaller streams also entered as channels through canal banks without any lockage or other built accommodations, but canal interception of most smaller streams occurred below hillsides where natural channel contours and canal bank elevations created bulges or basins in canal water surfaces. This incorporation of topographic features into the canal evidently featured little if any special construction, aside from the occasional stone reinforcement of canal banks opposite feeder entries noted above. Some feeder basins may also have served as commercial basins and as holding or waiting areas near locks. No descriptions survive of the larger, now destroyed or buried commercial basins without such multiple functions, leaving unanswered questions about their construction. There is

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virtually no documentary information on waste wier construction, other than that these structures used wooden flashboards and generally leaked badly. The stone wall at the site of a waste wier in Hamden, added to the canal sometime after original construction, suggest that at least some of these features were substantial (Feature 34, Table 1; Photograph 18).[13]

Culverts and Drains

The dozen culverts which carried the canal over larger streams were essentially sandstone rubble, single arch masonry bridges with cut sandstone ringstones. Some were laid in natural cement, others were dry laid. Except perhaps for the Salmon Brook culvert with its forty foot span and about eighty-five foot width, the culverts were all much narrower than the normal canal profile: intact culverts without original embankment cover suggest widths of fifteen to twenty-five feet for all but perhaps the largest streams. Sidewalls some two feet high above the arches helped retain the earthen prism and banks laid on the arches, while sandstone rubble end or wing walls curved away from arch corners to meet the wider canal banks at either end of the span (Photographs 6 through 10).[14]

Smaller streams not tapped by the canal builders passed under the prism in undocumented drains. The only surviving one is an arched sandstone rubble channel about two feet wide at the bottom (Feature 12, Table 1; Photograph 11). Prism elevation probably determined whether small streams entered or passed under the canal.

Bridges

Davis Hurd's bridge specifications called for a simple, bolted framing system provided by a Mr. Payne, and rubble abutments (Figure 3). Both farm bridges linking property divided by the canal and road bridges carrying public ways were forty-two feet long, differing only in their twelve and fourteen foot widths, respectively. Abutments were about thirty feet wide and nine feet high, with faces set on the sides of the prism to leave the normal stipulated water width of about thirty-five feet (Photographs 16-17). The canal company was responsible for bridge construction and maintenance, but frequently tried to pass this duty off to the towns.[15]

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DESCRIPTION OF CANAL DISTRICT SECTIONS

The numbered canal district sections begin at the Massachusetts border, with sections 1 through 22 running along the main line of the canal, and sections 23 through 25 encompassing parts of the feeder canal from Unionville to the main canal/feeder junction west of the aqueduct. Numbers in parentheses after each section heading below are mileage points along the original canal route for section end points, as measured on U.S.G.S. quadrangle maps. Table 1 details the condition and location of the features briefly noted below.

Section 1 (0.00 - 1.80)

Beginning at the state line in Suffield, the towpath runs along the west side of the canal as an intact railroad bed about ten feet wide for some 750 feet. The first 400 feet of towpath is a low artificial bank across a wetland and the next 350 feet is a level cut into a natural slope. Across open water -- which probably fills the canal prism from the state line into Granby for most of the year -- the berm side opposite the railbed begins as a very low bank or natural grade level for about 600 feet, and then becomes a cut into the natural slope. The canal diverges west from the railroad about 1000 feet north of Phelps Road, and continues with both banks fairly intact as cuts into natural slopes until the berm becomes a low embankment south of Phelps Road. Quarry Road is built on the towpath. There are discontinuous artificial towpath embankments as the canal adapts to local topography through Suffield. Water leaves the canal about 425 feet south of the Suffield/Granby line at a poorly defined culvert site (Feature 1), draining into Hungary Brook west of the canal. The canal continues as a dry, well preserved feature for some 3650 feet, with an artificial towpath on the west side and a natural slope berm (see Figure 2, Profile 1). This dry section includes a farm bridge site (Feature 2) some 1020 feet south of the Suffield line. Section 1 ends at Notch Road in Granby, with the last several hundred yards notably silted and eroded. Completely demolished features in this section include a waste wier north of the Suffield line.

Between Sections 1 and 2, the towpath is demolished for about .39 mile although the canal bottom remains visible. There were no features.

Section 2 (2.19 - 3.77)

Beginning at power lines which cross Quarry Road about 1300 feet south of Notch Road, this section is similar in appearance to the southern part of Section 1 for most of its length, although there is much soil eroded into the canal north of Griffin Road. The crossing of Griffin Road features a road bridge abutment (Feature 3), beyond which the canal briefly becomes two

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artificial banks. Immediately south and east of Hungary Road, the canal passes through a natural basin -- opposite a short stretch of artificial towpath -- which probably served as a small feeder (Feature 4). After a run of about 900 feet southeast of the basin as a cut into a natural surface, the canal resumes with an artificial towpath on the west side. It continues in excellent condition through the recent Hampton Village housing development, across Petersen Road, and across Route 20 at Laurel Road where the towpath is visibly eroded. There is standing water between Petersen Road and Route 20, probably for much of the year. A similar but better preserved profile characterizes the canal south of Route 20 (see Figure 2, Profile 2) until residential construction in the towpath ends Section 2 about 765 feet south of Route 20. Demolished features in this section include road bridges at Hungary and Petersen roads, and at Route 20.

Residential construction south of Section 2 seriously disturbed the canal for about .19 mile, a stretch originally including a road bridge and a feeder basin.

Section 3 (3.96 - 4.52)

Beginning about 475 feet south of Canal Road in Granby, the canal continues with an artificial towpath on the west side through the remains of the most northerly flight of locks. Of the original six locks, parts of Locks 2, 4, and 6 are visible (Features 5, 6, and 9), along with a basin between the locations of Locks 5 and 6 (Feature 8). South of Lock 4, there are also remains of a road bridge across Hartford Avenue (Feature 7).

Tobacco cultivation south of Lock 6 eradicated the canal, which was double banked and increasingly wide as it approached Salmon Brook. Floods and farming destroyed about .35 miles of canal, including one road bridge, a small basin, and a cross-over bridge north of Salmon Brook where the towpath changed to the east side.

Section 4 (4.87 - 6.56)

Remains of the north side of the Salmon Brook culvert (Feature 10) begin this section in East Granby. South of the brook, with no such remains, the canal weaves across the line of the railroad for about 850 feet with an artificial towpath to the east and a natural slope berm. Leaving the railroad, the canal proceeds southeast across Floydsville Road as a deep cut into a natural terrace with occasional artificial towpath as terrain demanded. Artificial towpath predominates south of Floydsville Road until the canal intercepts the railroad again about 1100 feet north of the East Granby/Simsbury line. Completely demolished features in this section include a drain or waste wier, a bridge, and a small basin.

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Railroad track construction and maintenance in the canal bed, along with dam construction and washouts at Lake Basile, have seriously disturbed or destroyed about .35 mile of the canal south of Section 4 with no documented original features. The stream crossing probably featured a small drain.

Section 5 (6.91 - 7.23)

A high, wide double banked profile begins this section immediately west of Lake Basile in Simsbury, where the canal originally crossed a stream (Figure 2, Profile 3). Most of this section, which ends just northeast of Westcott Road, continues the artificial towpath on the east and the natural slope berm seen south of Salmon Brook. There were no original features.

House construction around Westcott Road has destroyed or badly compromised about 510 feet of otherwise featureless canal south of Section 5.

Section 6 (7.33 -7.54)

Similar in appearance to Section 5, with some patches of double banking, this section begins south of Westcott Road and ends just north of Route 10. There were no original features.

Between Sections 6 and 7, residential and commercial development along Route 10 in Simsbury has removed most traces of the canal for nearly four miles. Very short sections of canal prism, in generally poor condition or setting, can be seen south of Hoskins Road and north of Owens Brook Boulevard. Completely demolished features include six road bridges, five farm bridges, a drain or small culvert, and a larger culvert at present Bissell Brook.

Within this otherwise ineligible four miles, the Hop Brook culvert (Feature 11) remains sufficiently intact to warrant inclusion in the district as a isolated feature, one of only five such structures on the Farmington Canal to retain original arch shapes.

Section 7 (11.64 - 11.83)

This section begins near the southwest corner of the South School playground in Simsbury, and runs about 1000 feet to a washed out area around Second Brook. The northern 400 feet, including a small drain (Feature 12), is double banked (see Figure 2, Profile 4), while the remainder has artificial towpath on the east side.

Between Sections 7 and 8, nearly 1.5 miles of canal has yielded to Simsbury development. Very short stretches of prism appear between Deer Park Road

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and Latimer Road in Simsbury. Completely demolished features include five road bridges and one farm bridge, plus one drain. There may be a buried bridge abutment fragment about 200 feet south of Sand Hill Road.

Section 8 (13.27 - 13.46)

Nearly 1000 feet of intact canal, with artificial towpath to the east and a natural berm, begins just south of Latimer Road.

Residential development is currently destroying much of the half mile of canal south of Section 8, although the line of the canal remains visible as a small watercourse. Demolished features here include two drains and one farm bridge.

Section 9 (13.99-14.18)

Beginning immediately east of Route 10 in Simsbury, about .7 mile north of Avon, this 1000-foot section of canal is a cut in the floodplain of the Farmington River. The original canal road bridge is gone, as are all traces of a farm bridge at the south end of this section.

Nearly 1.7 miles of canal south of Section 9 is obliterated or in poor condition. There are short sections, with filled prism, visible north and south of the Simsbury/Avon line, as well as some fragmentary prism east of Route 10 and north of Route 44. Completely demolished features include two rod bridges, one farm bridge, three basins or intake features, and the Nod Brook culvert which is completely replaced by a concrete structure.

Section 10 (15.85 - 16.30)

This section begins just south of the east end of Columbus Circle in Avon, paralleling Route 10 to the west behind homes for about 2400 feet. Floodplain edge forms the west side of the canal, while the towpath is artificial. Several short breaks in continuity mark this section, which had no original features.

Route 10, built on the berm, has seriously disturbed most of the next 1.2 miles of canal. Short, partly intact patches of prism marked by recent homes appear south of Country Club Road, but most of the towpath is gone. Two road and two farm bridges leave no traces.

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Section 11 (17.49 - 18.03)

Woodruff Brook culvert (Feature 13) passes under Route 10 to begin this section, about .45 mile south of Country Club Road. Leaving Route 10, the canal proceeds southeast with a profile similar to that of section 10. There were no original features. An access road to a water treatment facility disturbed a very short portion of this section.

Development behind Avon Old Farms School destroyed about a quarter mile of canal south of Section 11.

