NPS Form 10-900
(Rev. 8-86)

OMB No. 1024-0018

United States Department of the Interior
National Park Service

National Register of Historic Places Registration Form

This form is for use in nominating or requesting determinations of eligibility for individual properties or districts. See instructions in *Guidelines for Completing National Register Forms* (National Register Bulletin 16). Complete each item by marking "x" in the appropriate box or by entering the requested information. If an item does not apply to the property being documented, enter "N/A" for "not applicable." For functions, styles, materials, and areas of significance, enter only the categories and subcategories listed in the instructions. For additional space use continuation sheets (Form 10-900a). Type all entries.

1. Name of Property

historic name Blackstone Canal

other names/site number

2. Location From Smith Street, Providence, to Mass. line.

street & number ✓ ✓ Woonsocket n/a not for publication

city, town Providence, Pawtucket, Lincoln, N. Smithfield, & n/a vicinity

state Rhode Island code R.I. county Providence code 007 zip code

3. Classification

Ownership of Property	Category of Property	Number of Resources within Property	
		Contributing	Noncontributing
[x] private	[ ] building(s)		buildings
[x] public-local	[ ] district		sites
[x] public-State	[x] site	13	11 structures
[ ] public-Federal	[x] structure		objects
	[ ] object	13	11 Total

Name of related multiple property listing:

Number of contributing resources previously listed in the National Register 3

4. State/Federal Agency Certification

As the designated authority under the National Historic Preservation Act of 1966, as amended, I hereby certify that this [x] nomination [ ] request for determination of eligibility meets the documentation standards for registering properties in the National Register of Historic Places and meets the procedural and professional requirements set forth in 36 CFR Part 60. In my opinion, the property [x] meets [ ] does not meet the National Register criteria. [ ] See continuation sheet.

Signature of certifying official — Date: 9 Sep 1991

Rhode Island Historical Preservation Commission
State or Federal agency and bureau

In my opinion, the property [ ] meets [ ] does not meet the National Register criteria. [ ] See continuation sheet.

Signature of commenting or other official — Date

State or Federal agency and bureau

5. National Park Service Certification

I, hereby, certify that this property is:

[ ] entered in the National Register.
[ ] See continuation sheet.

[ ] determined eligible for the National Register. [ ] See continuation sheet.

[ ] determined not eligible for the National Register.

[ ] removed from the National Register.

[ ] other, (explain:) _____

Signature of the Keeper — Date of Action

D

6. Function or Use

Historic Functions (enter categories from instructions)	Current Functions (enter categories from instructions)
TRANSPORTATION/water-related	LANDSCAPE/park
INDUSTRY/waterworks	NOT IN USE

7. Description

Architectural Classification (enter categories from instructions)

N/A

Materials (enter categories from instructions)

foundation STONE, EARTH
walls STONE, EARTH
roof N/A
other

Describe present and historic physical appearance.

The expanded and revised nomination for the Rhode Island section of the Blackstone Canal (constructed 1824-1828) comprises both canalized and slackwater segments of the canal from Providence to the North Smithfield, Rhode Island/Blackstone, Massachusetts border. It follows the original route of the canal through the cities and towns of Providence, Pawtucket, Lincoln, North Smithfield, and Woonsocket for a distance of seventeen miles. From Blackstone, Massachusetts, the canal proceeds north to Worcester. Within the nominated Rhode Island length, the primary physical components of the canal--canal trench, towpath and berm--are reasonably intact and recognizable in many sections. In addition, related engineering features such as masonry walls, spillways, basins, and bridge footings exist at specific locations. No locks are known to remain in the Rhode Island length of the canal. The setting of the canal varies throughout its length as it traverses urban and rural areas; the sense of time and place is particularly well preserved along canalized and slackwater woodland sections in Lincoln. This nomination incorporates three sections of the Blackstone Canal previously listed in or determined eligible for the National Register: (1) Blackstone Canal (from Steeple and Promenade Streets, Providence to the Front Street Bridge, Lincoln), listed 1970; (2) Paul Ronci Memorial Park (from Front Street north to the Ashton Dam, Lincoln), listed 1970; and (3) Blackstone Canal (RI-532) (from 1400 feet north of the Manville Dam to a point 300 feet south of Woonsocket Water Treatment Plant, North Smithfield and Lincoln), [DOE 1986-87].

The Blackstone Canal ran forty-five miles from Providence, Rhode Island to Worcester, Massachusetts. It was constructed under the direction of engineer Holmes Hutchinson and funded through the Blackstone Canal Company (chartered 1823). When completed, the canal passed in and out of the Blackstone River sixteen times and ran in the river for approximately ten percent of its forty-five-mile distance. A total of forty-nine locks, of which all but one were granite, accommodated the elevation change from sea level at Providence to 168 feet at Woonsocket, to 451

[X] See continuation sheet

feet at Worcester. The canal prism was generally eighteen (bottom) to thirty-four (top) feet wide and four to six feet deep; the towpath at least ten feet wide; and would accommodate boats between forty-five and seventy feet long. Following two decades of operation, the Blackstone Canal collected its last toll in 1848, one year after the rival Providence & Worcester Railroad opened.

Nomination Boundaries and Contributing/Non-contributing Designations

Due to the nature of historical documentation and maps, the precise historical boundaries of the canal are difficult to determine. Descriptions of land acquired along the route contained in the Blackstone Canal Company's Locations and Appraisals Book, 1825-33 (RIHSL Collections) indicates that the width varied considerably, ranging generally from 33 feet (50 links) to 99 feet (1.50 chains), but in places was as little as 10 feet or as much as 132 feet across. Engineers' reports and construction contracts defined general range and standard dimensions for the canal prism, towpath, locks and other features, and the Edward Phelps survey map of 1828 delineated the canal as constructed at a scale of one inch to 200 feet. Nevertheless, because actual canal construction entailed incorporating natural topographic features and involved in-the-field decisions by a number of construction contractors, it is likely that the final dimensions varied within, and may have occasionally extended beyond, the established parameters. In addition, the physical remains of the canal have been shown to include subsurface archaeological features which may not be readily identified through historical research and visual observation.

Consequently, the nominated boundaries of the Blackstone Canal have been drawn to encompass the entire constructed resource to the extent that it is historically documented and known at present and to minimize inclusion of peripheral lands not directly associated with the canal. The south and north boundaries of the canal are defined, respectively as Promenade and Steeple Streets, Providence, and the North Smithfield, Rhode Island/Blackstone, Massachusetts, political boundary. These locations mark the linear extent of the Rhode Island portion of the canal.

The east and west boundaries are generally defined by the actual physical edges of canal bank, towpath berm, and, where applicable, basin or other feature. They include the entire area of earth or masonry structure, thus extending to the toe of a towpath berm slope, for example. They also include areas of both land and water known to have been used in canal operations. Thus in sections of slackwater with preserved towpath, the eastern boundary runs in the river, 15 feet from the east towpath bank. In canalized sections, the basic boundary dimension is defined by the combined standard canal prism (34 feet) and towpath (10 feet) widths, with allowance of 6 feet for towpath berm slopes, or 50 feet. The actual boundary dimension, however, varies with actual canal dimensions in a given section.

Within the nominated length of canal, contributing sections are those which possess integrity of location and where the canal trench, at minimum, is moderately or well preserved. In some cases the preservation of towpath contours and stratigraphy cannot be determined on the basis of current information: sections where the canal trench has been totally filled and is unrecognizable are defined as non-contributing. But further information may become accessible through archeological techniques.

Methodology

Physical elements and primary archival documents record the history of the construction, use, and abandonment of the Blackstone Canal. Over the years, interest in the canal has generated numerous historical studies, drawn primarily from documentary sources. In Rhode Island, the most recent and detailed of these studies is A History of the Blackstone Canal 1823-49 by Richard E. Greenwood, 1984, prepared for the Blackstone Valley Linear Park project, under auspices of the Rhode Island Historical Preservation Commission. Portions of that study have been incorporated into the text of this nomination. Recognition of the canal's significance resulted in its inclusion in the Historic American Engineering Record inventory of Rhode Island sites (1978) and in the listing of several sections in the National Register of Historic Places. More recently, a number of cultural resource management archaeological investigations conducted along the canal have

expanded the understanding of the canal's physical characteristics and survival.

The methodology used for this revised and expanded Blackstone Canal nomination consisted of a review and synthesis of existing information drawn from these various sources, along with a walkover of the canal length to observe, record, measure and photograph general attributes and specific features. Only limited new primary research and no subsurface archaeological investigations were conducted.

Historical Overview and The Canal as Constructed

Over one-quarter of a century prior to construction of the canal, the idea of an inland waterway linking the port of Providence and inland western Massachusetts had been first put forward in 1792 by a merchant, John Brown, of Providence. With considerable private support, Brown obtained a charter from the General Assembly in 1796. Canal enthusiasts in Worcester, Massachusetts, however, were unable to win over Boston and Springfield merchants, and the project lapsed in both states. In 1822, interest in the project was revived, and a survey of the proposed route was conducted by Holmes Hutchinson of Utica, New York. Charters were finally obtained for the complete project, and the Blackstone Canal Company (BCC) was formed. The cost of the construction was estimated at $500,000. In 1825, $400,000 worth of shares were sold in Providence, and a further $100,000 worth were sold in Worcester. With these funds in hand, six canal commissioners were elected by stockholders and Holmes Hutchinson was appointed chief engineer.

Following a resurvey of the 45-mile-long route in 1825-26, construction began and was completed in the fall of 1828. A final survey and mapping of the finished canal was conducted in 1828 by Edward Phelps.

The finished canal served as a transportation corridor for the movement of agricultural products, raw materials, manufactured goods, and passengers between Worcester and Providence. On average, the journey took two working days.

The cost of building the canal exceeded the amount subscribed by the shareholders by over $100,000. Despite these

initial financial problems, the company was able to declare dividends from 1832 through 1836. Even during these years, canal operations were hampered by difficulties in maintaining a consistent water level, maintenance problems, and disputes with mill owners over water rights. The 1836 dividend was the last the company paid, and from that date, canal operations were adversely affected by the opening of the Boston and Worcester Railroad. In 1841, the company petitioned for permission to dissolve in the view of the unprofitability of the operation. This petition was unsuccessful and the company attempted repeatedly during the next few years to dissolve the corporation. In 1847, the Providence and Worcester Railroad opened, making further inroads into the canal's trade. The company was finally successful in its attempts to close the operation in 1848.

The Providence and Worcester Railroad company bought much of the canal property in Massachusetts in 1845 when the northern portion of the canal was closed. In Rhode Island, property which had been obtained by eminent domain was returned to the original owners and property which had been purchased by the canal company was sold at public auction. Much of this property, including locks, was sold to local mill operators who dismantled the locks for building stone. Where roads and rights-of-way crossed the canal, the company was required to fill in the waterway. By 1851, all of the company's property was disposed of and the shareholders received a final payment of $1.25 for each share.

