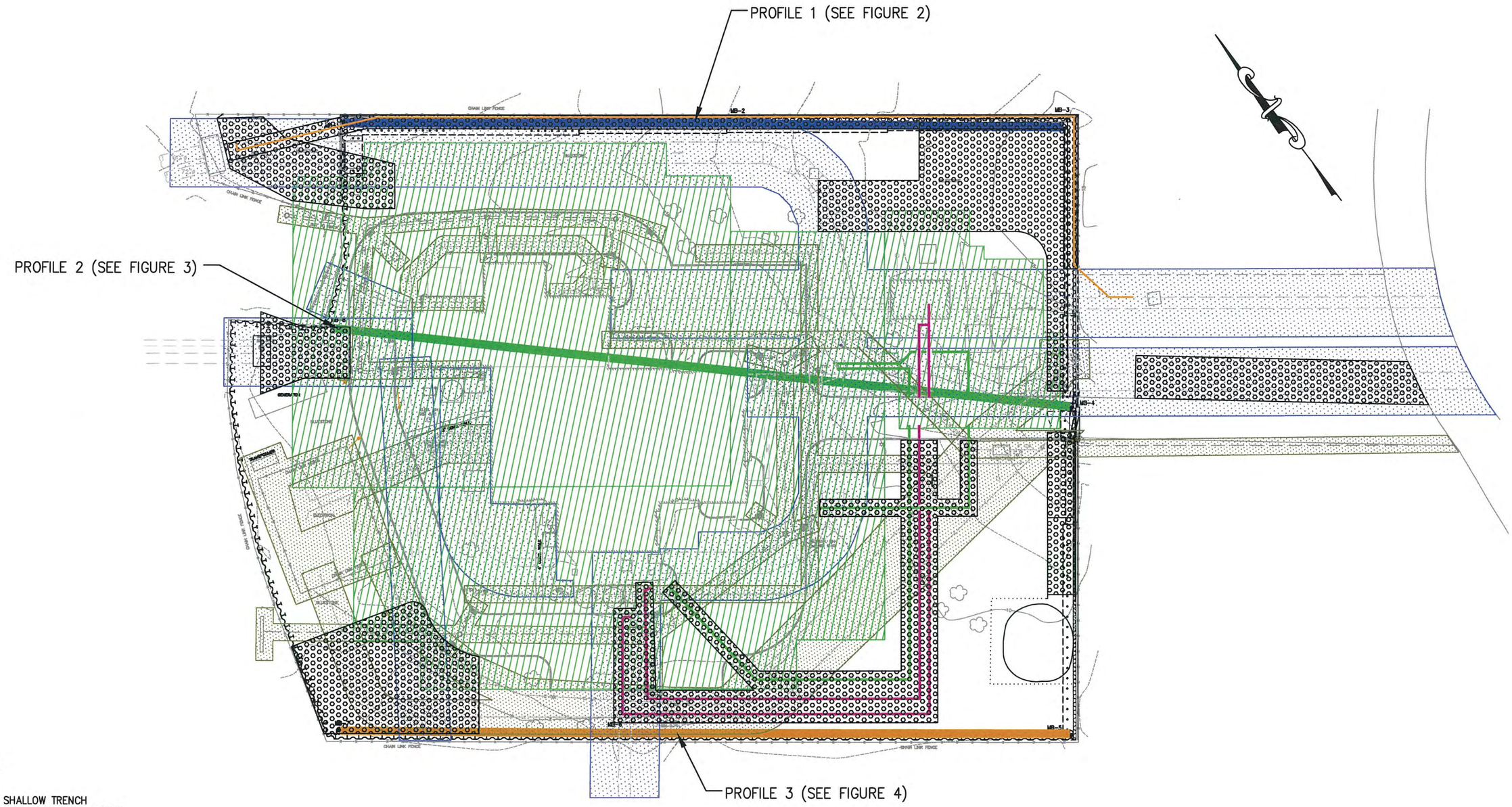


LEGEND

- SHALLOW TRENCH DISTURBANCE TO 6 FEET
- DEEP TRENCH DISTURBANCE OF ALL SOILS TO 20+ FEET DEPTH
- AREA EXCAVATED FOR BUILDINGS DISTURBANCE TO 30+ FEET DEPTH
- SURFACE GRADING AND STONE STABILIZATION AREAS DISTURBANCE TO 2+ FEET DEPTH
- BORINGS LOCATIONS SECTIONS SHOWN IN PROFILE

PLAN

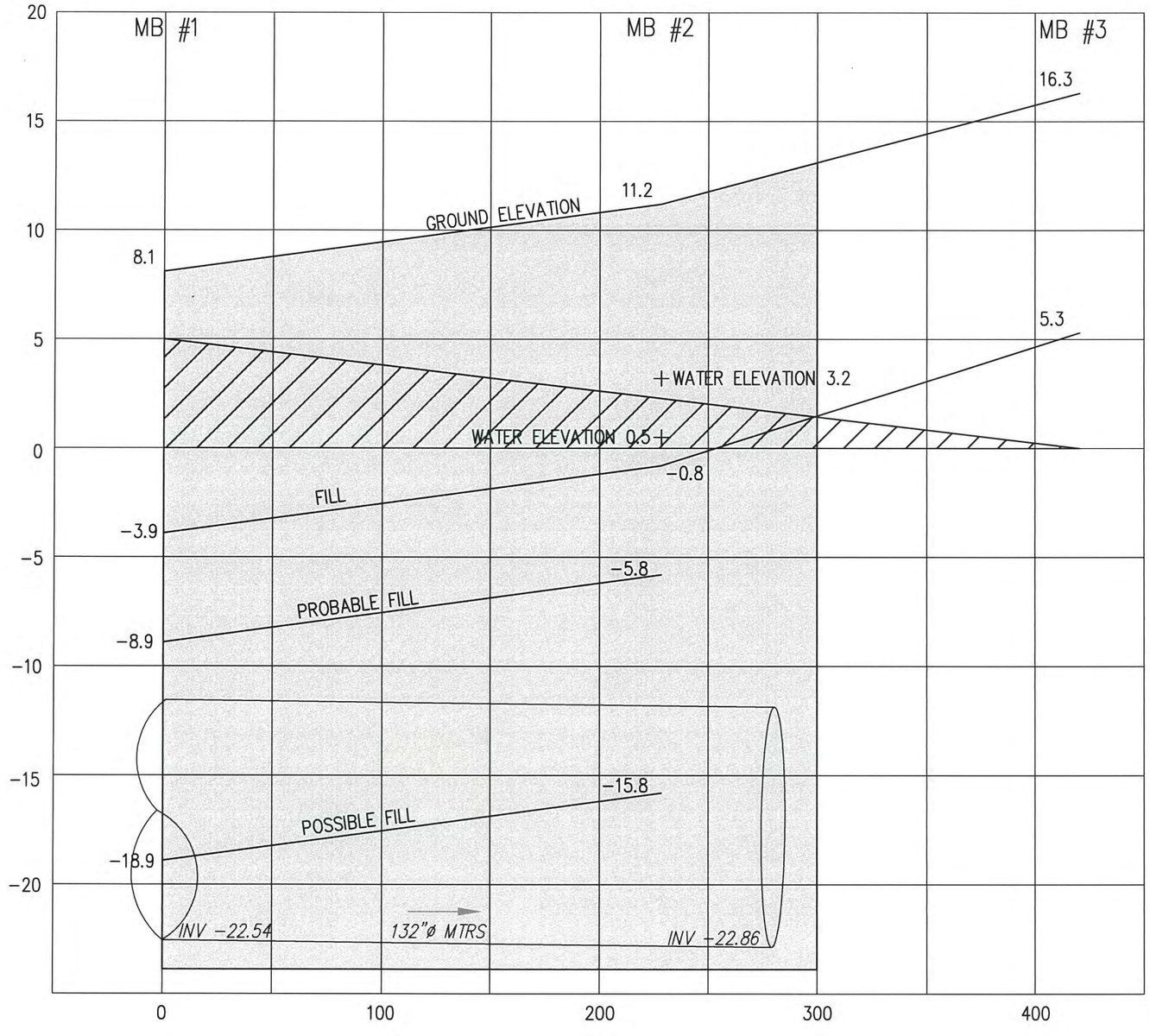
SCALE: 1" = 60'–0"

0 60 120

R3m engineering, inc.

1405 Route 18 Suite 208
Old Bridge, New Jersey 08857
Certificate of Authorization No. 24GA28044800
Tel. (732)-679-7100 Fax. (732)-679-7110

MIDDLESEX COUNTY UTILITIES AUTHORITY
SAYREVILLE PUMP STATION
FIGURE 1
PREVIOUS DISTURBANCE PLAN



NOTES:

1. LIMITS OF FILL, PROBABLE FILL AND POSSIBLE FILL ARE TAKEN FROM SAMPLE DESCRIPTIONS ON SOIL BORING LOGS.

2 GEOTECHNICAL REPORT INDICATES "SEEPAGE OF GROUNDWATER WAS NOTED IN THE BORINGS AND WALLS AT APPROXIMATE ELEVATIONS RANGING FROM +0 TO +5 FEET. GROUNDWATER LEVELS AT THIS SITE ARE SUBJECT TO TIDAL FLUCTUATIONS."

