February 2008

Prepared for:

MTA/NYC Transit

Phase IB Archaeological Investigations for Sunnyside, Queens Rail Complex (Queens Area 12), MTA/LIRR East Side Access Project, Construction Contract CH053

Queens, New York

Prepared by:

URS

Burlington, New Jersey

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February 2008

Management Summary

In December 2007, URS Corporation performed a Phase IB archaeological investigation in support of the East Side Access Project. The East Side Access Project will provide new Long Island Railroad (LIRR) service to Grand Central Terminal by connecting the Port Washington Branch and Main Line tracks adjacent to the Sunnyside Yard in Queens to the lower level of the existing 63rd Street Tunnel beneath the East River, and continuing in a new tunnel to Grand Central Terminal in Manhattan. Along the LIRR's Main Line east of the Sunnyside rail complex, the Main Line track area will be widened to the north and south of the existing embankment. This work will involve construction of retaining walls—one to the north of the embankment (Locus 1) and one to the south of the embankment (Locus 2)—between 43rd and 48th Streets, with filling behind those walls adjacent to the existing embankment. It will also require construction of two new bridges adjacent to and abutting the existing rail bridges that cross 43rd and 48th Streets. This work will be located in what is designated as archaeologically sensitive Area 12. This section of the project site consists of the active tracks of the LIRR Main Line, as well as the land below and adjacent to the tracks on the north and south sides of the embankment.

The Phase IB fieldwork began with the mechanical removal of 0.8 to 5.6 feet of fill that covered the intact soil deposits. Once completed, hand excavation commenced in order to avoid any inadvertent disturbances to intact deposits. Four 3-x-3-foot test units (eight total) were placed in each of the two loci. These test units encountered buried plowzones or Ap horizons that contained a mixture of mostly late-nineteenth-century artifacts. Overall, 439 artifacts were recovered. Most of these artifacts are small in size and probably represent materials that were redeposited during agricultural activities.

In both loci, the encountered buried horizon(s) represents an inherently disturbed context resulting from agricultural activities. None of these buried horizon(s) represent intact, primary deposits. Furthermore, additional disturbances have severely truncated and disturbed most of the surviving plowzone horizon in Locus 1. Although not observably disturbed, the buried horizon in Locus 2 also represents an inherently disturbed context because of agricultural activities; this buried horizon does not represent an intact primary deposit. The artifacts contained in both loci are the product of secondary redeposition and do not represent primary deposits or date to any specific occupation, such as the Hessian and/or British occupation of Sunnyside. No further archaeological work is recommended for Loci 1 or 2 within the East Side Access Project, Area 12.

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Introduction

The East Side Access Project will provide new Long Island Railroad (LIRR) service to Grand Central Terminal by connecting the Port Washington Branch and Main Line tracks adjacent to the Sunnyside Yard in Queens to the lower level of the existing 63rd Street Tunnel beneath the East River, and continuing in a new tunnel to Grand Central Terminal in Manhattan (Figure 1.1). The potential environmental effects of the proposed project were assessed in an environmental impact statement (EIS) prepared for the project, and included an evaluation of the project's potential effects on historic and archaeological resources. As part of the EIS process, Historical Perspectives, Inc. (HPI) completed a Stage IA archaeological assessment in 1999 (Mascia et al. 1999), which was summarized in the EIS. The final EIS (FEIS) for the project was published in March 2001.

Along the LIRR's Main Line east of the Sunnyside rail complex, the Main Line track area will be widened to the north and south of the existing embankment. This work will involve construction of retaining walls—one to the north of the embankment (Locus 1) and one to the south of the embankment (Locus 2)—between 43rd and 48th Streets, with filling behind those walls adjacent to the existing embankment. The retaining wall construction will penetrate to a maximum depth of 5 feet below the current surface. It will also require construction of two new bridges adjacent to and abutting the existing rail bridges that cross 43rd and 48th Streets. This work will be located in what is designated as archaeologically sensitive Area 12 (Figure 1.2). This section of the project site consists of the active tracks of the LIRR Main Line, as well as the land below and adjacent to the tracks on the north and south sides of the embankment.

