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**Prepared for:**

Jenny Engineering  
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Springfield, New Jersey

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**Phase IA Archaeological Assessment  
Shaft 17B Complex  
37<sup>th</sup> Avenue, Queens, New York**

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Prepared by:

**URS**

Florence, New Jersey

**PHASE IA ARCHAEOLOGICAL ASSESSMENT  
SHAFT 17B COMPLEX  
37<sup>TH</sup> AVENUE, QUEENS, NEW YORK**

*Prepared for:*

**JENNY ENGINEERING CORPORATION  
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**February 2004**

## ABSTRACT

This report details the findings of a Phase IA archaeological assessment URS Corporation (URS) conducted for Jenny Engineering Corporation. Work was initiated in response to the proposed construction of the Shaft17B Complex in Sunnyside, Queens, New York. The proposed project area is located on a 63,950 square-foot-area situated on 37<sup>th</sup> Avenue, Tax Lot 28 of Block 143. The property is bounded on the east by 48<sup>th</sup> Street, to the south by 37<sup>th</sup> Avenue, and to the north and west by other portions of Block 143. Currently, there are three existing buildings within the project area. The purpose of this study is to determine if the proposed construction activities will encounter intact surfaces that may contain archaeological resources. Although there are several documented sites presently on file at the New York State Historic Preservation Office in the general vicinity of the project area, there are none within or adjacent to the immediate area of potential effects (APE).

Previous studies of both prehistoric and Contact period settlement patterns within the region have indicated that the preferred locations for long-term occupation were elevated and well-drained areas within 150 to 1,000 feet of a freshwater source. Although the project area is situated in an upland setting, early historic maps indicated that the closest freshwater source was the Dutch Kills, located approximately 0.9 miles (4,752 feet) to the west, making the project area unattractive in regard to long-term habitation. It may have served as a location for short-term occupation, but such occupations usually leave behind very little archaeological evidence. In addition, subsequent industrial development would have altered the landscape and impacted any potential prehistoric resources. Therefore, the potential for locating intact prehistoric cultural deposits is low, and no further work is recommended.

The historical background research indicated that the project area was once part of the Bragaw/Gosman farm that dates to the mid-eighteenth century, but not the location of the farmhouse and associated outbuildings. During the British occupation of New York, Lord Cornwallis' 33<sup>rd</sup> Regiment constructed 50-foot-long, three-sided log huts on the farm. As late as the 1890s, newspapers reported on unearthed artifacts associated with the British occupation and that the outlines of the soldiers' huts were still clearly visible in the fields. Historical maps indicated that no development occurred within the project area until a pumping station was built during the late 1890s as part Long Island City water supply system. By 1915, the station was no longer in operation and was still standing until the 1930s. In 1931, the New York City Water Department built a garage with attached machine and workshops on 37<sup>th</sup> Avenue. The garage has remained in place into the present day.

There is a high-to-moderate potential for a variety of features associated with the British occupation of the project area. If such features have not been impacted by subsequent activities, then they have the potential to address research issues regarding the nature of British occupation and layout of encampment life. The types of archaeological features that may potentially provide valuable information are the remnants of the soldiers' huts and sheet-midden scatter (yard trash), in addition to remnants of privies. Therefore, a Stage IB archaeological investigation is recommended in order to determine the absence/presence of potential intact historic cultural resources.

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## I. INTRODUCTION AND PROJECT DESCRIPTION

URS Corporation (URS) conducted a Phase IA archaeological assessment in support of the construction of the proposed Shaft17B Complex project in Sunnyside, Queens, New York (Figure 1). The proposed project area is located on a 63,950 square-foot area situated on 37<sup>th</sup> Avenue, Tax Lot 28 of Block 143. The property is bounded to the east by 48<sup>th</sup> Street, to the south by 37<sup>th</sup> Avenue, and to the north and west by other portions of Block 143. Currently, there are three existing buildings within the project area. Therefore, the area of potential effects (APE) for the proposed shaft construction is defined as the entire area contained within Tax Lot 28, Block 143.

The purpose of the study was to provide information on the nature, location, and extent of intact and original soil surfaces within the project area and the depth of twentieth-century fills above these surfaces. This information is needed in order to determine if proposed construction activities will extend to a depth that will encounter historic and/or prehistoric surfaces that may contain archaeological resources. This work was conducted in accordance with the National Historic Preservation Act of 1966, as amended, and the Advisory Council on Historic Preservation's "Protection of Historic and Cultural Properties" (36 CFR 800). In addition, the study was performed under the guidelines of the City Environmental Quality Review (CEQR) (Executive Order No. 91 of 1977). This work was also conducted pursuant to the New York State guidelines for such projects, and pursuant to the guidelines established by the New York City Landmarks Preservation Commission for Phase IA archaeological work in New York City, dated April 12, 2002. The cultural resource specialists who performed this work satisfied the qualifications specified in 36 CFR 61, Appendix A.

Edward Morin, Principal Investigator for the project, is certified by the Register of Professional Archaeologists (RPA). Historian Ingrid Wuebber conducted the background research. Lynda Bass and Scott Hood prepared the graphics for the report, and Paul Elwork edited the text for style and consistency.

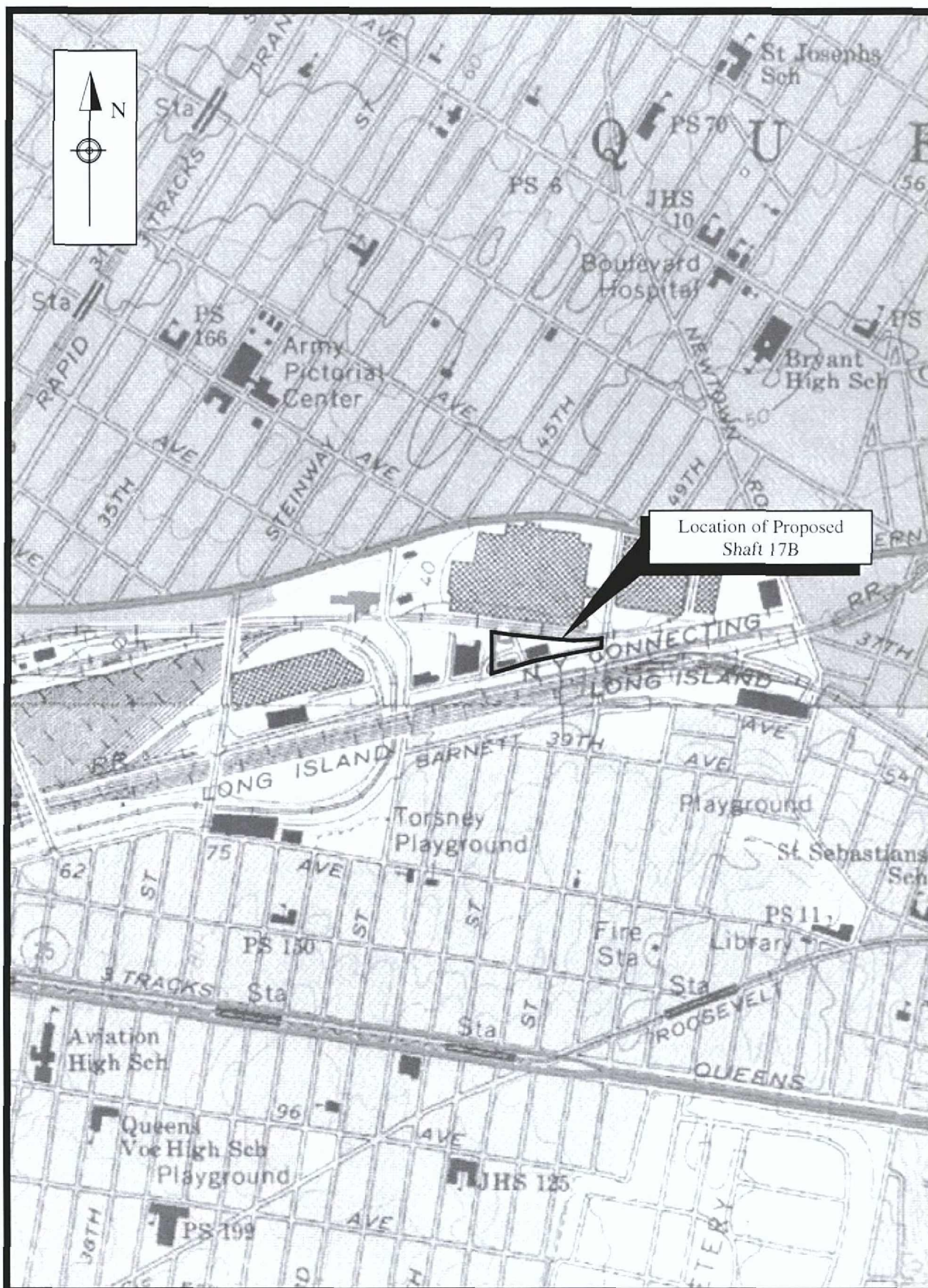


Figure 1 Location of Proposed Shaft 17B Complex in Sunnyside, Queens (Source: Portion of 7.5 -Minute Topographic Map, Central Park Quadrangle Queens New York, Maptech 1979).

## II. METHODS

Historical research for the proposed site of Shaft 17B Complex entailed the collection of maps and plans at the Queensborough Public Library and the Queens County Register's Office, both in Jamaica, Queens. The Municipal Archives, the City Hall Library, and the Map Division of the New York Public Library were also utilized. The Queensborough Public Library provided local-history resources and newspaper clippings. Land records were searched at the County Register's Office. Water Department reports were consulted at the City Hall Library. Published histories in the New York Public Library's collection provided contextual information. Additionally, files and reports maintained by the New York City Landmarks Preservation Commission were consulted.



### III. PREHISTORIC AND HISTORIC BACKGROUND

#### PREHISTORIC PERIOD

Archaeological traces of settlement in the greater New York City area extend back to the Paleoindian period, circa 11,000 to 10,000 B.P. (Cantwell and Wall 2001:40ff). Settlement continued throughout the ensuing Archaic and Woodland periods, accompanied by a steady increase in population. By the time of the Middle Archaic, people systematically exploited the coastal resources of Manhattan. The Middle Archaic sites found in the lower Hudson Valley area are, for the most part, shell middens whose compact nature and waterfront location protected many from destruction during eighteenth- and nineteenth-century development (Cantwell and Wall 2001:54). Many of the Late Archaic sites in the area are also shell middens (Cantwell and Wall 2001:57), although intact Archaic sites of any period are scarce in New York City. The available evidence suggests that people had established seasonal rounds by the Late Archaic (Cantwell and Wall 2001:59). Large groups occupied base camps during the summer; groups split up during other seasons to visit smaller hunting, fishing, or plant procurement stations. This pattern continued throughout the ensuing Transitional and Early and Middle Woodland periods.

Agriculture became established in the Northeast during the Late Woodland period (after 1000 A.D.), but the timing of the subsistence switch by coastal peoples from complete dependence on hunting and gathering to mixed foraging and agriculture is a matter of debate among archaeologists. By the time of European settlement in the early seventeenth century, native people kept well-established fields in which they grew the triad of corn, beans, and squash, along with some other domesticated plants. The Munsees—part of a larger group now called the Delaware or Lenape—occupied western Long Island at the time of European contact. Small, permanent communities characterize the Munsee settlement pattern, along with temporary sites for the collection of particular resources (Cantwell and Wall 2001:114). The Munsees farmed on a small scale, but also utilized the plant and animal resources of the land. Early writers described their fields and the large palisaded settlements that accompanied them (e.g. Van der Donck 1968), but archaeologists do not agree as to the temporal depth of this village-settlement pattern. Some see the pattern as extending back for several hundred years; others see it as a response to European trade (Cantwell and Wall 2001:94–95).