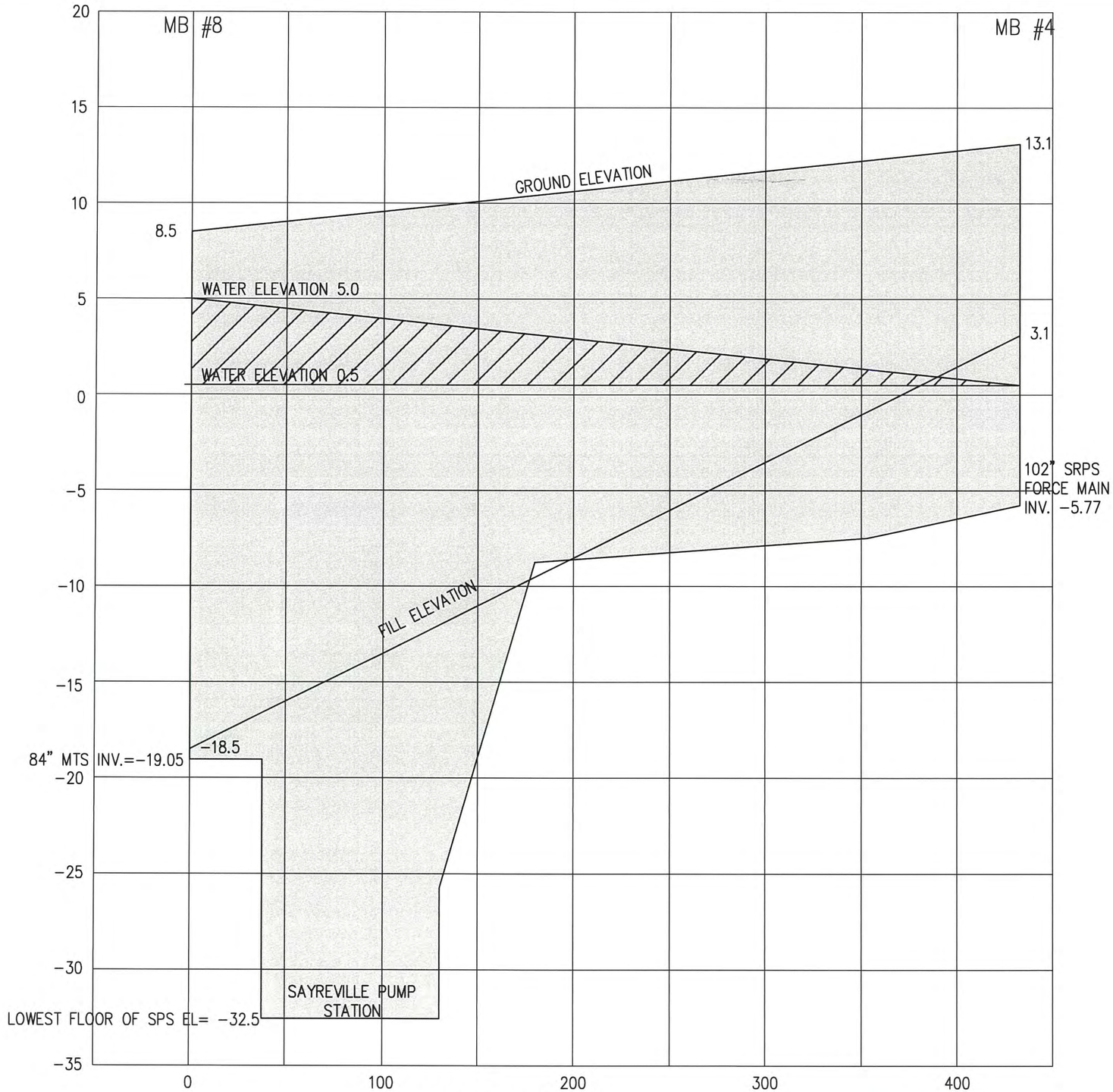
TIDAL RANGE OF GROUNDWATER IS EXPECTED TO RANGE FROM EL 5 TO EL 0 AT WESTERN SIDE OF SITE (ADJACENT TO WASHINGTON CANAL), AND BE RELATIVELY STABLE AT EL 0 AT EASTERN SIDE OF SITE, WHERE TIDAL INFLUENCE WOULD BE LESS.

AREAS PREVIOUSLY DISTURBED TO BE EXCLUDED FROM STAGE 1B INVESTIGATIONS.

PROFILE 1

R3m engineering, inc.
1405 Route 18 Suite 208
Old Bridge, New Jersey 08857
Certificate of Authorization No. 24GA28044800
Tel. (732)-679-7100 Fax. (732)-679-7110

MIDDLESEX COUNTY UTILITIES AUTHORITY
SAYREVILLE PUMP STATION
FIGURE 2
PROFILE 1-NORTH EDGE OF SITE



PROFILE 2

NOTES:

1. LIMITS OF FILL, PROBABLE FILL AND POSSIBLE FILL ARE TAKEN FROM SAMPLE DESCRIPTIONS ON SOIL BORING LOGS.

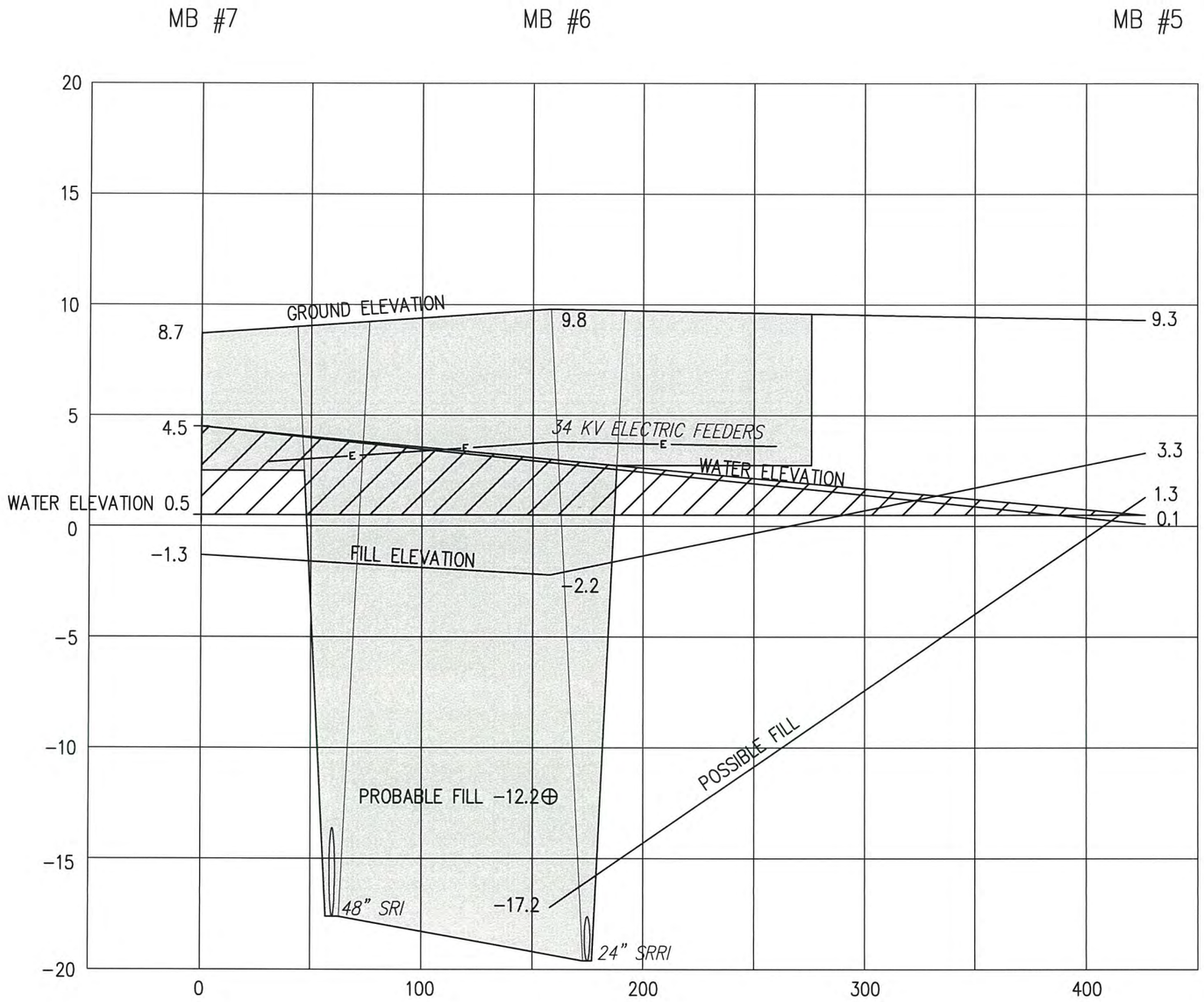
2 GEOTECHNICAL REPORT INDICATES "SEEPAGE OF GROUNDWATER WAS NOTED IN THE BORINGS AND WALLS AT APPROXIMATE ELEVATIONS RANGING FROM +0 TO +5 FEET. GROUNDWATER LEVELS AT THIS SITE ARE SUBJECT TO TIDAL FLUCTUATIONS."

TIDAL RANGE OF GROUNDWATER IS EXPECTED TO RANGE FROM EL 5 TO EL 0 AT WESTERN SIDE OF SITE (ADJACENT TO WASHINGTON CANAL), AND BE RELATIVELY STABLE AT EL 0 AT EASTERN SIDE OF SITE, WHERE TIDAL influence WOULD BE LESS.

AREAS PREVIOUSLY DISTURBED TO BE EXCLUDED FROM STAGE 1B INVESTIGATIONS.

R3m engineering, inc.
1405 Route 18 Suite 208
Old Bridge, New Jersey 08857
Certificate of Authorization No. 24GA28044800
Tel. (732)-679-7100 Fax. (732)-679-7110

MIDDLESEX COUNTY UTILITIES AUTHORITY
SAYREVILLE PUMP STATION
FIGURE 3
PROFILE 2- CENTER OF SITE



NOTES:

1. LIMITS OF FILL, PROBABLE FILL AND POSSIBLE FILL ARE TAKEN FROM SAMPLE DESCRIPTIONS ON SOIL BORING LOGS.

2 GEOTECHNICAL REPORT INDICATES "SEEPAGE OF GROUNDWATER WAS NOTED IN THE BORINGS AND WALLS AT APPROXIMATE ELEVATIONS RANGING FROM +0 TO +5 FEET. GROUNDWATER LEVELS AT THIS SITE ARE SUBJECT TO TIDAL FLUCTUATIONS."

TIDAL RANGE OF GROUNDWATER IS EXPECTED TO RANGE FROM EL 5 TO EL 0 AT WESTERN SIDE OF SITE (ADJACENT TO WASHINGTON CANAL), AND BE RELATIVELY STABLE AT EL 0 AT EASTERN SIDE OF SITE, WHERE TIDAL INFLUENCE WOULD BE LESS.

AREAS PREVIOUSLY DISTURBED TO BE EXCLUDED FROM STAGE 1B INVESTIGATIONS.

PROFILE 3

R3m engineering, inc.
1405 Route 18 Suite 208
Old Bridge, New Jersey 08857
Certificate of Authorization No. 24GA28044800
Tel. (732)-679-7100 Fax. (732)-679-7110

MIDDLESEX COUNTY UTILITIES AUTHORITY
SAYREVILLE PUMP STATION
FIGURE 4
PROFILE 3- SOUTH EDGE OF SITE

APPENDIX F: WASHINGTON CANAL SURVEY FORM

Map of surveyed resource.