Initially, a Phase IB investigation was proposed for Area 12 identified in the Stage IA studies described above. The testing program was to have consisted of mechanically excavating a series of test trenches. In the event that intact buried surfaces and/or artifact deposits were encountered, hand-excavated test units would then be utilized for further investigations. Since the areas requiring investigation were located adjacent to active rail lines, discussions occurred involving the New York State Historic Preservation Office (NYSHPO), New York City Landmarks Preservation Commission (LPC), Metropolitan Transit Authority (MTA)/LIRR, and their archaeological consultant (URS Corporation) about developing an alternative testing method that would provide the same information in a more expeditious and safety-conscious approach. Therefore, a geoarchaeological testing program—approved by all three agencies on September 1, 2006—was developed and executed using a Geoprobe 5400 unit. The purpose of the geoarchaeological investigation was to provide the necessary information on the nature, location, and extent of intact and original soil surfaces within Area 12 and the depth of twentieth-century fills above these surfaces. This information was also needed to determine if proposed construction activities for the retaining walls would extend deep enough to encounter the historic surface that might contain archaeological resources associated with the Hessian and British troops who camped in the area during the Revolutionary War. Field investigations were conducted on April 16 and May 7, 2007, and consisted of placing a series of continuously drawn, 2-inch-diameter soil cores, using a track-mounted Geoprobe 5400 unit, within the two archaeologically sensitive locations (Morin and Wagner 2007). A total of seven 2-inch-diameter soil cores were placed at 60-foot intervals along a single transect in Locus 1 (Figure 1.3). In

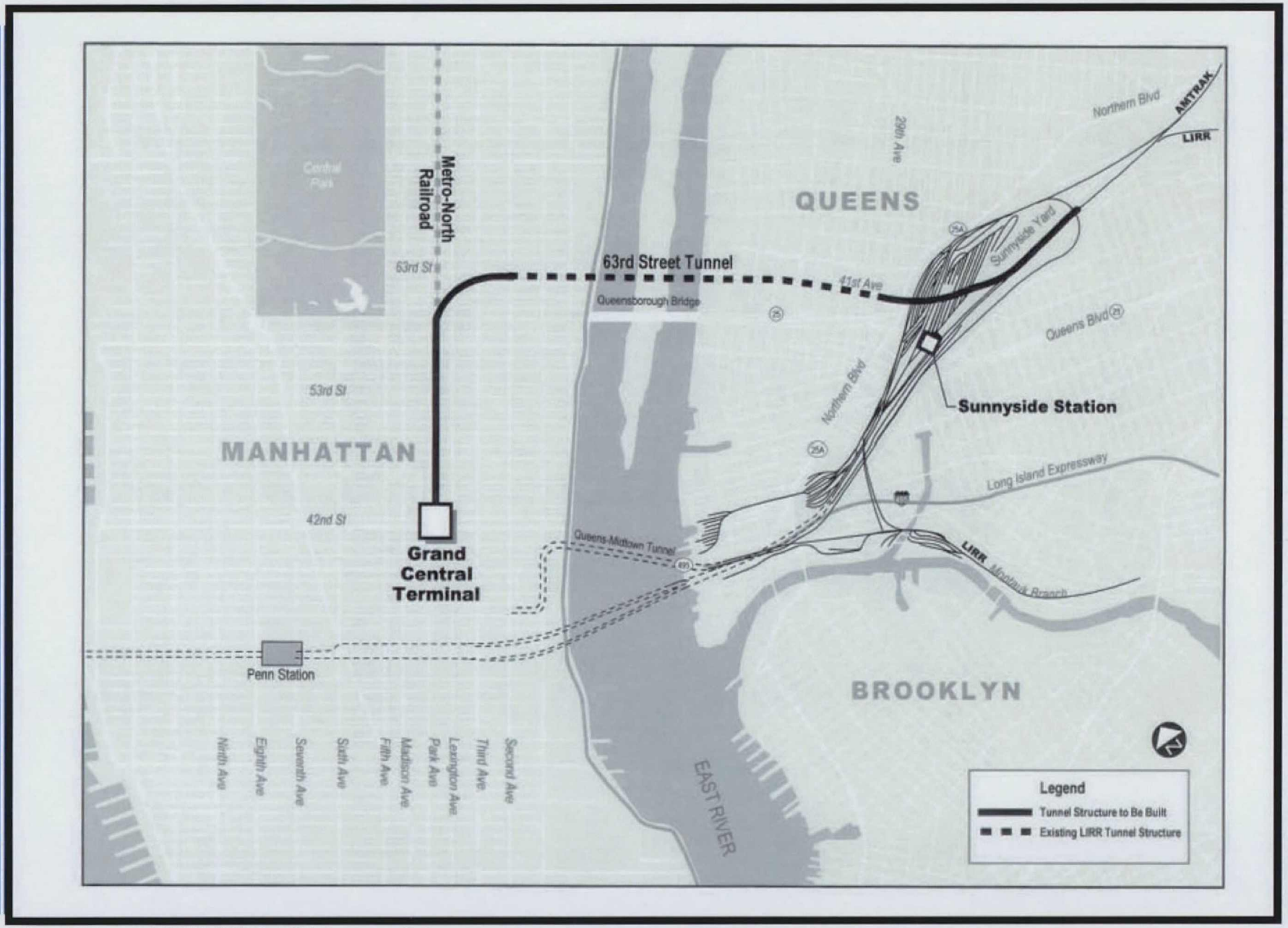


Figure 1.1 MTA/LTIRR East Side Access project area.