Pre-European sites within the New York City environs are not common, as subsequent development has obliterated them. A search of the archaeological site files has indicated that no known prehistoric sites have been recorded within the immediate vicinity of the project area. However, three sites have been recorded within  $\frac{3}{4}$  to one mile of the project area. These consist of a village site (NYSM#4538), located in Long Island City; a burial site (NYSM#4537), identified northeast of the village; and another burial site (NYSM#5472), located within St. Michael's Cemetery, Queens. Although the project area was once located within a wooded upland setting (as depicted on a U.S. Coast Survey Map of 1844), the New York City Landmarks Preservation Commission did not identify it as being sensitive for prehistoric cultural resources (NYCLPC 1982), perhaps due to the project area's distance from a freshwater source. Historic

maps indicate that the closest freshwater source was the Dutch Kills, located approximately 0.9 miles (4,752 feet) to the west. Several studies have indicated that the majority of prehistoric sites are located in elevated and well-drained areas within 150 to 200 feet of a water source (Mascia et al 1999). This tendency drops off sharply as distances increase. In addition, subsequent industrial development would have altered the landscape and impacted any potential prehistoric cultural resources. Therefore, the potential for locating intact prehistoric cultural deposits within the project area is low.

## HISTORIC PERIOD

The proposed site of Shaft 17B Complex is located at 46-01 37<sup>th</sup> Avenue. It is a triangular tract of land wedged between the Long Island Railroad right of way (ROW) and 37<sup>th</sup> Avenue in the Sunnyside section of the borough of Queens (see Figure 1). This parcel is presently designated as Tax Lot No. 28 of Block 143. Ownership of the lot was traced back to the eighteenth century, when it was part of the John Bragaw farm (see List of Property Owners, Appendix A). Historically, this section of Queens was part of Newtown and was associated with the scattered settlement around Dutch Kills. The project area has been under the control of a water department since 1873.

### *The Settlement of Sunnyside and the Bragaw Family*

The first generation of New Amsterdam settlers to establish themselves in Queens in the 1640s chose home sites at Hunter's Point and the area around Newtown Creek and Dutch Kills. By 1650, Dutch Kills had been dammed and Burger Jorissen, a German immigrant, established a gristmill. The mill was located about a mile southwest of the project area. The mill stayed in business for a century and a half; remains of the millpond and gristmill were still clearly visible when the Long Island Railroad built their line through the mill site in 1861. Middleburg Avenue (now 39<sup>th</sup> Avenue) was laid out in the seventeenth century and, by the time of the American Revolution, was lined with farmsteads, one of which (the Bragaw/Gosman farm) contained the project area (Figure 2). Middleburg Avenue, at one time known as Bragaw Avenue, crossed Dutch Kills and continued east to where it intersected with Newtown Avenue at Woodside. Many of the old farmhouses survived into the early part of the twentieth century (Seyfried 1984:77).

In 1650, Burger Jorissen dug a long ditch, thereafter known as "Burger's Sluice," to drain his land and improve the flow of water over his dam. The sluice ran northward along what later became the alignment of 42<sup>nd</sup> Street and passed through the Bragaw/Gosman farm. The sluice then turned eastward and formed the northern border of the farm (Van Alst 1873). Burger's Sluice was reportedly filled in when the Long Island Railroad and Jackson Avenue (now Northern Boulevard) were constructed in 1861 (Seyfried 1984:76).

The Bragaw family is descended from a French Huguenot exile, Bourgon Broucard, who arrived in New York in 1675. The family first lived on a farm in Bushwick, but in 1690 began to assemble a large tract of land in the area of Dutch Kills by buying land and a gristmill from Burger Jorissen. Bourgon's eldest son Isaac, a weaver, added onto the paternal farm. Isaac (1676–1757) had five sons who established farms in the area. His son John Bragaw inherited the



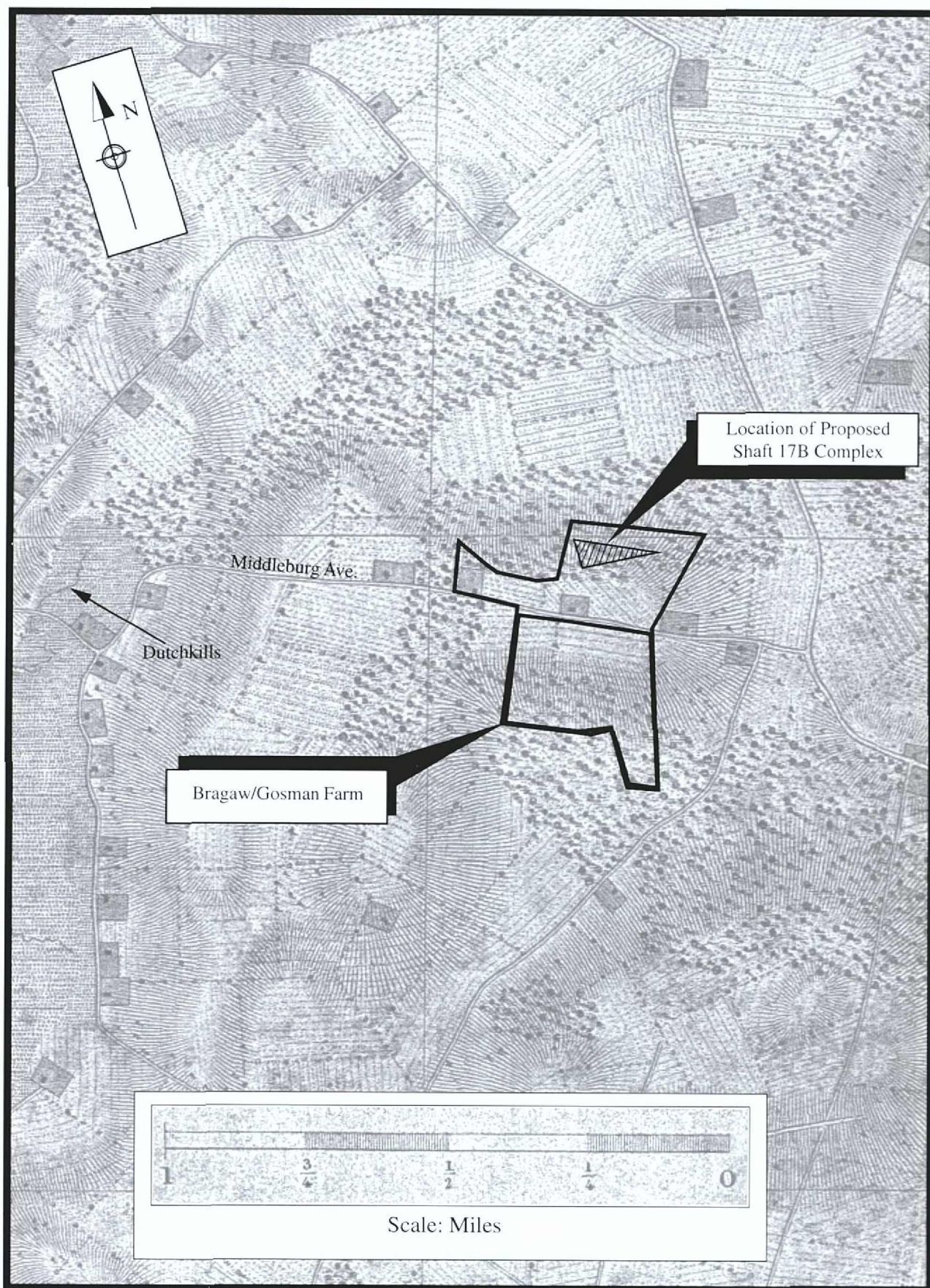


Figure 2 Location of Project Area on the Bragaw/Gosman Farm (Source: U.S. Coast Survey 1844).

farm on Middleburg Avenue that encompasses the project area (see Figure 2) (Riker 1852:370–372).

During the period in which the British army occupied New York (1776–1783), troops were garrisoned in the Sunnyside neighborhood. The area where today's Northern Boulevard, Woodside Avenue, and Newtown Avenue intersect was part of a narrow upland passage among the swampy tracts and meadowlands that covered the area in the eighteenth century. British officers were billeted in the ancient Dutch farmhouses and soldiers bivouacked in the outbuildings. During the occupation, all the woodland remaining in Queens was cut down to fuel the soldiers' fires. Lord Cornwallis' 33<sup>rd</sup> Regiment built 50-foot-long, three-sided log huts on the farm of John Bragaw on Middleburg Avenue. John Bragaw's Tory leanings made his farmhouse the preferred meeting place for all the British officers of the area, including Lord Cornwallis and Sir Henry Clinton. As late as the 1890s, newspapers reported on the unearthing of artifacts in Sunnyside related to the British occupation, while the outlines of the soldiers' huts were clearly visible in the fields (Riker 1852:209; Seyfried 1984:79).

When John Bragaw died in 1782, his son Andrew inherited the homestead farm. Andrew Bragaw lived on the farm with his wife and 12 children; he died in 1828 at the age of 73 (Riker 1852:372–373). The farm remained vested in his estate until a Chancery Court case in 1839 resulted in an order for sale. In 1842, the farm was sold out of the family to New Yorker Samuel Morrison. Morrison's occupation was given as "truckman," a transporter of goods. It appears that Samuel Morrison's family defaulted on a mortgage following his death and the farm was put on the auction block. It was sold in 1847 to William Gosman, a local farmer (Queens County Deed Books 57:282; 71:46).

### *The Development of Long Island City and Its Water Supply*

Long Island City was created in 1870 with the unification of the neighborhoods of Hunter's Point, Astoria, Ravenswood, and Dutch Kills. The project area falls within the city's second ward. One of the new city's first public works efforts was to fill in the swampy land that had become polluted and stagnant as industry and population increased. Efforts to supply the area with a reliable and safe water system began in 1865 with the establishment of private water companies. These water companies did little but develop plans. Residents got their water from hand pumps at street corners or rural wells. In 1871, the state legislature passed a bill authorizing the sale of water bonds in the amount of \$300,000 to fund the construction of a water system for Long Island City. The money became available just as Henry S. Debevoise began his term as mayor. Debevoise was the agent for James Thomson, a real estate developer with a knack for turning a profit at the public's expense. The mayor arranged to buy land near Pumping Station No. 1, on Van Dam Street, and another tract of land around Gosman's Pond, near Jackson Avenue, from James Thomson at inflated prices. A public outcry resulted in Thomson buying back some of the land—technically for a higher price. Thomson managed to buy back the land with city bonds that were worth far less than their face value. His real profit in the land deal was realized when he sold soil from this tract of land to the city to fill the area's wetlands (Seyfried 1984:109–110).



In February of 1873, James Thomson and his partner J. P. Giraud Foster paid William Gosman \$65,280 for his farm on Middleburg Road. The purchase price amounted to about \$1,275 per acre. The following month, Thomson and Foster sold approximately six and a half acres of the former Gosman farm to Long Island City's Board of Water Commissioners for about \$5,000 per acre (Queens County Deed Books 401:63; 402:421) (Figure 3).

Besides paying exorbitant prices for land, the Long Island City Water Board paid large sums to cronies to carry out surveying, construct stations, and lay pipes. A reservoir was built but never used. By 1875, only \$10,000 of the original \$300,000 remained and the city still had an insufficient water system (Seyfried 1984:110).