BASE SURVEY FORM

Historic Sites #:

Property Name: Washington Canal

Street Address: *Street #:* N/A *(Low)* _____ *(High)* *Apartment #:* _____ *(Low)* _____ *(High)*

Prefix: _____ *Street Name:* N/A *Suffix:* _____ *Type:* N/A

County(s): Middlesex **Zip Code:** _____

Municipality(s): Borough of Sayreville **Block(s):** N/A

Local Place Name(s): Washington **Lot(s):** N/A

Ownership: Public **USGS Quad(s):** _____

Description:

Covering approximately 25 acres and measuring roughly 4,490 feet long by 200-250 feet wide, the Washington Canal is a broad man-made channel cut in a tangent through low tidal meadow and serves to straighten and shorten the South River for navigation between the Borough of South River (formerly Washington) and the Raritan River. Approximately 835 feet of the canal's northwest (left) bank has been cut away and dredged to form a 20-acre lagoon. The remainder of the left bank appears to consist of heavily eroded earthen shores. The southeast (right) bank, which once bordered the Sayre and Fisher Brick Company works, is similarly eroded with wide scatters of broken brick and fill strewn about the shores. Digitally available modern aerial photography shows evidence of timber piling lining sections of both banks in the northern half of the canal. No pilings were observed *in situ* at high tide during this survey.

Registration and Status Dates:

National Historic Landmark: _____ SHPO Opinion: _____

National Register: _____ Local Designation: _____

New Jersey Register: _____ Other Designation: _____

Determination of Eligibility: _____ Other Designation Date: _____

Photograph:

Survey Name: Sayreville Pump Station

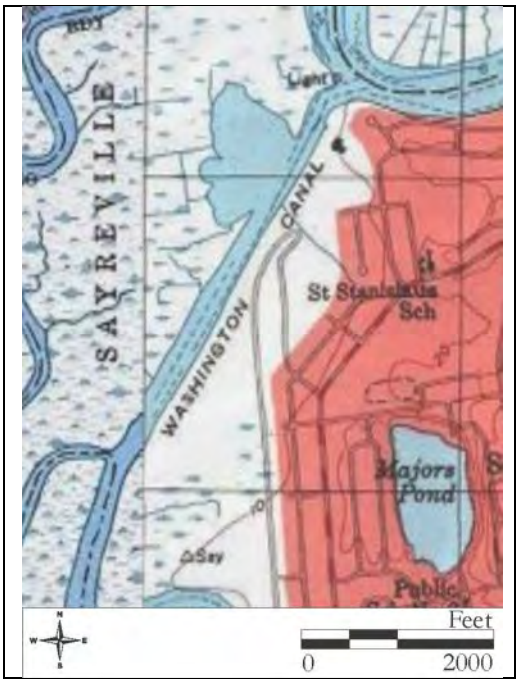
Surveyor: Philip A. Hayden Date: November 2014

Organization: Richard Grubb & Associates, Inc.

BASE SURVEY FORM

Historic Sites #:

Location Map:



Site Map:

See Continuation Sheet

Bibliography/Sources:
See Continuation Sheet

Additional Information:
Previous surveys of the Washington Canal have been undertaken in 1998, 2001, and 2012. All have recommended the resource not eligible for listing in the National Register (Mudge 1998; PanAmerican Consultants, Inc. 2001, 2012).

More Research Needed? ☐ Yes ☒ No

INTENSIVE LEVEL USE ONLY

Attachments Included: 1 Building _____ Landscape _____ Farm
_____ Bridge _____ Industry

Within Historic District? ☐ Yes ☒ No **Historic District Name:** _____

Status: ☐ Key-Contributing ☐ Contributing ☐ Non-Contributing

Associated Archaeological Site/Deposit? ☐ Yes ☒ No
(Known or potential Sites – if yes, please describe briefly)
There are no known archaeological resources, however, the canal is a man-made structure and once adjoined the abandoned and demolished Sayre and Fisher Brickworks. Excavations carried out in conjunction with the present survey found no evidence of a dike system constructed in 1882-1883.

Survey Name: Sayreville Pump Station
Surveyor: Philip A. Hayden Date: November 2014
Organization: Richard Grubb & Associates, Inc.

BUILDING/ELEMENT ATTACHMENT

Historic Sites #:

☐ **BUILDING** ☒ **STRUCTURE** ☐ **OBJECT**

Common Name: Washington Canal
Historic Name: Little Washington Canal
Present Use: Transportation and Movement Activity
Historic Use: Transportation and Movement Activity
Construction Date: 1823-1827 **Source:** Transportation Corporation Records (1823, 1827a, 1827b)
Alteration Date(s): 1872, 1882 **Source:** United States Secretary of War (1886); Collins (1888)
Designer: Unknown **Physical Condition:** Poor
Builder: Attributed to Samuel Gordon **Remaining Historic Fabric:** Low
Style: N/A
Form: N/A **Stories:** N/A
Type: N/A **Bays:** N/A
Roof Finish Materials: N/A
Exterior Finish Materials N/A

Exterior Description:
See Base Survey Form

Interior Description:
N/A

Setting:
The Washington Canal cuts through flat tidal meadow and marshland and is surrounded by saltwater reeds and low scrub growth. The north outlet opens into the Raritan River. The southern mouth connects with the South River. Twentieth-century housing developments adjoin the southeast (right) bank of the canal. The northwest (left) bank remains open meadow.

ELIGIBILITY WORKSHEET

Historic Sites #:

History:
See Continuation Sheet

Significance:
See Continuation Sheet

Eligibility for New Jersey and National Registers: ☐ Yes ☒ No **National Register Criteria:** ☐ A ☐ B ☐ C ☐ D

Level of Significance ☐ Local ☐ State ☐ National

Justification of Eligibility/Ineligibility:
Eligibility for listing in the National Register of Historic Places depends on the two-part test of significance and integrity. While the Washington Canal played a role in improvements to transportation, as well as to community, commercial and industrial development in the vicinity of South River, it no longer retains sufficient integrity to qualify for listing in the National Register. The canal continues to occupy its original location, but extensive dredging and widening over the years, coupled with the removal of approximately 20 acres of adjoining bank and meadow to create an open lagoon has significantly disturbed the resource's location and surrounding setting. The loss of the Sayre and Fisher Brickyard from the banks of the canal, and its subsequent replacement by wild land and modern residential housing, has further degraded the canal's late nineteenth-century industrial setting. The canal's integrity of design, materials and workmanship have been similarly degraded by the dredging and widening activities. From the air, an observer can discern the linear, man-made nature of the cut. From the ground, however, the tremendous added width to the canal, coupled with the addition of the large lagoon excavated out of the northwest bank, produces the appearance of a broad, naturally occurring tidal river. The channel bears no resemblance to an early nineteenth-century shipping canal or to a late nineteenth-century waterway flanked by industrial development. Although sections of the canal were once lined by a series of timber pile and stone dikes built in 1882-1883 as part of an Army Corps of Engineers program of erosion control and channelizing for the entire South River, either the dikes have been removed by subsequent construction activities or have been so extensively degraded that they no longer resemble the original structures or continue to function as intended. Their design, documented in drawings made at the time of their installation, is a common type of construction and well recorded. The canal lacks the feeling of a man-made channel and fails to convey its former associations with improvements in early nineteenth-century transportation. Previous cultural resource surveys of the canal have arrived at similar conclusions (Mudge 1998; PanAmerican Consultants, Inc. 2001, 2012). Because the Washington Canal lacks integrity, the resource is recommended not eligible for listing in the National Register.

For Historic Districts Only:

Property Count: Key Contributing: _____ Contributing: _____ Non Contributing: _____

For Individual Properties Only:

List the completed attachments related to the property's significance:
Building/Element Attachment – Washington Canal

Narrative Boundary Description:

N/A

Survey Name: Sayreville Pump Station
Surveyor: Philip A. Hayden Date: November 2014
Organization: Richard Grubb & Associates, Inc.

CONTINUATION SHEET

Historic Sites #:

History:

At the turn of the nineteenth century, extensive trade between Philadelphia and New York passed by way of landings at Bordentown and South Amboy, where coaches and sloops met to transport passengers and freight. Samuel Gordon Sr. of Bordentown moved to South Amboy about 1806, assumed a half-interest in a hotel there and established a line of sloops and coaches to handle traffic between Bordentown and New York (Clayton 1882: 824-825). The other half of the business came into the hands of Daniel Wilmurt in 1807 and so began a fierce competition and rivalry between the two over the management of their business. Ultimately, Gordon relinquished his share of the hotel and docks but kept the sloops and coaches for himself and promptly opened a competing hotel nearby. Nineteenth century historian W. Woodford Clayton described the rivalry thus:

> Each exerted himself to the utmost to gain favor with the public, and to shorten the time consumed in a passage between New York and Philadelphia. It is related that one of them boastingly prophesied that he would cut the time down to a day and a half between the two cities (Clayton 1882: 825).

Gordon proved a tenacious businessman. Together with William McKnight of Bordentown, he succeeded in incorporating the Bordentown and South Amboy Turnpike in 1816 to build an improved gravel road to speed his own fleet of overland stages and bring traffic straight to his doorstep (New Jersey Legislature 1816). McKnight would later serve as one of the first directors of the Camden & Amboy Railroad, which followed approximately the same route as the turnpike (Watkins 1891: 21).

Gordon also recognized the possibilities of running an alternate ferry service out of the nearby village of Washington on the South River. Travel by water was easier than by land, and the South River was passable as far upstream as Old Bridge from its confluence with the Raritan River, but the course was torturous and larger vessels such as steamships could travel only as far as the village of Washington (present day South River). The town was small; in 1800, it reportedly contained just six dwellings, a landing, and little else (Clayton 1882: 777). During the War of 1812, however, quantities of goods were successfully transported overland by way of Washington and thence by boat to New York. The town prospered and proved itself a viable alternate landing place for the overland trade between Philadelphia and New York. By 1820, the number of homes had increased to 10. Vincent Barkelew, considered the community's principal business man in the 1820s, operated a store near the dock. His brother Abraham Barkelew ran the Washington Hotel. Samuel Gordon was their brother-in-law (Halstead 1899: 94). Other residents of Washington included Henry Obert the tavern keeper, and John Combs and Thomas McDowell, merchants and ship owners (Clayton 1882: 759, 777-778). Frederick A. Kleine (aka Kline) served as the town postmaster.