Section 12 (18.26 - 20.45)

This impressive section, following the edge of the Farmington River floodplain to the aqueduct and across the river, begins behind Avon Old Farms School. Crossing Old Farms Road and proceeding south through the remains of the Thompson Brook culvert (Feature 14), the canal retains an excellent profile with an artificial towpath on the east or north side past Town Farm Road in northern Farmington. Except for a break of about 350 feet behind the Fisher farm buildings west of this road, this section is uninterrupted to the river. About 500 feet west of the river at mile 20.19, the canal meets the feeder from Unionville (Section 25) and leaves the natural terrace above the floodplain, becoming double banked and slightly wider as it crosses the floodplain to the aqueduct site (Feature 15). The towpath shifted to the south or west side at the feeder junction, although no traces of the cross-over bridge survive. East of the river at the aqueduct abutment, the canal reappears as two banks and continues to the junction of Route 10 and Aqueduct Lane in Farmington. In addition to the cross-over bridge, other completely demolished features in Section 12 include two road bridges and a farm bridge.

Between Sections 12 and 13, the canal is generally visible but in poor condition for some 5.2 miles through Farmington and into northern Plainville. Short intact stretches -- all well under 200 feet long -- appear on the Country Club of Farmington golf course along Route 10, east of the Pequabuck River north of Route 6, and north of Main Street about 1300 feet north of the Farmington/Plainville line. A longer stretch west of Farmington center, near the confluence of the Pequabuck and the Farmington rivers, is well defined as canal but lacks the eastern berm bank originally built below the very high floodplain terrace. Demolished features include nine road and four farm bridges, five feeder intakes or basins (some replaced in concrete), one culvert, one drain replaced with concrete and riprap, and four small basins with occasional remnants of topographic expression.

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Within the otherwise ineligible canal route through Farmington, the district includes one extremely well preserved road bridge abutment on the eastside of Route 10 north of Route 4 (Feature 16), one of only two such features extant in such condition.

Section 13 (25.66 - 26.19)

Beginning west of Farmington Avenue and east of Woodside Avenue in Plainville, about 1800 feet south of the town line, the canal appears intact for several hundred feet with an artificial towpath on the west side before becoming a cut through the Pequabuck River floodplain edge. The cut continues past St. Joseph's Cemetery, beyond which the artificial towpath returns as the canal follows the edge of floodplain terrace. All of this section holds water for much of the year. There were no original features.

Development in Plainville south of Section 13 has filled over or built on nearly two miles of canal, demolishing the Bristol and Whiting commercial basins, two road bridges, one farm bridge, and a waste wier. The towpath changed to the east side as the canal entered the Quinnipiac River basin to follow the east edge of the floodplain.

Section 14 (28.12 - 31.66)

This section begins at a restored stetch of prism in Norton Park, Plainville, where the canal cut through an edge of the Quinnipiac River floodplain. South of the park, an artificial towpath on the east side defines the canal into Southington, passing through the probable site of a farm bridge in Plainville (Feature 17). Continuing to Route 84 in Southington, the sections includes short breaks at power lines about 1300 feet north of Town Line Road, at a house foundation immediately north of Town Line Road, west of Redstone Road in Southington for several hundred feet, and at the crossing of Spring Road, Southington. There are suggestions of limited stone bank reinforcement of prism top or bottom south of Norton Park and between Spring and Curtiss streets. The canal appears cut through adjacent meadow north of Queen Street. Near the south end of this section, the towpath changed to the west side as the canal reached the edge of the Eight Mile River drainage; there are remains of the cross-over bridge abutments about 600 feet south of Curtiss Street (Feature 18). Completely demolished features include one road bridge, three farm bridges, and one drain, while there are three other possible bridge locations marked by rubble scraps.

Construction of I-84 eradicated most of the next .7 miles, including two road bridges.

(continued)

Description (continued):

Section 15 (32.37 - 32.85)

This short section, beginning immediately south of Jude Lane about 150 feet west of I-84, encompasses the drop into the Eight Mile River floodplain below the Long Level. For the first 765 feet, the section includes artificial towpath on the west side -- towards the river -- partially disturbed by longitudinal excavation. Scattered rubble marks the site of a cross-over bridge (Feature 19) above the limited remains of Lock 7 (Feature 20). Beyond the lock, there is some evidence of a drain through the eastern artificial towpath opposite the entry of the river into the canal. The partial impoundment of the river northwest of the canal created a pond which is today a swamp. South of this junction, the canal continues for about 1350 feet just west of the river, with eastern artificial towpath, before becoming a wide stream with no defined banks north of Center Street: the river recaptured its waters by running through the prism. There were no other features in this section.

Eight Mile River and I-84 washed out or eradicated about a quarter mile of canal south of Section 15, including a road bridge at Center Street.

Section 16 (33.08 - 33.29)

This featureless section, holding water, begins south of Center Street just east of I-84. The eastern towpath is partly artificial and partly a cut into natural slope.

About .16 mile of canal south of Section 16 disappears beneath I-84.

Section 17 (33.45 - 33.66)

The canal reappears west of I-84 and immediately south of Prospect Street in Southington, continuing the eastern artificial towpath and natural slope berm west of the Eight Mile River. Partial erosion and some dense refuse disposal mar both the berm side near Prospect Street and remains of Lock 8 (Feature 22). The section continues past a feeder site (Feature 23). There were no other features in this section.

Between Sections 17 and 18, development of I-84 and Marion Avenue removed most of some .7 mile of canal, including a road bridge and Merriman's Basin. Some short prism fragments survive between the north- and south-bound lanes of I-84 opposite Wonx Spring Street.

(continued)

Description (continued):

Section 18 (34.35 - 34.61)

Beginning immediately east of the I-84 access ramps west of Atwater Street, the canal appears with the eastern artificial towpath. The berm supports the highway ramps, which terminate this short section to the south. A feeder site (Feature 24) and patchy remains of a farm bridge abutment (Feature 25) were the only original features.

For nearly 1.4 miles south of Section 18, road construction, commercial/residential development, railroad construction, and agricultural land levelling have destroyed or seriously compromised canal integrity through Milldale and into northern Cheshire. A narrow ditch west of Canal Street marks the canal route, but the towpath supports the street and numerous structures to the east. The prism is filled south of the Cheshire line, and disappears entirely east of Dickerman Road where two banks crossed a terrace near the Ten Mile River, partially reappearing as one bank. The towpath changed to the west or south side just above Section 19. Demolished features include the cross-over bridge, Lock 9, two feeder sites, one waste wier, three road bridges, one farm bridge, and Hitchcock's Basin just south of Route 66.

Section 19 (35.99 - 36.26)

This section begins about 1400 feet east of Dickerman Road in Cheshire, 200 feet south of the Southington line, as two banks which turn south and widen considerably to carry the canal over the Ten Mile River culvert (Feature 26), the only feature (see Figure 2, Profile 5). A very short bulldozed interruption north of the culvert mars this otherwise uninterrupted section. Gravel extraction and highway construction obliterate the canal south of the culvert.

Nearly two miles of ineligible canal route follows Section 19. Beyond the destruction south of the culvert, partially intact canal with slumped berm and a low western towpath continues to Johnson Avenue. Industrial development immediately south of Johnson Avenue removed all canal traces, but heavily sedimented or partial prism remains reappear north of Schoolhouse Road. Marsh and flooding conquered the canal between Schoolhouse and Sandbank roads, with modified canal remains lined by industrial structures just north of Sandbank Road. Demolished features include three road bridges, one farm bridge, and a possible basin.

(continued)

Description (continued):

Section 20 (38.19 - 41.30)

The canal cuts into a natural surface south of Sandbank Road, with the towpath on the west side supporting the railroad through much of this section. Water in most of the section has eroded original prism width in some places. Continuing through the former Beachport area, the section includes the remains of locks 10 and 11 (Features 27 and 28), and a feeder entry south of Cornwall Avenue (Feature 29). Demolished features in this section include three road and three farm bridges, and Beachport Basin south of West Main Street.

A swamp in the Willow Brook drainage has completely overtaken about two thirds of a canal mile south of Section 20. Submerged timbers opposite Patton Drive correspond to a farm bridge location, although there is no indication of any original bridge construction.

Section 21 (41.96 - 46.53)

The longest section in the district runs over 4.5 miles from a point about 350 feet north of Higgins Road in Cheshire. Beginning east of Willow Brook with an artificial towpath on the west side and natural slope berm, the canal crosses North Brooksvale Road with several hundred feet filled on either side of the road, reappearing with a stone lined berm and a very wide towpath for some 500 feet north of restored Lock 12 (Feature 30). The towpath changed to the east side at the south end of the lock (there is no trace of the cross-over bridge) and the canal continues past Henry Farnam's railroad bridge and the Willow Brook canal feeder (Feature 31) to become two banks across a swamp north of South Brooksvale Road, with the railroad on the towpath for virtually the entire remainder of this section. The double banked prism extends to about 850 feet south of this road, through the site of a small stream intake (Feature 31). An eastern artificial towpath with a natural slope berm then characterizes the canal to Shepard Avenue in Hamden, passing the sites of Lock 13 (Feature 33), a waste wier about 700 feet south of the lock (Feature 34), two intake basins (Features 35 and 37) north and south of a bridge abutment (Feature 36), a farm bridge abutment about 1200 north of Farmington Drive (Feature 38), and a feeder south of Farmington Drive (Feature 39). South of Shepard Avenue, the canal is primarily a cut in the natural surface, passing the sites of Lock 14 (Feature 40), and a farm bridge (Feature 41). South of the bridge, the canal passes a small swamp to the west with a partially deteriorated artificial berm bank and the somewhat mysterious remains in the prism of the Brockett spring factory (Feature 42). As a cut in the natural surface south of this site, the canal passes the site of Lock 15 (Feature 43). Use of the prism bottom to house an AT & T cable south of the lock has maintained much original prism shape, but at the remains of Eaton Brook culvert (Feature 44) all prism remains are

(continued)

Description (continued):

washed out. The section ends at Todd Street, with some banking of the berm above the natural surface (see Figure 2, Profile 6). Completely demolished features in Section 21 include the Lock 12 cross-over bridge, seven road bridges, an intake and waste wier completely replaced by railroad masonry about 1200 north of the Cheshire/Hamden line, and a waste wier north of Farmington Avenue rebuilt in cut stone.

The canal loses definition rapidly south of Todd Street, beginning some 8.2 miles of ineligible route amidst dense Hamden and New Haven development. The towpath on the east side remains visible past the junction of Mt. Carmel Avenue and Whitney Avenue, but the berm slope is filled. Railroad construction in the prism widened the canal considerably north of Dean Street, beyond which the canal essentially disappears. Very short stretches appear on Evergreen Avenue, along the west edge of Meadowbrook Country Club, and south of Putnam Avenue. Demolished features include locks 16 through 25, twelve road and seven farm bridges, Shepard Brook culvert, two possible basins, and one drain.

Section 22 (54.74 - 55.01)

This last section on the main canal line begins on Canal Street in New Haven near the Lock Street intersection, appearing as walled prism remnants two to five feet high. Two corners of the Hillhouse Avenue bridge abutments (Feature 45) remain within an otherwise rebuilt structure. There is no sign of the Prospect Avenue bridge.