The consolidation of Kings, Queens, Richmond, and parts of Westchester counties into New York City in 1898 brought multiple water suppliers under the jurisdiction of the city. Overnight, New York's water department was responsible for serving a population of 3.5 million persons, and the water supply system had reached its limits. A combination of private and public pumping facilities supplied Queens. The municipal waterworks in Flushing, Whitestone, and College Point were able to provide water of sufficient quality and quantity for their small population centers, but the pumping stations in Long Island City could not meet the demands of its 48,000 residents. The Long Island City water system was composed of three pumping stations: No. 1 at Blissville, just outside the city limits; No. 2 at Astoria, known as the Steinway station; and No. 3 on the former Bragaw/Gosman farm at Sunnyside (Figures 4 and 5). Three engineers and three firemen staffed each station (Seyfried 1984:127). The Sunnyside Pumping Station, (see Figure 5) built in the 1890s, supplied water to the Ravenswood neighborhood and central sections of Long Island City (New York City Department of Water Supply, Gas and Electricity 1904:65). The station sat on a tract of 43 acres and pumped its water out of 11 wells (Brooklyn Eagle, March 1898).

Together, the three stations furnished 2,500,000 gallons of water a day, but Long Island City needed twice that amount. New water mains with larger and more uniform dimensions were needed, as well as new water pumping machinery at the stations. Minor repairs were made to the dilapidated Sunnyside Pumping Station while the New York City Department of Water Supply waited for appropriations to carry out major improvements (New York City Department of Water Supply, Gas and Electricity 1902:9). Finally, in 1903, the water department received the funding to overhaul the water supply system in Queens. The pumping stations were rebuilt and remodeled. The pumps were overhauled and repaired or replaced by new ones. The buildings were repainted and outfitted with new windows. When needed, additions and extensions were constructed. New machinery was ordered and new wells dug (New York City Department of Water Supply, Gas and Electricity 1904:30-31).

Improvements at Pumping Station No. 3 in Sunnyside included building a new coal bin; building storehouses; installing a 10-ton wagon scale; installing two 100-horsepower boilers, along with a water heater and purifier to prolong the life of the boilers; building a new steel stack; and driving new wells. Additionally, a new boiler house was built and a drain excavated at the front of the station (New York City Department of Water Supply, Gas and Electricity 1904:67-68) (Figure 6). In order to provide better access to the facility, a new street was laid out between Laurel Hill

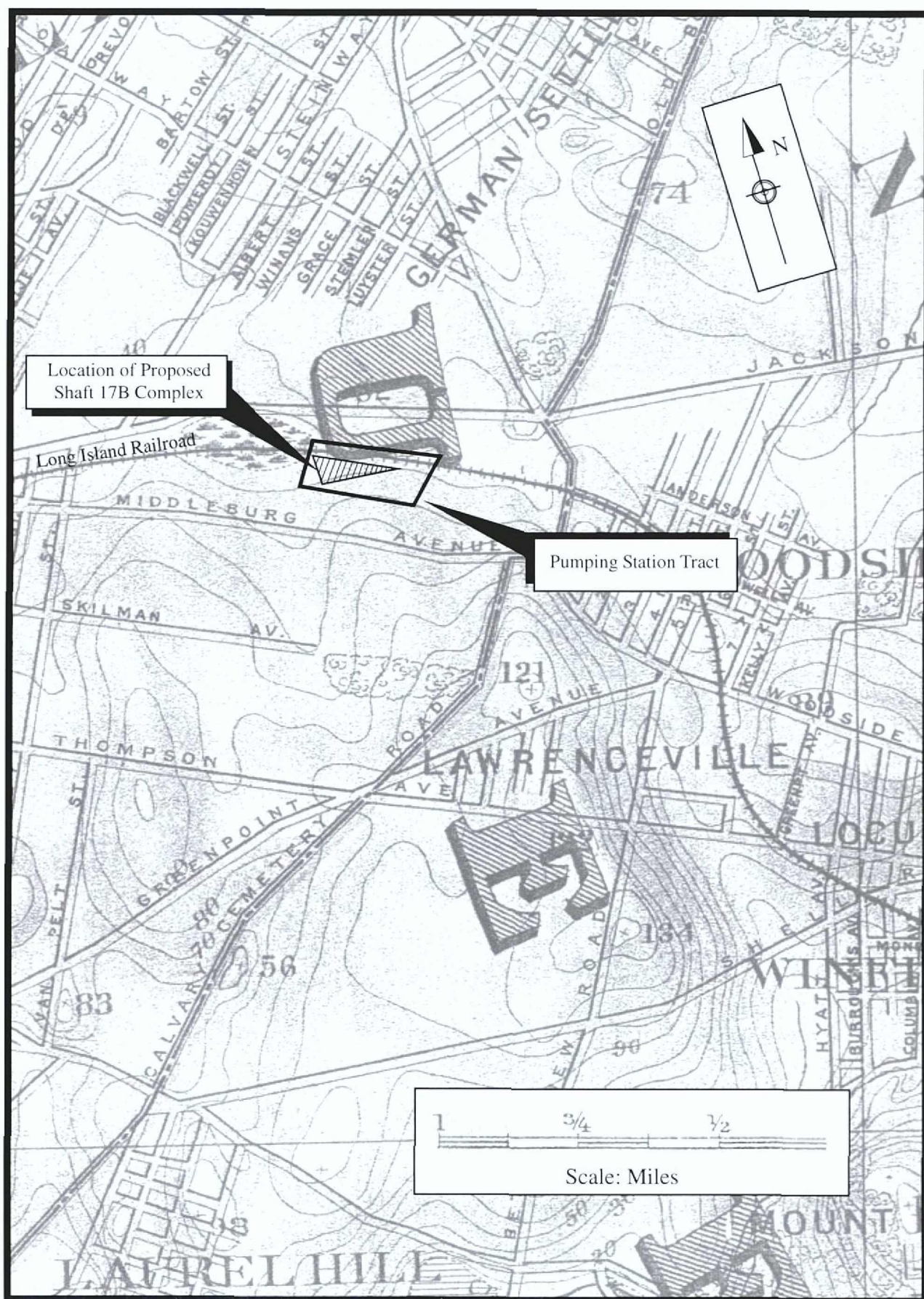


Figure 3 Location of Proposed Shaft 17B Complex in 1890 (Source: Bien 1891).



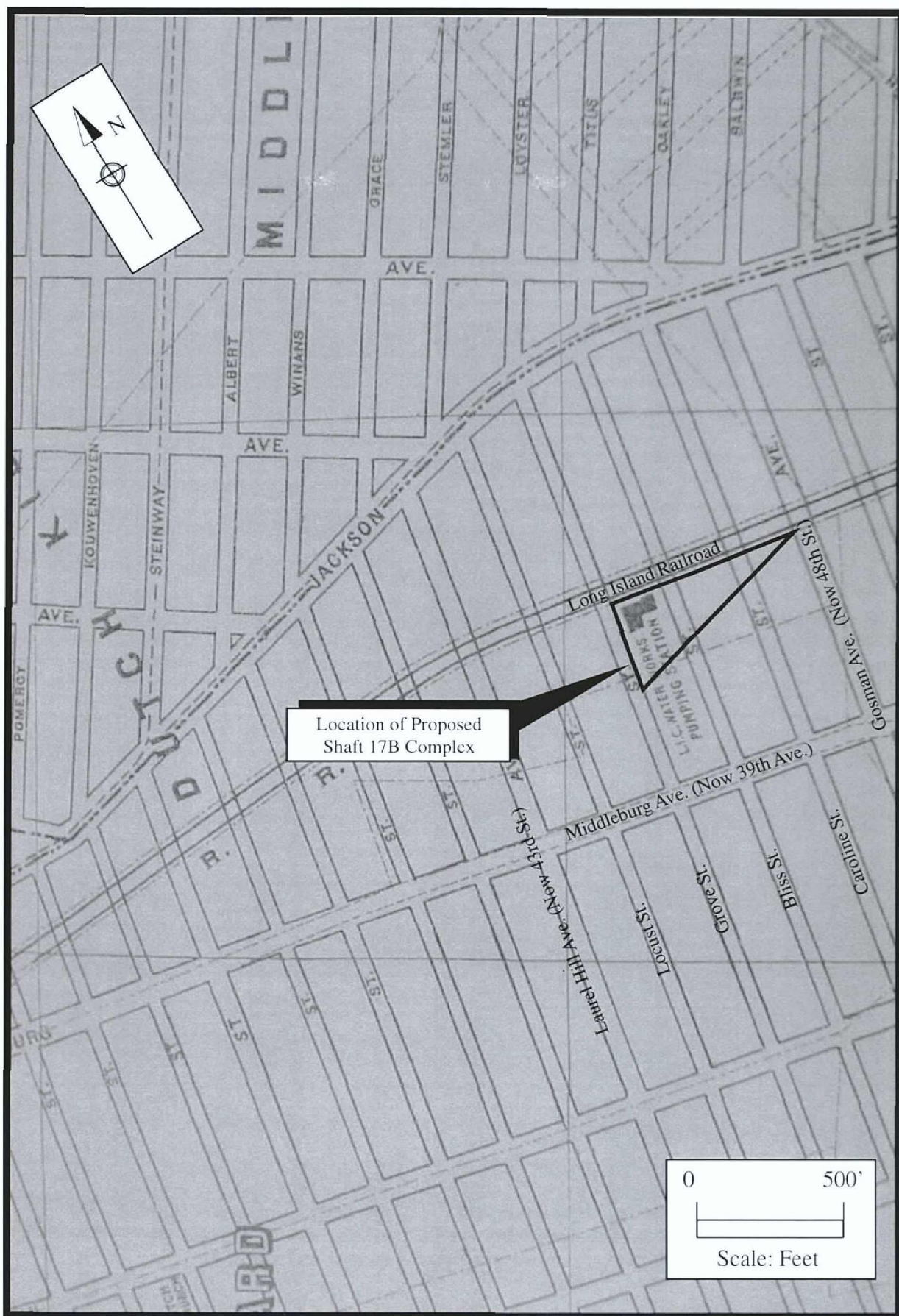


Figure 4 Long Island City Pumping Station, Circa 1901 (Source: Board of Public Improvements 1901).