The Canal Route

The canal route in Rhode Island as determined by the engineers began in a terminal basin in the northeast corner of the Great Salt Cove in Providence at sea level elevation. It ran north from there through Providence and North Providence in the valley of the Moshassuck River, sometimes running with the river and sometimes alongside it. Shortly after the river entered Smithfield (Lincoln), the canal left the river valley and through a series of locks was lifted up to Scott's Pond. It ran through Scott's Pond and Cranberry Pond and then was carried in an excavated trench on the west bank of the Blackstone River for several miles, to the dam at Wilbur Kelly's factory (also known then as Sinking Fund and now known as Ashton). At that point, it entered the Blackstone River and ran with it to the next factory

at Albion, where it passed again through a dug trench and reentered the river above the dam. Just below Manville, the canal left the river for a trench on the west bank, which carried it to just above the Mott Dam. From there it ran in the river to the site of the Hamlet factory, Woonsocket, where it once again ran along the west bank in a trench about one half mile. It then crossed the river to the east bank and entered a trench on that side which ran through Woonsocket Falls village and entered the river again just above the upper dam. After a short passage in the river, it cut across a bend in the east bank, crossed again to the west bank and then ran in a trench through the site of Waterford village and into Massachusetts, where it reentered the Blackstone just below Blackstone village. Over the length of the canal, approximately 10% of the distance was in ponds or Blackstone River slackwater and 90% in a canal trench. The canal route followed the west bank of the river, except for a short section in central Woonsocket, where it crossed to the east bank.

The construction features of the canal fell into three constituent parts: the trench and towpath, the locks, and the dams and reservoirs. On each part of the canal, the job was largely completed by men working with picks, shovels and wheelbarrows.

Trench and Towpath

The trench was for the most part designed with a prismatic cross section, thirty-four feet wide at the top, tapering to a bottom width of eighteen feet and containing four and sometimes as much as six feet of water. The side walls were built on a 1/2 slope with the banks rising at least three feet above the water. These dimensions did vary along the route though, widening in some places to forty-five feet at the top and narrowing in others top thirty feet. In at least one section the canal was forty feet wide, top and bottom. Basins and lay-bys at landings and near the locks allowed for the loading and unloading of cargoes and smooth passage of the two-way traffic.

The towpath in both slackwater and canalized sections was at least ten feet wide, although rock outcroppings occasionally reduced its width to eight feet. It rose generally no more than five feet above the water and in some sections a timber cap log was installed on the side of the path to keep the tow rope from

catching. The BCC also planted some trees on both banks of the canal, which served to prevent erosion and provide shade and ornament.

While the canal trench was lined with rubblestone walls, it was essentially an earthen structure. As specific clauses in the construction contracts made clear, it was critical that only the "most pure, solid and compact, and water-tight earth" be used in constructing the canal banks. "Vegetable mould, leaves, roots, sticks and brush" were expressly prohibited. Surprisingly, the surviving canal records contain no mention of the use of clay or the technique of puddling. Puddled clay, that is clay and water mixed to a gluey consistency, was an indispensable material for making a water-tight seal in the canal bed at the time and yet no evidence has been found to indicate that it was used on the Blackstone Canal.

The construction of the canal trench consisted of two basic jobs, excavation and embankment, with the associated tasks of grubbing, mucking and blasting. The principal tools of excavating and embanking were pick axes, shovels, iron bars and wheelbarrows. Embankment was generally more expensive than excavation and the prices for the latter varied according to conditions, more being paid for digging through hard pan or for digging below a certain depth.

In addition to excavating the trench and embanking, it was also necessary in some locations to build rubblestone walls on the exterior slope of the canal bank, where it was exposed to river freshets. At these spots, contractors also widened the river bed, to reduce the severity of the seasonal floods. Both the towpath and the canal also had to incorporate numerous drains and culverts to carry off the waters of the springs and streams that intersected them.

For those sections of slackwater navigation, where the canal ran in the river and in ponds, there were still obstructions, particularly rocks, to be removed, and the towpath to be built. In some of these locations, the towpath had to be carried by wooden bridges.

The work was performed by large gangs of unskilled workers assembled by the individual contractors. The contractors themselves included local farmers, such as David Wilkinson of

Smithfield, and local manufacturers, such as Dan Daniels of Woonsocket Falls, as well as men from elsewhere in New England and New York, such as Elihu Ewers of Manlius, New York, who had previous experience building canals or working on other large projects. Several of the contractors, such as Tobias Boland and Patrick O'Connor, were Irish immigrants, who tended to hire their fellow countrymen. Boland even had agents in Boston and New York who directed new immigrants in search of work to the canal project in Worcester. Edward Carrington was the commissioner who was most often directly involved in hiring the contractors and other workers.

Locks

The key elements of the canal's hydraulic system were the locks, the chambers in which the canal boats made the series of ascents and descents between Providence and Worcester.

According to Hutchinson's 1825 survey there were to be forty-nine locks, twenty of them in Rhode Island. There were to measure ten feet in width and eighty-two feet between gates, with an average lift of nine and a half feet. Though somewhat shorter than the locks on the Erie Canal, when built they were considered "equal, both as to material and workmanship, to any in this country."

The floor of the lock pit was some two or three feet below the water level, over which sills and priming planks were laid. The stonework was granite, five feet thick at the foundations and approximately thirteen feet high, with the rear courses of irregular stone laid with mortar made from Dexter lime from Lime Rock in Lincoln. The facing courses were built of split granite stones with hammered beds and dressed and smooth faces, laid in the best water lime available. No locks survive in Rhode Island.

Dams and Reservoirs

The third integral element of the canal was the system of dams and reservoirs that provided the canal water and kept it at proper levels. The main reservoirs, all but two of which are in Massachusetts, were natural ponds enlarged by damming. The main

reservoirs in Rhode Island were: Herring Pond (200 acres) and Allum Pond (1200 acres), both located in the town of Burrillville. In addition, smaller ponds, such as Scott's Pond (40 acres) and Cranberry Pond (10 acres), were designed to serve as reservoirs.

On the canal route itself, a series of dams served to raise the level of the Blackstone and Moshassuck Rivers and thus maintain the canal at proper levels. In some instances, the BCC raised the existing manufacturer's dams, as they did at Blackstone village and Woonsocket Falls. Elsewhere the company built its own dams, as at the Mott Dam above Manville. As with the reservoirs, the BCC was sometimes able to share the expenses with manufacturers who benefited from the dam raisings. Another dam built on the Crookfall River in Smithfield where it intersected with the canal served to pond the river's water in the canal. Although the official canal survey map of 1828 gives no indication of them, there must have been dams of this type on the Moshassuck River where it intersected with the canal, which kept the river from drawing down the level of the canal.

The Canal Boat

In keeping with the dimensions of the canal and its locks, the canal boats as requested by the BCC were to be between 5'and 70' long and no wider than 9'3" at the deck or 7'6" at the floor or dead flat. The naval timbers were to be a sturdy "round 9 on a side." "The bows and entrance of the boat below and above the water-line" were to be "of a full round and bluff form." This most likely was in an attempt to eliminate the problems encountered with sharp-prowed boats on the Erie Canal, which tended to inflict considerable damage in the event of a collision. Though not explicitly specified in the bylaws, the canal was built to accommodate boats weighing between twenty-five and thirty tons and drawing between two and two-and-a-half feet of water.

BLACKSTONE CANAL INVENTORY

Introduction

The following inventory of the Blackstone Canal begins in Providence and proceeds north to the Massachusetts state line. The canal has been divided into thirteen sections of varying lengths designated as contributing and interspersed with eleven non-contributing sections. Of the total seventeen miles, some 9.6 miles are contributing (56% of overall length), and some 7.4 are non-contributing.

Section 1

Promenade and Steeple Streets to 400 feet south of Industrial Drive, Providence (mile 0.0 to 0.95).

This southernmost section of the Blackstone Canal included a large canal basin in downtown Providence and a combined channel with the Moshassuck River. It is divided into several subsections or segments, all of which are defined as contributing.

The segment from Promenade and Steeple Streets north to the Smith Street bridge contains the easternmost portion of the original Canal Basin. Created by construction of a causeway dam across the northeastern corner of the tidal cove at Haymarket Street (approximately due west of the Old State House), the approximately 300-foot-wide Basin linked the canal (and the Moshassuck River) to the head of the Providence River estuary and port facilities leading to Narragansett Bay. It provided ample space for canal boats loading and unloading cargo and passengers. Filling of the Basin began with the construction of the Providence and Worcester Railroad in 1846-8, reducing the Basin to a channel running along the west side of Canal Street. Subsequent railroad and street improvement and building construction activities during the nineteenth and twentieth centuries have further modified the retaining walls of this segment. Today, the channel is approximately 40 feet wide and is defined by masonry walls of drylaid rubblestone and coursed and semi-coursed, mortared cut granite. Some spots are reinforced with poured concrete, probably associated with buildings that stood adjacent to or over the channel into the twentieth century.

The west wall of the Basin may remain buried under the former railroad yards that are now part of the Capital Center project area. The east Basin wall and the towpath may remain

buried beneath the approximate modern centerline of Canal Street. The likelihood of any traces of the causeway dam surviving is minimal due to radical changes in that area; however, it is possible that some granite blocks at the site of Haymarket Street may be associated with the lock between the Cove and Canal Basin. Finally, the site of the present-day Smith Street bridge marks the approximate historical location of a canal bridge crossing.

The segment from Smith Street to Mill Street Bridges is similar in configuration, with masonry walls defining the approximate channel which historically contained both the Blackstone Canal and Moshassuck River flowage just above the Canal Basin. The Mill Street Bridge crossing location also dates to at least the early nineteenth century.

Proceeding north from the Mill Street Bridge to Randall Street (.2 miles), the canal/river is 30-35 feet in width with 3-4 feet (west bank) and 7-8 feet (east bank) high walls of drylaid rubblestone. The towpath, which crossed to the west side at Charles Street, has been partially compromised by subsequent development and fill, although original contours may remain. A later dam and arched wasteway channel (filled) for the Stillman White Brass Foundry, 1 Bark Street (1871 et seq., NR), are located at the Charles Street Bridge where the building rises from the canal's east bank. The dam may have been originally constructed in 1856 when Stillman White established the foundry in a small frame building, no longer standing. No visible traces remain of the first lock and a structure, possibly a lockkeeper's house or the Lewis' dye mill, which stood at this location. Towards the northern end of this segment, the canal passes under a late-nineteenth century granite, single-arch bridge at Stevens Street and a modern concrete-and-steel bridge at Randall Street, both historic canal crossings.