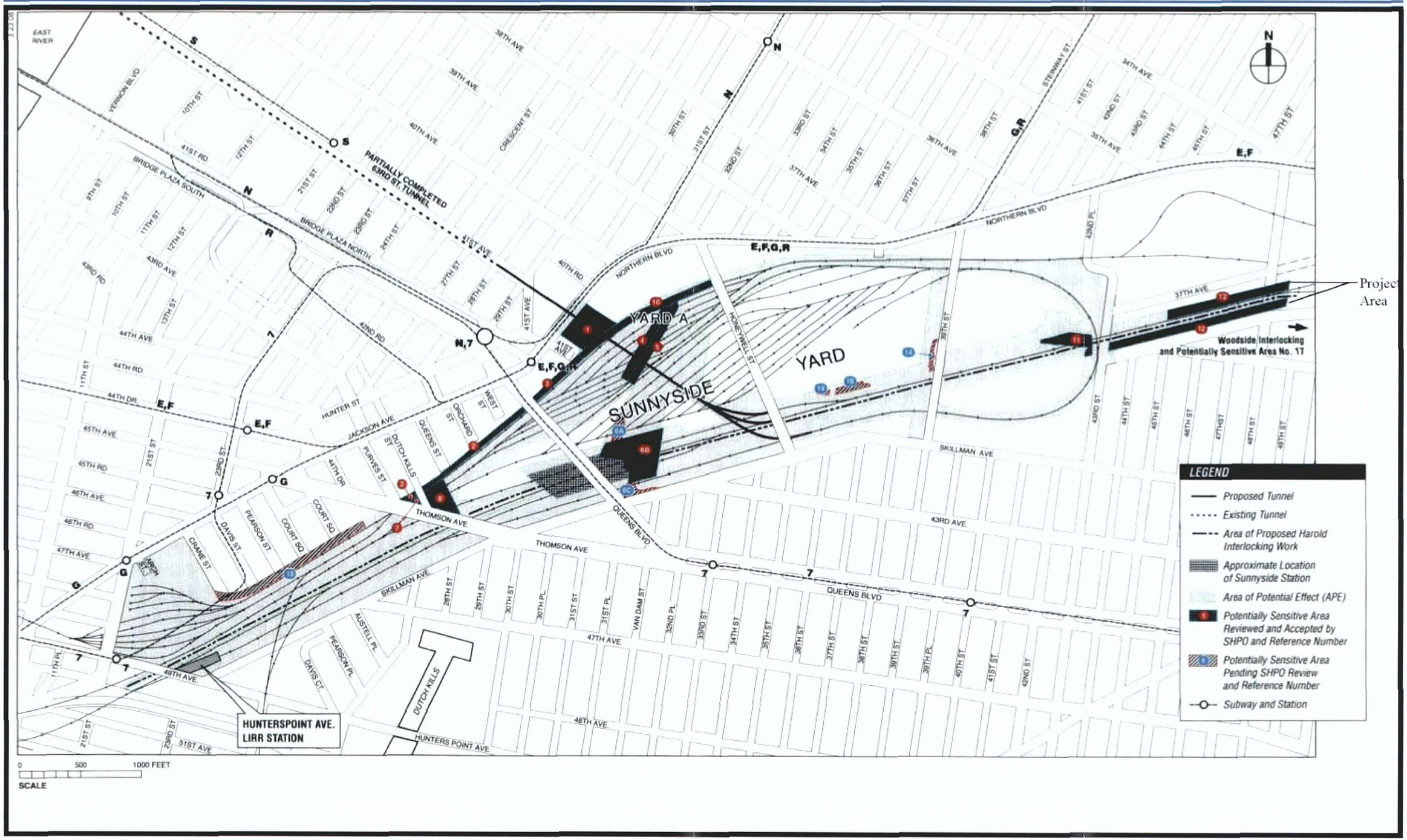


Figure 1.2 Area of potential effects and archaeologically sensitive areas, Sunnyside Yard.