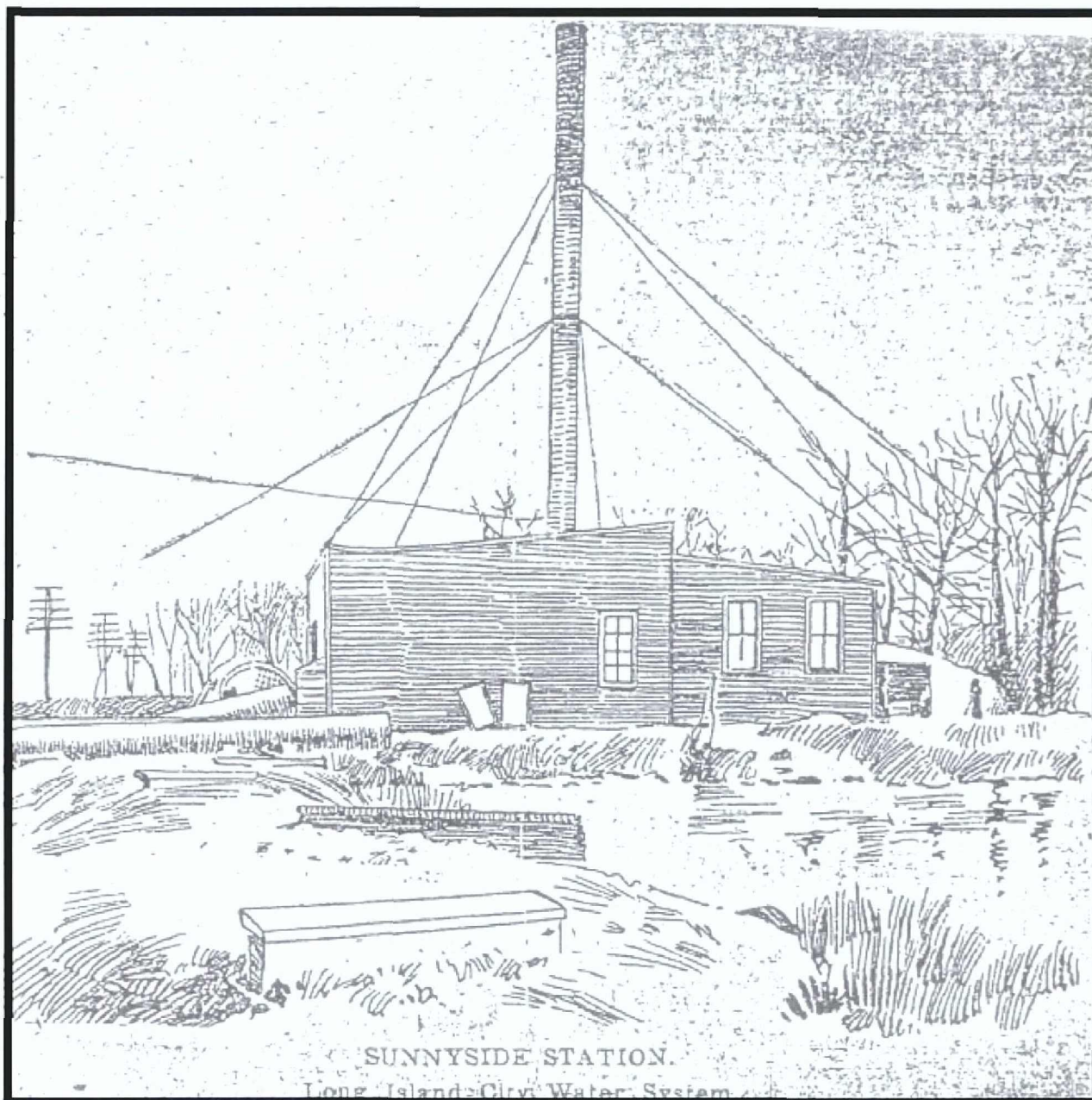


Figure 5 Water Pumping Station No. 3 at Sunnyside (Source: Brooklyn Eagle Newspaper Clipping, March 1898.



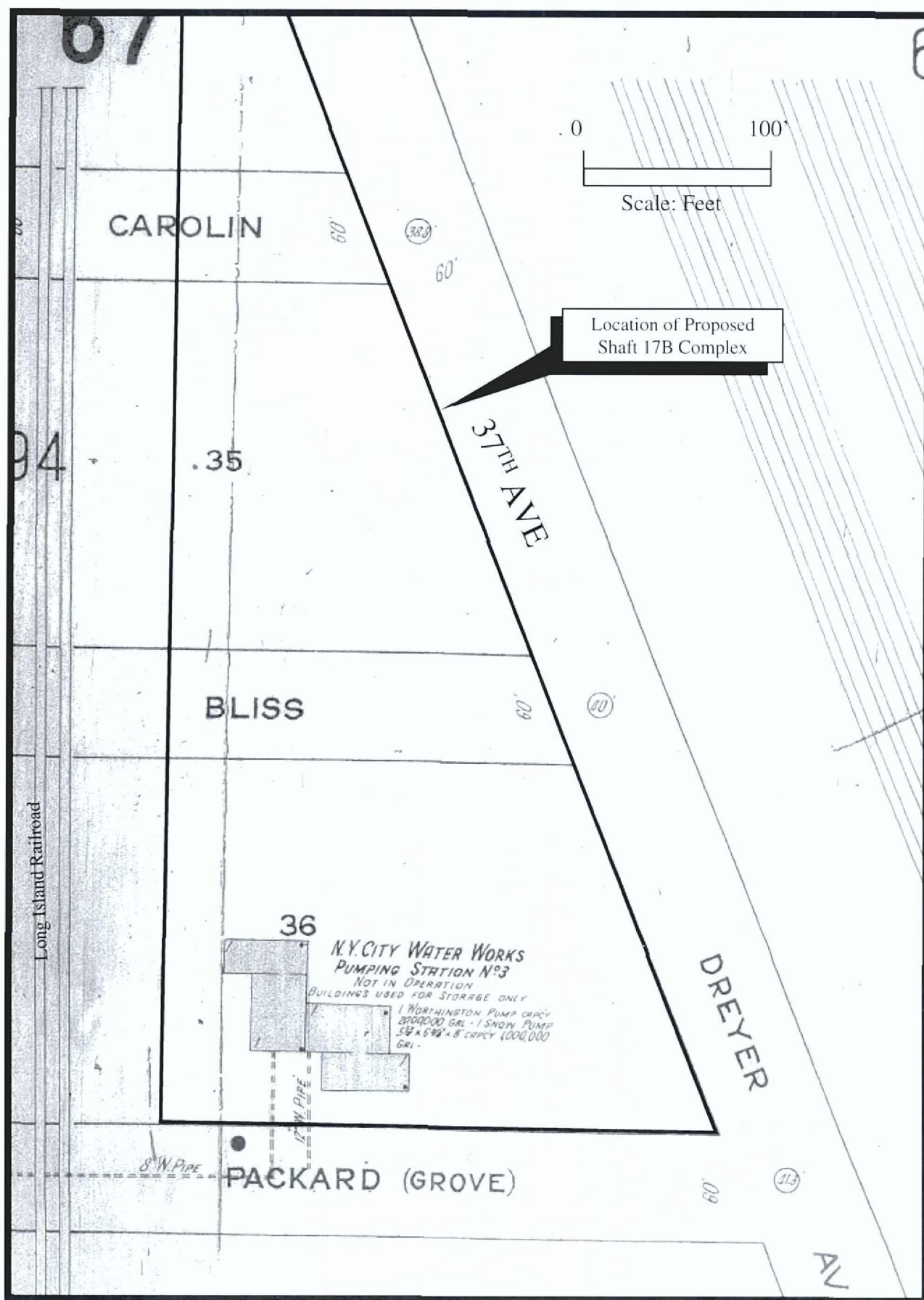


Figure 6 Queens Pumping Station No. 3, Circa 1915 (Source: Sanborn 1915).

Avenue (now 43<sup>rd</sup> Street) and Gosman Avenue (now 48<sup>th</sup> Street); it was called Dreyer Avenue (now 37<sup>th</sup> Avenue).

Even though pumping had been carried on for several years, the water table in the aquifer in 1903 was close to natural levels. By 1936, the water table was at a record low, dipping to 15 feet below sea level. The decline of the water table was attributed to excessive pumping, the elimination of wastewater into sewers, and extensive paving and construction activities that inhibited natural recharge (Perlmutter and Soren 1962:E136-138).

Soon after consolidation, surveys were undertaken to try and find a reliable source of water that could supply the current and future needs of New York City. In 1907, the Board of Water Supply began construction of the Catskill Aqueduct System. City Water Tunnel #1 was completed in January 1917 to distribute the water from the upstate reservoirs. City Water Tunnel #2 went into operation in March 1936 to distribute water from the Delaware Aqueduct system. City Water Tunnel #3 was proposed in 1966. The third tunnel will meet increased demand, reduce the high flows which periodically overload the older tunnels, permit maintenance and repair work on the older tunnels, and provide an alternative in the event of a disruption in one of the other tunnels (Merguerian 2000).

The Sunnyside Pumping Station was already out of operation by 1915. With the depletion of the aquifer and the opening of the City Water Tunnel, it had outlived its usefulness and was relegated to functioning as a storage building (see Figure 6). It appears the pumping station was extant until the 1930s (Hyde 1930). Although the 1936 Sanborn Insurance map of the area does not depict the pumping station, it is noted in 1937 tax records (New York City Department of Finance 1937, Sect. 2, Vol. 1:28; Sanborn 1936) (Figure 7). In 1931, the New York City Water Department built a garage with attached machine and workshops on 37<sup>th</sup> Avenue. The garage has remained in place into the present day.

In 1901, the decision of the Pennsylvania Railroad to locate its rail yard in Sunnyside wiped out the old Dutch farmsteads and much of old Middleburg Road. After buying up all the property between 32<sup>nd</sup> and 43<sup>rd</sup> Streets and between Skillman Avenue and Northern Boulevard, the railroad razed all the houses, leveled a 60-foot-high hill, and filled in over 250 acres of tidal marsh, including the headwaters of Dutch Kills. Sunnyside Yards officially opened to rail traffic in 1910 (Seyfried 1984:82). The opening of the Sunnyside Yards coincided with the completion of the Queensborough Bridge in 1909. The bridge turned the quiet residential backwater of Dutch Kills into a commercial and transportation hub. The rail yard effectively ended any remaining agrarian atmosphere in neighboring Sunnyside and boosted the commercial economy of the area. Strategically located between the Long Island Railroad and the Pennsylvania Railroad, 37<sup>th</sup> Avenue became the home for industrial plants (Figure 8).



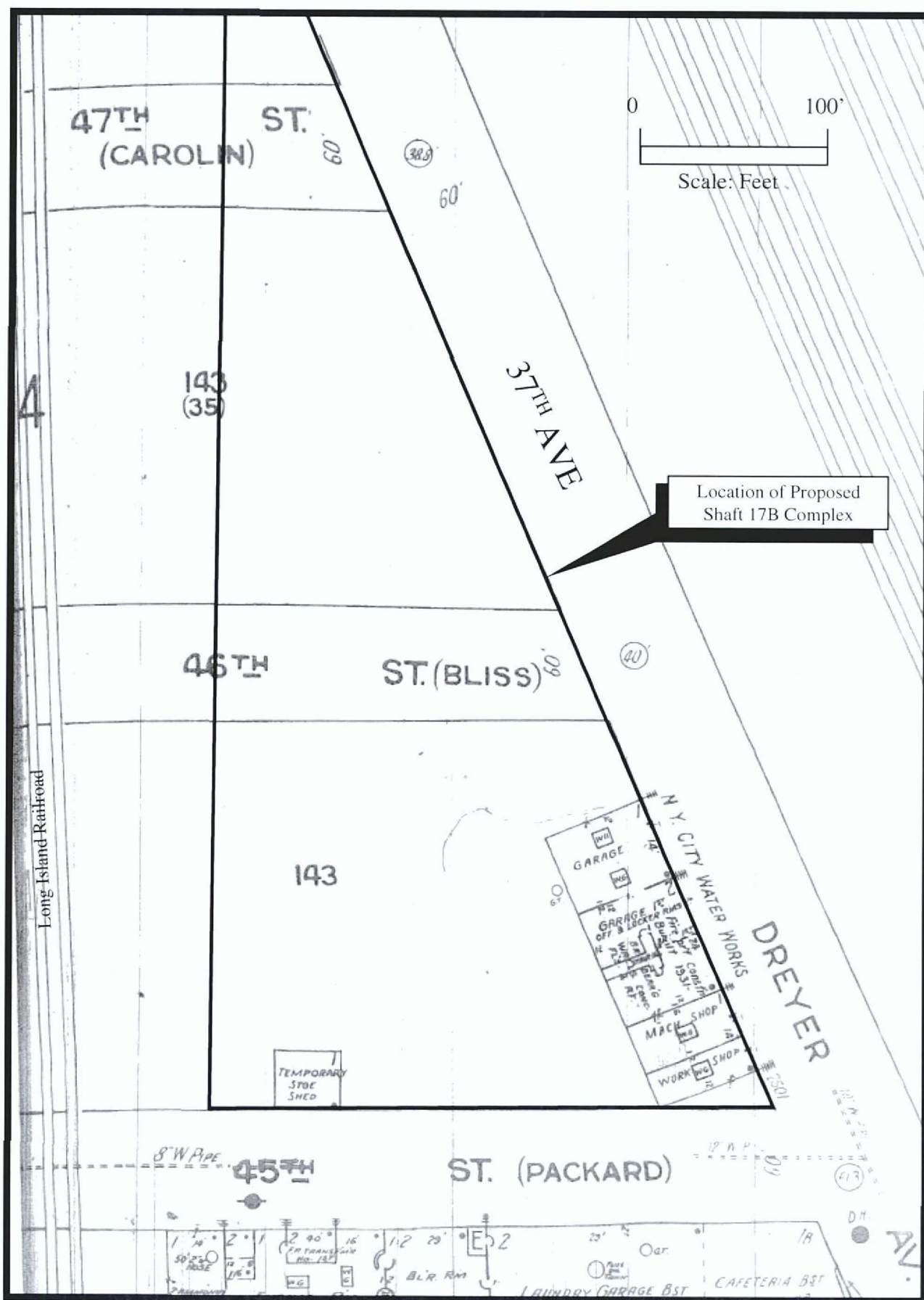


Figure 7 New York City Water Works Sunnyside Facility, Circa 1936 (Source: Sanborn 1936).