Beyond Section 22, there are scraps of original prism wall visible with no surviving features, but later concrete additions compromise the canal in this area where the railroad ran in the canal bottom. All canal traces disappear beyond Grand Street. The canal originally ended at mile 55.94 at the upper end of the tidewater basin. Demolished features include Hillhouse Basin, locks 26 through 28, and eleven road bridges.

On the feeder canal in Farmington, the dam on the Farmington River is gone and sewer construction fills the first .13 mile of prism, which lacks the south bank.

Section 23 (.13 - .26)

This short section north of Sequassen Road remains visible as a cut in a natural surface above the river floodplain. There were no features.

Beyond Section 23, residential development and gravel extraction filled, built over, or removed about 1.1 miles of the feeder.

(continued)

Description (continued):

Section 24 (1.37 - 2.35)

Beginning at Winding Trails Road, the feeder remains in excellent condition with an artificial towpath on the south or east side above the Poplar Brook drainage. Two bridges in this section have not survived, although a causeway through the woods marks the site of one.

The next third of a mile. although visible, is in poor condition with little towpath expression. One bridge at Town Farm Road is gone.

Section 25 (2.69 - 2.95)

Eligible feeder canal reappears about 400 feet east of Town Farm Road, and meets the main canal with an artificial towpath on the east side above the Farmington River floodplain. There were no original features.

Description (continued):

Table 1

FARMINGTON CANAL DISTRICT FEATURES

No.	Name	Mile	UTM Reference	Description
1	Hungary Brook Culvert	1.11	18 684610 4650430	Washed out; a few stones
2	Farm Bridge	1.22	18 684525 4650330	Abutments intact as barn foundation, with mortar added. To west, causeway may mark original approach
3	Griffin Road Bridge	2.61	18 683590 4648345	West abutment intact; 28 ft. wide, 9 ft. high
4	Basin/Intake	2.96	18 683735 4647805 18 683800 4647700 18 683245 4646610	Natural topographic expression
5	Lock 2	4.23	18 684315 4645915	25 ft. of west wall visible, 5 ft. high
6	Lock 4	4.35	18 684340 4645735	Limited fragments
7	Hartford Avenue Bridge	4.38	18 684305 4645670	Brownstone rubble fragments
8	Basin	4.49	18 684360 4645620 18 684320 4645620 18 684345 4645555 18 684280 4645475	Natural topographic expression
9	Lock 6	4.52	18 684325 4645485	Discontinuous rubble visible for 100 ft., both sides
10	Salmon Brook Culvert	4.87	18 684375 4644975	Removed by railroad bridge, but corners of north abutments survive: west corner is mortared sandstone, semi-coursed rubble 17 ft. long, 8-9 ft. high; east corner same height, 33 ft. long with part of original arch, although granite ringstones may be post-canal modification

(continued)

Description (continued):

Table 1

FARMINGTON CANAL DISTRICT FEATURES

No.	Name	Mile	UTM Reference	Description
11	Hop Brook Culvert	10.80	18 682015 4637245	16 ft. arch largely intact, but reinforced with concrete; downstream face largely intact with wing wall on north side; upstream face and south end gone; originally about 30 feet long, and now some 22 ft. wide
12	Drain	11.71	18 681490 4636205	Sandstone rubble arch, 2 ft. wide at bottom and 85 ft. long under both canal banks; largely intact
13	Woodruff Brook Culvert	17.49	18 679910 4627900	Largely intact through both canal banks, 8 ft. arch of sandstone rubble; west side lacks ringstones and appears modified by high curved rubble wall above arch; east side more original, with ringstones
14	Thompson Brook Culvert	18.74	18 680070 4626245	10 ft. arch intact, 16 ft. wide, with wing wall bottoms on downstream side; no prism remains
15	Aqueduct	20.29	18 681090 4624660 18 681160 4624610	West bank includes north side of abutment 45 ft. long & 20 ft. high, fragments of south side, and 1 pier base fragment; east bank includes north side of abutment 15 feet long, south side 20 feet long, pier base 6 x 16 ft; canal banks reach each abutment
16	Unnamed Bridge	22.74	18 681100 4622070	East dry rubble abutment intact, 45 ft. wide, 10-25 ft. deep, 10 ft. high.

(continued)

Description (continued):

Table 1

FARMINGTON CANAL DISTRICT FEATURES

No.	Name	Mile	UTM Reference	Description
17	Farm Bridge	28.54	18 676440 4613610	Loose rubble fragments, with causeway to east in marsh
18	Cross-Over Bridge	31.42	18 675269 4609320	Rubble abutment fragments at top of each prism edge
19	Cross-Over Bridge	32.51	18 674665 4607740	Scattered rubble
20	Lock 7	32.56	18 674645 4607680	Limited rubble fragments
21	Waste Wier	32.59	18 674665 4607645	A few rocks, east canal edge
22	Lock 8	33.51	18 674790 4606240	Sandstone and schist rubble walls 3-5 ft. high visible under refuse and sediment at intervals over about 50 ft.
23	Feeder Entry	33.60	18 674820 4606105	Opening in berm, stone wall fragments on towpath
24	Feeder Entry	34.39	18 675045 4604970	Opening in berm now filled with concrete pipe; washed out towpath opposite has stone core
25	Farm Bridge	34.49	18 675020 4604855	Scattered stones
26	Ten Mile River Culvert	35.15	18 675440 4602880	18 ft. arch and wing walls intact under 25 ft. high canal banks; minor concrete repair on west side; prism banks have footpaths above each culvert opening
27	Lock 10	40.85	18 674030 4596360	Schist walls 70 ft. long, 5-6 ft. high visible above sediment

(continued)

Description (continued):

Table 1

FARMINGTON CANAL DISTRICT FEATURES

No.	Name	Mile	UTM Reference	Description
28	Lock 11	41.04	18 674050 4596035	Schist walls 70 ft. long, 3-5 ft. high visible above sediment
29	Feeder Entry	41.25	18 674090 4595700	Swampy channel enters west side of canal
30	Lock 12	42.76	18 673315 4593375	Restored mortared sandstone rubble walls intact, with lockkeeper's house; listed on National Register
31	Feeder Entry	42.89	18 673315 4593240	Open stream enters west side of canal
32	Feeder Entry	43.53	18 673640 4592270	Open stream enters west side of canal; added 1828-1847
33	Lock 13	43.96	18 673855 4591660	Unmortared sandstone walls with stone headers largely intact for about 100 ft; foundation remains of lockkeeper's house; listed on National Register
34	Waste Wier	44.09	18 673910 4591450	Sandstone rubble wall with iron hardware; design unclear
35	Intake Basin	44.28	18 674000 4591230 18 673970 4591200 18 674005 4591145	Natural topographic expression
36	Bridge	44.52	18 674065 4590795	Two sandstone abutment remains of bridge possibly added 1828-1847; 18 ft. between walls suggests possible post-canal feature

(continued)

Description (continued):

Table 1

FARMINGTON CANAL DISTRICT FEATURES

No.	Name	Mile	UTM Reference	Description
37	Intake Basin	44.60	18 674065 4590725 18 674000 4590690 18 674085 4590540	Natural topographic expression
38	Farm Bridge	44.91	18 674240 4590170	Sandstone rubble remains of west abutment
39	Feeder Entry	45.17	18 674310 4589740	Open stream enters west side of canal
40	Lock 14	45.72	18 674600 4589010 18 674705 4589010 18 674705 4588965 18 674600 4588965	Partly intact sandstone rubble walls, 105 ft. long with stone headers; modified lockkeeper's house intact
41	Farm Bridge	45.77	18 674620 4588890	Partly buried rubble remains of both abutments, 4-6 ft. high, 35 ft. wide
42	Brockett Spring Factory	45.88	18 674710 4588750	Foundations of Charles Brockett carriage spring factory, built in prism c.1850; operated as spring factory to at least 1853; used by Mt. Carmel Button Co. c.1865. Remains in prism include curved wall across canal and corbelled rubble walls parallel to prism. 16
43	Lock 15	46.08	18 674710 4588435	Masonry scraps visible; more possibly buried
44	Eaton Brook Culvert	46.16	18 674670 4588325	7 ft. arch intact upstream, with 1 wing wall fragment; upstream side & prism washed out
45	Hillhouse Avenue Bridge	54.97	18 673750 4575350	Two sandstone rubble corners visible

(continued)

Description (continued):

NOTES

1. There are many summaries of Farmington Canal chronology. Two articles by Charles R. Harte remain the most detailed and accessible: "Some Engineering Features of the Old Northampton Canal." Annual Report of the Connecticut Society of Civil Engineers 49 (1933): 21-53; "Connecticut's Canals." Annual Report of the Connecticut Society of Civil Engineers 54 (1938): 3-64. Detailed estimates by the Wrights, dated December 15, 1823, appear with minutes of the Farmington Canal Company for January 7, 1824 in Plainville Historical Society collections. There are many differences between the Wright surveys and the canal as built. The major role of Simeon Baldwin and the other commissioners in route selection is apparent from Baldwin's journal of a trip with Henry Wright and company director James Goodrich, August 1823, and more significantly from minutes of commission meetings 6 through 15, September 1823 to May 1826, in the Farmington Canal Papers of the New Haven Colony Historical Society. Most of Davis Hurd's notes, estimates, surveys or plans have not survived.

2. Original surveys and subsequent accounts put the distance at fifty-eight miles; measurement on U.S. Geological Survey quadrangle sheets yields a few hundredths less than fifty-six. Similarly, the 218 foot descent originally surveyed between the Connecticut canal termini -- and often cited subsequently -- is incorrect.

3. The catalogue of canal features derives principally from comparison among the Farmington Canal Company's 1828 manuscript Map of the Farmington Canal in the Connecticut State Library, the New Haven and Northampton Company's Land Plan for New Haven to Plainville (undated, c.1847) at the New Haven Colony Historical Society, Harte's "Some Engineering Features..", and U.S. Geological Survey quadrangle sheets. The canal passed through or near the village or town centers of Granby, Simsbury, Weatogue, Northington (later Avon), Farmington, Plain Village (later Plainville), Southington (later Plantsville), Hitchcock Basin (later Milldale), Cheshire, Mount Carmel, Hamden Plains (later Centerville), Whitneyville, and New Haven. Only Granby, Simsbury, Hamden Plains, and Whitneyville appear to have lacked basin facilities. Some basins evidently incorporated feeder streams.

4. The Farmington Canal Company's 1828 "Map.." and the New Haven and Northampton Company's "Land Plan.." had only a handful of apparent errors in originally mapped feature locations. The earlier map, which is the only original one to show the entire canal, includes 242 locations of locks, culverts, feeders, waste wiers, bridges, and basins. Field survey confirmed the presence or absence of remains at 202 of these points, of which only four were apparently mislocated on the original map. Severe disturbance or paved urban burial precluded such confirmation in canal

(continued)

Description (continued):

sections containing the remaining thirty-nine points. Stereoscopic examination of 1980 aerial photographs on file at the Connecticut Department of Environmental Protection resolved some minor ambiguities in canal location relative to present watercourses.