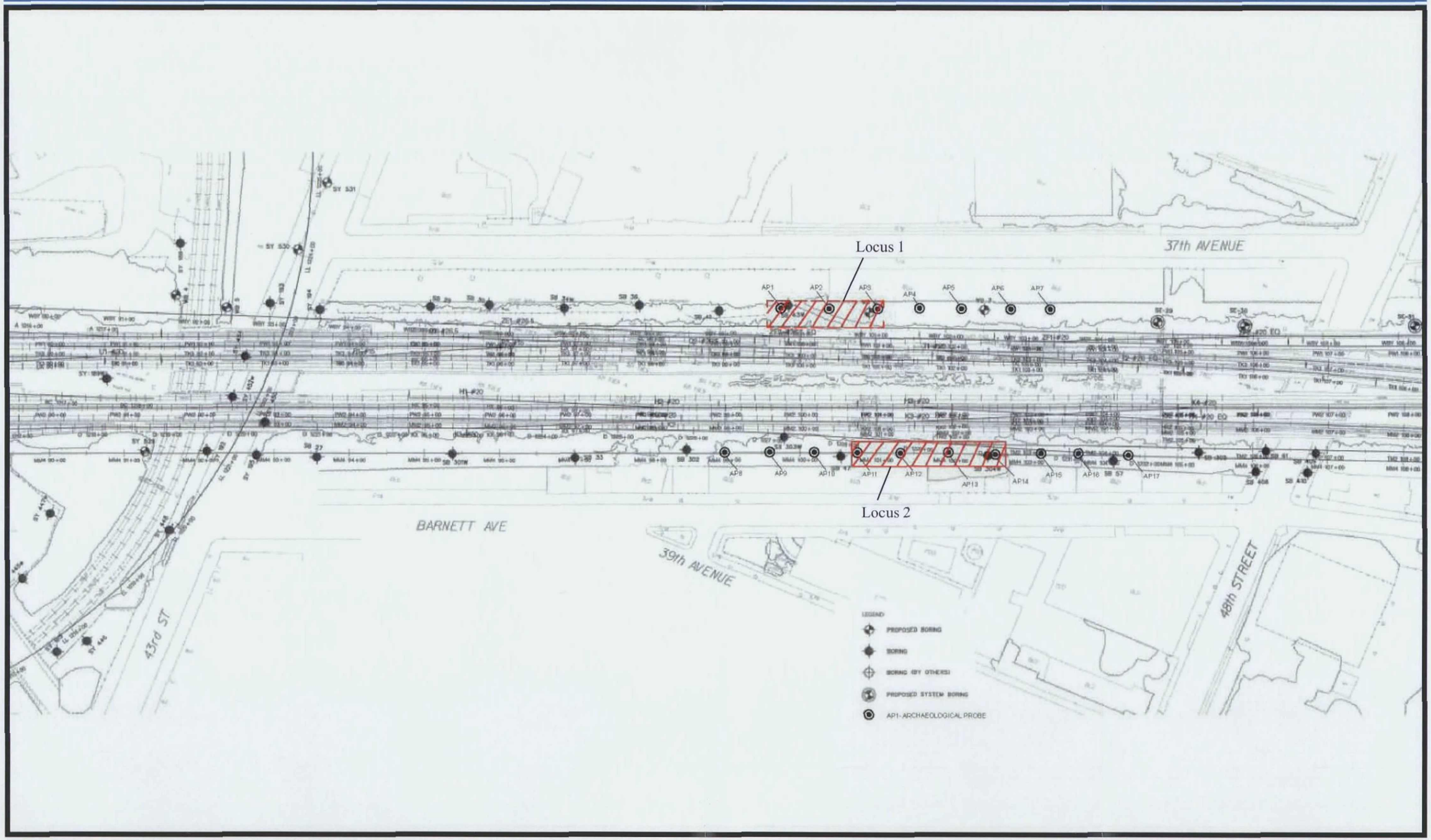


Figure 1.3 Areas tested based on geoarchaeological assessment.

addition, 10 cores were placed at 60-foot intervals along a single transect in Locus 2 (see Figure 1.3). Each core extended to a maximum depth of 10 feet below the current surface (this depth equals two lengths of the Geoprobe core).

Analysis of the 17 soil cores indicated that some amount of disturbance, in the form of filling and grading, is apparent throughout the project area. Fill deposits range in depth from as little as 2 feet (Cores AP2 and AP12) to over 10 feet (AP10 and AP17), with the average fill thickness between 4 to 5 feet. The truncation of natural soil deposits by grading was evident throughout much of the project area, with 14 of the 17 cores exhibiting a varying degree of truncation or mixing with overlying fill material. In several instances (AP5, AP6, AP7, AP8, and AP9), grading has been so severe that none of the original soil horizons are present, and fill materials rest directly atop deep, unweathered substrata. However, in other cases, the effects of grading were relatively minor, and wholly or partially intact surface horizons (Ab horizons) marking the original land surface were identified at three locations in Locus 1 (AP1, AP2, and AP3) and three locations in Locus 2 (AP11, AP12, and AP14). These locations were distributed over the west-central portion of the study area on both the north and south sides of the rail lines (see Figure 1.3). Therefore, additional investigations were recommended in order to determine the presence/absence of cultural deposits within the two locations of Area 12 that retain intact soils.