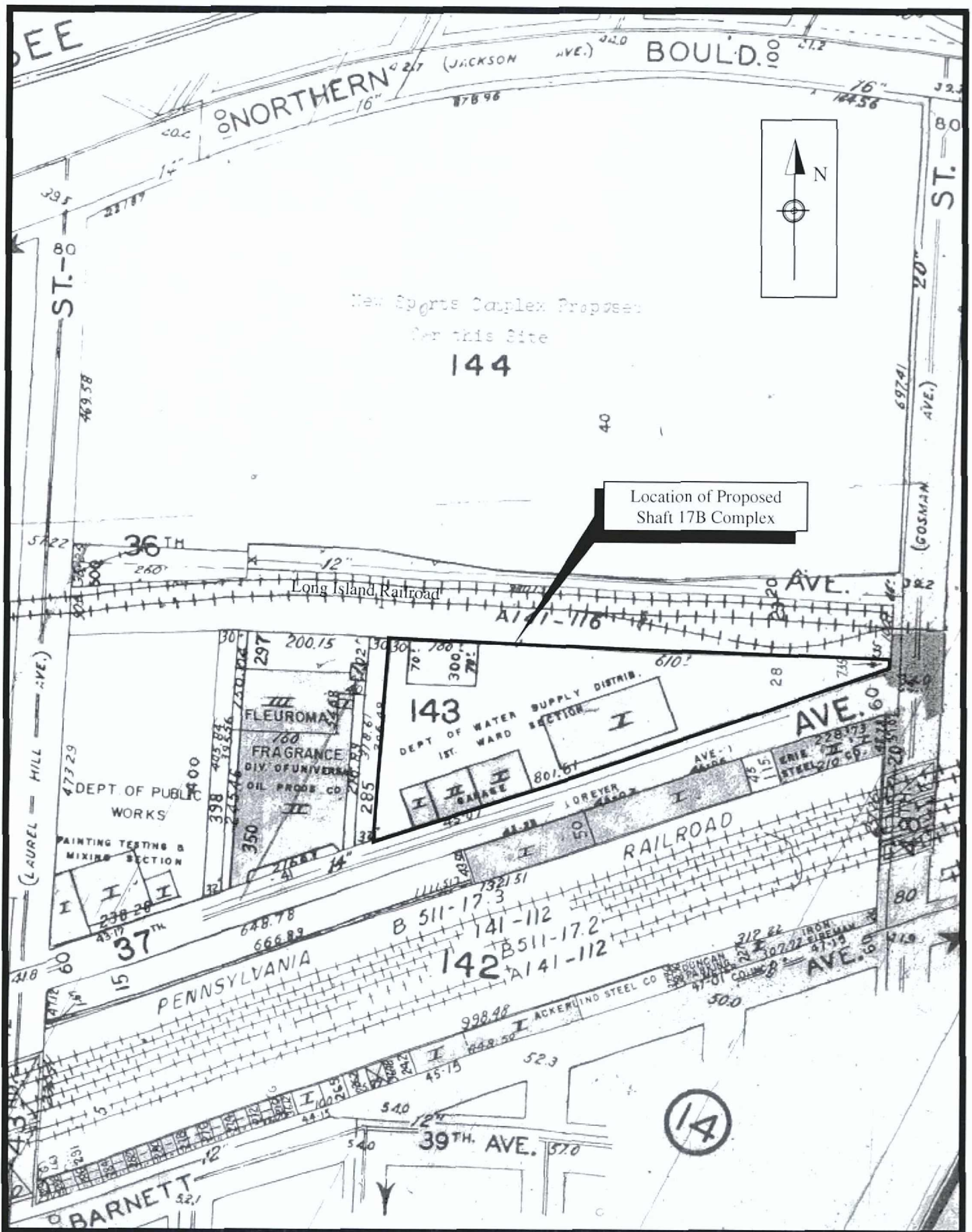


Figure 8 New York City Department of Water Supply Distribution, Sunnyside Facility, Circa 1979 (Source: Hyde 1979).



#### IV. CONCLUSIONS AND RECOMMENDATIONS

Previous studies of both prehistoric and Contact period settlement patterns within the region have indicated that the preferred locations for long-term occupation were elevated and well-drained areas within 150 to 1,000 feet of a freshwater source. Although the project area is situated in an upland setting, early historic maps indicated that the closest freshwater source was the Dutch Kills, located approximately 0.9 miles (4,752 feet) to the west, making the project area unattractive in regard to long-term habitation. It may have served as a location for short-term occupation, but such occupations usually leave behind very little archaeological evidence. In addition, subsequent industrial development would have altered the landscape and impacted any potential prehistoric resources. Therefore, the potential for locating intact prehistoric cultural deposits is low, and no further work is recommended.

The historical background research indicated that the project area was once part of the Bragaw/Gosman farm that dates to the mid-eighteenth century. The location of the farmhouse and associated outbuildings were unknown, but were most likely situated adjacent to Middleburg Avenue. During the British occupation of New York (1776–1783), troops were garrisoned in the Sunnyside area. In particular, Lord Cornwallis' 33<sup>rd</sup> Regiment constructed 50-foot-long, three-sided log huts on the farm of John Bragaw. Bragaw's Tory leanings made his farmhouse the preferred meeting place for all the British officers in the area, including Lord Cornwallis and Sir Henry Clinton. As late as the 1890s, newspapers reported on unearthed artifacts associated with the British occupation and that the outlines of the soldiers' huts were still clearly visible in the fields.

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There is a high-to-moderate potential for a variety of features associated with the British occupation of the project area. If such features have not been impacted by subsequent activities, then they have the potential to address research issues regarding the nature of British occupation and layout of encampment life. The types of archaeological features that may potentially provide valuable information are the remnants of the soldiers' huts and sheet-midden scatter (yard trash), in addition to remnants of privies. Therefore, a Stage IB archaeological investigation is recommended in order to determine the absence/presence of potential intact historic cultural resources.

## REFERENCES

Bien, Joseph R.

- 1891 *Atlas of the Metropolitan District and adjacent country comprising the counties of New York, Kings, Richmond, Westchester and part of Queens in the State of New York, the county of Hudson and parts of the counties of Bergen, Passaic, Essex and Union in the State of New Jersey.* J. Bien, New York. Available at the New York Public Library Map Div. +++(New York [city]) (Bien, J. Atlas of the metropolitan district).

Board of Public Improvements, Topographical Bureau

- 1901 *Map of the City of New York. Section 18.* November 1901. Available at the Long Island Division of the Queens Borough Public Library, Jamaica, New York.

Bolton, Reginald Pelham

- 1972 *Indian Life of Long Ago in New York.* Crown Publishing, Indiana.

Brooklyn Eagle

- 1898 "How Queens Borough Obtains Its Water." March 1898. Available in the clippings file under *Water Supply* at the Queens Borough Public Library, Jamaica, Queens.

Cantwell, Anne-Marie and Diana diZerega Wall

- 2001 *Unearthing Gotham: The Archaeology of New York City.* Yale University Press, New Haven.

Denton, Daniel

- 1902 *Denton's New York.* Reprint of the 1670 original. Burrows Brothers, Cleveland.

Hyde, E. Belcher

- 1930 *Atlas of the Borough of Queens, City of New York. Volume One.* Plate 19. E. Belcher Hyde, New York. 1928 atlas corrected to June 1930. Available on microfilm at the Long Island Division of the Queens Borough Public Library, Jamaica, New York.

- 1979 *Atlas of the Borough of Queens, City of New York. Volume One.* Plate 19. E. Belcher Hyde, New York. 1928 atlas corrected to 1979. Available on microfilm at the Long Island Division of the Queens Borough Public Library, Jamaica, New York.

Mascia, Sara, Richard Schaefer and Faline Schneiderman-Fox

- 1999 *Stage IA Archaeological Assessment for the MTA/LIRR East Side Access Project.* Prepared for AKRF, Inc., New York by Historical Perspectives, Inc., Westport, Connecticut.

Merguerian, Charles

- 2000 "A History of the NYC Water Supply System." Notes for 04 October 2000 Lecture at the Long Island Geologists Dinner Meeting. Topic: History and Geology of the NYC Aqueduct System. Hofstra University, Geology Department, Hempstead, NY. Available online [http://people.hofstra.edu/faculty/charles\\_merguerian/NYC%20Water%Supply/NYCWATERSupply.htm](http://people.hofstra.edu/faculty/charles_merguerian/NYC%20Water%Supply/NYCWATERSupply.htm) (2/2/2004).

New York City, Department of Finance, Bureau of Real Property Assessments

- 1937 *Annual Record of Assessed Valuation of Real Estate, Queens*. Section 2, Volume 1, page 28. Block 143 between 36<sup>th</sup> and Dreyer Avenues, between 43<sup>rd</sup> and 48<sup>th</sup> Streets. Available on microfilm at the Municipal Archives, Manhattan Surrogate Courthouse.

New York City, Department of Water Supply, Gas and Electricity

- 1902 *Report of the Department of Water Supply, Gas and Electricity for the Year Ending December 31, 1901*. Available at the City Hall Library.

Parker, Arthur C.

- 1920 "The Archaeological History of New York—Part II." *New York State Museum Bulletin*, 237/238, September/October, 471–743.

Permuter, N. M. and Julian Soren

- 1962 "Effects of Major Water-Table Changes in Kings and Queens Counties, New York City." Work done in cooperation with New York State Water Resources Commission. Reprinted from Geological Survey Research 1962. Geological Survey Professional Paper 450-E. p. 136–139. U.S., Department of the Interior, Geological Survey. Available in the clippings file under *Water Supply* at the Queensborough Public Library, Jamaica, Queens.

Riker, James, Jr.

- 1852 *The Annals of Newtown, in Queens County, New York*. D. Fanshaw, New York. Reprinted by Hunterdon House, Lambertville, New Jersey, 1982. Available at the New York Public Library.

Sanborn Map Company

- 1915 *Insurance Maps of the Borough of Queens, City of New York. Volume One*. Sheet 67. Sanborn Map Company, New York. Available on microfilm at the Long Island Division of the Queensborough Public Library, Jamaica, New York.
- 1936 *Insurance Maps of the Borough of Queens, City of New York. Volume One*. Sheet 67. 1915 Atlas revised in 1936. Sanborn Map Company, New York. Available on microfilm at the Long Island Division of the Queens Borough Public Library, Jamaica, New York.

Seyfried, Vincent F.

- 1984 *300 years of Long Island City, 1630–1930*. V. F. Seyfried, Garden City, New York. Available at the New York Public Library.

United States Coast Survey

1844 *Map of New York Bay and Harbor and the environs.* The Survey, [Washington, DC].  
Available at the New York Public Library, Map Div. 00-470.

Van Alst, Peter G.