The northern segment of Section 1 extends .25 miles from Randall Street to a point 400 feet south of Industrial Drive. Here the canal/river channel has been widened and substantial sloped rip-rap banks created. All evidence of the towpath, which crossed again to the east bank at Randall Street, has been obliterated. Although the configuration of the canal trench has been modified in the late twentieth century, it conforms to the location of the original route, and as such remains are an important physical record of the canal's original course.

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For nearly one mile north of Section 1, the canal and Moshassuck River were sometimes separate and sometimes concurrent. Canal integrity throughout this stretch has been destroyed. At the southern end, the channelization in Section 1 continues, but follows the route of the river for 800 feet; the canal trench to the east is filled. The curve of Printery Street may follow the canal route. Approximately 400 feet north of Industrial Drive, the channel turns west and is culverted under Interstate Route 95 and railroad yards. Demolished features in this segment included one lock (Franklin Foundry?) and three or four farm bridges.

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Section 2

.2 miles across the northwest corner of
North Burial Ground, Providence (mile 1.85-2.05)

About 1500 feet south of the Cemetery Street/North Main Street interchange, the canal and river emerge from underneath I-95 in a 34 foot wide, well-preserved canal trench running through North Burial Ground (NR listed). It is lined with approximately 4-foot high drylaid rubblestone walls, to which a low cement cap has been added. The towpath continued on the east bank from Randall Street, through this section, and northward. Some grading has undoubtedly occurred along the east bank in this section, but original towpath contours may also be present. No other canal features are known to have existed along this segment, although a small late nineteenth or early twentieth century [?] steel bridge, probably erected as part of cemetery improvements, remains today.

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Leaving North Burial Ground at Cemetery Street, the canal and river again separated. The present-day channel follows the river bed, while the canal trench to the west has been filled and destroyed by industrial development, Route I-95, and railroad construction for .9 miles. A lock (Horton's Grove?), 100 feet north of Cemetery Street, and a towpath bridge, where the

present-day north-bound Smithfield Avenue entrance ramp meets the highway, have also been lost.

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Section 3

Saint Francis Cemetery to 400 feet south of Mineral Spring Avenue

Emerging from beneath railroad yard fill at a point on the east side of Saint Francis Cemetery (off Smithfield Avenue), the probable remains of the canal trench follow the east cemetery boundary, the east edge of Veteran's Memorial Park, pass along the east side of the City of Pawtucket incinerator, then cross Grotto Avenue to 400 feet south of Mineral Spring Avenue and the Lorraine Mill. The Moshassuck River, originally located east of the canal, has been filled. Both banks of the canal have been altered by adjacent railroad yard filling (east) and landscaping/maintenance (west). The trench itself has been filled at the southern end, but is watered to the north. The 3-mile marker, once located just south of Grotto Avenue, is the only feature known to have existed in this segment.

At a point 400 feet south of Mineral Spring Avenue, the canal passed from the west to the east side of the river, as the river course took a broad westward curve. The current waterflow follows the river bed from the above mentioned point, across Mineral Spring Avenue and loops through the west and northern edges of the Lorraine Mill complex (1868, 1881 et seq.). The canal trench ran in a straighter north/south course and appears to have been lost to subsequent industrial construction. Features south of Mineral Spring Avenue of which no surface trace remains include: a cart bridge, two towpath bridges, a possible dam at the river/canal crossing (east), a lock, and a possible lockkeeper's house.

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Section 4

Lorraine Mills (Mineral Spring Avenue) to Saylesville (Walker Street)

Today, the southern point of a V-shaped curve in the water flow northeast of Lorraine Mill marks the location where the combined river and canal route resumed. Approximately 400 feet to the north, they again separated, with the canal to the west. At a point due west of the west end of Cleveland Street, the river crossed to the west, while the canal continued straight to Walker Street. The towpath ran along the east bank and may now be partially covered by the Moshassuck Valley railroad tracks. Some modification appears to have occurred along the west bank between Weeden and Higgin Streets; a series of small natural or constructed basins have been filled creating a linear bank alignment. North of Higgin Street, the original earth trench appears largely unchanged to a point 500 feet south of Walker Street where the canal was incorporated into the Saylesville Mill water system.

This segment contained several features which no longer exist: possible dams at the canal/river junctions, a cart bridge, a lock at Lockbridge Street (formerly Log Bridge Road), a sidelanding bypass north of Weeden Street, and a towpath bridge.

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A short segment from 500 feet south of Walker Street northward to the southern end of Scott's Pond appears substantially destroyed or buried by development of the Saylesville Mill (c. 1855-1920, NR listed); the mill trench now appears to veer west of the original canal route.

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Section 5

Walker Street through Scott's Pond and Cranberry Pond across Front Street, to the Ashton Dam, Lincoln

This section contains the longest, most intact length of trenched canal and towpath in Rhode Island. It forms the northern end of the canal currently listed in the National Register. Leaving the northern of the two locks mentioned above, the canal route proceeded .8 miles through two connected natural but enlarged bodies of water, Scott's Pond and Cranberry Pond, which also served as reservoirs for the canal. The towpath apparently followed both east and west pond banks and was carried

in sections on wood piers. Towpath contours and stratigraphy have most likely survived along much of the gently sloping west pond banks, and to a lesser degree along the steeply sloped east banks. Upright posts originally supporting the "floating towpath" are present in Cranberry Pond. The present-day Front Street bridge stands on the approximate site of a cart bridge crossing.

North of Front Street, the east bank of the canal is marked by a wood retaining structure constructed through a later mill pond for a distance of 150 feet. The 30-40-foot wide earthen trench resumes through the Lonsdale Mill complex and proceeds northward with the towpath on the east bank. From this point northward, the canal leaves the headwaters of the Moshassuck River and runs along the west side of the Blackstone River through a wooded, rural setting.

The southern stretch of this section appears to have been built with earth walls; an approximately 10 foot long area of dry-laid low masonry is, however, visible on the west bank of the canal opposite Pole 98 off River Road, Lincoln (Feature 1). Just south of Feature 1 on the east bank of the Canal is a long earthen ramp and a stone abutment, remnants of the cart bridge built to connect those portions of the John Wilkinson Heirs's property separated by the Canal (Feature 1A). A cluster of features remains at Martin's Way bridge (Martin's Wading Place) which carries Martin Street across the Blackstone River and canal. Earthen ramps on both sides of the canal north of the bridge suggest that an earlier crossing existed, possibly between two basins as shown on the 1828 Phelps survey map (Feature 2). This northern site may have been abandoned in 1855 at the same time that the approach and bridge over the river from the east was moved south (Cumberland Plat Book 1:5). In the "Lime Rock Lot" on the west side of the canal, scattered deposits of limerock north and south of the present bridge and a large pile of limerock, possibly a wharf, north of the bridge attest to the transport of this raw material from the Limerock Quarry to the west to the canal. Mid-twentieth century flooding in this area has caused washouts and required repairs undertaken by the town of Lincoln. Nevertheless, the original contours and noted features remain remarkably intact.

Approaching Quinnville, one-quarter-mile north of Martin's Way, the canal prism passes through "Gardner's Canoe Rock"

(Feature 3). On the wooded west bank smooth-faced ledge outcrop slopes steeply into the canal. The east bank and towpath are cut into outcrop; quarry chisel scars and low drylaid masonry support walls are visible along the water's edge. The only canal mile marker remaining in its original location, the 8-mile marker, is sited adjacent to Gardner's Canoe Rock (Feature 4). No remains are known to exist of several small wharves.

North of Gardner's Canoe Rock, the canal prism runs straight with earth walls to a point 300 feet south of the Ashton Viaduct (1934-45) and from there north to the Ashton Dam with walls of excellently preserved masonry. The remains of a cart bridge abutment (Feature 5) are visible at the south end of the east bank masonry where the towpath crossed from the east to west canal bank in the Old Ashton Historic District (NR listed). Several mill houses (c. 1810-15) along Lower River Road on the west side of the canal, the Wilbur Kelly House (c. 1820) on the east side of the canal south of the viaduct, and Ashton/Sinking Fund mill or gatehouse remains between the viaduct and dam form the extant visible structures of Lincoln's oldest mill village. North of the viaduct, a later basin or impoundment on the west side of the canal may have damaged the towpath for a short distance. No surface traces remain of a footbridge over the canal immediately south of the Kelly House.

Section 6

Ashton Dam north to 800' below
Albion Bridge (miles 8-10, approx.)

This section begins at the Ashton Dam, the northern terminus of the continuous length of canal beginning in downtown Providence and already listed in the National Register. West of the dam, the towpath apparently ran along the top of a 30 feet high ledge which drops down into the west side of the canal. Approximately 200 feet north of the dam, the canal entered the Blackstone River and ran in the river, with the towpath on the west bank for 1.1 miles. This section contains the most intact length of slackwater towpath identified. Along this section, the towpath is visible as a flat earthen berm, approximately ten feet wide, along the riverbank. It is defined on the western side by a shallow ditch. The area is wooded and the terrain rises steeply to the west. No masonry work was observed along the berm. Approximately 1,900 feet south of the Albion Bridge,

the semi-coursed masonry footings for a small bridge which carried the towpath over an unnamed stream are visible (Feature 6). Neither the stream nor bridge appear on the 1828 Phelps map.

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Beginning at a point 800 feet below the Albion bridge and 1300 feet below the Albion dam, the canal was carried in a trench for a distance of 1800 feet around the dam. The southern 200 feet of this short stretch was later modified for use as a power canal by Albion Mills expansion.

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Section 7
North of Albion Mill, 1,000 feet

The canal trench, possibly somewhat enlarged, and towpath route on the west side are clearly visible, particularly north of the mill. Two natural islands between the canal and river remain, although the inlets have been filled, culverted, and spanned by railroad tracks. Other alterations may have occurred when the dam was relocated in the nineteenth century. The location of the present Albion Road bridge crossing the canal and the road alignment mark the approximate location of canal-era crossings. The canal reenters the river 900 feet above the 1887 pony truss bridge. A floodgate across the canal trench was most likely erected by the mill to control water flow. Features no longer existing in this section include a 9-mile marker, a lock at the southern end of the Albion trench, an adjacent wharf, and a footbridge over the canal to the mill.

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North of Albion for 2200 feet to Mussey Brook the canal ran in the river. Railroad embankment has been overlaid onto the towpath, eliminating its visibility and integrity. No evidence of a towpath bridge crossing remains at Mussey Brook; only random stones and a modern culvert are visible.

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Section 8

Mussey Brook to 2000 feet north of Mussey Brook

Beginning immediately above Mussey Brook, the riverbank and towpath veer east away from the railroad for a distance of 2000 feet. The towpath contours are moderately well-preserved throughout this section. An 11-mile marker which stood at the northern end of this section has been removed.

