Historical and Photographic Documentation:

Canal Line Railroad
Cheshire Town Line to Plantsville
Southington, Connecticut

Prepared for the

Town of Southington

by

Bruce Clouette
Archaeological and Historical Services
Storrs, Connecticut

August 2009
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CANAL LINE RAILROAD
Southington/Cheshire Town Line to West Main Street, Plantsville
Southington, Connecticut

Location: Paralleling Canal and Atwater streets from the Southington/Cheshire town line approximately 2 miles north to West Main Street in the Plantsville section of Southington

U.S.G.S. Quadrangle: Southington
UTM Coordinates
18.674820.4603000 (south end)
18.675660.4605910 (north end)

Survey Engineer: Alexander C. Twining (1801-1884)
Fabricator (bridges): Boston Bridge Works, Berlin Construction Company

Date of Opening: 1847

Significance: The Canal Line was the direct successor to the Farmington Canal. Under the leadership of entrepreneur Joseph E. Sheffield, the New Haven and Northampton Company converted its charter to allow it to build a railroad along the route of the canal. Eventually, the line came under the control of the New York, New Haven, and Hartford Railroad, which had achieved a near-monopoly on rail service in southern New England. Structures along the line reflect both the stone masonry typical of early railroad construction and the upgrading of the line ca. 1900 to accommodate the weight of heavier steam engines. The Milldale station has local historical significance because of the centrality of rail service to the economic and social life of the community.

Project Information: This documentation, completed in August 2009, was requested by the Connecticut State Historic Preservation Office in its comments on a proposed rails-to-trails project using the former railroad right-of-way. The Connecticut Department of Transportation is assisting the Town of Southington with the project.

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I. INTRODUCTION

The Town of Southington is planning a linear park along the former rail bed of the Canal Line, a railroad that once ran from New Haven, Connecticut, to Northampton, Massachusetts. Because the rails-to-trails project is receiving funding from the Connecticut Department of Transportation (ConnDOT), it must comply with federal and state statutes that require publicly funded projects to take into account their effects on historic resources. Consequently, the Connecticut State Historic Preservation Office (SHPO) reviewed the plans and included among its comments the opinion that “the extant culverts, bridges, and Milldale freight structure*, located within the proposed project boundaries, possess architectural and engineering importance as small-scale, but essential components of the historically significant New York, New Haven & Hartford Railroad Co.” (Senich 2007). The SHPO further commented that the project would not constitute an adverse effect on historic resources provided that the following mitigative measure was implemented:

Prior to trail-related construction activities, ConnDOT shall document the extant New York, New Haven & Hartford Railroad Co.’s culverts, bridges, and Milldale freight structure, located within the proposed project boundaries, to the professional standards of the State Historic Preservation Office. Documentation shall consist of narrative text, photographs, and/or high-quality digital images, an index of photographs, and a photographic site plan. Final documentation shall be provided to the SHPO for permanent archiving and public accessibility.

The documentation herein is intended to fulfill the SHPO’s stipulation.

The project area extends from the Cheshire/Southington town line northward to West Main Street in the Plantsville section of Southington, a distance of nearly two miles (see location map, Figure 1, Appendix I). For most of its length, the former railroad right-of-way accommodated a single track; except for a few short sections, the rails and ties have been removed, leaving just the ballasted rail bed, much of which is now heavily overgrown with brush and vines. This documentation records all of the historic resources remaining within the project area: three bridges, six culverts, a “subway” (under-the-tracks passageway), and the former Milldale station. The locations of the documented resources are shown on Figure 2.

The methodology that was used to prepare this documentation is described in the next section, followed by a more detailed description of the historic resources and an assessment of the resources’ historical, engineering, and architectural importance. References to historical and secondary sources of information are at the end of the document. The bound version of this report includes prints of 57 captioned photographs as Appendix II, along with an index to photographs and a photographic key (on seven separate sheets).

* The SHPO terminology reflects the fact that freight service continued past the cessation of passenger trains; the Milldale station historically was a combined freight and passenger facility.
This documentation was prepared by Bruce Clouette, Ph.D., Senior Historian with Archaeological and Historical Services, Inc. of Storrs, Connecticut, under contract to the Town of Southington, Anthony J. Tranquillo, Town Engineer. The research, fieldwork, and photography were undertaken in August 2009. AHS Historical Archaeologist Ross K. Harper assisted with field measurements. Copies of this report, as well as archival copies of the text and the archival photographs, will be submitted by the SHPO to become part of the Connecticut Historic Preservation Collection housed at the Dodd Research Center at the University of Connecticut in Storrs.
II. METHODOLOGY

The products that make up this documentation include the following:

- Narrative text on acid-free, archival paper
- Digital color images on CD-ROM, .tif format, 300 dpi, minimum 2,000 by 3,000 pixels
- Detailed descriptions of the resources
- Index of photograph numbers and captions
- Graphic photographic key
- Archival 5" by 7" color prints, labeled in soft pencil and placed in archival paper sleeves

In addition to the archival version deposited at the Dodd Center at the University of Connecticut, bound copies of the text and photographs have been compiled for the Town of Southington and the SHPO, and one copy of the bound version will be included as part of the archived materials.