1873 *Map of Property in the second Ward of Long Island City, Queens County, New York called "The Gosman Farm" made by Peter G. Van Alst, City Surveyor, for J. P. Giraud Foster and James Thomson, Esq's of the City of New York. Dated February 1<sup>st</sup>, 1873.* Map No. 412. Filed at the Queens County Register's Office on March 8, 1873.

Van der Donck, Adriaen

1968 *A Description of the New Netherlands.* Edited by Thomas F. O'Donnel. Syracuse University Press, Syracuse, New York.

**Appendix A: Chain of Title**

## CHAIN OF TITLE

- 1898 Consolidation of Kings, Queens, Richmond, and parts of Westchester Counties into New York City brings the Long Island City Water Works under the control of the New York City Department of Water Supply.
- 1873 J. P. Giraud Foster, James and Anna D. Thomson, to Long Island City [Board of Water Commissioners]  
Written March 8, 1873; recorded March 12, 1873  
\$ 32,074  
Parcels in 2<sup>nd</sup> Ward of Long Island City. Block 3 Lots 35-58; Block 4 Lots 35-58; Block 5 Lots 35-58; Block 6 Lots 33-56; Block 3A Lots 1-2; Block 4A Lots 1-2; Block 5A Lots 1-2; Block 6A Lots 1-2; Block 7A Lot 1; including Grove and Caroline Streets.  
Queens County Deed Book 402 page 421
- 1873 William Gosman to J. P. Giraud Foster and James Thomson, Counselors at Law  
Written February 6, 1873; recorded February 17, 1873  
\$65,280  
Farm at Dutch Kills, Long Island City divided by public highway. 1) 26 acres & 12 perches on north side of highway adjoining Abraham L. Schuyler and William Bragaw. 2) 32 acres, 3 roods, & 22 perches on south side of highway adjoining William Morrel, John Alsop, William Payntar, and heirs of Richard Bragaw.  
Queens County Deed Book 401:63
- 1860 William Gosman to The Long Island Rail Road Company  
Written August 27, 1860; September 8, 1860  
\$500  
Strip of land 50 feet wide across William Gosman's land  
Queens County Deed Book 181:463
- 1847 Philo T. Ruggles, Master in Chancery, to William Gosman  
Written April 12, 1847; recorded April 14, 1847  
\$5,810  
Farm at Dutch Kills, Long Island City divided by public highway. 1) 26 acres & 12 perches on north side of highway adjoining Abraham L. Schuyler and William Bragaw. 2) 32 acres, 3 roods, & 22 perches on south side of highway adjoining William Morrel, John Alsop, William Payntar, and heirs of Richard Bragaw.  
Queens County Deed Book 71:46
- 1842 Thomas Addis Emmet, Master in Chancery, to Samuel Morrison  
Written May 23, 1842; recorded June 15, 1842  
\$6,642.12  
Farm at Dutch Kills, Long Island City divided by public highway. 1) 26 acres & 12 perches on north side of highway adjoining Abraham L. Schuyler and William

Bragaw. 2) 32 acres, 3 roods, & 22 perches on south side of highway adjoining William Morrel, John Alsop, William Payntar, and heirs of Richard Bragaw. [Part of Andrew Bragaw farm].

Queens County Deed Book 57:282

- 1839 Abraham & Sarah Bragaw, Margaret Stockholm, and John & Jane Humptry vs. Ellen Bragaw, Rulef Bragaw, Elsy Bragaw, et al.  
Chancery Court held April 23, 1839  
Case involving the estate of Andrew Bragaw

- 1828 Death of Andrew Bragaw  
[Cited in Riker 1852:373]

- 1782 Death of John Bragaw  
[Cited in Riker 1852:372]  
Farm containing project area inherited by his son, Andrew.

- 1757 Death of Isaac Bragaw  
[Cited in Riker 1852:371]  
Farm containing project area inherited by his son, John.

## **Appendix B: Resumes of Key Personnel**



***Education***

B.A./1979/Rutgers University, Douglass College/Archaeology

***Professional***

Society for Industrial Archaeology  
New Jersey Archaeological Society  
National Genealogical Society

***Experience***

Ms. Wuebber has over 20 years experience researching, analyzing, and writing contextual and site-specific histories for industrial, military, transportation, commercial, and residential properties in the Northeast, Mid-Atlantic, Southeast, and Midwest.

1999 to Present: Historian, URS Corporation. Archaeology and Historical Architecture Group.

***Cultural Resource Report, U.S. 130 Over Craft's Creek Bridge, Florence and Mansfield Townships, Burlington County, New Jersey.*** Study of historic roadway. Conducted for the New Jersey Department of Transportation.

***Phase Ia Archaeological Resource Survey for the Proposed Paradise Rail Station Project, Leaman Place, Paradise Township, Lancaster County, Pennsylvania.*** Historical context of railroad community. Conducted for the Red Rose Transit Authority.

***Phase I Archeological Investigations within the Gateway National Recreation Area at the Jamaica Bay Wildlife Refuge, Broad Channel Island, Jamaica Bay, New York.*** Historic context for islands in Jamaica Bay. Conducted for the National Park Service, Denver Service Center.

***Phase I Archeological Investigations within the Gateway National Recreation Area at the Jacob Riis Bathhouse, Jamaica Bay Unit, New York.*** Historic context for Jacob Riis Park, Rockaway Beach, New York. Conducted for the National Park Service, Denver Service Center.

***Phase I Archaeological and Geomorphological Survey for Proposed 8-Inch Sanitary Sewer Line, Whitemarsh Township, Montgomery County, Pennsylvania. ER#02-1143-091-B.*** Historical background for area bordering Wissahickon Creek. Conducted for Whitemarsh Township.

***Phase I Archaeological and Historic Architectural Survey of a section of State Route 9, New Castle County, Delaware.*** For the Delaware Department of Transportation.

***West Virginia Historic Bridge Study.*** Historic Context of pre-1955 Highway Bridges. Conducted for the West Virginia Division of Culture and History, State Historic Preservation office.

***King of Prussia Inn, S.R. 0202, Section 400, King of Prussia, Montgomery County, Pennsylvania.*** Conducted documentary, cartographic, and photographic research for the ca.1719-1952 King of Prussia Inn. For the Pennsylvania Department of Transportation.

***Phase I/II Archaeological Surveys for Proposed the Route 54 Truck Climbing Lanes between Boyd and Elysburg in Northumberland County, Pennsylvania.*** Conducted general background research on the Route 54 project corridor and site specific historic research on three areas selected for Phase II excavation. For the Pennsylvania Department of Transportation, District 3.

***Phase I/II Archaeological Investigations for the Proposed Norfolk Southern Railway Company's Saltsburg to Clarksburg Spur, Armstrong Township, Indiana County, Pennsylvania.*** Assisted in historic research for a Phase I and Phase I/II archaeological investigation for the conducted for the Norfolk Southern Railway Company. The project involved the investigations of a 4.8 miles area of potential effect (APE). For the Norfolk Southern Railway Company.

***Route 21 Cultural Resources Mitigation, Passaic County, New Jersey.*** Researched and wrote walking tour brochure for an ethnically diverse industrial neighborhood in Passaic. For the New Jersey Department of Transportation.

***Phase I Investigation for Proposed Electric Generating Facility in Cass Township, Muskingum County, Ohio.*** Compiled archaeological and historical background data and wrote historical context for the project area. For the Dominion Resources, Inc. and Consolidated Natural Gas (DRI-CNG).

1983 to 1999: Louis Berger.

***Raritan River Crossings Historic Study.*** History of crossings between Raritan Landing and Raritan Bay. For the New Jersey Department of Transportation.

***Georgetown Incinerator Site, Square 1189, Washington, D.C.*** Intensive historical research for the eastern half of a block located along the historic waterfront area. For Millennium Partners of Washington, D.C., Inc.

***Edison National Historic Site, West Orange, New Jersey.*** Ethnographic overview and assessment for the Thomas Edison National Historic Site. For the U.S. National Park Service.

***Randolph BRF 0241(29) Project, Bridge Number 42, Vermont Route 12, Town of Randolph, Orange County, Vermont.*** Phase I archaeological and historical investigations of industrial sites in the village of Randolph, Vermont. For the Vermont Agency of Transportation.

***New Jersey Route 18, East Brunswick and Old Bridge, Middlesex County, New Jersey*** Phase I and II cultural resource investigations for Route 18 bridge improvements. For the New Jersey Department of Transportation.

***Philadelphia, Pennsylvania, Metropolitan Detention Center.*** Intensive historical investigation of half a city block in Center City, Philadelphia. For the U.S. Department of Justice, Federal Bureau of Prisons.

***Delaware SR 1 Corridor, Pine Tree Corners, New Castle County, Delaware.*** Phase I and II investigations at the John Henry Site (7NC-J-223). For the Delaware Department of Transportation.

***New Jersey Route 21(2N), City of Newark, Essex County, New Jersey.*** Phase II historical investigations for Route 21(2N) bridge replacement and roadway improvements. For the New Jersey Department of Transportation.

***Clarksburg, West Virginia, proposed federal facility.*** Phase I archaeological survey at 306-344 West Pike Street, West Clarksburg. For the U.S. General Services Administration, Region 3.

***Houston, Texas, Metropolitan Detention Center.*** Intensive historical investigation of two city blocks in downtown Houston. For the U.S. Department of Justice, Federal Bureau of Prisons.

***Clark-Cochran Farm at the Appoquinimink North Site (7NC-F-13), New Castle County, Delaware.*** Phase III investigation of a multi-component prehistoric and historic site. For the Delaware Department of Transportation.

***Erie Federal Courthouse Site, Erie, Pennsylvania.*** Phase II historical and archaeological investigations. Intensive documentary research of a city block in downtown Erie. For the U.S. General Services Administration, Middle Atlantic Region.

***Greater Sandy Run Acquisition Area, Marine Corps Base, Camp LeJeune, North Carolina.*** Archaeological and architectural study of Camp Davis, a World War II military facility. For the U.S. Department of the Army, Wilmington District Corps of Engineers.

***Naval Air Station Reserve Base, Willow Grove, Pennsylvania, and the Aviation Supply Office, Philadelphia, Pennsylvania.*** Architectural resource assessment and Phase IA archaeological survey of naval facilities. For the Department of the Navy, Northern Division, Naval Facilities Engineering Command.

***Conrail Pennsylvania Clearance Improvement Project.*** Archaeological and architectural assessment of bridges and tunnels throughout Pennsylvania. For the Consolidated Rail Corporation.

***Survey and Evaluation of Historical and Archaeological Resources at the Former United States Coast Guard Station, City of Gloucester, Camden County, New Jersey.*** Phase I and II investigations of a former Coast Guard Station and U.S. Immigration Detention Center. For the U.S. Coast Guard Maintenance and Logistics Command Atlantic, Governors Island.

***Historic American Engineering Record. Gohlson Bridge, Mansion Truss Bridge, Clarkton Bridge, Oak Ridge Bridge, Kerr's Crossing Bridge, Mount Meridian Bridge, Knightly Bridge, Wallace Mill Bridge, and Carpenter's Ford Bridge, Virginia.*** Intensive background research for nine bridges. For the Virginia Department of Transportation.

***Rowland's Mills (28Hu475), New Jersey Route 31 Dualization, Readington Township, Hunterdon County, New Jersey.*** Phase II archaeological and historical investigations of a nineteenth-century milling community. For the New Jersey Department of Transportation.

***Route I-287 (5T, 6N, 7H through 8N, and 9R) HOV Lane Additions, Morris and Somerset Counties, New Jersey.*** Phase I and II cultural resource investigations of alternatives for the Canal Parkway 15-mile-long corridor in Morris and Sussex counties. For the New Jersey Department of Transportation.

***U.S. Route 113, Sussex County, Delaware.*** Archaeological and architectural study of U.S. Route 113 between Milford and Georgetown. For the Delaware Department of Transportation.