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Above this terrace, the canal route and railroad intersect again for 1000 feet to a more pronounced curve in the river. Here, the canal was trenched around the Manville dam and northward. To the south of and for 1400 feet north of the dam, this trench appears to have been totally filled and altered by railroad and other construction. This section contained three locks and a road crossing bridge below the dam and a 12-mile marker a short distance above the dam. The road crossing bridge site remains marked by a modern bridge; the masonry visible at ground level on the east side of the railroad right-of-way north of the bridge appears to be associated with the Canal.

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Section 9 (RI-532)

1400 feet north of Manville Dam (Lincoln)
to 300 feet south of Woonsocket Water Treatment
Plant (Woonsocket)

This segment extends for a distance of 7,000 feet parallel to the course of the Blackstone river. Throughout this distance the canal is reasonably intact and most of it contains standing water. The canal is breached at one location to the north of Crook Fall Brook and is filled in by stream alluvium in the area around the mouth of Crook Fall Brook. The only ancillary engineering features known to have existed on this portion of the canal are a dam and spillway on Crook Fall Brook where it intersected the canal, and a culvert to the north of Crook Fall Brook (Feature 7). Some archaeological evidence of the dam and spillway was discovered during archaeological testing in July 1986 (Milner 1987). The breach north of Crook Fall Brook may be on the site of the culvert. Both the towpath bank (southwest) and the berm bank (northeast) are well preserved, although

heavily overgrown with brush and small trees. The banks of the canal throughout this segment are 30 to 40 feet apart. To the south of Crook Fall Brook the canal towpath is under the existing railroad embankment. North of Crook Fall Brook the canal alignment veers away from the railroad and both banks of the canal are visible. At present, the canal prism is disturbed or destroyed 1400 feet north of Manville and 300 feet south of the Woonsocket water plant. This section contained a 13-mile marker.

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From 300 feet south of the Woonsocket Water Treatment Plant to approximately 100 feet north of the plant (total distance of 700 feet), the canal prism has been thoroughly destroyed by earth moving associated with the plant construction.

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Section 10 (Mott Dam)

From 100 to 700 feet above the Woonsocket Water Treatment Plant and extending to the east riverbank (Woonsocket)

Just above the treatment plant, canal and berm extend to a point where the Mott Dam stood. The canal reentered the river just above the dam. Archaeological testing in this area indicates that intact sediments associated with canal construction and use are present within fifty centimeters of the surface (Morenon and Tidwell 1988). In addition, masonry and earthwork most likely associated with the Mott Dam is present on both sides of the Blackstone River (Feature 8). The Mott Dam was an earthen structure built by the Blackstone Canal Company to control water flowage in the canal; it has been dismantled. On the west riverbank is a dry laid, fieldstone embankment interpreted as representing the entrance to the canal trench above the Mott Dam. It is approximately (12 meters) 25 feet in length and (1 meter) 3 feet high (exposed), facing north and east and earth-filled on the southern side. It curves northwest from the riverbank.

On the east riverbank, a massive earth mole which clearly appears on modern topographic maps, is the eastern section of the dam. It consists of a raised berm, approximately 7 feet above water level approximately (5 meters) 15 feet wide extending into

the river from the bank for 100 feet and curved at the western end. Along the north, west and western (rivermost) section of the south sides, large quarried granite blocks (1-2 m x 50-60 cm) are laid at a sloped angle of 30-35 degrees, creating a smooth grade to the water. Where the berm meets the riverbank on the north side, granite blocks continue around a curved corner and to the north along the riverbank for approximately 80 feet. The blocks appear to have been added in the twentieth century, perhaps for flood control purposes.

Other features in this section for which no remains are known to exist are two wharves located on the island berm inside the canal just below the dam.

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Beginning 700 feet north of the Woonsocket Water Treatment Plant where a power line crosses the river, landfilling, and earth moving associated with the City of Woonsocket Landfill have destroyed all traces of the towpath that ran along the west riverbank to a point approximately 900 feet below the Hamlet Avenue Bridge, where the canal entered a trench for a distance of 1800 feet around the Hamlet dam. This trench has been filled in some locations and the canal berm has been enlarged with earth overburden and rip rap for flood protection. Two unwatered sections of canal prism remain, possibly widened for later use as a power canal.

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Section 11
South of Hamlet Avenue Bridge (Woonsocket)

This short, straight section is approximately 100 feet long, planted in grass, and terminated by parking lot fill to the south and by Hamlet Avenue Bridge abutment fill to the north. The survival of towpath contours is unknown.

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Between the Hamlet Avenue bridge and the Villanova Street foot bridge to the north, all traces of the canal prism have been lost in the grassy area between Florence Drive and the flood control berm.

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Section 12
Villanova Street footbridge to site of the Hamlet Dam (Woonsocket)

This section is an approximately 700-foot long, 50-70-foot wide broad trench which follows a river curve, with volunteer weed vegetation. It is terminated at the south by fill for a pedestrian bridge over the river and blends to the north with masonry remains of a floodgate and the Hamlet dam. Demolished features in this canalized section include one lock and two wharves.

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Reentering the river, the canal route followed the west (or south) bank for a short distance before crossing to the opposite bank, where it was again trenched, following the riverbank contours through the village of Woonsocket Falls to just above the Woonsocket Dam and present-day Main Street Bridge. Later nineteenth and twentieth century construction has destroyed all traces of this trench. Lost features include two locks. Above the dam, the canal towpath route followed the east river bank, but has most likely been destroyed by washouts and flood control projects.

At a point approximately 100 feet north of the Conrail Bridge, the canal again entered a trench which carried it straight, paralleling present-day Water Street, across an oxbow in the river for 700 feet to a point approximately where the railroad now crosses. Later industrial construction resulted in the filling of this segment at around the turn of the twentieth century. Crossing the river, the canal again became a separate trench, the lower 1100 feet of which has been filled by railroad bed, industrial buildings and River Street. The V.F.W. Building parking lot at the intersection of River and Rhodes Streets marks the location of a canal basin.

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Section 13

Singleton and River Streets (Woonsocket) 1200 feet along Canal Street (North Smithfield) to Blackstone, Massachusetts state line.

At a point opposite the present-day Singleton Street Bridge, the canal trench becomes visible again as a wide basin which narrows to the more standard canal prism and parallels River and Canal Streets for 1200 feet through the village of Waterford to the Massachusetts state line. The present-day bank contours appear basically unchanged since 1828, although diversion of water to the river has substantially lowered the water flow level in the trench. In this section, the towpath ran along the east side of the canal, and thus under present-day River/Canal Street. The dry-laid fieldstone masonry retaining walls of the earth-filled dam are visible on both sides of the road embankment. On the canal side (west) the embankment walls are approximately 6 feet high. Demolished features in this section include an inlet for a small mill race to the river, 17-mile post, two wharves and a mill pond inlet to the Mammoth Mills and associated towpath bridge.

TABLE I

BLACKSTONE CANAL FEATURES

Feature	Location and Description
1	Off Old River Road at Pole 98, Lincoln. Approximately 10 foot long length of low, dry-laid masonry on west canal bank.
1A	Just south of Feature 1, Lincoln. Long earthen ramp and stone abutment, remnants of a cart bridge.
2	Martin's Wading Place and Lime Rock Lot. Both sides of Martin's Way Bridge, Lincoln and Cumberland. A cluster of earlier river and canal crossing road embankments, two canal basins and limerock deposits.
3	Gardner's Canoe Rock, Lincoln. North of Martin's Way Bridge. Natural ledge outcrop and blasted and quarried canal trench and towpath contours.
4	8-Mile Marker. At Gardner's Canoe Rock, Lincoln. Granite mile marker lying in the ground.
5	Bridge abutment, Old River Road, Quinnville, Lincoln. Dry-laid masonry in a corner configuration on the east side of the canal south of the Wilbur Kelly House.
6	Unnamed stream, south of Albion, Lincoln. Low dry-laid masonry abutments for former towpath bridge in slackwater section of canal.
7	Crookfall Brook, Lincoln. Masonry remains of dam, spillway and a washed-out culvert at feeder stream.
8	Mott Dam, Off Manville Road, north of Woonsocket Water Treatment Plant on both sides of the Blackstone river, Woonsocket. Dry-laid masonry remains (west) and earthen mole (east) of water control dam built by the BCC.

BLACKSTONE CANAL
Lincoln, Woonsocket, North Smithfield

Photographer: Walter A. Nebiker
Date: July 1991
Negative: Rhode Island Historical Preservation Commission

Section 7: Lincoln. North of Albion Mill, 1,000 feet. Canal in River where railroad runs over towpath.

Photo #1
View: North of Albion Mill, 1,000 feet. Slackwater section where road joins railroad, looking south.

Photo #2
View: Several hundred feet north of above, at junction of canal and river. Left to right: river, island, canal. View to southwest.

Photo #3
View: Same location as above, looking to south. Canal section.

Photo #4
View: Same place, to north, showing river.

Photo #5
View: About 200 feet north of Albion Dam. Left to right: canal, island, river.

Section 8: Lincoln. Mussey Brook to 2,000 feet north of Mussey Brook. Beginning at brook, riverbank and towpath veer east away from railroad for 2,000 feet.

Photo #6
View: Delta of Mussey Brook looking north.

Photo #7
View: Towpath. River is to left, behind trees, Along river is a line of low vegetation, marking the edge of towpath, visible as the light section to the right of center. Looking south.

Photo #8
View: Albion Mill.

Section 9: Lincoln. North of Manville Dam. North of Crookfall Brook.

Photo #9
View: Stagnant water body just west of railroad tracks, about 150 feet north of brook.

Section 10: Woonsocket. From 100-700 feet north of Water Treatment Plant.

Photo #10
View: From fieldstone embankment along the east bank of the river, across river to east (in/near berm area).

Section 11: Woonsocket. South of Hamlet Avenue Bridge.

Photo #11
View: Atop riprap dike south of bridge, looking north (upstream).

Photo #12
View: From edge of parking lot, view north to Hamlet Avenue and bridge.

Section 12: Villanova Street footbridge to site of Hamlet Dam. 700 feet.

Photo #13
View: View across broad trench, toward elderly housing on Clinton Street.

Photo #14
View: From same spot, looking in opposite direction, to St. Ann's Church.

Photo #15
View: View from opposite side of river to upstream part of dam.

Photo #16
View: View from opposite side of river to downstream part of dam.

Section 12 (cont.): North of Conrail Bridge to Woonsocket line.

Photo #17
View: Water Street to north, near crossing with Canal Street.

Section 13: North Smithfield: Singleton & River streets north to Massachusetts

Photo #18
View: Canal Street, North Smithfield, looking north.

Photo #19
View: Canal Bed parallel to (and west of) Canal Street.

Photo #20
View: Canal bed parallel to (and west of) Canal Street.