Standards for written and photographic documentation have been issued by the SHPO (Saunders and Moore 2007), and the narrative text and photographs that make up this documentation meet or exceed all the specifications in the standards. The photographs were taken in August 2009, using an 8-megapixel Canon Digital Rebel XT™ camera. Digital color images were saved on CD-ROM as uncompressed .tif files, 300 dpi, 24-bit RGB color, at a resolution of 2000 by 3000 pixels or greater. The archival 5" by 7" color prints produced by the project meet National Park Service standards for permanency; they were printed using Kodak™ archival pigmented inks and Kodak Ultra Premium Photo Paper™. The prints were labeled using soft pencil and numbered sequentially. Photographs were placed in 5" by 7" acid-free paper archival sleeves, which also were labeled with the photograph number. In the bound copies, the photographs appear as Appendix II.

The historic resources are presented in south-to-north order, beginning with a pipe culvert located a short distance north of the town line. Where available, milepost numbers are given, based upon the numbering system used by the New York, New Haven, and Hartford Railroad Company and continued by its successors. Two of the resources, the Milldale station and the Clark Bros. subway, are located on private property and so there was limited access. In nearly all cases, the resources are depicted in the photographs from all vantage points, along with close-ups of distinctive details. The structures along the line are heavily overgrown with bushes and vines, but in every case it was possible to clear away enough vegetation to adequately show the resource. The graphic keys accompanying the photographs were prepared at a scale of 1” = 100’. This scale was chosen so that the resources could be related to some nearby intersection or other landmark, rather than being presented in isolation; at the same time, the scale is adequate to show the vantage points from which the photographs were taken.
In addition to the photographs, this documentation includes narrative text that gives a brief history of the railroad line and identifies the historical and engineering significance of the resources. To prepare the narrative text, background research was conducted using published railroad histories (e.g., Karr 1995, Roy 2008, Turner and Jacobus 1989), as well as the reports filed by the railroad companies with the Connecticut Railroad Commission. Archival sources included a copy of the original survey for the line, railroad-company maps of the line compiled in 1915 and ca.1960, and Sanborn Map and Publishing Company insurance surveys from 1901, 1906, 1911, and 1923. Descriptive information was compiled from railroad bridge lists from several different periods. General histories and genealogies of Southington (e.g., Smyth 1898, Atwater 1924, Kopec 2007) were consulted for the local historical context. Historical photographs of the Milldale station (Figures 8, 10, 11, and 12) were obtained from the Dodd Research Center at the University of Connecticut, Storrs, and online from the New England Railroad Photo Archive. The sources of information for the narrative are identified in the References section of this document (Section VI).

It can be confidently stated that this documentation is complete for this particular two-mile section of right-of-way. For the fieldwork, the historian and historical archaeologist first consulted the railroad company’s 1915 valuation map, which located all railroad structures along the right-of-way. The resulting list of bridges and culverts was then cross-checked against later bridge lists to ensure that post-1915 structures were accounted for. The cross-checking resulted in the inclusion of one such structure, the 1916 Clark Bros. subway, and a change in structural type for another (a stone box culvert rebuilt as a rail-stringer culvert).
III. DESCRIPTION OF THE RESOURCES

The resources inventoried for this documentation are described here in south-to-north order; the locations of the resources are shown on Figure 2. Milepost designations are taken from the New York, New Haven and Hartford Railroad’s bridge lists. The photographs appear in Appendix II.

- **Pipe culvert** (Photographs 1 through 5), 18”, located approximately 550’ south of State Route 322 (Meriden-Waterbury Turnpike). The culvert consists of a flanged iron pipe, 18” internal diameter, set within coursed-ashlar brownstone retaining walls. The length of the pipe could not be measured but appears from the 1915 valuation survey to be about 38’. The west wall (Photograph 1) has five courses of stone; it measures about 40” high, 8’ long, and 12” thick. The east wall is interrupted by a much later reinforced-concrete wall that forms a corner for a stormwater system (Photograph 2); approximately 5 ½’ of the original seven courses of brownstone is exposed (Photograph 3). The east wall is about 44” high and 12” thick. The culvert’s overburden is about 3’ to 4’ thick. The track level of this part of the right-of-way (Photograph 4) is one of the few sections that have not become densely overgrown. Probably because of its small size, the culvert does not appear in any of the railroad bridge lists, but it does appear on the 1915 valuation map. A number of stone slabs appear nearby (Photograph 5), suggesting that the pipe culvert was rebuilt from an earlier stone box culvert.

- **Pipe culvert** (Photographs 6 through 8), 36”, located about 200 feet south of State Route 322 (Meriden-Waterbury Turnpike). Similar to the structure above, the culvert has 12”-inch-thick brownstone-ashlar retaining walls and a flanged 36” I.D. iron pipe. The length of the pipe could not be measured but appears from the 1915 valuation survey to be about 40’. The west wall (Photograph 6) is 13’ long with four courses of stone exposed, making it about 45” high. The east wall (Photograph 7), about 16’ long, has ten courses exposed, for a height of about 8’. The east-side opening has been sealed with concrete, rendering the culvert inoperative. The culvert is designated MP 19.48 in the ConnDOT bridge list (ca.1985).