The Phase IB fieldwork began with the mechanical removal of 0.8 to 5.6 feet of fill covering the intact soil deposits. The fill soils were pulled far enough back from edge of each unit in order to provide a safe working environment for personnel and to comply with OSHA safety regulations. Neither the machinery nor stockpiled soil impacted the operation of the rail lines. Once completed, hand excavation commenced in order to avoid any inadvertent disturbances to intact deposits. Four 3-x-3-foot test units (eight total) were placed in each of the two loci. These test units encountered buried plowzones or Ap horizons that contained a mixture of mostly late-nineteenth-century artifacts. Overall, 439 artifacts were recovered. Most of these artifacts are small in size and probably represent materials that were redeposited during agricultural activities.

The Phase IB fieldwork 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). The investigation were also be conducted pursuant to the *Standards for Cultural Resource Investigations and the Curation of Archaeological Collections in New York State*, prepared by the New York Archaeological Council and adopted by the New York State Office of Parks, Recreation, and Historic Preservation (NYSHPO 1994), and to the guidelines established by the LPC for Phase IB archaeological work in New York City, dated April 12, 2002. The cultural resource specialists who performed this work satisfy the qualifications specified in 36 CFR 61, Appendix A. The Principal Investigator for the Phase IB investigations is certified in the Register of Professional Archaeologists (RPA).

Edward Morin (MS, RPA) served as Principal Investigator for this project. Daniel Eichinger, Field Supervisor, directed the fieldwork, with the assistance of Eileen Krall. Field crew consisted of Andrew Stanzeski and Robert Kotlarek. Scott Hood produced the graphic images and GIS maps. Paul Elwork edited the report for style and consistency and oversaw the production process.

2
Environmental and Physical Setting

PHYSIOGRAPHY AND UNDERLYING GEOLOGY

The project area is located on the western end of Long Island, where basal geology consists of various unconsolidated Coastal Plain deposits ranging in age from Cretaceous to Quaternary. Owing to the glacial history of the area, however, these deposits would not be reflected in the original native soils. Rather, all surficial deposits across Long Island can be attributed to the Wisconsin glaciation, the terminal advance of which in fact corresponds to the island. Glacial moraines marking former ice margins are aligned along both the northern shore and central spine of the island; extensive deposits of glacial outwash are evident to the south of the central moraine. Since the study location is near the moraine-to-outwash transition, several types of glacial material are possible. In close vicinity to the moraine, glacial drift of varying compositions—ranging from loamy sediments to cobbles—would be present. Where outwash is the predominant material, glaciofluvial deposits of sand and gravel would be expected. Additionally, surficial deposits of loess also occur in the Long Island area, particularly near Long Island Sound. These windblown deposits are a common byproduct in the aftermath of glacial retreat, and when present form a mostly silty mantle atop the usually coarser textures of drift and outwash (Morin and Wagner 2007).

UNDERLYING SOILS

Soils within the project area fall within the LaGuardia-Ebbets-Pavement and Buildings Complex (0–8% slopes). This occurs in nearly level to gently sloping areas that are filled with a mixture of natural soil materials and construction debris. Fifteen to forty-nine percent of this complex's surface(s) is covered with impervious pavement and buildings. In general, the soils are a mixture of anthropogenic soils, which vary in their content of coarse fragments (New York City Soil Survey Staff 2005).

The LaGuardia soil series is formed in loamy fill that is greater than 40 inches deep and has intermixed construction debris. It is well drained and occurs on anthropogenic urban fill plains. The typical profile begins with a brown (10YR 4/3) gravelly sandy loam Ap horizon with 25% gravel-sized "artifacts"* and 5% cobbles. The Ap horizon caps a brown (10YR 4/3) very gravelly coarse sandy loam Bw horizon with 40% gravel-sized artifacts and 5% cobbles. The Bw horizon in turn caps a brown (10YR 4/3) very gravelly coarse sandy loam C horizon with 50% gravel-sized artifacts and 7% cobbles (New York City Soil Survey Staff 2005).

The Ebbets soil series is also formed in loamy fill greater than 40 inches deep and has intermixed construction debris. It is well drained and occurs on anthropogenic urban fill plains. The typical

* In the context of this section on soils, the term "artifacts" refers to non-naturally occurring items that are common in soil in urban settings. The New York City Soil Survey Staff (2005) defines artifacts as "human created or altered materials (construction debris, coal ash, garbage, etc.)" that "can affect soil chemical and physical properties; take up rooting volume or water and nutrient storage space." This definition is, in essence, the same as that utilized by archaeologists. The difference lies only in that the survey staff considers *all* human-created items included in the soil column to be artifacts, while archaeologists tend to reserve this term for historic or prehistoric-aged items.

profile begins with a very dark grayish brown (10YR 3/2) loam A horizon with 5% gravel-sized artifacts. The A horizon caps a yellowish brown (10YR 4/4) gravelly sandy loam Bw horizon with 25% gravel-sized artifacts. Finally, a dark yellowish brown (10YR 4/4) gravelly sandy loam C horizon with 30% gravel sized artifacts underlies the upper strata (New York City Soil Survey Staff 2005).