8. Statement of Significance

Certifying official has considered the significance of this property in relation to other properties:
☐ nationally ☒ statewide ☐ locally

Applicable National Register Criteria ☒ A ☐ B ☒ C ☒ D

Criteria Considerations (Exceptions) ☐ A ☐ B ☐ C ☐ D ☐ E ☐ F ☐ G

Areas of Significance (enter categories from instructions)
ARCHEOLOGY/
HISTORIC-NON-ABORIGINAL
COMMERCE
ENGINEERING
TRANSPORTATION
OTHER: Regional Development

Period of Significance
1824-1849

Significant Dates
10/7/28

Cultural Affiliation
Yankee, Irish

Significant Person
N/A

Architect/Builder
Hutchinson, Holmes (engineer)

State significance of property, and justify criteria, criteria considerations, and areas and periods of significance noted above.

The Blackstone Canal is a significant engineering accomplishment of the second quarter of the nineteenth century. As a technical feat, the canal was a product of the outstanding skills of the American engineering profession. Essentially an earthen structure supplemented with masonry, and with a system of forty-nine locks, numerous bridges, dams and other features, the Blackstone Canal was the last major canal to be begun in New England during this period. Remaining sections of the canal are significant in that they embody distinctive design, materials, workmanship and methods of construction typical of the time. These attributes are accessible for study both through visual observation and archaeological investigations. The preserved individual sections gain additional significance in combination with lost sections of canal. Together they chart the route of an important transportation corridor whose path reflects engineering decisions based on technology and topography. Further, the route selected had impacts on the areas through which it passed. Canal construction marked a critical transition period in the economic and social history of the Blackstone Valley in Rhode Island and Massachusetts. The canal is a major artifact of the "Age of Internal Improvements," a historic archaeological site and engineering structure that links the period of industrialization with the preindustrial era of maritime commerce and near-subsistence farming which preceded it. It carried the life's blood that enabled Providence to sustain its growth into one of nineteenth century America's great industrial cities. As a financial venture, the canal demonstrated the ambition and vision of the entrepreneurs of Providence, Worcester, and the country towns in between. As a social force, the canal brought the surrounding countryside into closer contact with the urban center of Providence, promoting development along its route and accelerating the shift in rural society from focus on small circles of friends and family into the larger and more impersonal

☒ See continuation sheet

realm of national and international commerce and politics. The canal also served to introduce ethnic diversity into the Blackstone Valley, through the Irish laborers hired during construction.

ARCHAEOLOGY

As it exists today, the Blackstone Canal is both an engineering structure and an archaeological site. The canal has the potential to provide information through archaeological investigations which can broaden understanding of aspects of its construction, maintenance history, and use. The presence and value of these data categories have been demonstrated on the Blackstone Canal by several recently completed archaeological studies; a wider range of possible categories is suggested by work undertaken on the Farmington Canal (Raber 1981, Connecticut Archaeological Survey, 1983). Techniques such as core sampling, prism profile measurements, and cross-section excavations can provide physical evidence of canal design elements and period construction methods which are not revealed in the documents. Comparison of different sections of the canal broken down by construction contract and topographical character may reveal much about patterns of engineering design and construction decisions on the Blackstone Canal, as well as providing data for comparison with other contemporary canals. Study of soil stratigraphies may also be fruitful in understanding the impacts of flooding, siltation, washouts and repair on the original canal contours. In addition, the remains of numerous features such as dams, culverts, and bridges which were not recorded in the surveys, but were undoubtedly constructed at many locations, may be present, buried under overburden and vegetation. Such was the case at Crook Fall Brook, where footings for a dam and bridge were found through archaeological excavations (Milner 1987). A complete picture of these kinds of features would add greatly to our understanding of the full scope of the water supply system developed for the canal and subsequently used by numerous valley industries.

Canal-related archaeological studies already conducted suggest that cultural material deposits associated with the people who constructed and operated the canal are unlikely to exist. There is no known documentary or physical evidence that construction workers lived adjacent to the canal site, although

it is possible that some may have camped in the vicinity. The transient nature of human activity along the canal route, which consisted primarily of animal-drawn boats moving north and south, is expected to have resulted in few and sparsely distributed artifacts. A potentially important exception to this general rule may be at on- and off-loading locations, such as basins, and at the site of specific engineering features, such as locks. For example, period artifacts apparently do not exist (Mair 198_) at the Lime Rock Lot, where limestone concentrations resulting from in-transport stockpiling are visible on the surface, although the raw material itself is a valuable physical record of canal trade.

Land use, engineering, and hydrology, and to a lesser extent, canal-associated activities, are data base categories which can be fruitfully explored through archaeological research along the Blackstone Canal. It should also be recognized that the original character of the seventeen-mile Rhode Island stretch of the Blackstone Canal was not homogeneous. Variations among density and type of adjacent development, three basic construction frameworks--open river, canalized river, and canal trench--, topography within those frameworks, and implementation of over two dozen construction contracts resulted in a structure of considerable variability in many respects. This essentially variable character, along with differential preservation along the canal length, indicates that in the absence of a comprehensive archaeological survey, the archaeological potential of different sections should be considered complimentary and equally important, but not redundant.

ENGINEERING

Formulated by American engineers who had previously worked and been trained on the highly acclaimed and successful Erie Canal (partially open by 1819), the design of the Blackstone Canal drew on the most advanced survey and engineering techniques of the day. In the summer of 1822, the Blackstone Canal promoters engaged Benjamin Wright, chief engineer of the middle section of the Erie Canal, to undertake a topographical survey of the proposed route. The actual survey was conducted by Holmes Hutchinson of Utica, New York, another veteran of the Erie Canal, under Wright's direction. At about the same time, Wright's expertise was also the choice of the Farmington Canal Company in Connecticut. In both projects, the engineer responsible for the

actual survey stayed on as chief engineer for construction, leaving Wright free to pursue new projects. With the assistance of the commissioners, Hutchinson assembled a team of assistant engineers: Richard S. Scott, B.G. Dexter, Edward N. Phelps, and Joseph D. Allen. In addition, others such as Elihu Ewers in Woonsocket, Wheeler Blanding, a Providence carpenter who built the lock and dam at the boat basin, and Warren Batchellor, a Providence road-maker who constructed the basin causeway, performed many of the duties of an engineer in their capacity as construction contractors. Within this context, the Blackstone Canal reflects the early history of the American civil engineering profession in which individuals with little more than some knowledge of land surveying or related construction trade techniques developed their skills by working under seasoned engineers and learning from practical experience.

Construction of the canal relied predominantly on manual labor and on traditional techniques of earth moving and masonry work, yet lessons learned from recent canal construction projects were also incorporated. Although the canal proposal outlined by Wright and Hutchinson in 1822 had referred to wooden locks, it was decided in the summer of 1825 to forego the short term economy of the wooden locks for a more permanent system of stone locks. While the difference in cost was considerable (a stone lock cost around $4000), the canal commissioners could not have been unaware of the problems of maintaining the wooden locks on the Middlesex Canal (completed 1803). One wooden lock was apparently constructed on the Blackstone Canal in Rhode Island, but it is not clear where it was built or why.

On the other hand, unlike the Farmington Canal, which was a totally artificial waterway designed to avoid problems in river navigation, the Blackstone Canal included both slackwater and canalized sections. Cost concerns as well as topography undoubtably shaped these decisions. In the five-mile stretch between Providence and Scott's Pond, the engineers took advantage of the narrow Moshassuck River bed and transformed it into canal trench except where the river course was excessively circuitous. In the larger Blackstone River, the route was required to run in an excavated trench, in a channel separated from the river by embankment, or in the river itself. There is some evidence that final trench decisions were made following land acquisition. At Albion, the BCC apparently planned "to continue the trench down until it reaches the lock at the head of Wilbur Kelly's mill pond

[at Ashton]" (Book of Locations and Appraisals, 1825-33, RIHSL); as constructed, however, this section ran in the river itself with the towpath on the west river bank.

In addition to inherent flaws in the canal's technical design which resulted in disruption of travel (too much water, caused by floods and freshets; too little water caused by droughts; and ice which could close the waterway from late fall to early spring) and occasional structural failure of canal components, the ultimate demise of the canal can be attributed in large part to operational constraints written into the charter at the instigation of lower Blackstone Valley manufacturers rather than engineering shortcomings.

COMMERCE

Trade

Ostensibly an engine of commerce, the Blackstone Canal was first projected by Providence merchants eager to secure new home markets in the fertile interior to supplement their maritime trade in Europe and Asia. By facilitating the trip back downstream to Providence, the canal also encouraged production for market among farmers and artisans who had hitherto been frustrated by the length, labor, and expense of overland travel on roads of poor quality. As John Brown, the Providence merchant, had pointed out as early as 1796, by lowering transit time and costs, the canal made it feasible to deliver bulky and perishable country produce to Providence, where it would be consumed or shipped to other markets. At the same time, boats travelling back up the canal would be delivering merchandise and raw materials imported through Providence from this country and abroad, goods that would be distributed from Worcester and smaller villages along the way. In the balance of trade, the traffic up the canal heavily outweighed the downward; between 1831 and 1835, the tonnage shipped to Worcester averaged 4848 tons and the tonnage in the other direction averaged 822 tons.

For the most part, cargo from Providence consisted of staple goods: flour, grains, molasses, and salt; and raw materials for manufacturing: coal, wool, iron, cotton, and oil. There were also small but significant amounts of provisions: dried fish, coffee, tea, sugar, spices, and liquor, as well as imported or

manufactured goods: machinery, hardware, dyes and plaster. Items travelling back down the canal fell into the general categories of country produce: fruit, vegetables, butter, cheese, hay, cider, feathers, bark, and firewood. Manufactured goods included items that could be produced at home: boots, shoes, hats, combs, and baskets, as well as a wide range of other goods: beer, bread, casks, chairs, paper, shingles, wagons, farm and textile machinery, firearms, iron castings, wire, and cotton and wool cloth. In addition, some commodities, such as building stone and lime, were in demand up and down the canal. Evidence of the transport of lime on the canal is present at the Lime Rock Lot adjacent to Martin's Way, Lincoln.

By drawing the back country into closer commercial ties with Providence, the canal furthered an ongoing process of economic change, ushering in the era of the market economy and supplanting the traditional household economy. These changes were most evident in the textile factories and other industries that proliferated in the Blackstone Valley by the 1810s. The textile industry, although it proved to be a powerful rival in the subsequent contests over river water rights, served as a strong impetus for the canal. The numerous mills located on the Blackstone and its tributaries formed one of a few significant concentrations of industry in the country and had considerable transportation needs. Raw cotton and wool, machinery and other materials had to be obtained, and the finished cloth had to be delivered to market. Canal promoters (many of whom, such as Brown and Ives, who owned Lonsdale, and Edward Carrington, who owned the Hamlet factory, were also investors in these factories) viewed the canal and industry as mutually beneficial allies. As a review of the canal boat lading lists reveals, the factories generated a large percentage of the canal's business. The textile manufacturers did not, however, find the canal to be indispensable; indeed for the whole of the canal's career, they often united in opposition against it over water flow rights.