At the end of 1822, Gordon joined with his father-in-law Runyan Barkelow, his brother-in-law Vincent Barkelow, Samuel Combs (the father of Washington shipowner John Combs, misidentified as "Holmes" in the legislation), and postmaster Frederick Kleine to have the New Jersey Legislature approve an act of incorporation to create the Washington Canal Company (New Jersey Legislature 1823: 80-84). The legislation, passed on November 22, 1822, justified the need for the canal as follows:

> Whereas that part of the river called South River, which is below the village of Washington, in the county of Middlesex, in this state, and which empties into the river Rariton [sic], is very circuitous, and the passage of sloops and other vessels going from the said village of Washington down the Rariton [sic] to New-York and other places, would be facilitated by cutting and forming a canal, leading from South River, near said village, to the Rariton [sic] through and over the intervening lands; and whereas the intervening lands are owned in fee simple by Robert Montgomery, Christopher VanDeventer, and Henry Obert, who have consented and agreed, in writing, that such canal should be cut and formed, and that buildings and other works necessary and proper for the formation and use of such canal, should be made and erected upon their said lands; and that the public shall have the right of using the same when completed… (New Jersey Legislature 1823: 80).

History, continued:

The legislation appointed a commission of five men with authority to receive subscriptions for cutting and building the canal in return for stock in the new company and granted the company an exclusive twenty-year right to collect tolls on vessels using the same at rates fixed by the legislation. At the expiration of the twenty-year privilege, the legislation allowed the State of New Jersey to compensate the commissioners for the costs expended and assume ownership of the channel. The charter offered scant details on the design of the canal, except that the company should "cause the same to be made of such size and dimensions as to be navigable by sloops, schooners, and steamboats" (New Jersey Legislature 1823: 82). The original dimensions of the canal prism are not known, however, in 1871, J. D. Kurtz, the Lieutenant Colonel of Engineers at the Army Corps reported that the cut was originally made about 80 feet wide with a proposed depth of 6 feet below mean low water (United States Secretary of War 1871: 698). Deeds that might have offered clues to the dimensions of the canal's right-of-way are not recorded in the Middlesex County Clerk's Office.

The canal promised to cut approximately three miles from the length of the trip down the natural channel, saving considerable time (United States Secretary of War 1871: 698). As such, its purpose was akin to a river straightening project more so than a canal in the traditional sense of the word. The New Jersey Legislature chartered four similar projects to improve navigation in various creeks and waterways between 1800 and 1816 (Hood 1871: 47-49) (Table 1). The governor at the time of the chartering of the Washington Canal, Isaac Halstead Williamson, proved a strong supporter of canal projects. He watched with interest as neighboring New York worked toward completing the Erie Canal. During his term of office between 1817 and 1829, Williamson signed legislation for seven more canal projects, including the Washington Canal (Hood 1871: 47-49) (Table 1). He actively encouraged the construction of a grand canal between the Delaware and Raritan Rivers, especially after the failure of the initial private attempt in 1820 (Stellhorn and Birkner 1982: 96-97). At the legislature's request, Williamson commissioned a study of commerce between Philadelphia and New York, which served to persuade the legislature to act, and it ultimately chartered the Delaware and Raritan Canal in 1830 (Stellhorn and Birkner 1982: 96-97).

Table 1: Canal Corporations Chartered Between 1800 and 1830.

Chartered Company	Date
Canal to Shorten the Navigation of Salem Creek	1800
Canal in the County of Cumberland	1811
Clay Pit Creek & Canal Company	1816
Canal Through Manasquan Beach	1816
New Jersey Delaware & Raritan Canal Company	1820
Washington Canal Company	1822
Orange & Sussex Canal Company	1823
Delaware & Raritan Canal Company	1824
Morris Canal & Banking Company	1824
Salem Creek Canal Company	1825
Canal from Newark Bay to New York Bay	1828

The first commissioners for the Washington Canal included Runyan Barkelow, Frederick A. Kleine, Vincent Barkelow, Samuel Combs (misidentified as "Holmes") and Samuel Gordon. They were later joined by local merchant/ship owner John McDowell. An advertisement in the *New Brunswick Fredonian* on December 5, 1822 announced the incorporation of the company and called on interested investors to visit Robert Carson's inn at Washington to subscribe to the stock. By means of the canal, promised the ad, "the passage of vessels going from Washington, down the River Rariton [sic], will be greatly shortened" and it professed that "a slight knowledge of the subject, will satisfy any person of the utility to be delivered from such a canal, and of the profits which must

History, continued:

accrue to the stockholders" (*New Brunswick Fredonian* 1822: 3). The five commissioners plus John McDowell delivered their bond of $2,000 to Governor Williamson on January 18, 1923, to secure their right to commence construction (Transportation Corporation Records 1823). The stockholders met on February 1, 1823 to organize the company, and work began shortly after (*New Brunswick Fredonian* 1823: 3). Fredrick A. Kleine was elected President and Samuel Combs the Treasurer. Samuel Gordon relocated from South Amboy to Washington in 1823 and is generally credited with overseeing construction of the cut (Clayton 1882: 777). His son, Samuel Gordon, Jr., also moved to Washington and built what was considered the first brick house in town in 1825 (Clayton 1882: 777).

Four and one-half years after securing the bond, on August 6, 1827, Frederick Kleine wrote Governor Isaac Williamson at his home in Elizabethtown to report that the canal was finished and requested that he appoint a commission to inspect the works as required by the chartering legislation. In a postscript, the letter requested that the Governor direct the commissioners to Mr. William McKnight of Bordentown to arrange for their inspection (Transportation Corporation Records 1827a). McKnight, it will be recalled, was one of the forces behind the Bordentown and South Amboy Turnpike and clearly in a position to arrange transport to the canal. Two days later, on August 8, 1827, Governor Williamson appointed Caleb Newbold, Allison Ely, and Joshua S. Earl to review the canal and report. The commissioners wrote back on August 31, 1827, declaring that "after viewing & Examining the same [the commissioners] are of the opinion that the said canal is Executed and Completed according to the true intent and meaning of the Act" (Transportation Corporation Records 1827b). The following year, Eddy's map of the Country 30 miles around New York depicted the finished canal for the first time (Figures 1 and 2) (Eddy 1828).

It is hard to divine the motives behind the building of the canal, although clearly improving transportation between Philadelphia and New York played a significant part. An obvious side benefit was increased commerce and property values for the village of Washington, and this promised to benefit the townsfolk responsible for incorporating the canal. That the Washington Canal was planned with travel between Philadelphia and New York in mind became abundantly clear when a new stage and steamboat line began offering service via Bordentown and Washington in 1824, even before the work was completed (Lane 1939: 198; Clayton 1882: 777). Known as the "Citizen's Line," the system of stages was operated by Joseph Lyon & Sons of New York, which became known as Lyon, Ward & Company in the 1820s. The Columbian Steamboat Company, owned by a group of Philadelphia and New York capitalists, operated the steamboat *Pennsylvania* between Philadelphia and Bordentown and the steamboat *Aetna* from Washington to New York (Lane 1939: 198). As work on the Washington Canal progressed, The "Citizen's Line" added the steamboats *Congress* and *New York* to the Washington-to-New York run in 1826 and 1828, respectively (Lane 1939: 199). To what extent Gordon or his neighbors participated in the running of the "Citizen's Line" is unclear. The route proved so successful that its main competitor the "Union Line," controlled by the Stevens family of Hoboken, acquired two-thirds of the stock of the "Citizen's Line" in 1829, ending the competition between them (Lane 1939: 196, 199). Thus, the Washington Canal lost what must have been one of its principal patrons almost as soon as the canal opened.

Efforts to revive steamboat traffic through the canal proved difficult, especially after the opening of the Camden & Amboy Railroad between Bordentown and South Amboy. Despite the decline in stagecoach trade, the village grew modestly. By 1834, it contained two taverns, three stores, and between 30 and 40 dwellings (Clayton 1882: 777). Renewed interest in steamboat travel emerged again in 1838 with the chartering of the Washington Steamboat and Transportation Company (Clayton 1882: 777). By the 1850s, its steamboat *John Mason* traveled daily out of Washington with loads of produce (Lane 1939: 214). Peaches, in particular, were shipped regularly from Washington beginning in the 1820s, although the peach blight brought an abrupt end to movements of the fruit through Washington by 1850 (Clayton 1882: 777). A report in the *Trenton State Gazette* in 1849 noted that "…in consequence of the failure of the peach crop, there is only one steamer running from South River to New York. Last season the same section of country supplied freight for five" (*Trenton State Gazette* 1849: 1).

CONTINUATION SHEET

Historic Sites #:

History, continued:

The fate of the canal as a private enterprise is not clear. The Washington Canal Company appears nowhere in the Middlesex County deeds, and there is no record of a transfer of control to the State of New Jersey or to the United States of America. Ultimately the federal government assumed responsibility for maintaining navigation of the entire South River in 1870, including the Washington Canal. The first plans of improvement, authorized by congressional appropriation in 1870, called for dredging the channel to a uniform depth of six feet and excavating two shoals that had developed at each end of the canal. It also called for cutting away the lower corner of the canal outlet to improve the angle of entry as well as the natural flow of water to prevent shoals from re-forming. The project required removing some 40,000 cubic yards of material at an estimated cost of $13,653.50 (United State Secretary of War 1871: 698). Justification of the expenditure came in the form of statistics on agricultural and manufactured goods from the four townships expected to benefit from the improvement. According to the statistics, the district in 1870 generated $560,566 in agricultural products, approximately 12,000 tons of fire and molding sand, cord wood, and roughly 72 million bricks. Shipments of snuff, tobacco, cigars, whiskey, rubber, spices, flour, seed, etc. amounted to approximately $1.25 million in value. Some forty local vessels of light draught and an unknown number of similar vessels out of Boston, New York, and Philadelphia moved to and from the South River at high water only. The improvement in the channel was expected to greatly increase the trade in sand, clay, and brick out of the river (United State Secretary of War 1871: 700). Congressional appropriations in 1871 and 1873 were used to complete the dredging of the canal to the proposed depth of six feet.