***Historical Research for Liberty Gas Pipeline, Middlesex County, New Jersey, and New York City.*** Prepared historical overview for assessment of archaeological potential within proposed gas pipeline corridor. For Transcontinental Gas Pipe Line Company.

***Route 9A Reconstruction Project, New York, New York.*** A contextual study of nineteenth-century manufacturing sites along Manhattan's West Side. For the New York State Department of Transportation, in cooperation with the Federal Highway Administration and the City of New York.

***Historical Research: 1626-1990, Salem Maritime National Historic Site, Massachusetts.*** Responsible for tax and deed research used in development of a site history and series of base maps for the park. For the National Park Service, Denver Service Center.

***Historic Sites Inventory, Delaware Water Gap National Recreation Area, New Jersey and Pennsylvania.*** Responsible for compiling an inventory of historic standing structures in park, and conducted site-specific research on potentially National Register-eligible structures. For the National Park Service, Mid-Atlantic Region.

***Youngstown, Ohio, Proposed United States Courthouse.*** Intensive historical investigation of one city block in downtown Youngstown. For the U.S. General Services Administration, Region 5.

***I-95 Ramp Completion Project, Philadelphia, Pennsylvania.*** Archaeological data recovery. Conducted property research on waterfront lots in Center City, Philadelphia. For Urban Engineers, Inc.

***East Creek Sawmill Site (28CM20), Cape May County, New Jersey.*** Phase II historical and archaeological study. Conducted historical research to identify property ownership and develop historical context for interpretation of mill remains dated circa 1782 to 1913. For the Federal Highway Administration and the New Jersey Department of Transportation.

***Vandeventer-Fountain House Site (A085-01-0007), Staten Island, New York.*** Phase III historical and archaeological data recovery. Conducted historical research related to this late eighteenth- to late nineteenth-century farmstead. For the Department of the Navy, Northern Division, Naval Facilities Engineering Command.

***Florence Historic Archaeological District, Colorado.*** Phase III historical and archaeological data recovery. Conducted historical research related to this late nineteenth-/twentieth-century oil field in Fremont County, Colorado. For the U.S. Department of Justice, Federal Bureau of Prisons.

***Clover Property, Old Dominion Electric Cooperative, Halifax County, Virginia.*** Phase I and II cultural resource survey. Conducted historical research on this late nineteenth-century tobacco plantation. For United Engineers and Constructors, Inc., and Old Dominion Electric Cooperative.

***Proposed New Jersey Turnpike Widening Project, Interchange 8A to U.S. Route 46.*** Environmental Impact Statement. Wrote township histories and conducted research on land use of the New Jersey Meadowlands from the seventeenth through the twentieth centuries. For the New Jersey Turnpike Authority.

***Submarine Escape Training Tank, Naval Submarine Base, New London, Groton, Connecticut.*** Historic structure documentation. Conducted background research on this historic engineering resource. For the U.S. Department of the Navy.

***The Fort Drum Cultural Resource Project, New York.*** Conducted intensive historical research on nineteenth-century farmsteads in Jefferson and Lewis counties, New York, including tax, census, deed, and court records. For the National Park Service, Mid-Atlantic Region, and the U.S. Department of the Army.

*Archaeological Excavation and Historic American Engineering Record Documentation at Locks 4 and 6A of the Delaware and Raritan Canal, Trenton, New Jersey.* Responsible for background research on these historic canal features. For the New Jersey Department of Transportation.

*Archaeological Evaluation of the Washington Metropolitan Area Transit Authority (WMATA) E-Route, Upper Mid-City Segment, District of Columbia.* Developed a historical context for the evaluation of archaeological resources along this transportation route. For Wallace Roberts & Todd and the Washington Metropolitan Area Transit Authority.

*Archaeological Survey for the Rehabilitation of Park Roads, Gettysburg National Military Park, Gettysburg, Pennsylvania.* Conducted research on the Battle of Gettysburg and the history of monumentation in the park. For the National Park Service, Denver Service Center.

***Education***

M.S./1980/Archaeology, Rensselaer Polytechnic Institute  
M.A./1978/American Studies, St. Louis University  
B.A./1975/ History, Westfield State College

***Professional Affiliations***

Register of Professional Archaeologists  
Society for Historical Archaeology  
Society for Industrial Archaeology  
Council for Northeast Historical Archaeology, Board Member  
Professional Archaeologists of New York City

***Experience***

Mr. Morin has over 24 years of experience in conducting and supervising archaeological investigations. He has directed archaeological and historical assessments, National Register evaluations, and archaeological data recovery efforts. Mr. Morin's particular expertise is in the area of urban archaeology and nineteenth century farmsteads, domestic deposits and structural remains.

1999 to Present \* Senior Archaeologist, URS Corporation

***Bridge 9 on Smith's Bridge Road Replacement, New Castle County, Delaware.***  
Principal Investigator for a Phase I archaeological investigation in order to identify the nature and extent of any cultural resources within the project's Area of Potential Effect (APE) and determine if they will be impacted by the proposed construction activities. Conducted for the Delaware Department of Transportation..

***Woodrow Wilson Bridge Improvement Project Virginia/Maryland/Washington, DC.***  
Principal Investigator responsible for all aspects of investigating historic archaeological resources associated with this \$2-billion bridge replacement, which carries I-95 over the Potomac River. The project involved URS managing all cultural resource efforts implemented under the Memorandum of Agreement. Work also included Design Review Working Group created to implement the MOA, and Section 106 and 4(f) coordination with the Virginia, Maryland and Washington, D.C. SHPOs, National Park Service, and Federal Highway Administration on cultural resource issues. Conducted for the Federal Highway Administration.

***Lancaster Pike and Brackenville Road Improvements, New Castle County, Delaware.***  
Principal Investigator for a Phase I cultural resources study of the area of potential effect associated with proposed intersection and roadway improvements. Conducted for the Delaware Department of Transportation..

***State Route 9 Road Improvements, New Castle County, Delaware.*** Principal Investigator for a Phase I cultural resources survey of the area of the area of potential effect associated with proposed intersection and roadway improvements. Conducted for the Delaware Department of Transportation.



***State Routes 24 and 5 Road Improvements, Sussex County, Delaware.*** Principal Investigator for a Phase I cultural resources survey of the area of the area of potential effect associated with proposed intersection and roadway improvements. Conducted for the Delaware Department of Transportation.

***Phase I Archaeological Investigations, Route 71, Monmouth University, Monmouth County, New Jersey.*** Principal Investigator for Phase I archaeological investigations of a pedestrian walkway across Route 71 at Monmouth University. Conducted for the New Jersey Department of Transportation.

***Route 27 Environmental Screening, Somerset and Middlesex Counties, New Brunswick, New Jersey.*** Principal Investigator for environmental screening along Route 27 in Somerset and Middlesex Counties, New Jersey. Conducted for the New Jersey Department of Transportation.

***Cultural Resource Reconnaissance Survey of the Proposed Hillsborough Motor Vehicle Inspection Station, Somerset County, New Jersey.*** Principal Investigator for an historical and archaeological field reconnaissance survey to identify and evaluate the potential for any significant cultural resources within the construction area of a proposed inspection station. Conducted for the New Jersey Department of Transportation.

***Cultural Resource Survey of the Proposed Freehold Motor Vehicle Inspection Station, Monmouth County, New Jersey..*** Principal Investigator for an archaeological survey as part of a Categorical Exclusion Document for a proposed motor vehicle inspection station. Conducted for the New Jersey Department of Transportation.

***Reconstruction of the Stone Street Historic District, New York, New York.*** Principal Investigator for archaeological monitoring of Stone Street reconstruction. Provided the oversight and inspection of an archaeological contractor providing monitoring services associated with the installation of a water main and catch basins. Provided review of resulting archaeological report. Conducted for the New York City Landmarks Preservation Commission.

***Archaeological Monitoring for the Dry-Laid Stonewall Stabilization/Restoration Project, Chesapeake and Ohio Canal National Historical Park, Georgetown, District of Columbia.*** Principal Investigator, for the recordation and evaluation of structural remains and deposits associated with the restoration of the towpath stone retaining wall between 33<sup>rd</sup> and 34<sup>th</sup> Streets. Conducted for the National Capital Region, National Park Service.

***Archaeological Overview and Assessment of the Chesapeake Ohio Canal National Historical Park.*** Principal Investigator for providing archival, literature and collections research for developing an overview and assessment of the prehistoric and historic archaeological resources located within the C&O Canal park. This information will be summarized and evaluated, addressing topics regarding the nature, distribution, and significance of the prehistoric and historic resources. Recommendations will also be generated for future research involving site prediction, sampling bias in the existing



record and National Register evaluations. Conducted for the National Capital Region, National Park Service

1991 to 1998 \* Staff Archaeologist, National Park Service, Denver Service Center, Applied Archaeology Center.

***Archaeological Testing at the Delaware Aqueduct, Upper Delaware Scenic and Recreational River, Minisink Ford, New York and Lackawaxen, Pennsylvania.*** Principal Investigator for the determination of construction impacts to potential archaeological resources associated with the aqueduct and Delaware and Hudson Canal.

***Various Archaeological Assessment and Testing Programs at Gettysburg National Military, Gettysburg, Pennsylvania.*** Principal Investigator, for the determination of construction impacts to archeological resources associated with nineteenth century farmsteads and battlefield related activities. Conducted for Gettysburg National Military Park, National Park Service.

***Archaeological Investigations of Outer Line Drive and PA Route 252 Intersection, Valley Forge National Historical Park, Chester County, Pennsylvania.*** Principal Investigator for the determination of construction impacts to archaeological resources associated with a nineteenth century farmstead. Conducted for the Denver Service Center, National Park Service

***Light Rail System - Archeological Testing of Site AZ:B:16:491 (Pinyin Park Dump) for the Proposed Light Rail System, Grand Canyon National Park, Grand Canyon, Arizona.*** Principal Investigator for developing a Scope of Services and Project Agreement to conduct a program of archeological testing designed to determine, in advance of the proposed project, the condition and extent of below ground cultural resources within a known historic landfill site. Given the history of the site, the potential existed for the discovery of historic resources associated with the developmental history of the Grand Canyon as a tourist attraction. Delineation of these resources would provide the information needed to insure that the final construction design avoids, to the maximum degree feasible, unnecessary impacts on any archeological remains. Conducted for the Grand Canyon National Park by the Denver Service Center, National Park Service.

***Courthouse/Jail Rehabilitation – Archeological Testing, Fort Smith National Historic Site, Fort Smith, Arkansas.*** Principal Investigator for developing a scope of services detailing the testing program to determine the nature and extent of potential archeological resources within area, which would be subject to construction related disturbances. Conducted for Fort Smith National Historic Site by the Denver Service Center, National Park Service.

***Archeological Testing and Mitigation of the Proposed Comfort Station, Stewart Warehouse and Altman Mill, Saltsburg Canal Park – Phase I Development, Saltsburg, Indiana County, Pennsylvania.*** Principal Investigator for determining construction impacts to archeological resources at a canal era warehouse and proposed comfort station, in addition to mitigating impacts to the remains of a canal period dwelling. Conducted for America's Industrial Heritage Project by the Denver Service Center, National Park Service.

***Archeological Assessment and Testing for Phase I Development at Various Sites, Acadia National Park, Bar Harbor, Maine.*** Principal Investigator for determining the construction impacts to archaeological resources associated with a prehistoric and several nineteenth century farmsteads. Conducted for the Denver Service Center, National Park Service.

***Archaeological Assessment for Phase I and Phase II Development at Miners Memorial Park, Windber/Scalp Level Coal Heritage Project, Borough of Scalp Level, Cambria County, Pennsylvania.*** Principal Investigator for evaluating and recording structural remains and deposits associated with the original (circa 1890s to 1910) train station and a circa 1910 house foundation and yard that was occupied by a former coal mine supervisor. Conducted for America's Industrial Heritage Project by the Denver Service Center, National Park Service.