Canal Financing

Despite the enthusiasm the canal generated and its initial successes, inadequate financing, a problem common to many canal ventures, was a constant threat to the BCC and investors. The major Providence canal promoters were Nicholas Brown, nephew of John Brown, his brother-in-law and partner, Thomas Poynton Ives,

and Edward Carrington, all among the town's wealthiest men. As was traditionally the case in the society of maritime traders, the launching of a venture by major capitalists attracted the support of many other investors, both large and small. Investment capital was relatively plentiful at this time due to previous successes in overseas trade, and merchants were searching for places to put their profits. The town of Worcester also seems to have unanimously supported the canal, with its business and political leaders taking the initiative to promote it.

Throughout the twenty years of canal operation, BCC officers struggled to secure investors and lenders to defray the increasing debt. Upon completion of the canal, deficits came to more than $100,000, including $29,558 owed by delinquent stockholders and $84,200 in cost over-runs. By the end of the 1830 season, although the floating debt was reduced to $7,000, sources of credit in Providence were exhausted and attempts to negotiate loans in New York and Philadelphia had failed. The solution was creation of the Blackstone Canal Bank, an improvement bank, chartered in January, 1831, with a capital of $250,000 of which $150,000 was to be invested in the BCC. This influx of money alleviated the BCC's financial bind, and with what would turn out to be the peak toll income of $14,944, allowed payment of the first dividends at $1.00 per share, three years after the canal had opened. Yet, tolls and dividends declined steadily in the ensuing years, and in 1836 a last dividend of 20 cents was distributed. Doubts of the canal's ultimate prosperity caused the Blackstone Canal Bank to dispose of its canal stock in 1834. In subsequent years, tolls continued to fall as the Boston and Worcester Railroad secured more and more of the regional transport business.

Canal Boat Companies

In addition to operating the canal, the BCC was also a commercial carrier through its subsidiary, the Providence and Worcester Canal Boat Company. The Canal Boat Company, one of several individuals and firms which maintained one or more boats, initially had a fleet of eight freight boats and the passenger packet boat Lady Carrington. The fleet was expanded, but by 1849, when the canal ceased operations, had been reduced to only four vessels.

TRANSPORTATION

The Blackstone River, fed by ponds and small streams, has its headwaters in the eastern uplands of Worcester County, Massachusetts. It makes its way south over rocky, hilly upland to the head of Narragansett Bay at Providence, Rhode Island, draining an area of 540 square miles, one third of which is in Rhode Island. To a large degree, the settlement pattern developed by the early colonists in the Blackstone/Narragansett region was dictated by the nature of transportation, which was determined in turn by the abundance of navigable waterways and the natural superiority of water transport in comparison with overland travel through the largely uncharted wilderness. The Blackstone River was, however, continuously navigable only as far north as Pawtucket Falls. The colonists readily adopted an existing network of Indian trails which ran generally east-west, following topography; yet overland travel was predominantly by foot and was slow, laborious and frequently hazardous. As the Providence and Plymouth colonies expanded northward, a system of roads developed running up the Blackstone Valley. These roads, though of typically poor quality, served wilderness settlers and helped foster the gradual growth of commercial ties between the nascent port of Providence and its forest-rich hinterlands. The earliest toll roads were constructed with the principal support of merchants seeking to improve commercial trade with inland areas. By the second decade of the nineteenth century, many of the same capitalists were building turnpikes to promote industry and to improve access to the rural textile factories beginning to proliferate in northern Rhode Island. While the turnpikes served as the major means of improving overland travel in the late eighteenth and early nineteenth centuries throughout the country, they were far from being a complete solution. As an investment, turnpikes were largely a disappointment. As a means of improving travel, they were only partially successful. While passenger transportation was generally facilitated, long-distance freight hauling was still onerous, time-consuming, and expensive.

In 1792, even before the first turnpike charter was granted, John Brown, the merchant who best epitomized the bold entrepreneurial spirit of the Providence traders, had already set in motion his plans for a different and more ambitious transportation scheme, a canal from Providence to the

Massachusetts interior and on into New Hampshire. The grandiosity of this idea, known as the Providence Plantations Canal, is particularly striking in that no canal of any length had yet been built in North America.

Despite the support for the canal generated in Providence and Worcester, there was serious opposition elsewhere in Massachusetts; the merchants of Boston and Springfield recognised the canal proposal as a direct threat to their established trade with the interior. Consequently, all efforts to secure a charter proved futile. During the next quarter century, while the canal idea lay dormant, farmers and artisans continued to make their way over the same rough and unimproved roads or on turnpikes where they were available and affordable. Providence merchants persisted in searching for ways to sustain their economic growth, a search that increasingly led them from maritime trade to the new field of textile manufacturing. As a result of textile expansion, the Blackstone Valley was on the verge of a major economic and population explosion by the early 1820s. An 1825 survey of valley traffic revealed that over 20,000 tons travelled between Worcester County and Boston and Providence annually, at an average distance of thirty-five miles. Traffic up and down the valley between Rhode Island and Worcester County accounted for 10,000 tons, over an average distance of about twelve miles.

Thus, once canal construction was initiated elsewhere in the country, the local climate was primed for renewed interest in a Blackstone Valley canal; inland navigation had come to be viewed as a viable and preferable alternative to the difficulties, inconvenience, and expense of overland travel.

Once completed, the canal did reduce inland transportation costs dramatically. In Worcester, for example, there was a savings of $3.80 per ton on goods shipped from Providence by the canal, over those carried by road from Boston. It became cheaper to transport goods from Boston to Worcester by shipping them on sloop and canal boat via Providence, than to carry them the shorter distance overland. It was even 25% cheaper to ship merchandise from Worcester to New York by the canal, Narragansett Bay and Long Island Sound than to transport it to Boston by wagon. This reduction in transportation costs gave a major impetus to trade and manufacture throughout the valley, encouraging farmers, craftsmen and capitalists alike.

The canal was less successful as a mode of passenger transportation and never effectively competed with the stage coaches, although the BCC's flagship, Lady Carrington, was primarily a passenger boat. Seasonal and daylight-only operation, water level fluctuations, and periodic closures due to structural failures such as lock breakage and washouts no doubt were factors.

Patterns of development that canal transportation did much to foster were largely sustained rather than disrupted by the subsequent construction of the Providence and Worcester railroad; the railroad followed essentially the same route up the river valley. Significantly, the railroad corporation organizers included earlier canal backers, as well as Blackstone Valley manufacturers, a fact that testifies to the prevailing faith in the value of a transportation route up the valley. It was not until the advent of the automobile in the twentieth century that marked changes in transportation corridors occurred, significantly altering patterns of development in the valley.

IMPACTS ON REGIONAL DEVELOPMENT

Throughout the Blackstone Valley region, introduction of the canal brought economic and social changes. The canal brought a more localized prosperity to the villages it touched directly,, through the disbursement of money by the BCC during construction, the influx of tradesmen taking advantage of the canal commerce, and the appreciation of property values. In Providence, for instance, over five hundred laborers, exclusive of artisans, worked on the canal at one time and the wages they earned and spent generated a great deal of business in the town. The construction of the canal basin in the Providence Salt Cove and the ensuing canal traffic led to the rapid development of a commercial district of wharves and storehouses on adjacent Canal Street. The canal's effect on the inland community of Worcester was similar, and perhaps greater.

In between the two largest and terminal towns, the same process occurred on a smaller scale, creating or expanding villages and causing appreciations in land values. As early as 1825, the Providence newspapers began reporting cases of property value increases to as much as five times their previous worth. Although settlements in the valley grew more like individual

beads on the necklace of the river than the continuous band canal promoters envisioned, they were transformed from isolated hamlets into prosperous components of a thriving regional economy. Existing factories, such as at Ashton and Manville, were improved; isolated mill seats attracted developers; and in some cases, such as at Lonsdale, Hamlet, and Waterford, the higher water levels associated with the canal itself created manufacturing opportunities where none had existed before. Perhaps the greatest universal benefit was the system of reservoirs built by the canal, which helped regulate the river's flow year round, thereby eliminating some, if not all, of the manufacturers' low water problems even after the canal closed. Manufacturers also adapted sections of the canal trench itself for use in their water power systems.

With this economic change came social change as well, as the disruption of subsistence farming and production for home consumption led to the displacement of the home as the production center and the family unit as the basic labor force. The canal also brought new population to the valley. Irish laborers who worked on canal construction and stayed to farm or work in the textile industries brought their own cultural heritage and customs to the valley communities. Many of the traders and boatmen who operated on the canal came from areas outside the region, such as New Hampshire and Vermont.

In summary, although the Blackstone Canal proved to be a significant failure for its investors, and perhaps something of an anachronism as a transportation system, as one contemporary writer expressed it, the canal was "more useful to the public than to the owners," and the capital invested by the stockholders in many ways served as seed money for subsequent development in the Blackstone Valley.

9. Major Bibliographical References

[X] See continuation sheet

Previous documentation on file (NPS):
- [ ] preliminary determination of individual listing (36 CFR 67) has been requested
- [X] previously listed in the National Register
- [ ] previously determined eligible by the National Register
- [ ] designated a National Historic Landmark
- [ ] recorded by Historic American Buildings Survey # _____
- [ ] recorded by Historic American Engineering Record # _____

Primary location of additional data:
- [X] State historic preservation office
- [ ] Other State agency
- [ ] Federal agency
- [ ] Local government
- [ ] University
- [ ] Other

Specify repository: Rhode Island Historical Preservati Commission

10. Geographical Data

Acreage of property 71 acres

UTM References

	Zone	Easting	Northing
A			
B			
C			
D			

[X] See continuation sheet

Verbal Boundary Description

[X] See continuation sheet

Boundary Justification

[X] See continuation sheet

11. Form Prepared By

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street & number 387 Lonsdale Avenue telephone 401-728-8780
city or town Pawtucket state Rhode Island zip code 02860

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Section 1

A 19/299810/4634580
B 19/299710/4633220

Section 2

A 19/300180/4636080
B 19/299980/4635920

Section 3

A 19/300220/4638100
B 19/300360/4637400

Section 4

A 19/300210/4640400
B 19/300310/4638550

Section 5

A 19/300240/4640680
B 19/298020/4645800

Section 6

A 19/298020/4645800
B 19/296780/4646940

Section 7

A 19/296480/4647420
B 19/296680/4647050

Section 8

A 19/295770/4648390
B 19/295910/4647810

Section 9

A 19/293620/4650720
B 19/294840/4649580

Section 10

A 19/293580/4651120
B 19/293620/4650980

Section 11

A 19/293060/4652960
B 19/293100/4652890

Section 12

A 19/292500/4653250
B 19/292820/4653220

Section 13

A 19/290010/4654300
B 19/290420/4653760

Feature 1

A 10/298660/4643820

Feature 2

A 19/298370/4644280

Feature 3

A 19/298360/4644560

Feature 4

A 19/298360/4644760

Feature 5

A 19/298220/4645350

Feature 6

A 19/297000/4646770

Feature 7

A 19/293870/4650190

Feature 8

A 19/293610/4651040

Verbal Boundary Description

The east and west boundaries are generally defined by the actual physical edges of canal bank, towpath berm, and, where applicable, basin or other feature. They include the entire area of earth or masonry structure, thus extending to the toe of a towpath berm slope, for example. They also include areas of both land and water known to have been used in canal operations. Thus in sections of slackwater with preserved towpath, the eastern boundary runs in the river, 15 feet from the east towpath bank. In canalized sections, the basic boundary dimension is defined by the combined standard canal prism (34 feet) and towpath (10 feet) widths, with allowance of 6 feet for towpath berm slopes, or 50 feet. The actual boundary dimension, however, varies with actual canal dimensions in a given section; see Section 7.