The work did not last long. The first attempt to dredge in 1872 failed when the banks of the cut fell in and the entire work had to be re-dredged in 1872-1873 (United States Secretary of War 1886: 778). Nothing more was done until the end of the decade when the channel had silted in again to a depth of just three feet below mean low water in some places. A second River and Harbor Act passed in 1879 called for a new survey of the South River, but this time from the Raritan River to the head of navigation at Old Bridge. The plan, prepared by the Chief of Engineers in 1880, proposed expanding the channel of the Washington Canal to a width of 100 feet and a depth of 8 feet at mean low water. From the head of the canal to Bissett's brickyard some 3.5 miles upstream, the plan called for dredging to a depth of 6 feet, and from there to the head of navigation at Old Bridge to a dredged depth of 4 feet. Throughout, the plan called for diking and straightening of both the canal and the rest of the South River at strategic points to improve navigation, prevent erosion, and control the natural flow of water (United State Secretary of War 1882: 661; 1906: 3). The 1880 improvements also contemplated closing the natural or "old" river channel downstream of Pettit & Company's brick yard and changing the course of the canal at its outlet with the Raritan River from a right angle to a sweeping curve. The purpose was to improve the passage of vessels. At first, the plan called for excavating an entirely new ditch to the north of the present channel. This met with strong resistance from the affected property owners and was modified to create a much tighter curve. This was made possible by an agreement with the Sayre and Fisher brick company, which agreed to cut off the corner of their existing dock at the mouth of the canal in exchange for the construction of a new bulkhead and dock. Ultimately this plan was adopted in 1882 (United State Secretary of War 1882: 660). Significantly, the Washington Canal was no longer viewed as a discrete piece of infrastructure capable of solving the area's navigational problems, but rather as a part of a much larger and more comprehensive dredging and straightening project of the entire South River.

By the time of its adoption, the amount of commerce expected to benefit from the project had grown to 152,850 tons with an estimated value of $1,239,925. The principal articles of export consisted of bricks, molding sand, cord wood, fruits, and vegetables. The river and its tributaries included 8 brick yards, 11 flour mills, 1 licorice mill, 4 snuff and tobacco manufactories, 2 shirt factories, 6 saw mills, and 2 ship yards (United States Secretary of War 1882: 661). The vessels plying the river at the time included 1 side-wheel steamboat, 1 propeller vessel, 48 resident sailing vessels, 60 transient sailing vessels, and 50 transient barges. Their draughts ranged from 5 to 9 feet (United States Secretary of War 1882: 663).

CONTINUATION SHEET

Historic Sites #:

History, continued:

Dredging and dike construction commenced at the end of 1882 and continued into 1883 (Figures 3 & 4). The contractor Henry DuBois Sons completed the work under the direction of Bvt. Maj. Gen. John Newton (Collins 1888). Six timber pile and stone dikes were constructed, five of which were actually located in the Washington Canal channel. The first three, Dikes A, B, C, measured 9 feet in width and were located at the outlet of the canal where it met the Raritan River. Dikes D & E measured only 7 feet across and flanked the sides of the most susceptible northern parts of the channel for 1,515 feet and 1,333 feet, respectively. Dike F, also a 9-foot-wide structure, was built upstream of the mouth of the canal in the right bank of the South River. The designs for the dikes followed a conventional model consisting of two parallel rows of timber piles spaced either 7 or 9 feet apart and sunk deep into the mud. These were tied together at intervals by lateral timber crossties. The hollows between each row of pilings were designed to be filled with rubble stone (See Figure 4) (Collins 1888). DuBois had only to fill dikes D, E & F with stone. The others, located at the outlet of the canal, were filled with stone blasted out of the Raritan River by the Army Corps itself during a separate channel clearing project. When completed, the distance across the channel between dikes measured 150 feet (United States Army Corps of Engineers 1886: 779).

After completion of the initial dike system, natural scouring rapidly undermined Dike B on the left bank near the canal's outlet. The daily ebb and flow also began to cut away the upstream portions of the canal where the banks remained unprotected. The report for 1886 also noted that the commerce on the river had not changed appreciably since 1872. The value of the overall freight declined while the number of manufactured bricks dropped from 72 million reported in 1871 to just 50 million in 1884 (United States Army Corps of Engineers 1886: 780). Subsequent reports on the project continued to support the 1880 plan of improvements but no longer justified it in terms of dollars or quantities of materials. Instead, the reports resorted to tonnages. Whereas the total quantity of materials in 1881 totaled 152,850 tons, by 1897 the amount equaled 308,563 tons. In 1898 it dipped to 274,381 tons but rebounded to 343,202 tons in 1899 (United States Secretary of War 1900: 181).

In 1892, the original plan of 1880 was modified to eliminate various proposed dikes in the river in place of a new cut-off above Washington and additional dredging. It also called for dropping plans to close the old South River channel as it flowed into the Raritan (United States Secretary of War: 1906: 3). Work included general upkeep and some additional dredging to maintain the channels or improve new sections. Within the main canal, additional dredging took place in 1887 and 1895. By 1900, however, full implementation of the modified plan of 1880 remained unfinished. In 1906, the Army Corps began another major dredging of the old South River channel from the head of the canal to the Pettit & Company brick yard and neighboring industries (United States Secretary of War: 1906: 3). In 1912, the government again prepared estimates for completing the final part of the original 1880 project by dredging the South River from Bissett's brickyard to Old Bridge. At the time, the estimated commerce on the whole river equaled about 100,000 tons with an approximate value of over $400,000 (United States Secretary of War 1912: 8). This was a far cry from the high value of $1.25 million reported in 1870. Further progress slowed after the initial appropriation, then stalled in the wake of World War I. At the same time, commerce decreased dramatically as a result of the war conditions, while the Chief of Engineers reported considerable shoaling taking place from lack of maintenance (United States Secretary of War 1919: 2293-2294).

The channel changed little during the first half of the twentieth century. Early aerial photography suggests that the original dikes from 1882 fell gradually into disrepair, with the exception of Dikes A and E along the south (right) bank adjacent to the Sayre and Fisher brickyard. These dikes were partly incorporated into the company's bulkhead and dock system as early as 1896, which probably contributed to their longevity (Kelsey 1896). The 1931 aerial photograph of the brickworks shows Dike E lined with buildings or stacks of brick (NETR 1931, 1940). By 1947, however, the area was vacant (NETR 1947).

CONTINUATION SHEET

Historic Sites #:

History, continued:

In 1957, a major dredging project within the northwest (left) bank of the canal created a large lagoon covering approximately 20 acres. The remnants of Dikes B and D were substantially demolished to make room for this undertaking (NTER 1957). A comparison of aerial photographs between 1957 and 1963 shows substantial earthmoving and reconstruction of both the left and right banks of the canal channel especially at its outlet in the vicinity of the present Sayreville Pump Station. Dike A, if it survived until then, appears to have been completely destroyed as a result of the dredging project (NETR 1957, 1963). During the expansion of the Sayreville Pumping Station in 1979, the vicinity of Dike A appears to have been altered again by additional filling and contouring (NETR 1979). No evidence of the structure appears today above-ground.

Today, modern aerial photography depicts rows of pilings in the locations of some of the other original dikes. These appear to represent the remnants of Dikes C, D and E (Pictometry International Corp. 2012). Only a single line is visible, suggesting that the original double line of pilings and stone fill has been almost completely destroyed.

Significance:

The Washington Canal was built with the idea of improving transportation between the cities of Philadelphia and New York (Criterion A). The corridor between Bordentown and the vicinity of South Amboy was especially active, but competition meant that those using the route demanded constant improvement through better roadways and faster vessels. A channel straightening project by all accounts, the Washington Canal promised to cut three miles off the course up the South River from the Raritan River to the village of Washington and improve the speed of travel. The canal also promised to benefit the inhabitants of Washington by attracting commerce to the otherwise modest community. After the canal's completion in 1827, Washington became the base for a successful coach and ferry service for the Philadelphia-to-New York trade, but competition from similar operations, coupled with the opening of the Camden & Amboy Railroad, led to a quick decline in inter-city travel through Washington. The town reverted to a simple landing place, mainly for the shipment of fruits and agricultural goods and eventually as a center for the production and export of sand, clay, and clay products, particularly brick. The canal quickly evolved into a default shortcut for associated river traffic, though speed was no longer critical. The gradual development of the community, its commerce, and industry was arguably the result of the river itself and its natural resources, regardless of the presence of the canal. Indeed, by 1870 the canal had become nearly impassible from shoaling. This condition led to the addition of the South River (including the Washington Canal) to the list of responsibilities of the United States Army Corps of Engineers. The takeover by the Army Corps served to confirm the canal's role as one of the hundreds of other channel straightening and dredging projects undertaken across the United States.

Under Army Corps control, the entire river and canal were altered extensively through widening and dike construction (Criterion C). These dikes, a common design, were erected not only in the old canal channel but elsewhere in the South River and were justified by anticipated growth in the commerce of the River. That commerce, however, remained relatively flat, even declining from $1.25 million to $400,000 between 1870 and 1912. Today, little remains of the brick industry that once thrived along the South River. The Army Corps dikes are almost totally destroyed, and subsequent dredging and construction activities along the canal's banks have so altered the character and appearance of the canal that it resembles more a natural channel than a man-made structure.