1988 To 1991 \* Senior Archaeologist, The Cultural Resource Group Louis Berger & Associates, Inc., East Orange, New Jersey.

***Phase I/II Archaeological and Historical Investigation of the Proposed NJ Route 129 Realignment Between Broad Street and US Route 1, Trenton, New Jersey.*** Principal Investigator for the recordation and evaluation of a basin associated with industries along the D & R Canal. Conducted for or DKM Properties Corp., Lawrenceville, New Jersey.

***Archaeological Data Recovery of the I-95 Completion Project, Philadelphia, Pennsylvania for the Pennsylvania Department of Transportation.*** Principal Investigator for the mitigation of mid-eighteenth to nineteenth century wharves, domestic deposits and structural remains. Conducted for the Pennsylvania Department of Transportation, Engineering District 6-0 and the Federal Highway Administration.

1986 to 1988 \*Archaeologist, Louis Berger & Associates, Inc.

***Archaeological and Historic American Engineering Record Data Recovery at Two Locks on the Delaware and Raritan Canal, Mercer County, New Jersey.*** Principal Investigator for the mitigation of mid-nineteenth to early twentieth century canal and structural remains. Conducted for the New Jersey Department of Transportation.

***Archaeological Data Recovery Program of the East Creek Mill Site, Cape May County, New Jersey for the New Jersey Department of Transportation.*** Principal Investigator for the mitigation of structural remains of a mid-nineteenth to early twentieth century sawmill. Conducted for the New Jersey Department of Transportation.

***Cultural Resource Reconnaissance of the Azalea Farm Development, Shrewsbury, New Jersey.*** Principal Investigator for the testing of potential archaeological sites. Conducted for Blackpoint Construction Company, Inc., Red Bank, New Jersey.

***Archaeological Data Recovery Program of the Hamlin Historic Archaeological Site, Warren County, New Jersey, for the New Jersey Department of Transportation.*** Principal Investigator for the mitigation of the structural remains of a late eighteenth to early-nineteenth century rural farmstead. Conducted for the New Jersey Department of Transportation.

***Documentary and Literature Search for the Proposed Sanitary Landfill Site 1A, Rockaway Township, Morris County, New Jersey.*** Principal Investigator for the evaluation of the potential for cultural resources. Conducted for Rockaway Township, New Jersey.

1985 – 1986 \* Field Supervisor, Louis Berger & Associates, Inc.

***Route 92, Mercer, Middlesex and Somerset Counties, Technical Environmental Study.*** Historical Archaeologist for the evaluation of nineteenth to early twentieth century farmsteads. Conducted for the Federal Highway Administration and the New Jersey Department of Transportation.

***Archaeological Assessment of Droyer's Point Development, Jersey City, New Jersey.*** Field Supervisor for the evaluation of the potential for cultural resources. Conducted for Department of Housing and Economic Development, Jersey City.

***Phase II Archaeological Investigation of the Washington Street Urban Renewal Area, Site, New York, New York.*** Field Supervisor for the testing of nineteenth century industrial and commercial remains. Conducted for Shearson Lehman/American Express.

1984-1985 \*Crew Chief, Louis Berger & Associates, Inc.

***Barclays Bank Site, 100 Water Street, New York, New York.*** Crew Chief for archaeological data recovery of the block prior to construction of Barclays Bank Tower. Project involved excavation of 18<sup>th</sup> and 19<sup>th</sup> century commercial and residential lots. Responsible for supervising archaeological field crew during excavation. Conducted for Barclays Bank, London, England.

1983-1984 \*Crew Member, Louis Berger & Associates, Inc.

***Phase II Archaeological Investigation of Barclays Bank, 100 Water Street.*** Testing of late seventeenth to early nineteenth century domestic deposits and structural remains. Conducted for the London and Leeds Corporation, London, England

***Phase III Mitigation at Carney Rose/Thomas Tindall Farmstead Site, Trenton, New Jersey.*** Data recovery of seventeenth to early nineteenth century domestic deposits and structural remains associated with a farmhouse. Conducted for the New Jersey Department of Transportation.

1980-1983 \* Staff Historical Archaeologist, American Resources Group, Ltd., Carbondale, Illinois. Responsibilities included site survey and identification; supervision of field crews; laboratory analysis, and report preparation. Dealt with both prehistoric and historic resources, however, main concentration was on historic resources.

***Phase II Archaeological Investigations of the Green Site, Randolph County, Illinois.*** Principal Investigator for the testing and evaluation of a mid-nineteenth century horse powered sawmill and gristmill site.

***Callaway Nuclear Power Plant Survey, Fulton, Missouri.*** Project Historical Archaeologist, for the identification and evaluation of nineteenth to mid-twentieth century deposits and structural remains.

***Phase II Archaeological Survey in Northfield, Sparta, Illinois.*** Project Historical Archaeologist for the historic archaeological research and analysis.

***Phase I Archaeological Survey of the Eden Field, Burning Star Mine #3, Randolph County, Illinois.*** Project Historical Archaeologist, for the identification and evaluation of nineteenth to mid-twentieth century deposits and structural remains.

***Phase I Archaeological Survey of the Northfield and Eastfield, Burning Star Mine #3, Randolph County, Illinois.*** Project Historical Archaeologist, for the identification and evaluation of nineteenth to mid-twentieth century deposits and structural remains.

***Phase I Archaeological Survey of the Eastfield and Westfield Burning Star Mine #5, Jackson County, Illinois.*** Project Historical Archaeologist, for the identification and evaluation of nineteenth to mid-twentieth century deposits and structural remains.

***Phase I Archaeological Survey of the Callaway Nuclear Power Plant, Callaway County, Missouri.*** Project Historical Archaeologist, for the identification and evaluation of nineteenth to mid-twentieth century deposits and structural remains.

1980 \* Project Director, Macon County Conservation District, Decatur, Illinois. Supervised and taught an archaeological field school at the Prairie Homestead Site, a circa 1840 standing structure for Youth Conservation Corp participants.

***Phase I Archaeological Survey of the Kerr-McGee Coal Mine, Galatia, Illinois.*** Crew member. Conducted by the Center for Archaeological Investigations, Southern Illinois University, Carbondale Indiana for the Kerr-McGee Coal Company.

1979 – 1980 *Stadt Huys Site, 85 Broad Street, New York, New York.* Crew Chief for archaeological data recovery of block prior to construction of an office building. Project involved excavation of 17<sup>th</sup> century Dutch occupation and some late 18<sup>th</sup> and early 19<sup>th</sup> century residential lots in Lower Manhattan. Responsible for supervising archaeological field crew during excavation. Conducted for Turner Construction Company, New York, New York.

1979 *Phase II Archaeological Investigations at the Hoboken Hollow Site, Troy, New York.* Crew member. Conducted by Rensselaer Polytechnic Institute, Department of Anthropology and Sociology, Troy, New York.

*Phase II Archaeological Investigation of the Creekside Grove Site, Cheektowaga, New York.* Crew member. Conducted by Rensselaer Polytechnic Institute, Department of Anthropology and Sociology, Troy, New York.

*Hoboken Hollow Site, Troy, New York.* Historic researcher. Conducted archival research on mid-nineteenth century worker housing for Rensselaer Polytechnic Institute, Department of Anthropology and Sociology, Troy, New York.

*Ruscher Brewery Project, Troy, New York.* Historic researcher. Conducted archival research on mid-nineteenth century brewery for a National Register of Historic Places Nomination proposal for Rensselaer Polytechnic Institute, Department of Anthropology and Sociology, Troy, New York.

*Historic Sites Bureau, New York State Office of Parks and Recreation Division for Historic Preservation, Peebles Island, Waterford, New York.* Volunteer. Identifying and cataloguing nineteenth century ceramics, glass and metal.

1978 *Phase I Archaeological Survey of the Watervliet Arsenal, Watervliet, New York.* Crew member. Conducted by Rensselaer Polytechnic Institute, Department of Anthropology and Sociology, Troy New York.

*Phase I Archaeological Investigation of a Revolutionary War Armory, Russell, Massachusetts.* Crew member. Field school on a Revolutionary War armory site conducted by Westfield State College, Department of History, Westfield, Massachusetts.

1975 *Phase I Archaeological Investigation of the Ashley Site, Westfield, Massachusetts.* Crew member. Field school on a circa 1850s farmstead conducted by Westfield State College, Department of History, Westfield, Massachusetts.

*Old Sturbridge Village, Sturbridge, Massachusetts.* Interpreter at a living history museum that portrayed the 1790 to 1840 time period. Conducted blacksmithing demonstrations and acted as a guide in the gum museum.



***Publications***

- 1974      Springfield During the Civil War Years: 1861 – 1865. *Historical Journal of Western Massachusetts* (3)2:25 – 37.
- Why Dig Another Mill Site? Archaeological Investigations of the East Creek Mill. *North American Archaeologist* (12)2:93 – 108.

***Papers***

- 2001      The Virginia Shipbuilding Corporation, 1918 to 1928. Paper presented in the Session, "Industrial Archeology at Government Facilities." Society for Industrial Archeology, Washington, D.C.
- 1997      Excavation, Preservation and Interpretation: The Pennsylvania Canal in Saltsburg. Paper presented in the session, "Archeology and Tourism in Southwestern Pennsylvania." Council for Northeast Historical Archaeology, Altoona, Pennsylvania.
- 1995      Saltsburg and the Pennsylvania Canal: Excavation, Preservation and Interpretation. Paper presented in the session, "Beyond 106: Contributions from National Park Service 'Compliance' Archeology." Society for Historical Archaeology Conference, Washington, D.C.
- 1994      Excavation of the Pennsylvania Canal in Saltsburg: A Synthesis of Four Field Seasons. Paper presented at the Middle Atlantic Archeological Conference, Ocean City, Maryland.
- 1991      Waterfront Technology Along the Eastern Seaboard: An Archaeological Overview. Paper presented at the 1991 Society for Historical Archaeology Conference, Richmond, Virginia.
- 1990      The Archaeology of Philadelphia's Waterfront: The Meadows Excavation. Paper presented at the 1990 Oliver Evans Chapter Meeting, Society for Industrial Archaeology, Philadelphia, Pennsylvania.
- The Meadows Site. Paper presented at the Forks of the Delaware Chapter, Archaeological Society of Pennsylvania, Easton, Pennsylvania.
- 1989      Archaeological Excavations at Locks 4 and 6A of the Delaware and Raritan Canal. Paper presented at the quarterly meeting of the Archaeological Society of New Jersey, Trenton.
- 1988      The East Creek Sawmill, 1782 to 1910. Paper presented at the 1988 Society for Historical Archaeology Conference, Reno, Nevada.

Why Dig Another Mill Site? Archaeological Excavations at the East Creek Sawmill, 1782 to 1910. Paper presented at the annual meeting of the Council for Northeast Historical Archaeology, Quebec, Canada.

- 1987      The East Creek Sawmill Site: A Preliminary Report on Excavations. Paper presented at the Roebling Chapter, Society for Industrial Archaeology Seventh Annual Symposium, Drew University, Madison, New Jersey.

The Hamlin Site, 1780 to 1856. A Study of Rural Consumer Behavior. Paper presented at the 1987 Society for Historical Archaeology Conference, Savannah, Georgia.

- 1986      The Hamlin Archaeological Site, 1780 to 1856. Paper presented at the annual meeting of the Archaeological Society of New Jersey, New Brunswick..

Rural Life in Northwestern New Jersey, 1800 to 1860. Paper presented at the Forks of the Delaware Chapter, Archaeological Society of Pennsylvania, Easton, Pennsylvania.