Boundary Justification

Due to the nature of historical documentation and maps, the precise historical boundaries of the canal are difficult to determine. Descriptions of land acquired along the route contained in the Blackstone Canal Company's Locations and Appraisals Book, 1825-33 (RIHSL Collections) indicates that the width varied considerably, ranging generally from 33 feet (50 links) to 99 feet (1.50 chains), but in places was as little as 10 feet or as much as 132 feet across. Engineers' reports and construction contracts defined general range and standard dimensions for the canal prism, towpath, locks and other features, and the Edward Phelps survey map of 1828 delineated the canal as constructed at a scale of one inch to 200 feet. Nevertheless, because actual canal construction entailed incorporating natural topographic features and involved in-the-field decisions by a number of construction contractors, it is likely that the final dimensions varied within, and may have occasionally extended beyond, the established parameters. In addition, the physical remains of the canal have been shown to include subsurface archaeological features which may not be readily identified through historical research and visual observation.

Consequently, the nominated boundaries of the Blackstone Canal have been drawn to encompass the entire constructed resource to the extent that it is historically documented and

known at present and to minimize inclusion of peripheral lands not directly associated with the canal. The south and north boundaries of the canal are defined, respectively as Promenade and Steeple Streets, Providence, and the North Smithfield, Rhode Island/Blackstone, Massachusetts, political boundary. These locations mark the linear extent of the Rhode Island portion of the canal.

Blackstone Canal

Photographer: Walter Nebiker
Date: July 1991
Neg. R.I. H.P.C.

Blackstone Canal
Rhode Island

Photo # 2

Blackstone Canal
Rhode Island

Photo #3

Blackstone Canal
Rhode Island

Photo # 4

Blackstone Canal
Rhode Island

Photo #5

Blackstone Canal,
Rhode Island

Photo #6

Blackstone Canal
Rhode Island

Photo #7

Blackstone Canal
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Photo # 8

Blackstone Canal
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Photo #9

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Photo # 10

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Photo #11

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Photo # 12

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Photo #13

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Photo # 14

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Photo #15

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Photo # 16

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Photo #17

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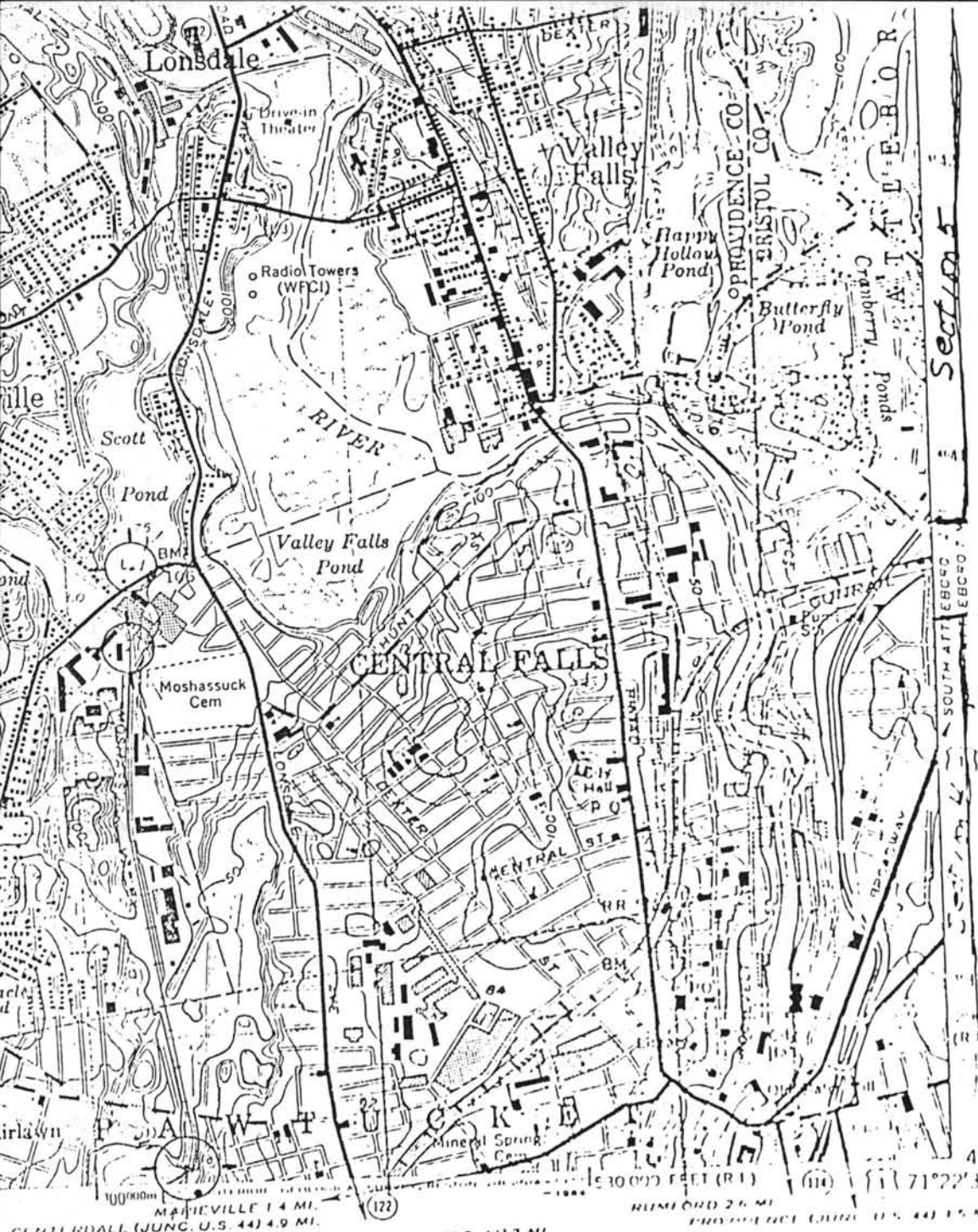
Photo #18