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Historic Sites #:

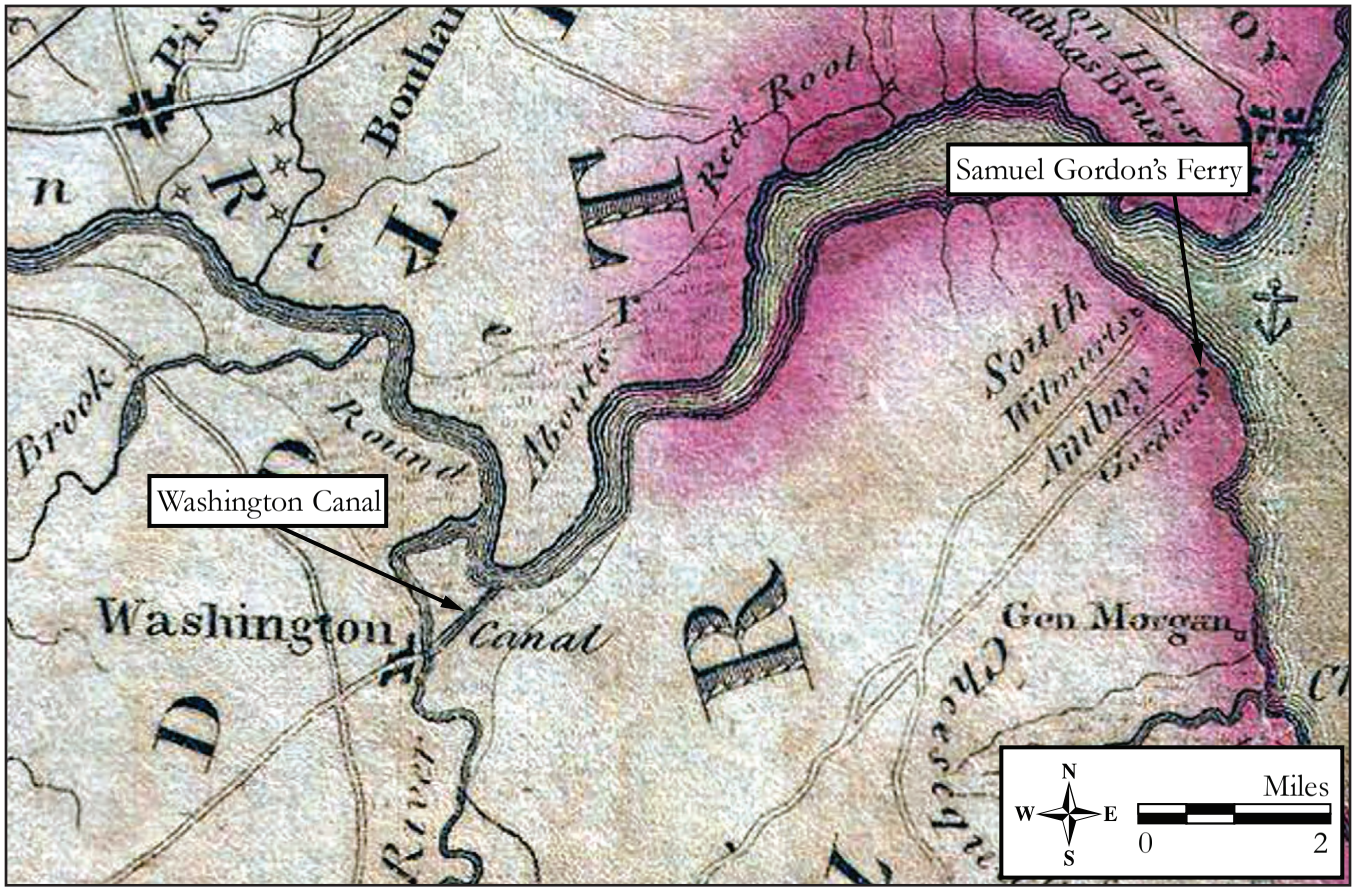

Figure 1: 1828 I. H. Eddy, Map of the Country 30 Miles Around the City of New York.

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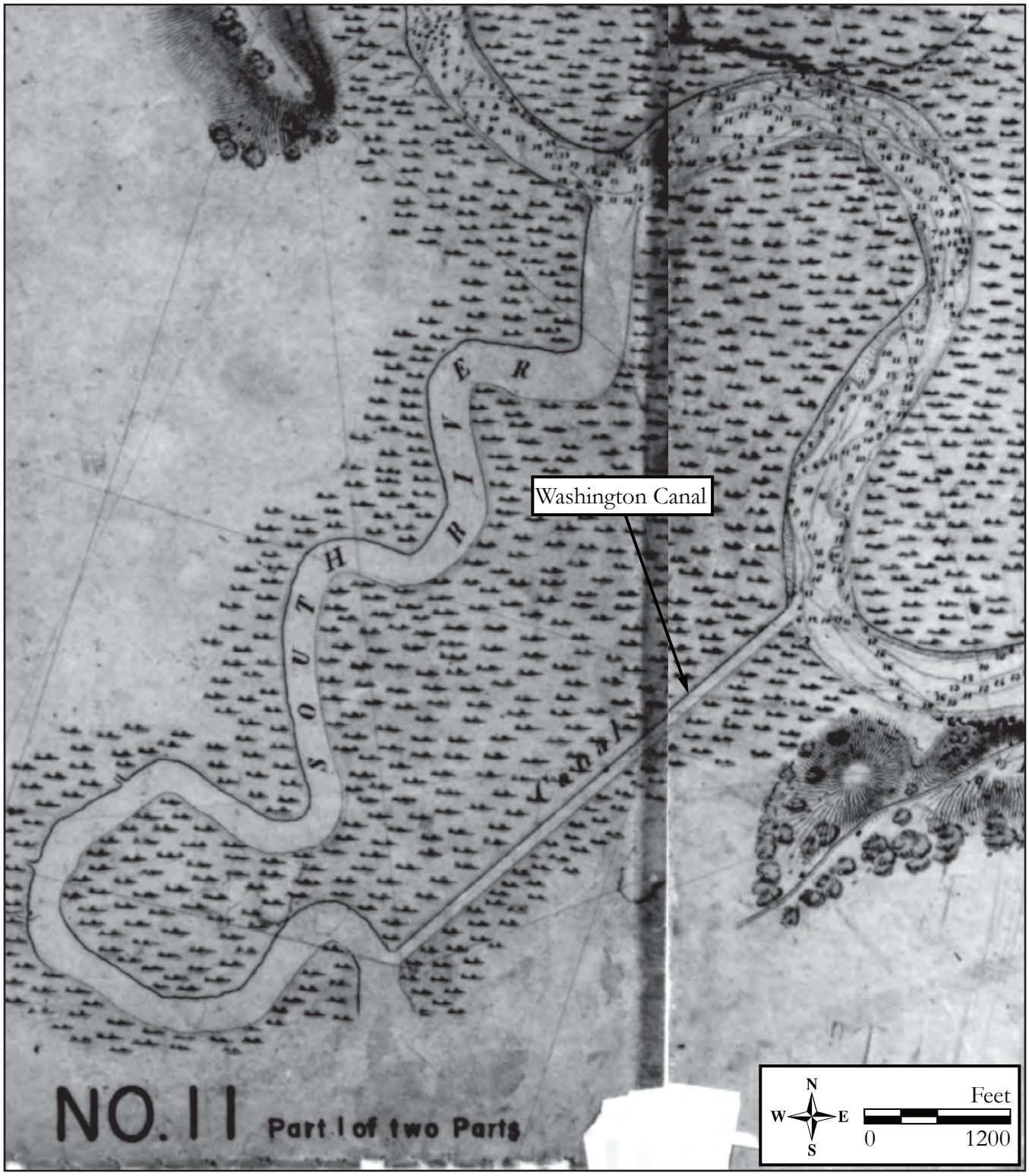

Figure 2: 1836 United States Coastal Survey, Perth Amboy to New Brunswick.

Survey Name: Sayreville Pump Station
Surveyor: Philip A. Hayden
Organization: Richard Grubb & Associates, Inc.
Date: November 2014

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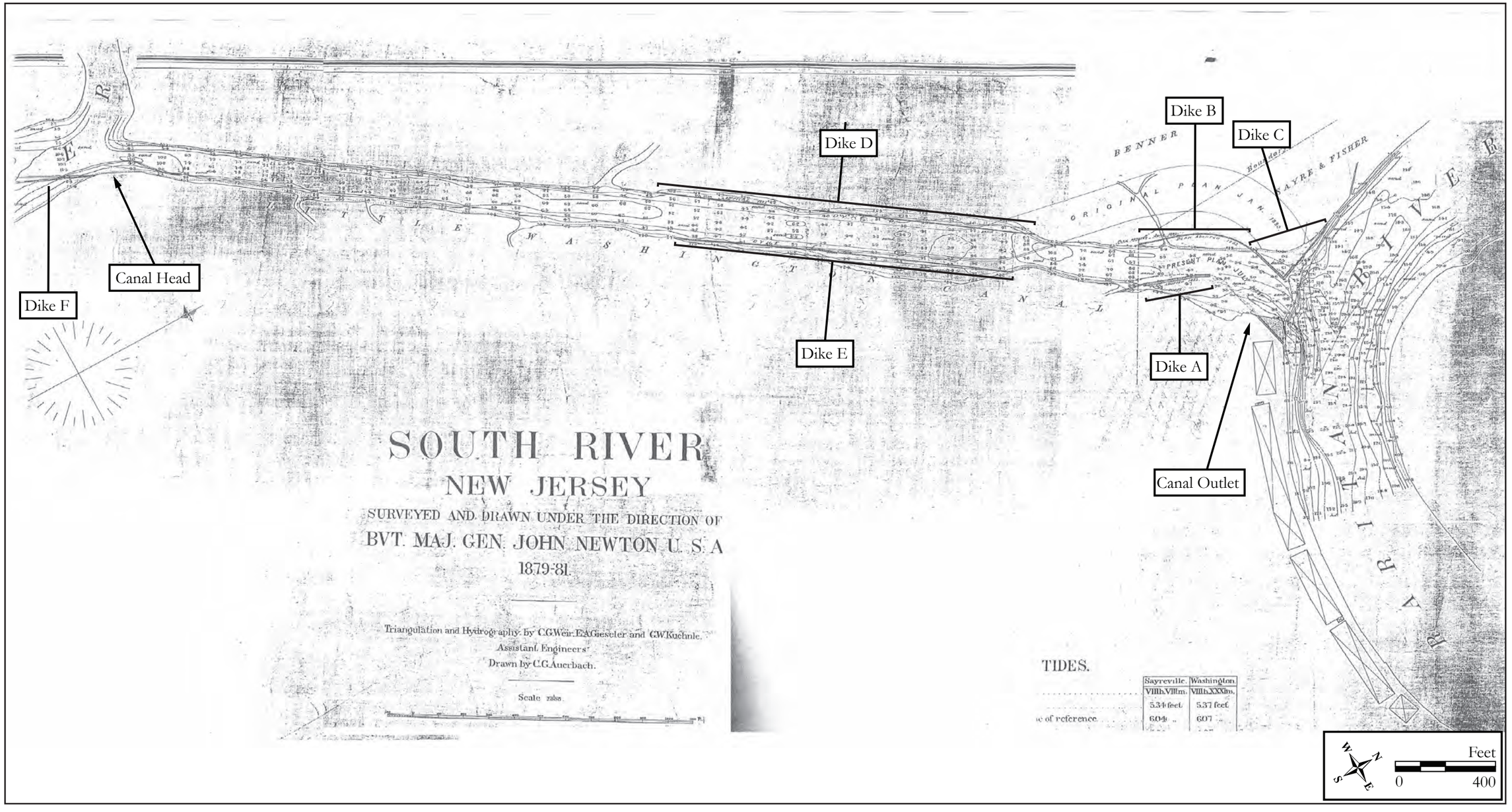

Figure 3: 1882 C. G. Auerbach, South River, New Jersey. The plan depicts the Army Corps' planned improvements, including the locations of Dikes A, B, C, D & E in the Canal channel.