5. In addition to Harte's work in the 1930s, recent field studies include: Michael S. Raber. The Farmington Canal in Simsbury, Connecticut: Assessment of Significance and Mitigation Recommendations for a Section Subject to Sewerage Facility Impacts. Manuscript, 1981; Michael S. Raber. Farmington Canal Lock No. 13, Hamden, Connecticut: An Assessment of Significance. Manuscript, 1981; and Connecticut Archaeological Survey. Documentation of the Farmington Canal Remains in Cheshire, Connecticut. Manuscript, 1983, all of which are deposited with the Connecticut Historical Commission. Aside from intended prism, lock, bridge and aqueduct dimensions prescribed in minutes of the Farmington Canal Company of 1825 for July 4, July 18, November 12, and December 5, and a reference to pilings at one culvert in minutes of September 26, 1826 -- in Farmington Canal papers of the New Haven Colony and Plainville historical societies -- the only surviving design data are: Davis Hurd. Specification, plan, bird's-eye view, and broadside view of wooden lock. Manuscript, 1825. Connecticut State Library; and Anonymous [probably Davis Hurd]. Bills of timber for road and farm bridges, with sketch. Manuscript portion of a contract for Hampshire and Hampden Canal construction, no date. Folder M, Farmington Canal Papers, New Haven Colony Historical Society. Many useful data for study of canal routing appear in the following U.S. Geological Survey publications: Allan D. Randall. Surficial Geologic Map of the Tariffville Quadrangle, Connecticut-Massachusetts. 1970. Map GQ-798; Robert W. Schnabel. Surficial Geology of the Avon Quadrangle, Connecticut. 1962. Map GQ-147; Howard E. Simpson. Surficial Geology of the New Britain Quadrangle, Connecticut. 1959. Map GQ-119; Howard E. Simpson. Surficial Geology of the Bristol Quadrangle, Connecticut. 1961. Map GQ-145; and Albert M. La Sala, Jr. Surficial Geology of the Southington Quadrangle, Connecticut. 1961. Map GQ-146. The following reports for the State Geological and Natural History of Connecticut complete geological material available for the canal route: Richard F. Flint. The Surficial Geology of the Mount Carmel Quadrangle With Map. 1962. Quadrangle Report No. 12; and Richard F. Flint. The Surficial Geology of the New Haven and Woodmont Quadrangles With Map. 1965. Quadrangle Report No. 18.

6. Such additional structures apparently appear not only along or near the canal route, but in more distant towns within the `catchment' of the canal's influence.

(continued)

Description (continued):

7. Final specifications included a twenty foot prism bottom, water four feet deep and thirty-four to thirty-six feet wide at the surface, a towpath at least ten feet wide and between two and five feet above the water, an opposite or berm bank at least seven wide and two feet above the water, and interior and exterior bank slopes with vertical/horizontal ratios of 1:2. These dimensions, compared with the four rod (about sixty-six foot) total canal width expected in most places, suggest the preference for the side hill construction method: ideally, it resulted in a sixty-nine to eighty-one foot width beginning at the cut edge of the natural slope, depending on the height of the towpath. Profiles with two artificial banks stretched some eighty-nine to one hundred feet, again ideally and relative to towpath height. The company engineer could reduce the preferred width as needed when building very large embankments (see Profiles 3 and 5, Figure 2). Specifications appear in Harte "Some Engineering Features.." pp. 42-3; for exceptions, see Farmington Canal Company minutes for August 15, 1825, Plainville Historical Society collections.

8. It seems clear from the specifications cited in note 7, and from numerous primary and secondary references to problems with canal porosity, breaching, and repair, that virtually all earthen prism sections had no protective lining when initially constructed. Subsurface field examinations of profiles in Simsbury and Cheshire confirm this impression; see Raber "The Farmington Canal.." and Connecticut Archaeological Survey "Documentation..." The nature and location of repaired sections with lining remain unclear and poorly documented. Harte "Connecticut's Canals" notes an 1828 leak in Hamden was "puddled..with clay" (pp.19-20), a procedure often referred to in early nineteenth century canal building. A first hand description apparently made of the same incident, however, states that the repair involved mixing soil from the bank edges with water in the canal to form a "..muddy plaster over the bottom of the canal..", the mixing and rolling tool being a tree. In the absence of much if any clay near the canal, the use of such material seems unlikely if immediately adjacent soils were used. The same writer -- a company director -- later concluded that gravel was a more effective seal than clay (see letters of June 23, 1828 and December 8, 1829, Stephen Twining to Alexander C. Twining, Alexander Twining Collection, New Haven Colony Historical Society).

9. Remains of low walls appear opposite a feeder entry below Lock 8 in Southington, and on the berm bank top immediately above Lock 13 in Hamden (Features 23 and 33, Table 1). The interior of a bank opposite another feeder entry in Southington contains a rubble core; the core is visible because the bank washed out, suggesting increased porosity and bank weakening with the large material (Feature 24, Table 1). The canal company apparently minimized protective stonework.

(continued)

Description (continued):

10. Agreement between the New Haven and Northampton Company and Benajah Humphrey, December 30, 1837, for aqueduct repairs, in Plainville Historical Society collections; Harte, "Some Engineering Features.." pp. 37-8.

11. Raber, "Farmington Canal Lock..", and Michael S. Raber, National Register of Historic Places Inventory-Nomination Form, Farmington Canal Lock No. 13, deposited with the Connecticut Historical Commission.

12. Original measurements and appropriations appear in minutes of canal commissioner meetings for November 17, 1825 and January 4, 1826, in Farmington Canal Papers of the New Haven Colony Historical Society. The only known contemporary survey of the canal's water budget, noting points of intake and the estimated extent of leakage and evaporation, is M.S. Webb, "Survey of the water running in and out of the Farmington Canal from a point near Southwick Pond as far as New Haven, 1841". Manuscript, Connecticut State Library. Webb's low water survey included spot measurements which seem, if anything, lower than might be expected from modern estimates based on U.S. Geological Survey and Connecticut Department of Environmental Protection, "Water Resources Inventory of Connecticut, Part 8, Quinnipiac River Basin". Connecticut Water Resources Bulletin No. 27 (1979). The comparison with modern data tends to confirm Webb's conclusion about a surplus of supply over demand, which he based in part on low traffic lockage requirements. His data also suggest that increased traffic without attendance to water loss problems might have strained water resources, although the canal's uneven traffic history makes it impossible to explore this issue. Comparing his notes on smaller streams with the larger number apparent from data in Farmington Canal Company "Map.." and modern topographic maps accounts for the uncertainty in numbers of streams actually tapped.

13. Webb, "Survey.."; New Haven and Northampton Company, "Land Plan.." shows the Hamden waste wier, unlike Farmington Canal Company "Map.." of 1828.

14. Features 11 & 14, Table 1; Harte, "Some Engineering Features.." pp.32-3.

15. See Features 2, 3, 38, and 41, Table 1; Farmington Canal Company minutes for November 11, 1825, Plainville Historical Society collections, mention Payne. Strained company-town relations over bridges appear frequently in primary sources, e.g., Farmington Canal Company minutes for September 26, 1826, Plainville Historical Society collections; letter from Farmington selectmen to New Haven selectmen, August 27, 1829, Farmington Canal Papers, New Haven Colony Historical Society; and New Haven Register items of August 15 and September 5, 1835, referring to the bridge crisis highlighted by several collapses in the city.

16. Hamden Land Records 23: 405; personal communications, Christopher Becker.

8. Significance

Period	Areas of Significance—Check and justify below				
___ prehistoric	___ archeology-prehistoric	___ community planning	___ landscape architecture	___ religion	
___ 1400–1499	X archeology-historic	___ conservation	___ law	___ science	
___ 1500–1599	___ agriculture	___ economics	___ literature	___ sculpture	
___ 1600–1699	___ architecture	___ education	___ military	___ social/ humanitarian	
___ 1700–1799	___ art	X engineering	___ music	___ theater	
___ 1800–1899	X commerce	___ exploration/settlement	___ philosophy	X transportation	
___ 1900–	___ communications	___ industry	___ politics/government	___ other (specify)	
		___ invention			

Criteria A, C & D (see Summary,below)

Specific dates 1828-1847 **Builder/Architect** Davis Hurd & Henry Farnam, engineers

Statement of Significance (in one paragraph)

SUMMARY STATEMENT OF SIGNIFICANCE

In size and complexity, the Farmington Canal is Connecticut's foremost engineering work prior to the construction of the railroads: 56 miles in length, with a system of 28 locks, numerous bridges, culverts, and an aqueduct, the canal required the period's best surveying and engineering. It was the earlier and by far the larger in scope of two completed canal projects in Connecticut.[1] As an engineering artifact, the remaining sections of the canal are significant because they embody the distinctive designs, materials, and methods of construction characteristic of the 1820s (Criterion C): the locks, bridge abutments, and intact prism segments illustrate what was feasible in canal-building using the surveying expertise of the day, the traditional skills of the stonemason and carpenter, and excavation by shovel, wheelbarrow and wagon.

The canal also has historical significance as Connecticut's premier example of an important movement of the early 19th century, the promotion of internal improvements to stimulate economic growth (Criterion A). Throughout the United States, turnpikes, canals, and river and harbor channeling schemes were enthusiastically embraced by both private citizens and local and state government. The Farmington Canal is typical: conceived by merchant interests in New Haven, the canal was ambitious in scope, promoted with hyperbole, financed by an uncertain mixture of public and private funds, and ultimately unprofitable.[2]

Despite its overall lack of financial success or effect on the larger economy, the canal had a distinct economic and cultural impact on the small inland communities through which its passed (Criterion A). Many localities in Connecticut owe their initial development to the canal and others grew substantially as a result of the business it brought. Although in most cases, the railroad which replaced the canal greatly accelerated that growth, it was the canal itself which first stimulated these communities. Beachport and Milldale in Cheshire, Plainville, Simsbury, and East Granby all experienced economic development made possible by the canal connecting them to larger markets. The canal also introduced to these communities the first element of ethnic diversity: Irish laborers brought new customs and attitudes to the small towns, and in New Haven they formed the core of an Irish-American community which would later be swelled by immigrants of the Famine generation. Finally, the canal (and the railroad which replaced it) established cultural and economic links between New Haven and the inland towns. Though closer to Hartford, towns like Simsbury, Farmington, and Plainville developed strong ties to New Haven, ties first established by the Farmington Canal.