Blackstone Canal
Rhode Island

Photo #19

Blackstone Canal
Rhode Island

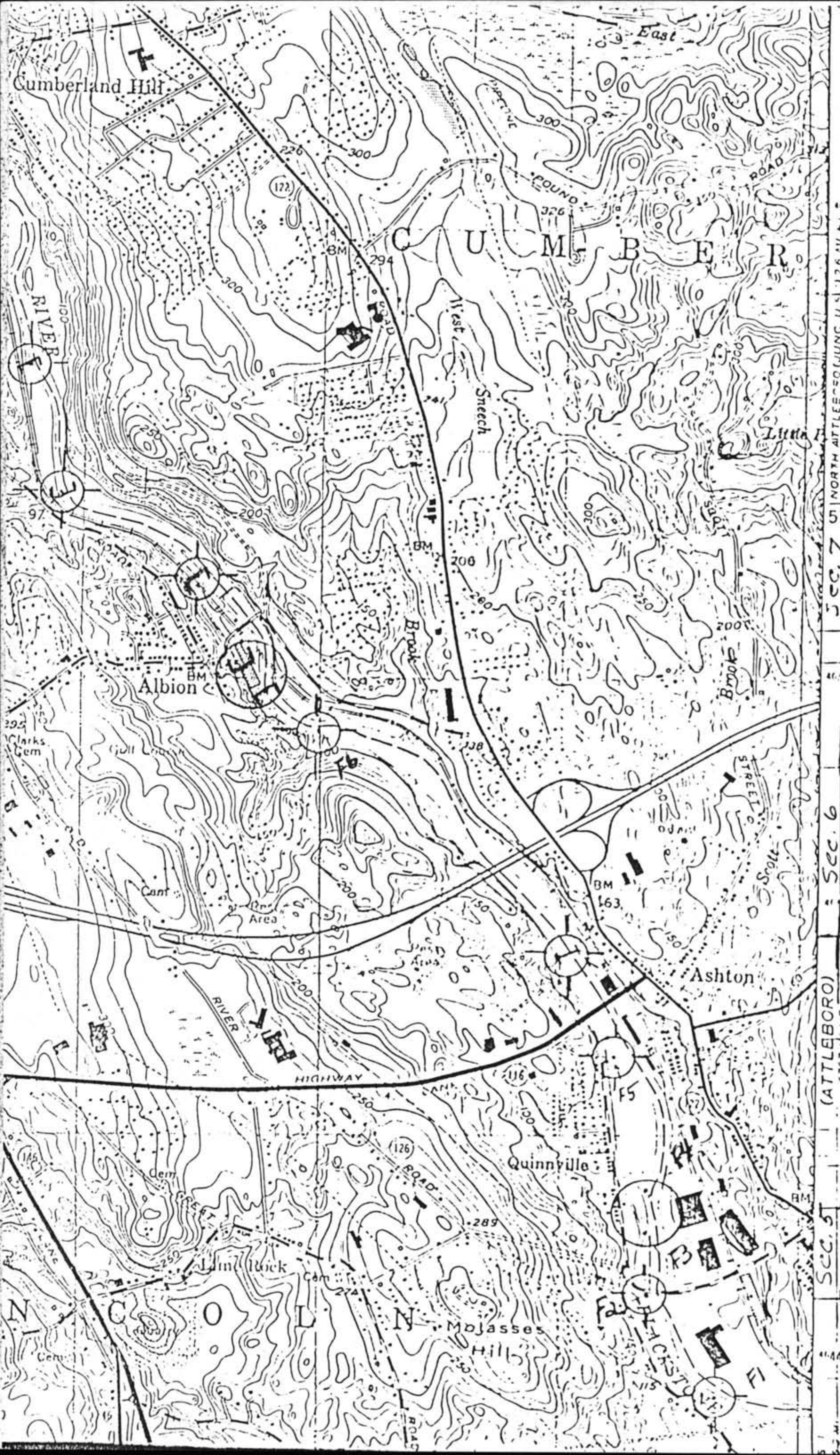


Blackstone Canal
Rhode Island

section 5
B 19-300240 - 4640680

section 4
A 19-300210 - 4640400

B 19-300310 - 4638550



Blackstone Canal
Rhode Island

A 19-295770-4648390

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A 19-296480-4647420

B 19-296680-4647050

A 19-296780-4646940

F6 19-297000-4646770

6B B / 5A A 19-298020-4645800

F5-19-298220-4645350

F4-19-298360-4644760

F3-19-298360-4644560

F2 19-298370-4644280

F1-19-298660-4643820

Blackstone Canal
Rhode Island

6668 II SE
(BLACKSTONE)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

Section 10
A 19-293580 - 4651120
B 19-293620 - 4650980
Sec. 10

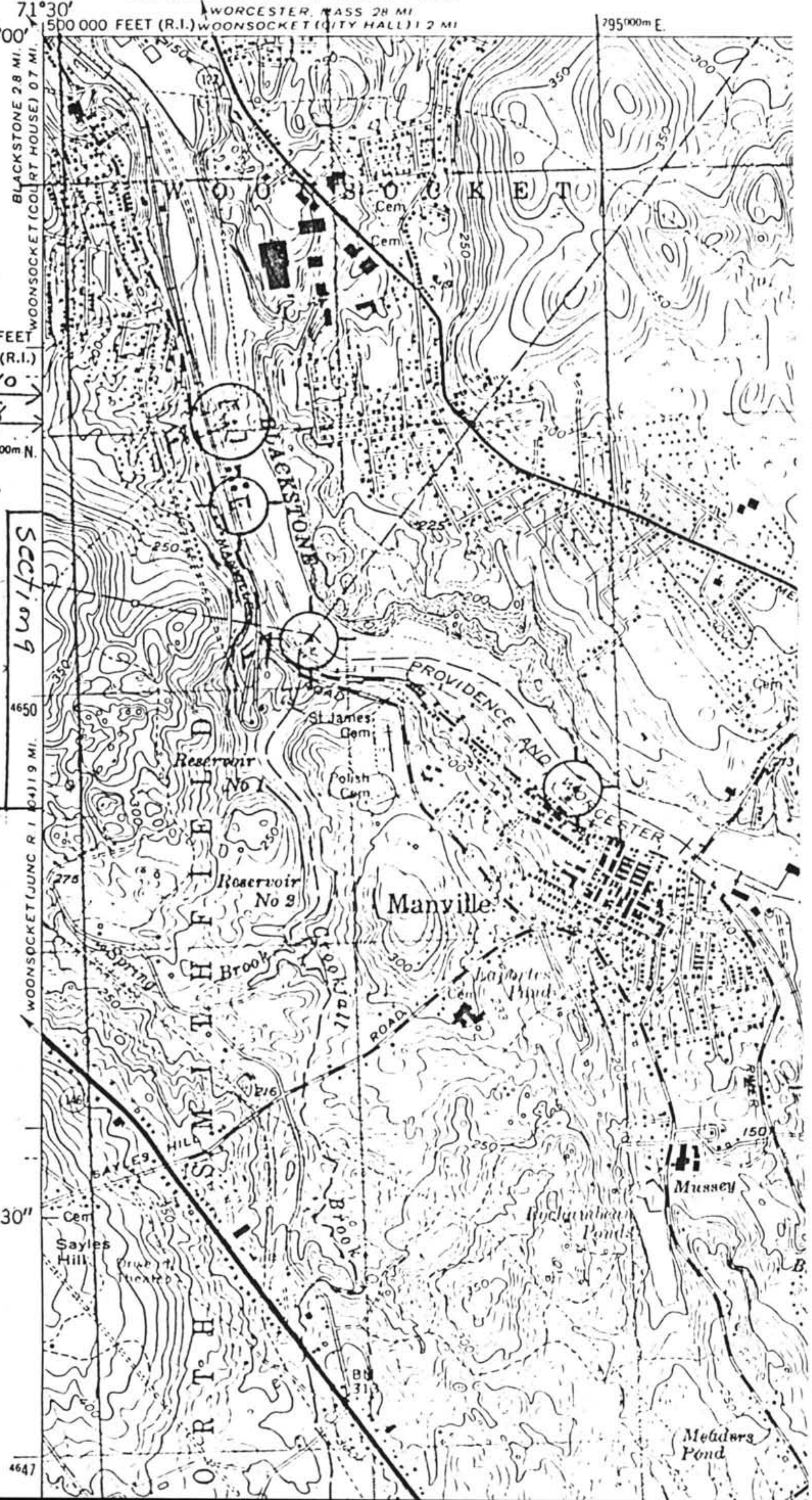
19-293610 - 4651040
Fea. 8

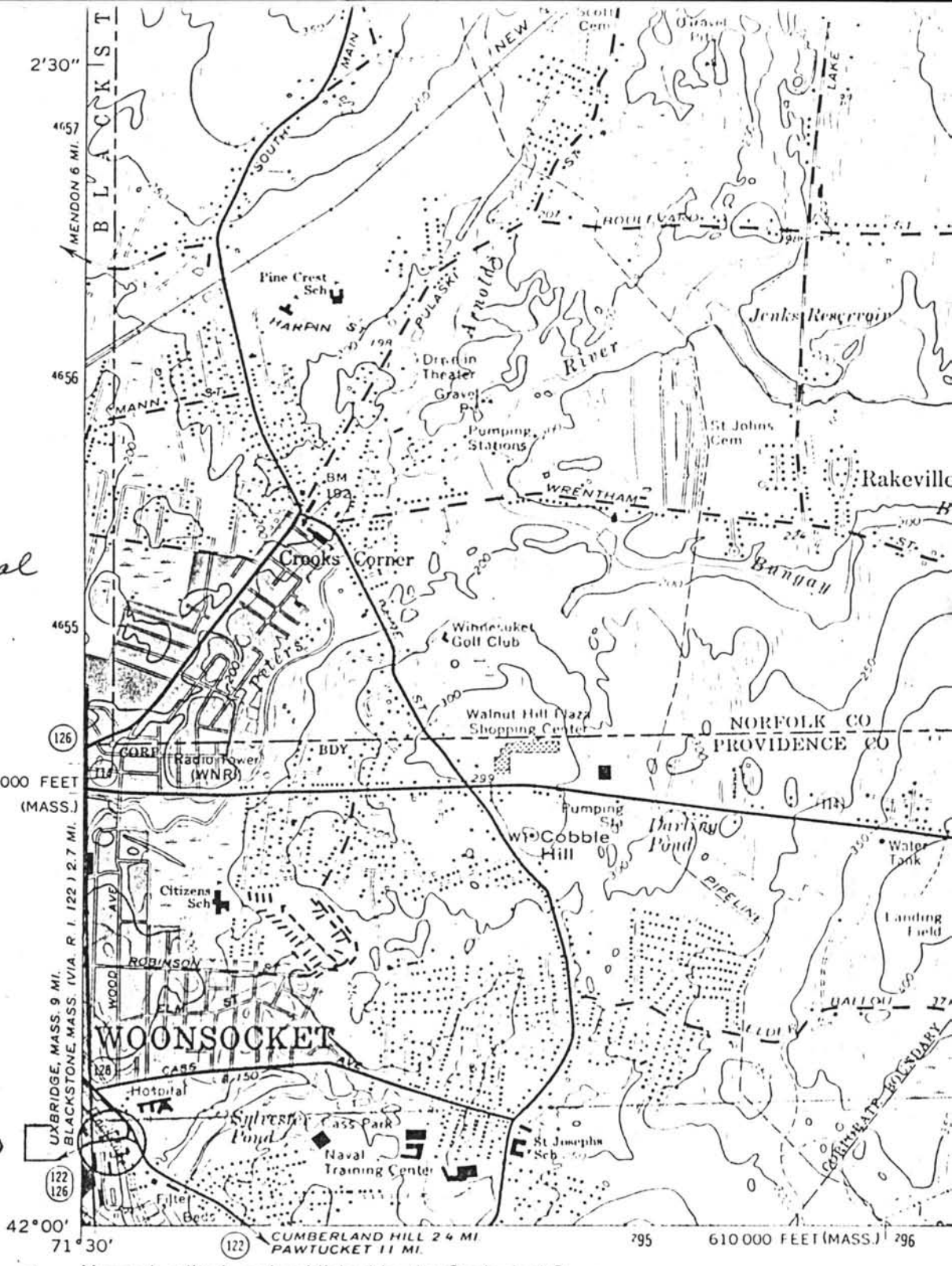
Section 9
A 19-293620 - 4650720

Feature 7
19-293870 - 4650190

Section 9

B 19-294840 - 4649580





Blackstone Canal
Rhode Island

section 11
A 19-293060-4652960
B 19-293100-4652890

Mapped, edited, and published by the Geological Survey

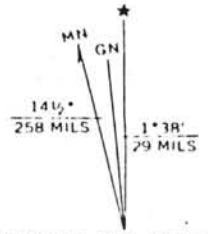
Control by USGS, USC&GS, and Massachusetts Geodetic Survey

Topography by planetable surveys 1938–39. Revised 1964.

Polyconic projection. 1927 North American datum
10,000-foot grids based on Massachusetts coordinate system, mainland zone, and Rhode Island coordinate system
1000-meter Universal Transverse Mercator grid ticks, zone 19, shown in blue

Fine red dashed lines indicate selected fence and field lines where generally visible on aerial photographs. This information is unchecked

Red tint indicates areas in which only landmark buildings are shown



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4	1 2192
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6	1 8288
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8	2 4384
9	2 7432
10	3 0480

To convert feet to meters multiply by 3048

To convert meters to feet multiply by 3 2808

Blackstone Canal
Rhode Island

(R. I.) Sect 111113
A 19-290010 - 4654300
B 19-290420 - 4653760

Section 12
A 19-292500 - 4653250
B 19-292820 - 4653220

INTERIOR—GEOLOGICAL SURVEY RESTON, VIRGINIA—1981

ROAD CLASSIFICATION

Primary highway, all weather, hard surface

Light-duty road, all weather, improved surface

Unimproved road, fair or dry weather

State Route

QUADRANGLE LOCATION

(PAWTUCKET) 6767 IV NW

BLACKSTONE, MASS.—R. I.

N4200—W7130/7.5

1969
PHOTOREVISED 1979
AMS 6668 II SE—SERIES V814

ns shown in purple compiled in cooperation with State of husetts agencies from aerial photographs taken 1977 and other data. This information not field checked. Map edited 1979