Survey Name: Sayreville Pump Station
Surveyor: Philip A. Hayden
Organization: Richard Grubb & Associates, Inc.

Date: November 2014

CONTINUATION SHEET

Historic Sites #:

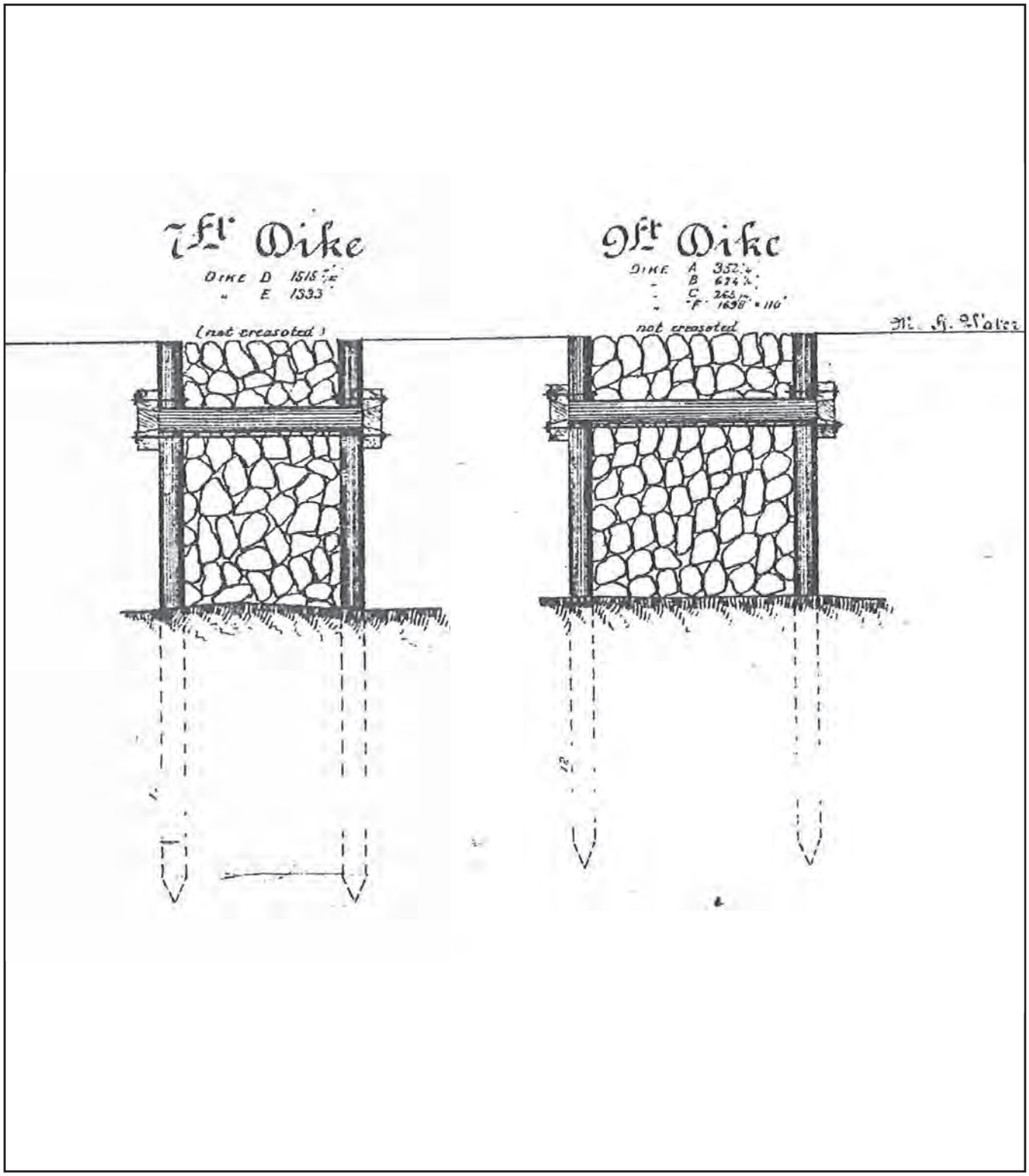

Figure 4: Detail, map of South River depicting design of 7-foot and 9-foot dikes installed in 1882-1883 (Collins 1888).

Survey Name: Sayreville Pump Station
Surveyor: Philip A. Hayden
Organization: Richard Grubb & Associates, Inc.
Date: November 2014

CONTINUATION SHEET

Historic Sites #:

Plate1

Photo view:
Southwest

Photographer:
Philip A. Hayden

Date:
November 7, 2014

Overview, northern end of the Washington Canal looking upstream toward South River (formerly Washington). From ground level the canal resembles a natural tidal river.

Plate 2

Photo view:
Northwest

Photographer:
Philip A. Hayden

Date:
November 7, 2014

Overview, Raritan River at the outlet of the Washington Canal (left). There are no surviving dikes or other bulkhead structures.

APPENDIX G: GEOMORPHOLOGY REPORT

Report of Soils and Geomorphology Study
Conducted as an Adjunct to Phase IB Archaeological Investigation,
Sayreville Pumping Station
Borough of Sayreville, Middlesex County, New Jersey

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Submitted November 4, 2014

On October 9, 2014 I conducted a study of soils and geomorphology at a municipal water treatment facility (Sayreville Pump Station) in the borough of Sayreville, Middlesex County, New Jersey where flood mitigation construction is proposed. The purpose of my study, conducted at the behest of Richard Grubb Associates, was to determine the potential for the presence of intact, in-situ cultural material, particularly deeply buried material, within alluvium and colluvium in the area of potential effect (APE) of the proposed project.

SETTING

The study area is located on a low upland bordering the right side of the Raritan River in the Inner Coastal Plain physiographic province, immediately south of its boundary with the piedmont physiographic province. The setting is 6 km above the head of Raritan Bay, at the extreme lower end of the approximately 2800 square kilometer Raritan River drainage basin. The broad Raritan River channel occupies most of the valley floor, an estuarine setting subject to tidally driven fluctuations of river level. The sideslope and toeslope where the study area is located border the river on the south. The Washington Canal, which connects the highly meandering lowest reaches of the South River with the estuarine lower reaches of the Raritan River, bounds the study area on the northwest. Elevations within the study area range from around 2.4 m (8 feet) above mean sea level (amsl) proximal to the canal to around 3.7 m (12 feet) amsl along the perimeter fence at the northeast corner of the property.

Surficial deposits making up the upland of the study area are mapped as a combination of artificial fill (af) and glacially-derived sand and pebble gravel of Late Wisconsinan age (Qtl) (Stanford 1995). Soils of the study area are mapped as Udorthents, clayey substratum, 0-8% slopes; and Psamments, sulfidic substratum, 0-3% slopes. Both are members of the soil order Entisol, recently formed soils that have little or no evidence of development of pedogenetic horizons. Udorthents are frequently mapped in areas where fill has been deposited or where cutting and grading have removed weathered profiles and no pedogenic development has yet occurred. Psamments are weakly developed soils formed in sandy parent material. Because soil development proceeds slowly in material dominated by non-reactive quartz sand, these sediments may be recently deposited or may have been in place and stable for thousands or tens of thousands of years.

Based on the known limits of Pleistocene glaciation to the west, the study area has been near or within the furthest extent of continental glacial ice three times over the last 2.4 million years. The most recent glacial advance to reach the area was that of the Late Wisconsinan glaciation (Woodfordian Stage), which reached its maximum extent at Perth Amboy, just north of the study area, at between 20,000 and 22,5000 years BP. A broad, high, continuous Wisconsinan terminal moraine formed at the ice limit, a product of delivery of sediment-laden ice to the wasting ice front. In the general vicinity of the study area, the disparate remnants of the moraine make up an axial ridge on Staten Island, the long, high ridge of the Harbor Hill Moraine on Long Island, and are visible as prominent landforms in Perth Amboy and Metuchen. Recession of the ice margin from the Perth Amboy area commenced at around 20,000 BP (Stanford and Harper 1991). The resulting meltwater was confined between the terminal moraine and the receding ice front and formed a series of transient proglacial lakes which filled the scoured troughs of the Passaic, Hackensack, and Hudson River valleys. The initial lake, which occupied the Arthur Kill, Newark Bay, and the upper New York Bay lowlands, has been designated Lake Bayonne. Waters of Lake Bayonne overtopped the moraine and created an outlet to the coastal plain at what is now the Richmond Valley on Staten Island and later near Perth Amboy in the position of what is now the Arthur Kill (Stanford and Harper 1991). Ongoing erosion of the outlet at Perth Amboy allowed creation of an outlet channel within what is now the Arthur Kill.

Prior to the advance of the Wisconsinan (and possibly the Illinoian) glacial ice into northern New Jersey, the Raritan River followed a northeasterly course toward the general vicinity of Newark. Blockage of the drainage by ice and glacial debris resulted in formation of a proglacial lake within the Raritan River valley. Eventually the impounded water rose to a level at which it overtopped a low shale-supported drainage divide near Bound Brook and quickly eroded a gorge between Bound Brook and New Brunswick, from whence it occupied and deepened the existing valley of the South River and flowed southeast to the coast along this, its present course (Stanford 1993). Sediment-free spillway drainage from the glacial lakes to the north entered the newly established Raritan Valley, augmenting the nonglacial discharge. The highly erosive flow caused downcutting of the valley bottom to as much as 60 m below modern sea level in the

Raritan Bay lowland and as much as 35 m below modern sea level at the mouth of the Raritan estuary (Stanford et al. 2002).