(continued)

9. Major Bibliographical References

see continuation sheet

10. Geographical Data

Acreage of nominated property 247.63

Quadrangle name see continuation sheet

Quadrangle scale see continuation sheet

UTM References see continuation sheet

	Zone	Easting	Northing
A			
B			
C			
D			
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G			
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Verbal boundary description and justification

see continuation sheet

List all states and counties for properties overlapping state or county boundaries

state	Connecticut	**code**	09	**county**	Hartford	**code**	003
state	Connecticut	**code**	09	**county**	New Haven	**code**	009

11. Form Prepared By

name/title	Michael S. Raber	Edited by John Herzan, National Register Coordinator	see continuation sheet
organization	Raber Associates	**date**	November 30, 1984
street & number	41 Great Hill Road P.O. Box 198	**telephone**	(203) 267-2280
city or town	Cobalt	**state**	Connecticut 06414

12. State Historic Preservation Officer Certification

The evaluated significance of this property within the state is:

___ national X state ___ local

As the designated State Historic Preservation Officer for the National Historic Preservation Act of 1966 (Public Law 89-665), I hereby nominate this property for inclusion in the National Register and certify that it has been evaluated according to the criteria and procedures set forth by the National Park Service.

State Historic Preservation Officer signature [signature]

title Director: Connecticut Historical Commission **date** July 3, 1985

For NPS use only

I hereby certify that this property is included in the National Register

[signature] **date** 9-12-85

Keeper of the National Register

Attest: **date**

Chief of Registration

Significance (continued):

Archeological investigations have demonstrated the usefulness of certain Farmington Canal segments and features in illustrating and explaining the engineering techniques of the period (see citations in Item 6). Other portions of the canal can be presumed to be equally useful in addressing similar questions and other issues posed by archeologists in the future (Criterion D).

INTEGRITY OF THE CANAL AS A SIGNIFICANT HISTORIC RESOURCE

The remaining segments included in this nomination do not represent the entire original length of the canal. Nevertheless, the portions included do possess substantial integrity. Prism segments have their banks intact for long continuous stretches, and despite erosion, sedimentation, and vegetative overgrowth of the banks, the canal's dimensions, configuration, and course are clearly visible in the nominated portions. The canal's relaton-ship to surrounding topography manifests engineering decisions of great interest (see below). Prism construction techniques are preserved, undisturbed in most cases, for archeological investigation (or at a few points where sharp-edged washouts have occurred, to any observer). Taken together, the nominated portions possess an integrity beyond that of individual components. A full range of original features, including bridge abutments, culverts, locks, and several distinct types of prism, are embraced by the nominated resource, and the comparisons made possible by multiple examples heighten the significance of the separate parts. For example, a lock which is now nothing but scattered rubble is important because it indicates the site of a solution to the engineering problem of moving boats over sloping topography, and it can be more fully interpreted because the canal as nominated includes several locks in various states of preservation. Finally, the nominated portions are in most cases sufficiently long and well-preserved to demonstrate the canal's role in local history -- that of a major transportation innovation running for long distances through the countryside.

ARCHEOLOGICAL SIGNIFICANCE

Investigations by Michael S. Raber in 1981 and Connecticut Archeological Survey in 1983 (cited in Item 6) studied the canal itself as an artifact of canal construction methods of the 1820s. Using core samples, measurement of existing profiles, and excavation through a section of the prism, these studies have provided physical evidence for some of the canal's basic design criteria: the formation of the banks almost exclusively from excavated material, the lack of a sealing substance such as clay or mortared masonry, and a minimal use of stone to ballast or protect the banks. These findings are available only through archeological techniques; they corroborate inferences from the indirect documentary evidence of decentralized construction

(continued)

Significance (continued):

and repair and the topographical evidence showing the use of side hill routes to minimize both excavation and bank construction. In short, archeological study of the Farmington Canal has provided essential direct evidence of low-cost, low-technology construction and repair. The emerging picture suggests the canal project was more similar to the turnpike efforts which preceded it than to the railroads which followed.

None of the cited studies uncovered artifacts associated with the people building or operating the canal, nor are such artifacts likely within district boundaries. Unlike the building and habitation of a dwelling, most canal prism sections featured relatively little human activity other than passing boats. There is no evidence that canal workers lived in the canal right of way during construction, and except at some engineering features the canal is structurally an extensive sand bank. Locks and basins were probably sites of artifact deposits, but the potential for interpretable artifact recovery at such sites must remain speculative. Raber's preliminary testing at Lock 13 yielded no period artifacts, and recent disturbance and filling remove both the commercial basins and the tidewater basin from district inclusion. It is the visible remains of the canal which constitute the chief artifact, one shown to be of use in understanding the historical development of this mode of transportation.[3]

From an archeological viewpoint, most nominated portions of the canal appear redundant: one well-preserved sidehill segment is probably much like another and of similar utility for demonstrating construction technique. Except for some of the large surviving embankments at stream or river crossings, the canal is a structurally monotonous array of prism sections. Nevertheless, the nomination of all 23.5 miles, essential for retaining the characteristics which are associated with the criteria of historical and engineering significance, is justifiable on archeological grounds as well. In the absence of any comprehensive plan of study or any imminent further excavation, each segment has approximately the same archeological potential and thus the same qualities which make it eligible for the National Register. Each segment retains the potential to explore detailed design decisions, and taken together the segments catalog a largely unwritten vocabulary of vernacular construction and early American engineering practice.

ENGINEERING SIGNIFICANCE

The canal was surveyed, constructed, and managed by engineers who had received their training on the Erie Canal, a fact which places the Farmington Canal in the mainstream of early 19th-century engineering. The Erie, the foremost engineering work of early America, trained a generation of engineers, many of whom built subsequent canals and had later careers in railroad construction and other branches of the profession.

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Significance (continued):

Erie Canal chief engineer Benjamin Wright, assisted by his son Henry, provided initial engineering advice and specifications for the Farmington Canal. Davis Hurd, responsible for actual survey, design and construction administration, was a less prominent graduate of the Erie Canal school, as was Henry Farnam. On the Farmington Canal project, Hurd was the first chief engineer and Farnam his assistant. Hurd was a surveyor and had been an assistant engineer on the Erie before his work on the Farmington Canal. Farnam and Hurd were relatives. The younger Farnam had lived with the Hurd family as a youth, and worked with Hurd on the Erie, first as a cook and later as a rod-man. By 1830 Farnam had taken over as the Farmington Canal's chief engineer, a position he continued to hold until the canal's abandonment. A self-taught land surveyor, Farnam (1803-1883) lacked formal higher education, but what he and Hurd had learned on the Erie sufficed for them to plan and carry out a large-scale project like the Farmington Canal. Farnam also planned and supervised the canal company's establishment of a parallel rail line. Shortly thereafter, he went west, where he worked as chief engineer for the construction of the Rock Island Railroad, later serving as the Rock Island's president. That an unschooled but bookish youth could become one of the country's leading railroad engineers and managers says much of Henry Farnam's perseverence and energy, but it also was characteristic of that generation of engineers, in which learning by doing far outweighed academic preparation.[4]

As an engineering accomplishment, the Farmington Canal was regionally impressive for its size, complexity, and scope -- it was the longest canal ever built in New England -- but it was nevertheless a project which relied on traditional methods and a minimum of technological finesse. The stone culverts, for example, used the same rubblestone masonry with cut ring stones which had been in use for years for important highway bridges. Wooden locks of limited lift, simple wooden trusses and steeply ramped abutments for the bridges, and the use of unreinforced banks all kept costs down and made construction simple. As an entirely artificial canal, avoiding river navigation and built for small boats, the Farmington's design closely reflected some of the Erie's lessons, but the differences between state and predominantly private financing emerge in the initial absence of all-masonry locks and reinforced banks. At the very start of the project, Benjamin Wright suggested "wooden locks in the first instance, as more economical," despite known problems with such construction.[5] In several critical areas of design, however, the best contemporary practice can be seen. Two of these exceptional aspects were the quality of the survey, which eased construction by utilizing sidehill routes, and the engineers' provision of sufficient water for the canal. With the Unionville branch, and other feeders constructed as early as 1830, when Congamond ponds went dry for three months, the canal avoided the Erie's perpetual problem of inadequate water. The engineers' knowledge of hydrology was apparently not well-developed: many

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Significance (continued):

culverts were too small for the streams flowing through, and the one at Salmon Brook was actually washed out and replaced twice before the canal could open.[6] Technologically, the canal was at best a limited success: the instability of the banks and consequent washouts plagued the canal for most of its existence. Ultimately, however, the canal's problems arose from financial and organizational, not technical, deficiences.[7]

NEW HAVEN AND THE "TRANSPORTATION REVOLUTION"

The idea for the canal came from prominent New Haven merchants led by James Hillhouse. In the early 19th century, there was considerable rivalry among the merchants of the leading Connecticut cities. Worried over the growth of the West at the expense of the East and the apparent lack of manufacturing such as that enjoyed by Rhode Island, Connecticut merchants were ill-disposed to accept any threat to trade. The establishment of the turnpike system in the 1790s and early 1800s had shown that transportation improvements led to increased commerce; access to an ever wider hinterland was thus seen as an advantage. By bypassing Hartford (whose merchants had undertaken important improvements to the river south of their city), New Haven could lay claim to the shipping of products from the middle and upper Connecticut River valley. With this in mind, corporations were formed in Connecticut and Massachusetts to construct the canal from New Haven all the way to Northampton, Massachusetts. The merchants predicted, however,that one day the project would extend to Canada to the north and the Hudson River to the west. The remains of the canal nominated herein are a testament to the optimistic ideology of internal improvements, the faith that citizens acting together could improve their fortunes by building better transportation.

CANAL FINANCES AND MANAGEMENT

The canal was not adequately financed. The first offering of stock was sold by subscription, with the money due in installments. The first payments came in quickly, but subsequent calls for cash elicited a lackluster response. Since the canal cost nearly twice the estimated $420,698.00, the lack of money was a serious problem both for the initial construction and ongoing maintenance. The canal company arranged for the establishment of no fewer than three banks which typically paid in $100,000 as a condition of their charters, and received two substantial grants of cash from the City of New Haven. Even with this help, the canal never showed a profit. In good years, the receipts from tolls covered the canal's operating expenses, but nothing was left over for emergencies. Floods and washouts, far from being unusual, occurred with such frequency that they should have been considered (and budgeted for) as ordinary expenses.[8] The canal was finally abandoned shortly after the company completed a parallel railroad in 1847.

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Significance (continued):

The day-to-day operation of the company was not tightly organized. Operations and repair were left to local agents, with whom the chief engineer would correspond by mail. In Simsbury, for example, lawyer Jeffrey Phelps ran the canal. Phelps chose the lock attendants and paid their wages, hired men to do incidental repairs, and even made what might be considered minor structural decisions: Farnam told him to decide whether plantings along the banks might reduce erosion, and if so, to undertake the work. When large breaks occurred, like the one in Farmington in September 1831, Farnam wrote to his agents requesting them to hire local workers and teams and send them to the site of the washout.[9] How many days it took to organize a work crew in this way is not known.