- **Route 322 bridge** (Photographs 9 through 14), through-plate-girder, 1914, Boston Bridge Works, fabricator. The single-span, single-track bridge is 43’ long and is set at a 73.30° skew relative to the road. The bridge rests on reinforced-concrete abutments with sloped sides. The girders are 6’ deep by 12” wide and are set 12’ on-center. Five plate-girder cross-beams, 9” by 32”, carry two sets of 9”-by-24” plate-girder stringers supporting wooden ties for the rails (the ties are in place but not the rails). The ties are stabilized by 3” straps near the ends (Photographs 11 and 12). The bridge’s bracing consists of angle-iron lower cross-bracing (Photograph 13) and diagonal plates connecting the middle three cross-beams to the main girders so as to provide sway bracing. The horizontal clearance at the edge of the road was measured at 14’ 6”, though the official clearance given in the state bridge log is 14’ 11”. The fabricator’s plaque, lettered
“BUILT BY THE BOSTON BRIDGE WORKS INC. 1914”, appears on the outside of the west girder at its south end, partially obscured by an advertising panel (Photograph 14). The bridge, located at MP 19.52, was called “Hitchcock’s Crossing” in the 1918 bridge list, a designation that continued into the Penn Central era of the early 1970s. The total cost as reported in 1918 was $2,326.40.

- **Milldale station** (Photographs 15 through 20), 447 Canal Street, a one-story, gable-roofed, clapboarded building originally built in 1894. As it now stands, it measures 25 feet by 42 feet in plan, but according to Roy (2008: 66), it was reduced in size following a fire in 1928. Comparing the 1915 and ca. 1960 valuation maps (Figures 5 and 9), it can be seen that originally the building extended another 20’ to the south (Roy says the north end of the building was lost; either he is mistaken or the railroad’s maps are incorrect). The roof forms wide overhangs on all sides, where it is supported by simple stick braces; the east (track-side) slope of the roof is longer than the west slope, presumably to provide more shelter for passengers awaiting trains. The entrance is on the south end, where there are also two windows. There is one window and a large opening with paired loading doors (Photograph 18) on the west (street-side) elevation, another set of freight doors and two windows on the north end elevation, and a third set of freight doors and two windows on the east elevation. The freight doors are of single-panel construction with narrow diagonal boarding for the panel. Examination of historical photographs (Figures 8, 10, and 11) shows that the station has undergone a number of alterations over time: the entrance formerly was sheltered by a shed roof on braces, the current 8-over-8 windows are replacements for earlier 2-over-2 sash, and a small brick chimney has been removed; these changes were in place by 1982 (Figure 11). Originally, the station property included a small separate building for oil storage. The 1915 valuation map (Figure 5) shows wooden platforms on three sides of the station, but the 1923 Sanborn map (Figure 7) and later graphic sources (Figures 8 through 10) show only the high-level freight platform on the north and east sides. The interior of the building, reportedly in use for storage, could not be examined. The building is private property.

Midway along the east side of the station is a tall pipe tower with an attached ladder that served as a mast for a semaphore signaling system (Photograph 20). Now heavily overgrown, the mast can be more clearly seen in a 2003 photograph from the New England Railroad Photo Archive (Figure 12).

- **Clark Bros. subway** (Photographs 21 through 23), located about 475’ north of the Milldale station at MP 19.71. The portal of the subway, a period term designating an undergrade pedestrian tunnel, bears the date of 1916, though the 1918 bridge list gives its date of construction as 1917. The subway provides a 5’-wide, 79’-long passage from the east side of the right-of-way under the tracks to the cellar level of the former Clark Bros. bolt factory on Canal Street. According to the 1918 bridge list, its structure consists of 6” I-beams embedded in concrete. Now filled-in and heavily overgrown, its east-side portal has a 3’-high concrete
parapet inscribed with the date “1916”, with stepped concrete wing walls flanking the passageway and extending it about 40’ to the east. The structure appears as the “Mildale [sic] subway” on the 1974 Penn Central bridge list.

- **Rail-stringer culvert** (Photographs 24 through 26), located just south of the Burritt Street crossing at MP 19.92. The structure consists of a concrete slab 10” thick carried on closely spaced sections of rail, the whole resting on low brownstone-ashlar side walls. The overall dimensions given in the bridge lists are 8’ long and 20’ wide, though field measurements gave a length of 80” for the slab. The west-side opening measures 52” wide with its height varying from 18” to 28”. The east side of the culvert is not visible; it adjoins a stormwater drain, with the intervening opening boarded over (Photograph 27). The culvert is skewed at approximately the same angle as Burritt Street. The structure was rebuilt from an earlier stone box culvert sometime between the 1915 valuation map and the 1918 bridge list.

- **Cattle-pass bridge** (Photographs 28 through 33), located 675’ north of the Burritt Street crossing at MP 20.06, multiple rolled steel I-beams, 1915, Berlin Construction Co., fabricator. The structure consists of two sets of five closely spaced rolled 4 ½”-by-14 ½” I-beams, 16’ in length, set atop brownstone-rubble abutments. The beam sets are stabilized by means of wooden-block spacers (most of which are no longer in place) and through tie-rods. Cross-bracing between the inner beams consists of deep channels built up from angles and plate (Photograph 31). The ties remain in place atop the beams, stabilized by 5”-by-8” timbers bolted atop the ends of the ties (Photograph 32). A small stream flows through the opening, which provides about 5’ of headroom. The bridge, identified as a cattle pass on the 1915 valuation map, was erected by the railroad itself using some salvaged material and some new steel supplied by the Berlin Iron Bridge Company of Berlin, Connecticut; the railroad’s out-of-pocket costs came to just $77.36.