The effects of continental glaciation go far beyond even the vast surface manifestations of erosion and deposition. Because immense volumes of global water were temporarily contained in world-wide continental ice masses at the last glacial maximum, eustatic sea level fell by as much as 125 m (Fairbanks 1989). This drawdown resulted in exposure of now-submerged coastal plain in the area of New York City and northern New Jersey; dry land made up of unconsolidated marine sediments extended as much as 60 mi east of the present shoreline. The presence of the enormous weight of a continental ice mass causes the surface of the Earth's crust to deform and warp downward, forcing the fluid mantle material to flow away from the loaded region. As the load is removed by ablation of the ice mass, the removal of the weight from the depressed land allows uplift or rebound of the surface (isostatic rebound) and the return flow of mantle material back under the deglaciated area. Due to the extreme viscosity of the mantle, it takes many thousands of years for the land to reach isostatic equilibrium, returning to more or less its pre-glacial state. Because of its position immediately beyond the ice margin, the current study area may have experienced a very minor amount of lift due to a forebulge effect. Any uplift would have exacerbated the effect of base-level lowering and increased incision of the coastal plain river valleys.

Wasting of the global Wisconsinan continental ice sheets produced sea level rise, rapid at first and slowing over the course of the Holocene but continuing at a reduced rate today. Along the east coast of North America, canyon-like river valleys that had been incised into the recently exposed expanded outer coastal were submerged by the rise. The large embayments along the middle Atlantic seaboard, such as Raritan, Delaware, and Chesapeake Bays, are drowned coastal valley segments. Estuarine settings and the lowest reaches of mid-Atlantic coastal rivers are low gradient, low velocity settings where suspended sediment load (clays and silts) are deposited. Within the Raritan River system, fine sands tend to remain within the channel while suspended sediments transported through the bedrock-underlain and braided reaches upstream are deposited in low velocity zones in the meandering lower reaches (Ashley and Renwick 1983). Presence of

vegetation such as grasses, reeds, phragmites etc. greatly enhances deposition in frequently inundated settings.

METHODOLOGY

Three backhoe trenches (BHT1-BHT3) were conducted in the course of this study. The trenches were conducted along the perimeter of the existing perimeter fence surrounding the treatment plant property. Soil profiles of the trenches were described using standard field parameters (Munsell color, texture, structure, rock fragment content, redoximorphic features, etc.). Particular attention was paid to those characteristics pertinent to archaeological potential of the study area (e.g., presence of buried stable surfaces, relative age of the sediments, depositional dynamics, etc.).

BHT1 was excavated in the northeast corner of the study area. This is the highest point within the APE. BHT2 was excavated 55 m southwest of BHT1, near the southeast corner of the plant property. The surface there lies approximately 1 m lower than at BHT1. BHT3 was located in the southwest corner of the property, approximately 15 m from the Washington Canal and approximately 2 m above water level on the canal at the time of excavation, just following high tide in Raritan Bay. Depth of excavation ranged from 3.45 m below surface (bs) in BHT3 to 3.9 m bs in BHT1.

RESULTS

Historical to recent records indicate that extensive disturbance has taken place within the APE. This disturbance includes major excavation and landscape alteration associated with construction and improvements of the existing treatment plant. This was preceded by extensive excavation of raw materials for local brickyards (Richard Grubb and Associates 2014). Profiles revealed in backhoe trenching for this study document a recent history of disturbance and filling at the site.

Excavation of BHT1 revealed a profile consisting of 40 cm of coarse limestone gravel over stratified fill which in turn overlaid thinly laminated slackwater deposits. The stratified fill from 40 to 232 cm bs included 10YR4/4, 7.5YR4/4 and 10YR3/3 sandy loam, loamy sand, and silt loam, all containing brick fragments, wood, and cobbles. A large piece of broken PVC pipe was

encountered at 113 cm bs. From 232 to 250 cm bs was a distinct stratum interpreted to be dredge spoil – heavily reduced loamy fine and loamy medium sand containing much fine and very fine organic matter. Fill from 250 to 288 cm bs the fill was dominated by brick fragments in a matrix of brick dust. The profile from 288 cm bs to base of excavation at 390 cm bs consisted of structureless 10YR4/6 medium sand containing brick fragments and including thin laminations of organic-rich silt loam.

The profile of BHT2 was capped by 15 cm of compacted coarse gravel. Immediately beneath the gravel was 55 cm of fill consisting of mixed and variegated 10YR4/4 and 4/6 loamy medium and loamy fine sand containing gravel, brick fragments, and plastic. Beneath the loamy sand was a thick stratum (175 cm) of brick fragments. The upper 60 cm of the brick fragments were surrounded by a matrix of coal cinder and ash; the lower 115 cm were in a matrix of brick dust. The brick fragments were underlain by 25 cm (245 to 270 cm bs) of thinly laminated, heavily reduced silt loam to very fine sandy loam containing much very fine organic matter along with coal cinder and ash. Beneath this, from 270 cm bs to base of excavation at 360 cm bs, was unweathered, massive (structureless) loamy medium sand containing rounded medium gravel.

The profile of BHT3, at the lowest point within the APE, consisted of fill over estuarine and alluvial lateral deposition. The profile was capped by 48 -50 cm of 10YR4/3 loamy fine and loamy medium sand containing rounded gravel and brick fragments, with brick dominating in the lower half. From 48 to 132 cm bs the fill consisted of brick fragments mixed with coarse organic material, rounded gravel, and coal cinder. A 10 cm stratum of thinly laminated fine and medium sand from 132 to 142 cm bs separated this layer of brick fragments from another at 142 to 225 cm bs, with the lower brick contained in a matrix of brick dust and coarse sand. The profile from 225 to 290 cm bs consisted of dark, heavily reduced (5Y2.5/2) massive silty clay containing many fine roots and very fine organic detritus. Underlying the silty clay, from 290 cm bs to base of excavation at 350 cm bs, was heavily reduced (2.5Y3/3), structureless medium sand. The profile below 225 cm bs was wet and water began entering the excavation at 340 cm bs.

DISCUSSION

Excavation of three backhoe trenches just within the perimeter fence of the Sayreville Pump Station revealed the presence both of deep fill and – beneath the fill – extensive disturbance and truncation of developed soil profiles. The disturbance and truncation, seen in BHT1 and BHT2 on the higher elevations within the study area, are interpreted to be related to the presence of brick and ceramic industries in this area. In both BHT1 and BHT2, the lower zones of the profiles consisted of brick fragments and waste directly overlying thinly laminated sediments. The laminated sediments included thin strata of organic-rich silt loam and also included Historic markers such as brick fragments and coal cinder. In BHT2, the laminated sediments unconformably overlaid unweathered, structureless sand and gravel. These unweathered sediments are interpreted to be in-situ, undisturbed Late Wisconsinan glacial outwash, the lower remnant of a truncated profile. The overlying laminated sediments in BHT2 and those seen at the base of excavation in BHT1 are interpreted to be slackwater deposits accumulated in shallow depressions on a quarried landscape. The source of the laminated sediments would be overland flow that had moved across a heavily disturbed surface within an active industrialized area. In both trenches, the slackwater deposits are overlain by strata of fill dominated by brick waste but including coal ash and cinder along with some dredge spoil. No evidence of stable, utilized surfaces was seen in the profile, suggesting that the fill was dumped simply as an expeditious means of disposal rather than to convert the quarried landscape into a work space. The upper layers of fill in both of these areas appear to be the product of landscape alteration associated with construction and maintenance of the water treatment plant.

In BHT3, at the lowest point within the study area and proximal to the valley floor, canal, and river, brick waste and other fill directly overlaid an unquarried profile comprising estuarine muds over sandy alluvial lateral deposition. The accumulation of 65 cm of organic-rich estuarine muds over the sandy lateral deposition reflects Late Holocene sea level rise and the final stages of the drowning of the Raritan River embayment. The structureless, unweathered medium sand at the base of the profile is relatively high energy deposition laid down in an unstable river-edge setting and has no potential to contain in-situ cultural material. The overlying estuarine muds are tidal flat deposition and are similarly interpreted to have no cultural potential. Intentional deposition of brick waste in this area probably served both as a convenient means of disposing of

unwanted material and as a means of stabilizing the river bank while extending the work area at the base of the toeslope into what was otherwise unusable space.

John M. Stiteler

Soil scientist

Newfield, New York

November 4, 2014

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APPENDIX H: HISTORIC ARTIFACT CATALOG

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CATALOG #	TRENCH #	LEVEL	DEPTH*	STRATUM	COUNT	GROUP	ARTIFACT MATERIAL	ARTIFACT CLASS	ARTIFACT TYPE	DESCRIPTION	MEASUREMENTS/ COMMENTS/DATES
1	1	-	8.5	Fill	1	DOM	Glass	Vessel	Bottle	Thick, colorless bottle base with embossed lettering on the base, "4 I [within a circle] 55" "C-14032" "2". Owens scar is present	Post 1903 (Miller 2000)
2	2	-	8.8	Fill	1	FUEL	Coal	Byproduct	Slag	Fragment	347.6 g
3	2	-	Back Dirt Pile	Fill	3	ARCH	Ceramic	Red Earthenware	Brick	Whole bricks.	4781.1 g
3	2	-	Back Dirt Pile	Fill	1	ARCH	Ceramic	Red Earthenware	Brick	Broken. Stamped "S&F" for the Sayre and Fisher Brick Company	1447.7 g

KEY:

* in feet

ARCH = Architectural

DOM = Domestic

FUEL = Fuel-Related

APPENDIX H: ARTIFACT CATALOG REFERENCES

Miller, George L. with contributions by Patricia Samford, Ellen Shlasko, and Andrew Madsen
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APPENDIX I: ANNOTATED BIBLIOGRAPHY

Author:	Sharon D. White, Ph.D., RPA
Title:	Stage I Archaeological Survey, Flood Mitigation and Permanent Restoration of the Sayreville Pump Station, Borough of Sayreville, Middlesex County, New Jersey (NJDEP Project # 340699-12)
Date:	February 2015
RGA Database Title:	Stage IA Sayreville Pump Station
RGA Project No:	2014-110; 2014-247
State:	New Jersey
County:	Middlesex
Municipalities:	Borough of Sayreville
U.S.G.S. Quad:	South Amboy, NJ
Drainage Basin:	Washington Canal, Raritan River, Raritan Bay, Sandy Hook Bay, Atlantic Ocean
Regulation:	Section 106, National Historic Preservation Act; Environmental Assessment Requirements for State Assisted Environmental Infrastructure Facilities (N.J.A.C. 7:22-10:8)
Project Type:	Public Utilities Improvements
Project Sponsor:	Middlesex County Utilities Authority
Client:	R3M Engineering, Inc.
Level of Survey:	Stage I Archaeological Survey
Cultural Resources:	None