By its charter, the canal was governed by a board of commissioners acting in the public interest. The commissioners were not supposed to have any financial interest in the canal. In practice, however, they were closely linked by family and business ties to the major stockholders. Commissioner Jonathan Pettibone, for example, was the major Simsbury proponent of the canal and an underwriter of the intial survey: his son John was another underwriter and owner of the canal boat Weatogue. Whatever mistakes the canal company made were not likely to be counteracted by the commissioners.[10]

REGIONAL ECONOMIC IMPACTS

The canal was opened through Farmington by 1828 and finally finished through to Northampton in 1835. Its overall economic effect was not great. Competing Hartford merchants had overcome the major navigational hurdle north of their city, the Enfield Rapids, by completing only six miles of canal in 1829. For most of its length, the Farmington Canal and the Connecticut River ran sufficiently close together that they in effect shared the same hinterland. Washouts suspended service on the Farmington Canal for several months some years, and even when the canal was running well, the fifteen to twenty boats a week which seem to have been typical did not affect New Haven's basic economy. Shipments of lumber, country produce, and Bristol clocks to New Haven and of salt, preserved foods, liquor, farm implements, iron and steel upcountry benefited a few merchants and wholesalers but in volume had little impact on the regional economy. The city experienced some growth around the canal's terminus, a sheltered harbor formed by a breakwater extending to the Long Wharf, but as this was the commercial heart of New Haven, the growth cannot be chiefly attributed to the canal. Yet the canal's direct route to the interior and the dramatic shortening of travel time (many trips took only one fourth as long) had important effects on the growth of several inland communities.[11]

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Significance (continued):

EFFECTS ON LOCAL DEVELOPMENT

Although as much as 75% of the stock of the Farmington Canal (and more than half the stock of the Massachusetts portion, the Hampshire and Hampden Canal) was held by New Haven residents, it was the small towns along the route which were most affected, both economically and culturally, by the canal. Many merchants who established basins and stores along the route prospered. These basins -- large hollows (mostly natural) in which boats could wait to be loaded -- became the focal points for the transshipment of goods on the canal, and in many cases the basins grew into major settlements. Beachport in Cheshire, for example, was named after merchant Richard Beach (first cousin to lawyer and canal commissioner Burrage Beach), who built a basin, warehouse and store convenient to where a large east-west road crossed the canal. Beach's business connections extended westward to Prospect and Naugatuck, from which oxcarts carried goods bound for canal shipment. In Farmington a similar wharf and warehouse were erected by James and Augustus Cowles, and a large three-story brick building, the Union Hotel, was built to accomodate passenger traffic. In Simsbury Elisha Phelps established the Canal Hotel, and Granby benefited from the ability to ship out its copper ore. Many towns saw the establishment of new manufactures, as people built shops to take advantage of both the canal's transportation and, to a lesser degree, the fall in water at the locks. In Hamden, Elam Ives built a waterpowered carriage axle shop at Lock 17, bringing in metal and shipping out axles via the canal, and Charles Brockett built a carriage spring and carriage step factory at Lock 16. In New Haven, a paint mill, a foundry, a turning shop and forge, and two flour mills (one tidal) were in operation between Lock 24 and the harbor basin's breakwater. Cheshire had a spoon shop, coffee-mill factory, tannery, plaster mill, and hairpin factory, all near the canal. Hotelkeeper Phelps owned a card factory on the canal in Simsbury, and there was a spoon shop in Granby. Probably the greatest industrial side effect of the canal was the founding of Unionville in Farmington. Once the Farmington River had been dammed by the canal company for its branch canal, other Farmington merchants perceived the value of the river's waterpower and quickly formed a company to exploit the drop at Unionville, which eventually became a large industrial village. Throughout the route of the canal, individual entrepreneurs flourished by operating stores, hotels, shops, and canal boats, even while the company itself floundered.[12]

Plainville owed its existence to the canal. Prior to the 1820s, Plainville was merely a remote farming area within Farmington, with only a tavern, a few houses, and two small mills marking the site of the present town. When the canal went through, George, Elisha, and Harmanus Welch from the nearby town of Bristol lost no time in building a basin, store, and lumber yard near what is now the center of Plainville. They were soon joined by Adna Whiting, who had started out at another basin further up the canal.

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Significance (continued):

"Bristol Basin," as the location became known, prospered in part because of the proximity of Bristol, a large town in which the manufacture of inexpensive mass-produced clocks was the principal economic activity. Bristol clocks, marketed nationwide through a system of peddlers and agents, made the first leg of their journey via canal boat, and the specialty woods which went into the veneered cases were brought in by the same route. The Welches also did a large business in dry goods and groceries, selling them as far away as Litchfield and Goshen. E.N. Welch invested his profits in the clock industry, becoming one of the country's largest producers and one of the first millionaires in Connecticut; Harmanus Welch became a leading merchant, real estate developer, and banker in New Haven. Several other manufacturers, particularly of carriages and clocks, located near the canal in Plainville and across the line in the Forestville section of Bristol. Plainville's growth continued and even accelerated in the railroad era, but it was the canal which gave the town the first impetus which led, in 1869, to Plainville's incorporation.[13]

The canal established connections between the inland towns and the city of New Haven which otherwise might have formed with Hartford or not have existed. Because of the passenger traffic on the canal, movement of people and ideas was easier than when roads alone connected these towns. The canal's influence took the form of business ties, newspaper circulation, and migration between the inland communties and the city of New Haven. Many homes and businesses were financed by New Haven banks, a pattern which endured through the 1920s.[4] The canal extended New Haven's manufacturing influence: the early location of the carriage parts industry in Southington, Hamden, and Cheshire was in part a result of that city's role as a major carriage manufacturing center. Finally, many entrepreneurs moved from the inland towns to New Haven to further their businesses, one notable example being Chauncey Jerome, who in 1845 moved his Bristol clock factory to the city, where it eventually was transformed into the New Haven Clock Company.[14]

Of equal import with the canal's economic effects, yet far less easily measured, were the social and cultural changes the canal brought to communities along the route. Hundreds of Irish laborers were employed on the canal during construction. Recruited from Boston, New York, and cities near the Erie Canal such as Albany and Lockport, these strangers brought with them new habits, clothes, religious beliefs, and foreign accents (if not actually a foreign language - - Irish was widely spoken among the immigrants in the 1820s). Many of the natives were offended but what they perceived as the Irish's excessive drinking and congregating in public; at least one riot (and one death) occurred when Cheshire resident Titus Gaylord went berserk and, swinging his ax, charged into a crowd of Irish workers . Most of the immigrants settled permanently in New Haven, and a Catholic Church was built in 1832, prompting one paper to proclaim, "The Pope is Coming." The canal

Significance (continued):

thus was the catalyst for the formation at an early date of what would become one of the largest Irish-American communities in the state.[15]

In summary, the canal segments herein nominated have an importance beyond the success or failure of the canal company itself. For the towns through which it passed, the canal represented a new link to the outside. On the local level, the canal brought prosperity to particular entrepreneurs, increasing the wealth of established families such as the Phelpses of Simsbury and allowing new families, such as the Welch brothers, sons of an iron moulder, to join the elite. Whole new areas became nodes of settlement, and in many towns the canal provided the sites for diverse industrial enterprises. The remaining well-preserved segments of the canal constitute an essential historic resource which recalls important developments in the history of the region's towns.

Significance (continued):

NOTES

1. Connecticut's other canal, the Enfield or Windsor Locks canal, is a six-mile long stone-lined structure completed in 1829. Its three locks allow it to bypass the Enfield rapids on the Connecticut River above Hartford. It is listed on the National Register.

2. Edward C. Kirkland, Men, Cities and Transportation: A Study in New England History, 1820-1900 (2 vols., Cambridge, Mass., 1948), I, 76-80; Carter Goodrich, Government Promotion of American Canals and Railroads (New York, 1960), 126-31.

3. For an archeological study of the Erie Canal with generally similar results, see Charles E. Cleland and Lyle M. Stone, "Archeology as a Method for Investigating the History of the Erie Canal System," Historical Archeology 1 (1967): 63-70, 88, 90.

4. H.W. Farnam, Memoir of Henry Farnam (New Haven, 1889), passim. For an account of another career in this period see Neal Fitzsimons (ed.), The Reminiscences of John B. Jervis, Engineer of Old Croton (Syracuse, 1971). Jervis learned surveying as an axe-man on the Erie Canal, and became a major figure in American Engineering.

5. Farmington Canal Company, Act of Incorporation (New Haven, 1822).

6. These problems were typical of the period; see W. B. Longbein, "Hydrology and Environmental Aspects of the Erie Canal (1817-1899)," U.S. Geological Survey Water-Supply Paper 2038 (1976).

7. After corporate reorganization in 1836 and infusion of some new capital, Henry Farnam oversaw a reconstruction program which significantly improved canal operations by the early 1840s. The canal could work, then -- but by the time it did, its poor public image, its increasingly outmoded nature relative to burgeoning railroads, and the continuing opposition of Hartford interests to canal company facilities on the Connecticut River above Northampton all served to assure its demise. See New Haven and Northampton Company, Annual Report, 1845.

8. Account of the Farmington Canal Company... (New Haven, 1850); see also Arthur J. Frechette, Jr., "Canal Finances," in Raimon L Beard (comp.), Reflections on the Canal in Cheshire (Cheshire, 1976).

9. Henry Farnum to Jeffrey Phelps, September 24, 1831, September 28, 1831, Jeffrey Phelps papers, Connecticut Historical Society, Hartford.

10. Phelps papers; Private Laws of Connecticut, vol. 1, 300-11.

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Significance (continued):

11. Calm Considerations Relative to the Canal (New Haven, 1839); Kirkland, 130-31; Edward E. Atwater, History of the City of New Haven (New York, 1887), 358 ff.

12. M.S. Webb, Survey of the water running in and out of the Farmington Canal..., manuscript, 1841, Connecticut State Library; see also the local histories cited in the Item 10, Bibliographical References.

13. Henry A. Castle, The History of Plainville (Canaan, N.H., 1967), 93-104, 147-48; see also Carleton Beals, Our Yankee Heritage: The Making of Bristol (Bristol, 1954).

14. Matthew Roth, Connecticut: An Inventory of Historic Engineering and Industrial Sites (Washington, 1981), 179. For the influence of New Haven builders and lenders on Plainville architecture, see Historic Resource Survey of Plainville, 1983, Connecticut Historical Commission.

15. Robert Williams, "A Social History of the Farmington Canal," Senior Thesis, Quinnipiac College, 1978 (copy at Connecticut Historical Society), 18; Rollin G. Osterweiss, Three Centuries of New Haven, 1638-1938 (New Haven, 1953), 216.

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QUADRANGLE NAMES, ALL SCALE 1:24,000

Southwick, Mass. - Conn.
Tariffville, Conn.
Avon, Conn.
New Britain, Conn.
Bristol, Conn.
Southington, Conn.
Mount Carmel, Conn.
New Haven, Conn.