- **Stone box culvert** (Photographs 34 through 39), located approximately 550’ south of the Atwater Street crossing at MP 20.37. The structure consists of stone slabs resting on stone sidewalls. The material is primarily brownstone with other, metamorphic stone mixed in. The end slab visible on the west elevation, which can be taken as typical, measures 7’ long and 14” thick. The opening, listed as 4’ by 4’ on the 1915 valuation survey, measured 4’ wide and 30” to 40” high in the field. Above each side’s opening is about 4 feet of masonry forming a retaining wall for the roadbed. Some 10’ of masonry is exposed on the west side and 12’ on the east side. There is 1’ to 2’ of overburden visible above the retaining walls. The length of the culvert could not be measured but appears from the 1915 valuation survey to be about 30’. One of the stone slabs near the west opening appears to have cracked, and one or more slabs have been replaced by rail stringers (Photograph 38).
• **Stone box culvert** (Photographs 40 through 43), located approximately 375’ north of the Atwater Street crossing at MP 20.55. The structure consists of stone slabs resting on stone sidewalls. The material is primarily brownstone with other, metamorphic stone mixed in. The length of the culvert could not be measured but appears from the 1915 valuation survey to be about 38’. The culvert was widened 4’ on the west side with rail stringers. The west-side opening measures 36” in width and 32” in height, above which is 12” of mortared stone masonry. There is only about a foot of overburden visible. The east side of the culvert drains into an adjacent stormwater system (Photograph 43) and is not visible.

• **Pipe culvert** (Photographs 44 through 46), 36”, located approximately 1,500’ north of the Atwater Street crossing at MP 20.76. The original structure is now largely hidden from view. A modern concrete catch basin (Photograph 44) has been built against the original brownstone-ashlar retaining wall for the west side (Photograph 45); the 36” pipe is visible by looking through the catch basin’s grating. Nothing is visible on the east side, which has been heavily filled in, except for the top of a corrugated conduit that carries the stream away from the right-of-way. The filled-in area was formerly a mill pond associated with the Atwater Manufacturing Company.

• **Spillway bridge** (Photographs 47 through 53), deck-plate-girder, 1900, Berlin Construction Company, fabricator. The bridge is located approximately 700’ south of West Main Street, Plantsville, on the Eight Mile River at MP 21.11. This was formerly the outflow from a mill pond known as Plant’s Pond, remnants for the stone dam of which can still be seen adjacent to the west end of the bridge’s north abutment. The main girders, measuring 16” wide by 6’ deep, are 64’ 8” long. Spaced 78” on center, the girders are braced by cross-bracing of 3” angles (Photograph 50). Wooden ties rest atop the girders, stabilized by longitudinal timbers on either side of the track, which consists of rails spiked directly to the ties (Photograph 51). The ties extend outward over the east side of the bridge to support a 3’-wide plank walkway (Photograph 49). The walkway is noted on the ca.1960 revision but not on the original 1915 valuation map. The abutments for the bridge are built of a coursed ashlar of brownstone blocks 18” deep; the blocks range from 4’ to 8’ in length. The bridge itself rests on a concrete seat that is 24” in depth. Although there is no evidence of a second track having been built at this location, the abutments provide enough width for an additional track on the east side. The total cost as reported in 1918 was $3,700.

In addition to the above resources, a number of railroad-related artifacts and features were observed during the field inspection (Photographs 54 through 57). These include rails embedded in the pavement at the Burritt Street crossing (Photograph 54), discarded spikes, several tie-plates, both loose and spiked to ties (Photograph 55), and numerous wooden ties (Photograph 56). East of the pipe culverts south of Route 322, adjacent to a concrete-block former warehouse, is the only intact industrial siding that was observed (Photograph 57).
IV.  HISTORICAL BACKGROUND OF THE CANAL LINE

The Canal Line, as it name suggests, began life as a successor to an earlier mode of transportation. The Farmington Canal was chartered in 1822 at the instigation of New Haven merchants, who hoped to divert Connecticut River commerce away from Hartford by building a canal from New Haven to Northampton, Massachusetts. Construction began in 1825 and by 1829 the canal had been completed through to Farmington, Connecticut. Although eventually completed through to Northampton, the canal was not a commercial success, and following its bankruptcy in 1836, the Farmington Canal was reorganized as the New Haven and Northampton Company. The chief investor at this time was Joseph Earl Sheffield (1793-1882), a well-to-do merchant who had made his fortune in the cotton trade in the South and returned to New Haven in 1835. Sheffield was instrumental in having the company’s charter amended in 1846 so that it was authorized to build and operate a railroad as well as the canal. Even while the railroad was being built, the southern portion was leased for 21 years to the New York and New Haven Railroad, another company in which Sheffield had an interest and served as a director (the New York and New Haven itself was then under construction, building tracks between that New Haven and the Bronx, where it connected with another railroad leading into Manhattan). The New York and New Haven failed to make a profit on the New Haven to Plainville segment, but it nevertheless benefited from the lease because it thereby controlled the former canal company’s valuable property in New Haven, including a large wharf and basin in New Haven Harbor.