The Pavement and Buildings portion of the complex refers to those areas in which 80% or more of the surface is covered by asphalt, concrete, buildings, or other impervious materials (New York City Soil Survey Staff 2005).

HYDROLOGY AND ELEVATIONS

Drainage in the project area is provided by Dutch Kills, which lies 1.21 miles to the southwest. Dutch Kills is a tributary of the Newtown Creek, and the confluence of these two creeks is 1.79 miles southwest of the project area. The Newtown Creek flows 0.89 miles to the west, where it joins the East River. The East River eventually joins the Hudson Rive to form the Upper New York Bay.

Elevations in the project area are approximately 50 feet above mean sea level.

CURRENT SETTING

Both loci within the project area are adjacent to active railroad tracks and occupy narrow strips of open land between the tracks and industrial/manufacturing businesses. Locus 1 encompasses an access road that leads to the raised railroad embankment (Figure 2.1) and the steep slope of the embankment adjacent to a parking lot (Figure 2.2). Vegetation in Locus 1 generally consists of secondary scrub brush. Locus 2 is much flatter and consists of the narrow (around 10-foot wide) area between businesses and the foot of the railroad embankment (Figure 2.3). Vegetation consists of small deciduous trees and large growths of underbrush (Figure 2.4).

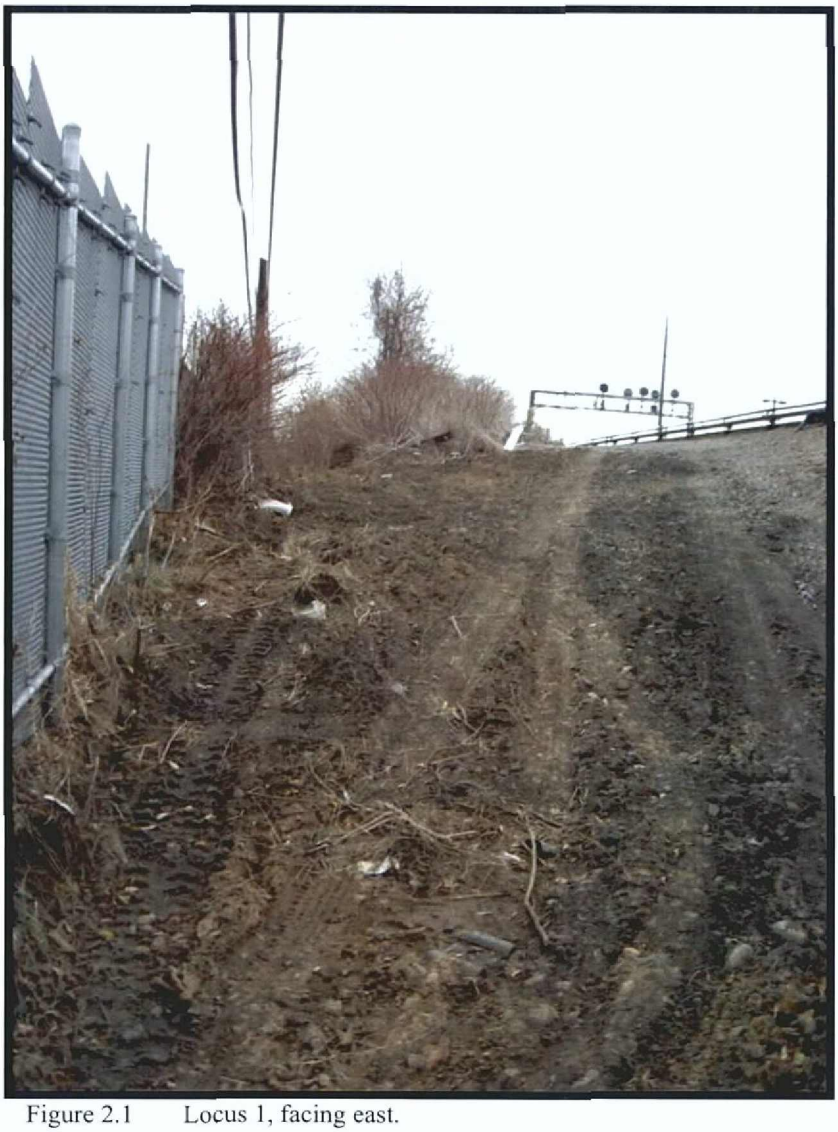


Figure 2.1 Locus 1, facing east.

Figure 2.2 Locus 1, facing south.

Figure 2.3 Locus 2, facing east.

Figure 2.4 Locus 2, facing west.