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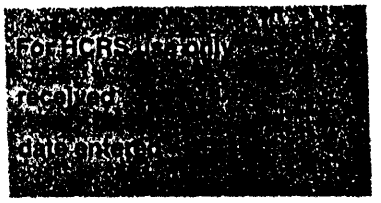
United States Department of the Interior
Heritage Conservation and Recreation Service

National Register of Historic Places Inventory—Nomination Form



UTM REFERENCES

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(Feature 4)			
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F	18	683780	4647700
G	18	684245	4646610
Section 3			
H	18	684390	4646375
(Feature 8)			
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Section 8			
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Section 18			
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AAA	18	675400	4602760
Section 20			
BBB	18	674940	4600125
CCC	18	674100	4595630
Section 21			
DDD	18	673800	4594680
(Feature 35)			
EEE	18	674000	4591230
FFF	18	673970	4591200
GGG	18	674005	4591145
(Feature 37)			
HHH	18	674065	4590725
III	18	674000	4590690
JJJ	18	674085	4590540
(Feature 40)			
KKK	18	674600	4589010
LLL	18	674705	4589010
MMM	18	674705	4588965
NNN	18	674600	4588965
OOO	18	674880	4587825
Section 22			
PPP	18	673530	4575610
QQQ	18	673790	4575300
Section 23			
LL	18	677590	4623525
MM	18	677400	4623535
Section 24			
NN	18	680425	4623995
OO	18	679375	4623420
Section 25			
FF	18	680960	4624730
HH	18	680640	4624455

(continued)

VERBAL BOUNDARY DESCRIPTION AND JUSTIFICATION

Lines shown on the quadrangle maps, and defined by UTM references, generally indicate the center of each district canal section. With the exceptions noted below, district boundaries are 13 meters/42.5 feet on either side of each center line. The total width of 85 feet corresponds to four typical canal profiles exemplifying three types of canal construction: cutting into a natural slope and creating one artificial bank with the excavated material (Figure 2, Profile 1 and 2); excavating into a level surface and banking up one or both sides (Figure 2, Profile 6), and building two artificial banks on lvel surfaces not abutting large streams (Figure 2, Profile 4). Towpath, berm, and outer banking edge fall within this width in all cases of these types of construction. For parts of sections with double banks crossing larger streams or approaching the aqueduct, the profile is wider and district boundaries increase commensurately. Double bank district boundary locations and widths, based on measurements, other field observations, or mapping from large scale contour maps, are:

Section 5, 18 meters/59 feet on each side of center line for 500 feet south of Point P;

Section 12, 15 meters/49 feet on each side of center line between Points FF and GG (except in the Farmington River);

Section 19, 28 meters/91 feet on each side of center line, for about 120 feet along center line over Feature 26;

Section 22 in New Haven exemplifies the narrower profile of vertical masonry walls, and is only 6 meters/20 feet on each side of the center line.

At basins (Features 4, 8, 35, and 37), the boundaries bulge out on one side of the center line, conforming to local topography. The lockkeeper's house at Lock 14 (Feature 40) also creates a boundary enlargement on the east side of the canal. UTM references listed above define these features.

The district passes through two listed National Register properties, Locks 12 and 13. UTM references for these features are at the approximate center of each lock.

NPS Form 10-900-a
(3-82)

OMB No. 1024-0018
Expires 10-31-87

United States Department of the Interior
National Park Service

National Register of Historic Places Inventory—Nomination Form

For NPS use only
received
date entered

Bruce Clouette

Historic Resource Consultants
Colt Armory, 55 Van Dyke Avenue (203) 547-0268
Hartford Connecticut 06106

Location: (continued):

Towns in Hartford County (003):

Avon
East Granby
Farmington
Granby
Plainville
Simsbury
Southington
Suffield

Towns in New Haven County (009):

Cheshire
Hamden
New Haven

Location of Legal Description (continued):

Avon Town Clerk
60 West Main Street
Avon, Connecticut 06001

Cheshire Town Clerk
Town Office Building
64 Main Street
Cheshire, Connecticut 06412

East Granby Town Clerk
Town Hall
Center Street
East Granby, Connecticut 06026

Farmington Town Clerk
Town Hall
1 Monteith Drive
Farmington, Connecticut 06032

Granby Town Clerk
Town Hall
15 North Granby Road
Granby, Connecticut 06035

Hamden Town Clerk
Memorial Town Hall
2372 Whitney Avenue
Hamden, Connecticut 06518

New Haven City and Town Clerk
Hall of Records - Room 204
200 Orange Street
New Haven, Connecticut 06510

Plainville Town Clerk
Municipal Center
1 Central Square
P.O. Box 250
Plainville, Connecticut 06062

Simsbury Town Clerk
Town Office Building
760 Hopmeadow Street
P.O. Box 495
Simsbury, Connecticut 06070

Southington Town Clerk
Town Office Building
75 Main Street
Southington, Connecticut 06489

Suffield Town Clerk
Town Hall
Mountain Road
Suffield, Connecticut 06078

Existing Surveys (continued):

Connecticut: An Inventory of Historic Engineering and Industrial Sites

Historic American Engineering Record
1981 - Federal

Records deposited with Connecticut Historical Commission
59 South Prospect Street
Hartford, Connecticut 06106

The Farmington Canal: A Proposal for Selective Restoration

Connecticut Department of Environmental Protection
1976 - State

Published; available from Department of Environmental Protection
State Office Building
Hartford, Connecticut 06115

Historic Resource Survey of Plainville, Connecticut

1983 - Local

Records deposited with Connecticut Historical Commission
59 South Prospect Street
Hartford, Connecticut 06106

Determinations of Eligibility:

4/25/77 Simsbury: "Farmington Canal"
11-25-77

2/20/78 Cheshire: "Section of the Farmington Canal Approximately 1100' South of the 10-Mile Culvert"
F) 0.78

Existing Surveys (continued):

Segments listed on the National Register:

Farmington Canal Lock
(Lock No. 12)
487 North Brooksvale Road
Cheshire (New Haven County), Connecticut
Listed 2/16/73

Farmington Canal Lock No. 13
Hamden (New Haven County), Connecticut
Listed 5/6/82

Archeological Reports:

Raber, Michael S. The Farmington Canal in Simsbury, Connecticut: Assessment of Significance and Mitigation Recommendations for a Section Subject to Sewerage Facility Impacts. 1981.

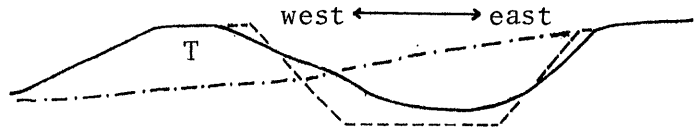
Deposited with Connecticut Historical Commission
59 South Prospect Street
Hartford, Connecticut 06106

Raber, Michael S. Farmington Canal Lock No. 13, Hamden, Connecticut: An Assessment of Significance. 1981.

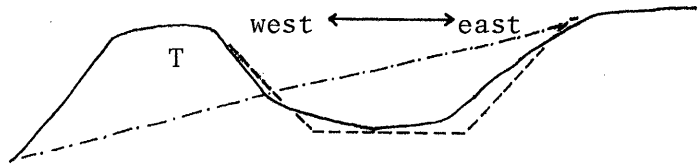
Deposited with Connecticut Historical Commission
59 South Prospect Street
Hartford, Connecticut 06106

Connecticut Archeological Survey. Documentation of the Farmington Canal Remains in Cheshire, Connecticut. 1983.

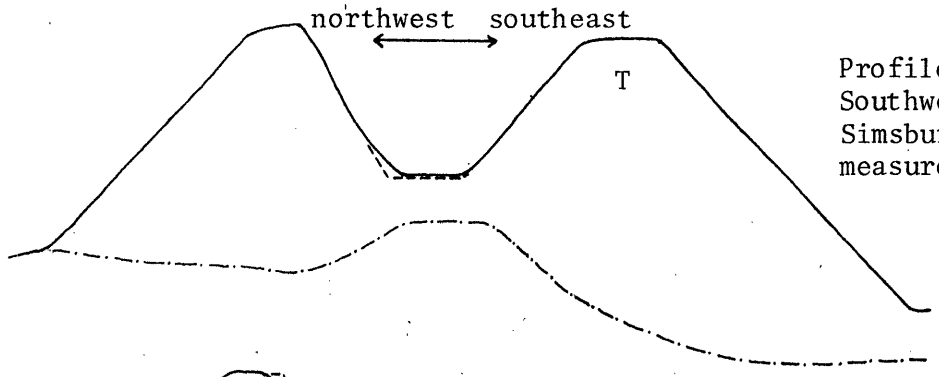
Deposited with Connecticut Historical Commission
59 South Prospect Street
Hartford, Connecticut 06106



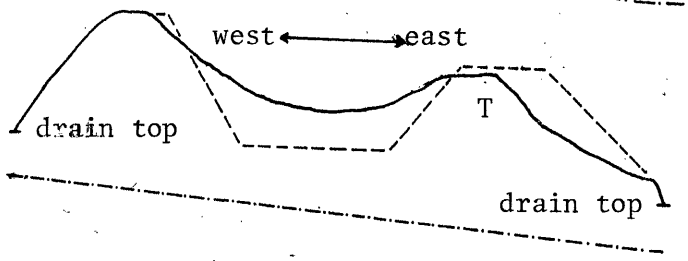
Profile 1
Between Quarry Road &
Hungary Brook, Granby
measured 1984



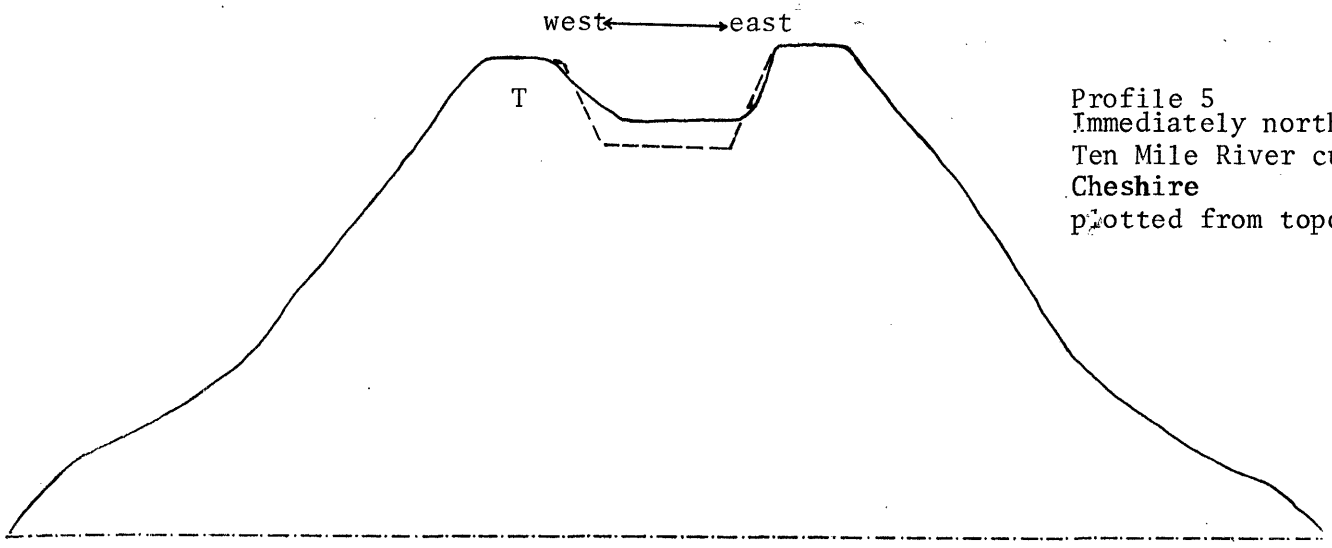
Profile 2
Between Route 20 &
Canal Road, Granby
measured 1984