The initial survey and engineering for the Canal Line route was undertaken by Alexander Catlin Twining (1801-1884). A native of New Haven, Twining was educated at Yale, where he served as a tutor of science and mathematics from 1823 to 1825, after which he studied engineering at the U.S. Military Academy as a private student. As a practicing civil engineer, he laid out many of Connecticut’s earliest railroads, including the initial alignment of the New York and New Haven. Twining taught engineering and science at Middlebury College in Vermont from 1839 to 1849, during which time he continued his railroad work, including the survey for the Canal Line. Later in life he retired from engineering and devoted himself to scientific study and lecturing (Hill 1918: 282-286).

Following Twining’s recommendation that the canal be abandoned and replaced by a rail line, construction began and by December 1847, the railroad was opened from New Haven to Plainville, Connecticut. The lease of this portion to the New York and New Haven provided Sheffield and the line’s other investors with cash to extend the New Haven and Northampton north of Plainville, and by 1850 the tracks were completed to Granby, just south of the Massachusetts town line. Branch lines were built to Collinsville and Tariffville in Connecticut, and after a period of litigation, the line reached Northampton in 1856. Additional branches were built to Williamsburg and Shelburne Falls in Massachusetts, and in Connecticut the Collinsville branch was extended to New Hartford. The New Haven and Northampton Company’s railroad was a sizeable enterprise, employing, according to 1874 statistics (Turner and Jacobus 1989: 64) some 400 workers. That year, operations produced a profit of $73,800 on revenues of
$604,000, most of which were derived from freight movements. The railroad rostered 20 locomotives, 28 passenger cars, and nearly 450 freight cars.

The success of the Canal Line attracted the attention of other railroads, including the Boston and Albany, part of the Vanderbilt empire, and the New York, New Haven, and Hartford Railroad, a merger of the New York and New Haven and the Hartford and New Haven railroads. Joseph Sheffield quietly sold his stock, at a considerable profit, to the New York, New Haven, and Hartford and retired from railroading to pursue his philanthropic interests, including the Yale Scientific School, which had been renamed the Sheffield Scientific School in his honor in 1861. The New York, New Haven, and Hartford Railroad, commonly called the Consolidated and later simply the New Haven, obtained complete control of the New Haven and Northampton Company in 1887 and thereafter the line was operated as its Northampton Division. “Canal Line” continued as an informal designation for the route, and even as late as the Penn Central era (1968-1976) the line was known as the Canal Secondary Track.

The New York, New Haven and Hartford Railroad Company was the dominant force in transportation in southern New England in the late 19th century right up to its inclusion in the Penn Central merger of 1968. The company leased or owned outright virtually all the rail lines in Connecticut, Rhode Island, and southern Massachusetts and had a virtual monopoly on New York-to-Boston travel. In addition, the railroad, through subsidiaries, controlled many of the region’s streetcar lines and all of Long Island Sound’s passenger steamship business. Later, buses, trucking lines, and even air service were added. Like most American railroads, the New Haven experienced periods of both prosperity and financial failure, but throughout it remained one of the region’s largest corporations and wielded substantial political influence on both the local and state levels.

After World War II, the Northampton Division experienced successive reductions in service. Passenger service was cut back and then eliminated altogether, and the division’s various branch lines were abandoned. In 1973, Penn Central operated only three freight trains a week over the New Haven to Simsbury portion of the Canal Line. Shortly thereafter, the State of Connecticut acquired the right-of-way and leased it to the Boston and Maine Railroad to continue freight operations. Freight trains on the part of the line that is to become a Town of Southington linear park ceased running around 1999, but the Boston and Maine’s successor corporation, Guilford Rail Systems, continues to provide freight service along a short portion of the Canal Line in northern Southington and Plainville.

The settlement around the Milldale station was originally known as Hitchcock’s Station, after farmer and merchant Albert Hitchcock, who had a store at this location in the days of the Farmington Canal. Just south of where the present station stands was Lock 17 and the lockkeeper’s house (see Figure 3), and south of present-day Route 322 was a small basin, called Hitchcock’s Basin, where canal boats could be loaded and unloaded or just wait to pass through the lock. The first passenger station at Hitchcock’s stood on the east side of the tracks on a 66’-by-100’ lot (see Figures 3 and 4). Canal Street did not exist at this time. In 1892, the New Haven Railroad bought land on the
west side of the tracks and built the present combined passenger and freight station, completing the building (according to Roy) in 1894. The design of the station was a New Haven Railroad standard for small-town and branch-line depots; similarly detailed stations remain standing on the Connecticut River line in Cromwell, Rocky Hill, and Wethersfield.

Southington in the late 19th century was a center of innovation in bolt-making and other forge-based technologies. In the 1890s, Clark Brothers, one of the largest bolt manufacturers, relocated their factory, which had been situated further north at a waterpower site on the Quinnipiac River, to the present location between Clark and Canal streets. Along with the Atwater Manufacturing Company’s forge operations on Atwater Street (Rex Forge) and the Plant Brothers bolt factory and other Plantsville manufacturers, Clark Brothers must have provided substantial business for the railroad bringing in coal (even the factories with waterpower relied on steampower much of the year) and shipping out finished products. Another customer for the Canal Line appeared in 1898, when the Meriden, Southington, and Compounce Tramway built its coal-fired electric-power generating plant and streetcar-storage barns just across the tracks from the Clark Brothers factory. Milldale became a busy transportation junction, with not only the north-south steam-railway line, but also streetcar lines going north to Plantsville and Southington along Clark Street, south to New Haven along present-day Route 10, and east and west to Meriden and Waterbury, respectively, on present-day Route 322.