3
Cultural Background and Archaeological Sensitivity

BACKGROUND RESEARCH

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; the compact nature and waterfront location of these middens 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 [1656]), 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).

Historic Period

The project area is located within what once was a historic farmstead, the ownership of which has been traced back to the eighteenth century, when it was part of the John Bragaw farm. Historically, this section of Queens was part of Newtown and was associated with the scattered settlement around Dutch Kills.

The Settlement of Sunnyside. 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 39th 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 3.1). 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 42nd 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 farm on Middleburg Avenue that encompasses the project area (see Figure 3.1) (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' 33rd 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

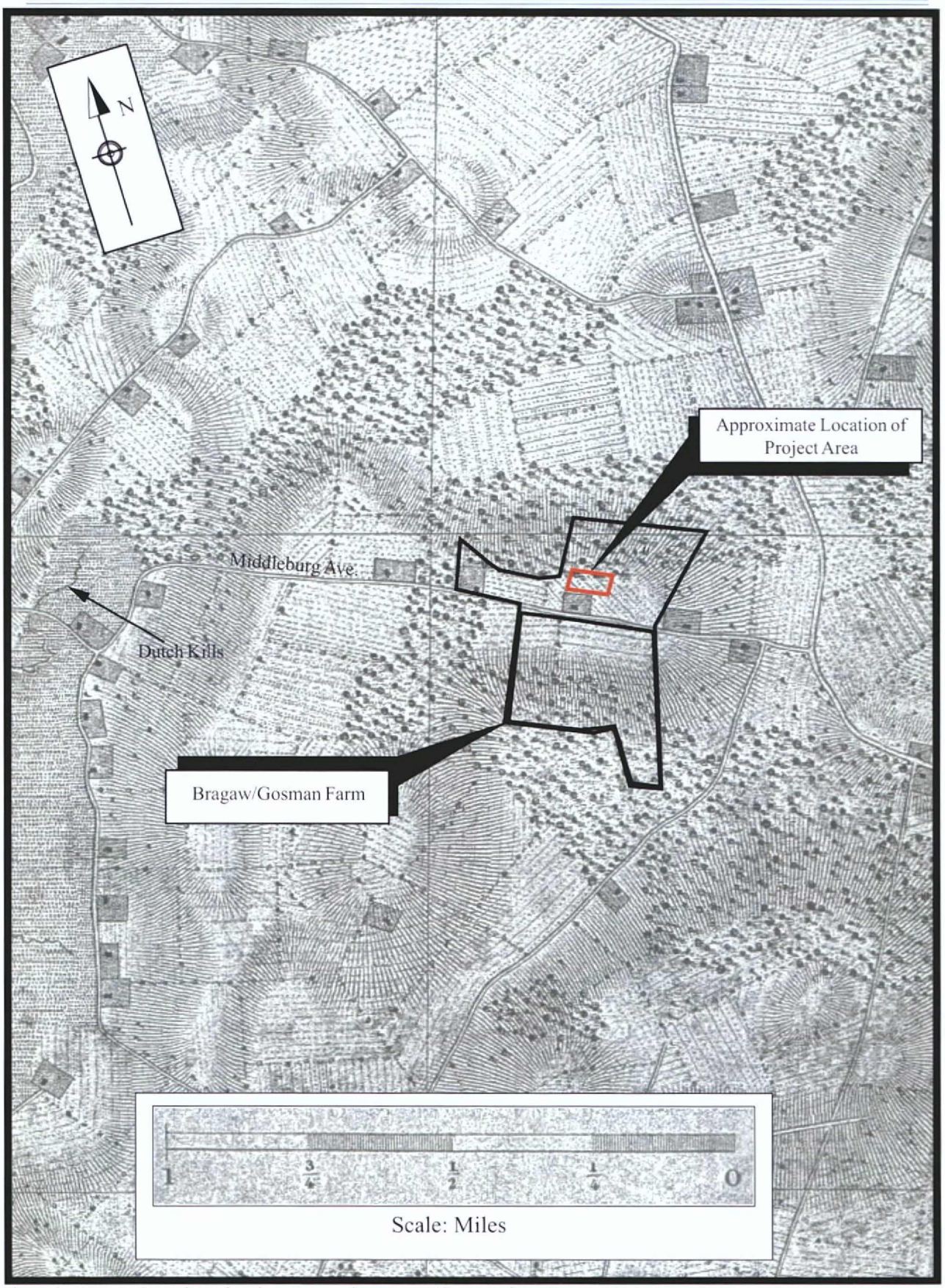


Figure 3.1 Location of project area on the Bragaw/Gosman farm (Source: U.S. Coast Survey 1844).