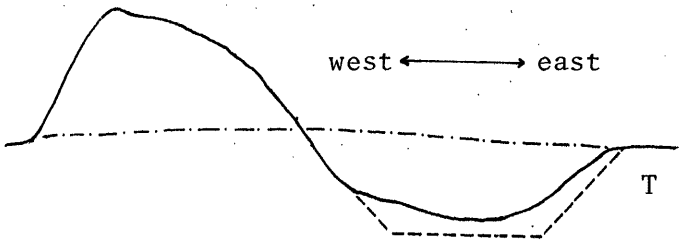
Profile 3
Southwest of Lake Basile,
Simsbury
measured and cored 1980



Profile 4
Southwest of South School
Simsbury
measured 1984

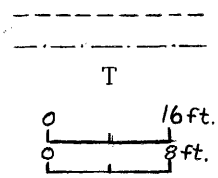


Profile 5
Immediately north of
Ten Mile River culvert,
Cheshire
plotted from topographic map



Profile 6
North of Todd Street, Hamden
measured 1984

Figure 2. FARMINGTON CANAL PROFILES



probable original prism
probable original pre-canal surface
T towpath
horizontal scale
vertical scale

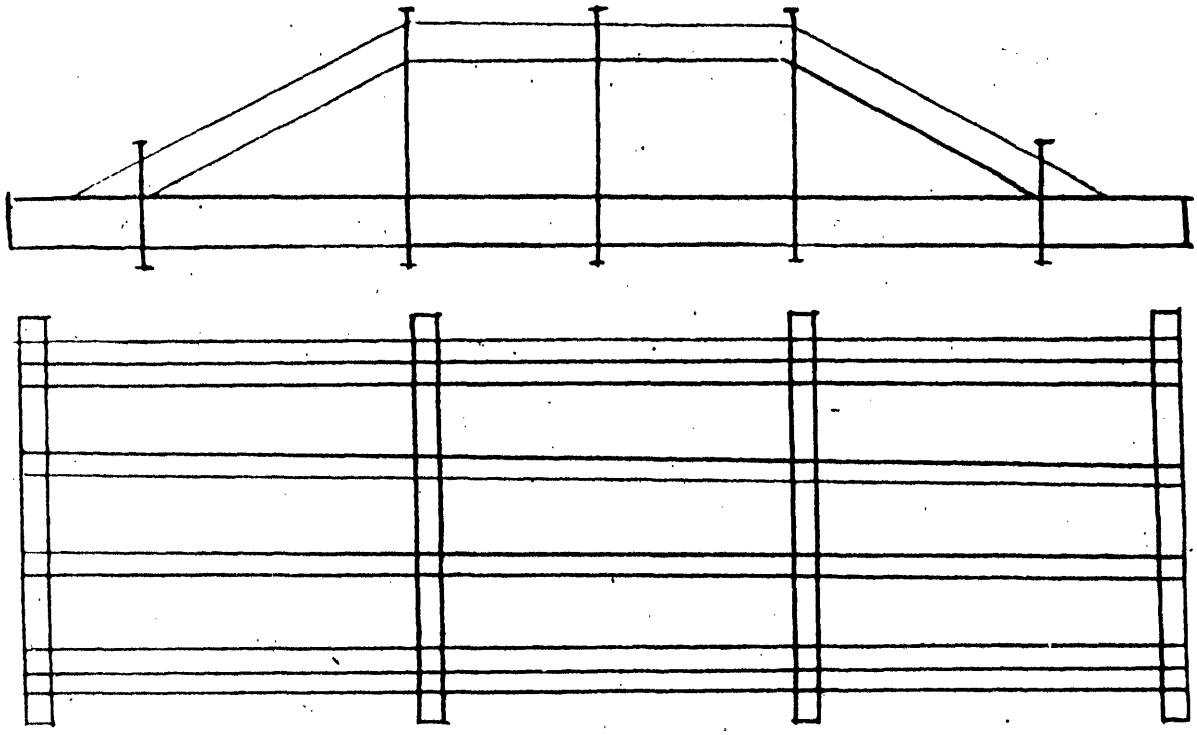


Figure 3. ORIGINAL FRAMING DIAGRAM FOR FARMINGTON CANAL BRIDGES

Bridge was 42 ft. long, 12-14 ft. wide.
Source: Folder M, Farmington Canal Papers,
New Haven Colony Historical Society

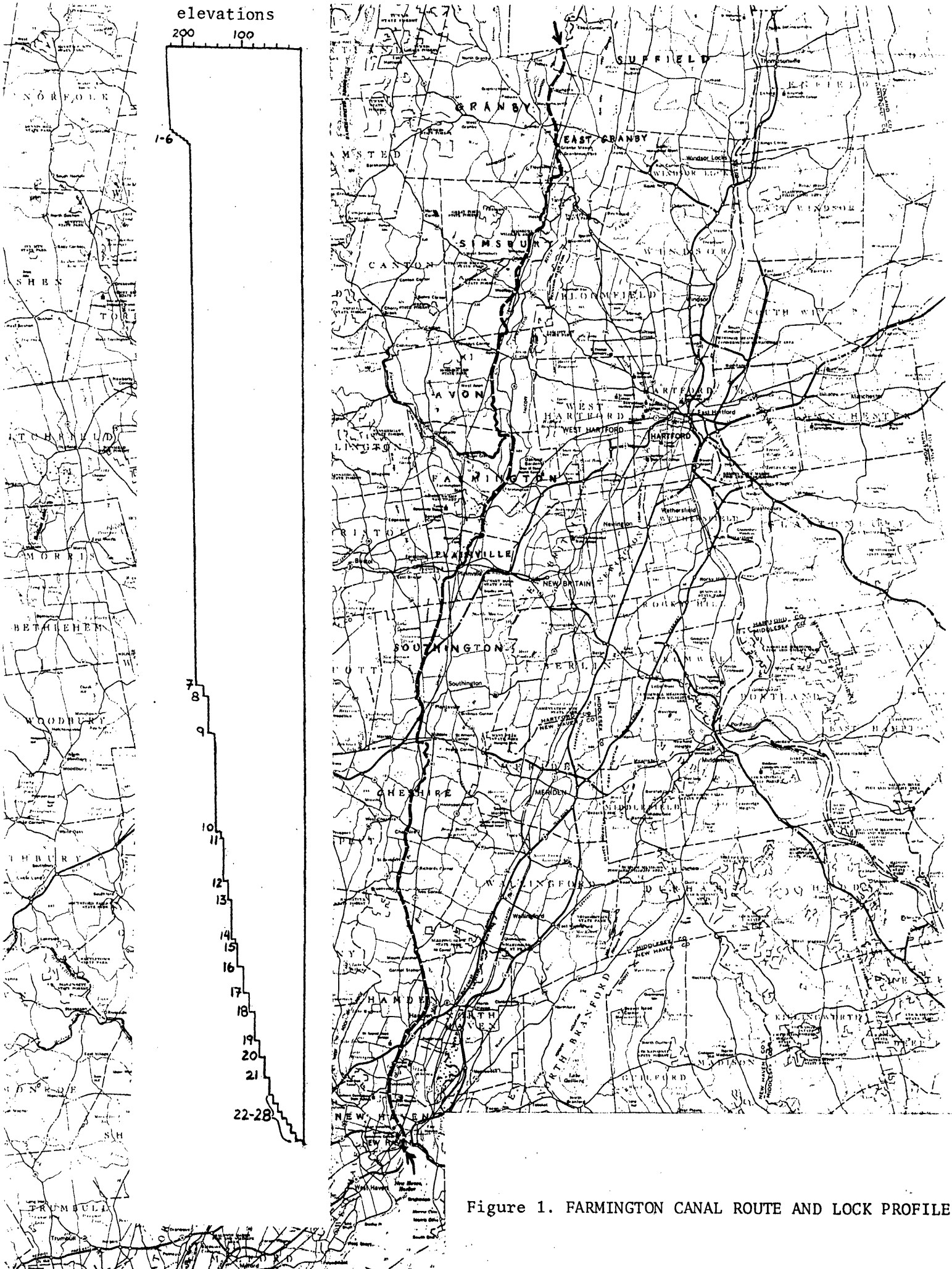
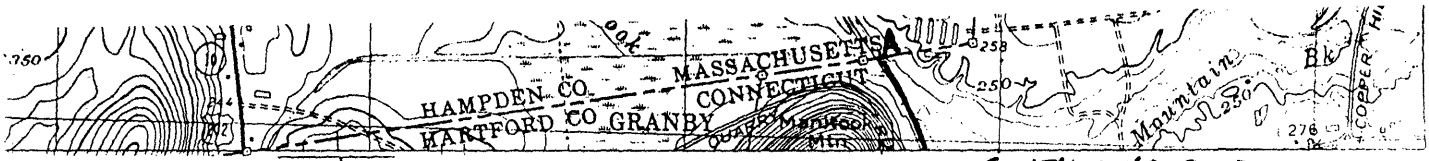


Figure 1. FARMINGTON CANAL ROUTE AND LOCK PROFILE



SOUTHWICK QUAD.

FARMINGTON CANAL

TARIFFVILLE QUADRANGLE

CONNECTICUT—MASSACHUSETTS

7.5 MINUTE SERIES (TOPOGRAPHIC)

(WES

STFIELD, MASS. 9.3 MI
THWICK, MASS. 4.2 MI.

47'30"

590 000 FEET

684

685

686

72°45'

42°0

Swedish Pilgrim Ch

Cem

ROAD

PHELPS

229

QUARRY

Five Points

BM 255

North

U F F I E L D

Mountain

276

4651

Section 1

A 18 684630 4652370

B 18 684775 4651970

Feature 1

Feature 2

420 000 FEET

4650

Beaverdam Marsh

Copper Hill Cem

Hungary

COPPER HILL ROAD

Copper Hill Ch

4649

Great

Duncaster Hill

Section 2

C 18 683750 4648915

(Feature 4)

D 18 683735 4647805

E 18 683800 4647795

F 18 683780 4647700

G 18 684245 4646610

Feature 3

Feature 4

ABANDONED ROAD

HUNGARY

PETERSEN

Waite Pond

4648

Town Sch

Granby Cem

Granby

BM 215

57'30"

(MAP 1)