Railroad timetables from the early 20th century (see Figure 6) indicate that Milldale residents had a choice of two trains a day to and from New Haven, where connections could be made with New York City trains (O’Connell 2009). Travel time ranged from 35 to 50 minutes to New Haven and a little over three hours to New York, little different from the times listed in 1884 (Turner and Jacobus 1989: 61). Trains along this section of the route could barely get up to speed before it was time to stop again. Between New Haven and Plainville, a distance of only 27 ½ miles, there were six intermediate stops. Milldale was just four miles north of the stop in Cheshire and two miles south of the stop in Plantsville.
V. SIGNIFICANCE OF THE CANAL LINE RESOURCES

The various rail-related historic resources described in this documentation are significant because, collectively, they recall the important role played by rail transportation in local, state, and national history. At one time, Connecticut was criss-crossed by dozens of rail lines, connecting all the major cities and industrial towns and providing access to the outside world for hundreds of villages and hamlets that previously had slumbered in rural isolation. Places where the railroad passed through tended to prosper. Farmers in those towns could sell products such as milk and vegetables to a wider market, merchants could bring in the latest goods from anywhere in the country, and manufacturers could more cheaply bring in fuel (coal) and raw materials and ship out their finished products. Conversely, places not connected to the rail system tended to stagnate or decline.

Like many of the industrial towns in Connecticut, Southington benefited greatly from having rail connections. New Haven had achieved an early lead in carriage manufacturing, and all the nearby towns to the north—Hamden, Cheshire, and Southington—benefited by acting as suppliers of component parts, such as axles and hardware. The Farmington Canal helped tie the early manufacturers together, though even in the turnpike era these towns had been in New Haven’s commercial orbit. By the 1850s Southington, particularly the Milldale and Plantsville sections, had developed a specialty in bolt and nut manufacture. Part of the success of these industrial enterprises was due to innovative manufacturing techniques, such as rolling carriage-bolt threads rather than cutting them on a lathe. But without a rail connection, Southington manufacturers such as Clark Brothers could not have achieved the major position in the national market for bolts and other fasteners which they enjoyed for many years.

The railroad also had the social effect of connecting small communities to the outside world. The passenger station became a focal point, the place where the first steps toward new opportunities in the city or out West were taken, where friends and family members arrived to visit, and where young men went off to war. Communities valued their depots so much that when in 1874 the railroad tried to discontinue the Plantsville stop, local citizens took the railroad to court. The Plantsville station was about a mile from the Southington station and only about a mile and a half from the Milldale station, so it must have been the emotional reaction to losing the railroad stop, and what that would mean to the village’s identity, rather than simply the inconvenience, that motivated Plantsville residents to take on a corporate giant and endure costly litigation. Even though the case eventually was appealed to the U.S. Supreme Court, the residents prevailed and the Plantsville stop was restored (Kopec 2007: 89).

Today, after the railroad abandonments of the late 20th century, reminders of the historical role of rail transportation are becoming increasingly rare. As a result even modest historic resources such as the station building at Milldale take on new importance. Many (perhaps even most) small-town depots in Connecticut no longer exist, and some former stations have been so altered that their original function can barely be discerned. Despite some modifications, the Milldale station’s freight doors and overhanging trackside roof make it original function clearly evident. Local stations in a similar state
to Milldale (e.g., Forestville, Putnam) have been found to be eligible for the National Register of Historic Places based upon their local historical significance. The fact that the Milldale station is a standard plan adds to, rather than subtracts from, its importance. In the 1890s and early 1900s, a period when the New Haven Railroad was building a great many stations to replace early ones that were no longer adequate in size or trackside location, the railroad tended to use the same basic design over and over to save money and time. Cities might get stations with some stylish architectural pretension, but small-town stops typically were provided with depots that, while well-suited to their function, were limited in architectural detailing. Milldale is an example of that utilitarian approach.

Some special note must be taken of the semaphore signal mast at Milldale. The position of the movable wooden blade that was formerly mounted at the top would have provided a signal to approaching trains. This part of the Canal Line right-of-way was one of the few that had multiple tracks: a through track, a track for the station, a passing track, and two sidings for the Clark Brothers factory, so there may have been special need to signal train crews. The signal was originally operated by means of rods connected to levers inside the station. Once a common fixture on rail lines, today semaphore signals have become rare. Like the other once-ubiquitous infrastructure that made the railroads work—crossing shanties, section houses, interlocking towers—semaphores are in danger of becoming solely museum objects rather than a part of the landscape.

The modest bridges and culverts along this particular two-mile length of right-of-way collectively have historical engineering significance as illustrations of common railroad construction methods. The brownstone masonry of the bridge abutments and culverts probably represents early if not original construction. Well-built stone offered a low-maintenance material that stood up well to damage from flooding, and so railroads were apt to pay for cut-stone masonry rather than the less expensive fieldstone rubble that characterized most 19th-century construction. The stone-slab box culvert technique is an age-old form that cannot be dated. It was commonly used for public highways and farm roads as well as railroad construction; stone box culverts remain on many former rail lines in Connecticut, so they cannot be regarded as rare, but rather as multiple examples of a typical construction technique that was later superseded by other materials and methods. Of the culverts inventoried for this documentation, the one at MP 20.37, 550’ south of the Atwater Street crossing, is the least altered (though even this culvert has had one or more slabs replaced with rail stringers).

The problem posed by stone box culverts (as opposed to arch culverts) is that the tensile strength of the stone slabs, which form lintels over the culvert opening and support the rail bed above, cannot be definitively known. From experience, 19th-century contractors knew how thick a piece of brownstone or granite had to be to support a load without cracking, but stone by its very nature is unpredictable. When used in railroad embankments, the overburden helped spread the live load of passing trains, reducing the load on the stone slabs. The Canal Line embankment, however, is relatively shallow in depth along this portion of the right-of-way and so may have placed greater stress on the stone slabs, accounting for the fact that of the six culverts, three appear to have been
rebuilt or replaced with iron-pipe culverts and one was completely rebuilt as a rail-stringer culvert.

In the early 20th-century, concrete replaced stone masonry as the preferred construction method for abutments and small bridges and culverts. In the absence of salt, concrete is as durable as stone masonry and far less expensive. The project area illustrates the growing preference for concrete in the abutments of the Route 322 bridge (1914), the Clark Bros subway (1916), and the inclusion of a concrete slab in the rail-stringer culvert at the Burritt Street crossing, MP 19.92. The subway, privately built and maintained under a lease from the railroad, is interesting because it used steel I-beams as the reinforcing material. The use of beams embedded in concrete was a common technique in the early 20th century. It was eventually abandoned because engineers showed that it was a wasteful use of steel and made for a heavier dead load compared with a sparing use of reinforcing rod, which was just as strong.

The two plate-girder bridges in the project area represent the standardization of railroad bridge engineering that was in place by 1900, as well as the need to accommodate the heavier steam engines that were then coming into use. Plate girders could be specified in any load-carrying capacity up to about 100’ in length. Typically, they were fabricated by companies specializing in structural steel for bridges and erected either by the bridge companies or by the railroad itself. Deck girders, in which the track was placed atop the girders (as in the bridge across the Eight Mile River at MP 21.11), were preferred by railroads since there was no possibility of horizontal-clearance problems, but it was not always possible. At Route 322, for example, a deck girder of the same depth (6’) would have posed clearance problems for the road underneath, which at the time was in use not only by cars and trucks but also by streetcars on the Meriden-Waterbury route. Consequently, a through-girder form was chosen in which the track runs atop cross-beams and stringers in between the girders. The railroad referred to the particular design of this bridge as “half-through-girder,” distinguishing it from through-girder designs in which the track was nearer to the level of the lower flange of the girders.

The Boston Bridge Works and the Berlin Construction Company were two of New England’s largest steel fabricators in the early 20th century. Boston Bridge Works served a wide market throughout the New England states. The Berlin Construction Company was started the very year the spillway bridge was built (1900). When the American Bridge Company, a part of J. P. Morgan’s attempt to monopolize the steel industry, bought the Berlin Iron Bridge Company in 1900, three of that company’s managers, along with a number of draftsmen and engineers, simply set up their own company to continue longstanding relationships with railroads and local highway officials. At first, the Berlin Construction Company subcontracted the actual production of structural steel to a plant in Pottstown, Pennsylvania, but soon the company erected its own plant in the Kensington section of Berlin, Connecticut. The Berlin Construction Company continued to be a major supplier of railroad and highway bridges throughout the Northeast in the early years of the 20th century and is still in business today as Berlin Steel. In the project area, both the spillway bridge and the cattle-pass bridge used steel supplied by Berlin Construction Company.
The cattle-pass bridge is of historical interest for another reason: it symbolizes the sometimes uneasy relationship railroads had with neighbors, particularly farmers. In order to build their lines, railroad companies had to purchase land from the adjacent property owners (Connecticut law allowed railroads to take the land from unwilling property owners so long as the latter were justly compensated, but the railroads sought to avoid court proceedings if at all possible). Many adjacent property owners were happy to receive the cash that the railroads offered for a comparatively small portion of their holdings, and in some cases, landowners also benefited by selling gravel for construction, which the railroads preferred to purchase locally. Many times, farmers selling land to a railroad put it into the deed that the railroad had to build and maintain fences along the right-of-way so as to protect their livestock. Less often, but not uncommon, was the situation in which a landowner, having property on both sides of the tracks, required the railroad to create and maintain a passageway so that cattle could be moved from one field to another. Notations on the copy of the New Haven and Northampton Company’s survey indicates that such a pass was required in this vicinity, though apparently not at any specific location. The cattle-pass bridge performed two functions: it carried the tracks over a small stream which otherwise could have been accommodated with a culvert, and it fulfilled the railroad’s responsibility to maintain a structure underneath which cattle and other livestock could be driven (albeit with limited headroom for the humans who accompanied them).

The railroad-related features along the route of the proposed Southington linear park are not outstanding works of railroad architecture or engineering, but they are examples of what was typically built in the 19th and early 20th centuries. As such, they represent once-common but now increasingly rare reminders of the important role played by the railroad in the historical development of communities throughout Connecticut and America as a whole.
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APPENDIX I:

FIGURES
Figure 1: Location of rails-to-trails project area shown on U.S.G.S. Southington Quadrangle, 7.5-Minute Series, scale 1:24000.
Figure 2: Location of Documented Resources
Shown on Enlargement of the U.S.G.S. Southington Quadrangle Topographical Map
Figure 3: Original survey for the New Haven and Northampton Company’s railroad in the vicinity of Milldale. These maps, copied by the New York, New Haven, and Hartford Railroad ca.1900, were updated in pencil through about 1915, after which the railroad used the valuation maps for its property-ownership plans. The map shows both the earlier depot site and the later site. North is to the right.
Figure 4: Area around the intersection of Route 322 (Meriden-Waterbury Turnpike) and Clark Street as shown on the 1869 Baker and Tilden atlas map. The Milldale station, located on the east side of the tracks at this time, is identified as “Hitchcock’s Station.”
Figure 5: Area around the Milldale station as shown on the 1915 railroad valuation map. The power house and car barn were built by the Meriden, Southington and Compounce Tramway, later merged into the Connecticut Company.
Figure 6: Excerpt from the New York, New Haven & Hartford Railroad’s timetable of 1922 showing New Haven-Northampton service (O’Connell 2009). Two passenger trains in each direction provided Milldale residents with a transit time to and from New York of a little over three hours.
Figure 7: Milldale area as shown on the 1923 Sanborn insurance map. The Clark Brothers power house on the east side of the tracks is shown north of the streetcar car barns.
Figure 8: Milldale station, 1937 (Francis Donovan Collection, Dodd Research Center, University of Connecticut).
Figure 9: Area around the Milldale station as shown on the ca. 1960 revision of the 1915 railroad valuation map. The station has been reduced in size following the 1928 fire, and the land at the north end of the station grounds has been sold to the Clark Brothers (1959). The Clark Bros. subway is indicated by the annotation “Tunnel.”
Figure 10: Milldale station, 1966 (Leroy Roberts Collection, Dodd Research Center, University of Connecticut).
Figure 11: Milldale station, 1982 (Carl Weber, Jr. photograph, New England Railroad Photo Archive).
Figure 12: Signal mast at Milldale station, 2003 (Nick Zabawar photograph, New England Railroad Photo Archive).
APPENDIX II:

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CANAL LINE RAILROAD
(Cheshire Line to Plantsville)
Southington, Connecticut

Index to Photographs

All photographs taken August 2009
Credit: AHS, Inc.

Captions:

Photograph 1: Pipe culvert 550’ south of Route 322 (Meriden-Waterbury Turnpike), west elevation, camera facing east.

Photograph 2: Pipe culvert 550’ south of Route 322 (Meriden-Waterbury Turnpike), overview of east side, showing added concrete stormwater structure, camera facing northwest.

Photograph 3: Pipe culvert 550’ south of Route 322 (Meriden-Waterbury Turnpike), east elevation, detail of original culvert, camera facing northwest.

Photograph 4: Pipe culvert 550’ south of Route 322 (Meriden-Waterbury Turnpike), track-level, camera facing north.

Photograph 5: Pipe culvert 550’ south of Route 322 (Meriden-Waterbury Turnpike), detail of discarded brownstone slab, possibly from an earlier stone box culvert, east side, camera facing south.

Photograph 6: Pipe culvert 200’ south of Route 322 (Meriden-Waterbury Turnpike), west elevation, camera facing southeast.

Photograph 7: Pipe culvert 200’ south of Route 322 (Meriden-Waterbury Turnpike), east elevation, camera facing west.

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Photograph 9: Railroad bridge across State Route 322 (Meriden-Waterbury Turnpike), east elevation, camera facing west.

Photograph 10: Railroad bridge across State Route 322 (Meriden-Waterbury Turnpike), west elevation, camera facing east.

Photograph 11: Railroad bridge across State Route 322 (Meriden-Waterbury Turnpike), track level, camera facing north.
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Photograph 14: Railroad bridge across State Route 322 (Meriden-Waterbury Turnpike), detail of fabricator’s plaque, south end of west elevation, camera facing northeast.

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Photograph 16: Milldale passenger and freight station, south and east (track-side) elevations, camera facing northwest.

Photograph 17: Milldale passenger and freight station, north and west elevations, camera facing southeast.

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Photograph 25: Rail-stringer culvert just south of Burritt Street, detail of masonry, west side, camera facing northeast.

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Photograph 27: Rail-stringer culvert just south of Burritt Street, east side, showing opening joining stormwater drain partly blocked off with timbers.
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Centerline of Right-of-Way

Rex Forge
(Formerly Atwater Mfg.)

Stone Box Culvert

Canal Line Railroad
Cheshire Town Line to Plantsville
Soutthington, Connecticut

Key to Photographs
Sheet 5 of 7
Canal Line Railroad
Cheshire Town Line to Plantsville
Southington, Connecticut

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Beginning of Existing Rails-to-Trails

WEST MAIN STREET

Former Bolt Factory

Remnants of Stone Dam

Former Mill Pond

Spillway Bridge

Centerline of Right-of-Way

100 FEET