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. 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. In 1901, the decision of the Pennsylvania Railroad to locate its rail yard in Sunnyside wiped out the original Dutch farmsteads and much of old Middleburg Road. After buying up all the property between 32nd and 43rd 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 Yard officially opened to rail traffic in 1910 (Seyfried 1984:82). The opening of the Sunnyside Yard 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, 37th Avenue became the home for industrial plants.

ARCHAEOLOGICAL SENSITIVITY

A search of the archaeological site files indicated that no known prehistoric sites have been recorded within the immediate vicinity of the project area. However, three historic sites have been recorded within three-quarters to one mile of the project area. These resources 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 distance increases. 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 was low.

A Stage IA investigation (Mascia et al. 1999) identified Area 12 as potentially sensitive for British and Hessian Revolutionary War troop occupation, which may lie in the lowest levels of and beneath the fill deposits. (As noted above on page 3.3, during the period in which the British army occupied New York [1776–1783], troops were garrisoned in the Sunnyside neighborhood.) A comparison of historical and current maps indicated fill on the embankment along the north and south sides of the track bed ranges between 10 and 20 feet in depth in the project area. There is no more than 5 feet of fill at the base of the embankment to the north and south, and to

be conservative, the areas at the base of the embankment were assumed to contain no fill. As part of the Stage IA, HPI examined geotechnical borings taken along the north and south embankments of the existing rail line between 43rd and 48th Streets (Mascia et al. 1999). The information provided in the boring logs did not provide a sufficient amount of information to conclusively determine the depth of fill in the locations of the proposed retaining wall. As a result, the earlier geoarchaeological investigation was conducted to further clarify subsurface conditions within the sensitive sections of Area 12 (Morin and Wagner 2007).

4
Methods and Procedures

FIELD METHODS AND PROCEDURES

Field investigations began with the reestablishment of geotechnical boring locations on either side of the railroad tracks that possessed potential buried archaeological remains. The portion of Area 12 that encompasses the northern side of the railroad tracks and Archaeological Probes (APs) 1 through 3 was designated Locus 1. The portion of Area 12 that encompasses the southern side of the railroad tracks and APs 11 through 14 was designated Locus 2. Once the general locations of the proposed test units were determined, machinery (a Bobcat) was used to remove the 1–6 feet of fill covering the intact soil deposits. The fill soils were pulled far enough back from the edge of each unit in order to provide a safe working environment for personnel and to comply with OSHA safety regulations. These soils from fill deposits of recent origin—or those that had been subjected to extensive disruption—were not screened, though diagnostic artifacts were retained on a selective basis. Once the removal of the fill soils was completed, four 3-x-3-foot test units (eight total) were placed in each of the two loci. Each unit was mapped via a Trimble Geo XT. The data from this sub-meter-accurate GPS device was then overlaid on geo-referenced project maps, which accurately show the placement of each test unit.

After the mechanical excavations and mapping of each test unit, hand excavations commenced in order to avoid any inadvertent disturbances to potentially intact deposits. The units were excavated stratigraphically (i.e., by natural horizons) until sterile subsoil was reached. In select test units, an additional 0.35-inch arbitrary level was also excavated. The purpose of the arbitrary levels was to ascertain whether or not deeply buried prehistoric artifacts were present. All soils from the test units were screened through ¼-inch-mesh hardware cloth, and recovered artifacts were bagged according to their unique provenience. All data was recorded on standard URS forms; the soils were described using the Munsell color system and standard USDA texture classifications.

Upon completion of each test unit, soil profiles were illustrated in measured drawings using engineer's scale tenths of feet in vertical perspective. Digital photography of each illustrated profile and the general project area was also undertaken. At the conclusion of field investigations, all excavated areas were backfilled, leveled, and left as close to original condition as possible.

LABORATORY METHODS AND PROCEDURES

All recovered materials were transported to the URS laboratory facility for processing, conservation, and analysis. All recovered artifacts were washed and labeled. The historic artifacts were analyzed in terms of form and material type, as well as temporal and functional attributes (following Hume 1970 and South 1977). Analysis also included the identification of the terminus post quem (TPQ) of artifacts (following Miller 2000) for each artifact and the generation of mean beginning and end dates for the recovered assemblage. This information was used to establish which contexts are from the same periods of time, as well as which assemblages represent primary versus secondary deposits. Artifact curation was performed in accordance

with the New York Archaeological Council's (NYAC) guidelines. All artifacts and field documentation associated with the project will be housed at the New York State Museum, or an appropriate local depository that meets the NYAC's standards, once the final draft of this report is approved.

5
Results of Fieldwork

In December 2007, URS Corporation (URS) conducted Phase IB archaeological field investigations in the proposed Area 12 of the East Side Access Project. Area 12 encompasses both the northern and southern sides of the existing railroad tracks, designated Locus 1 and Locus 2 (Figure 5.1). Four test units were excavated within each of the loci for a grand total of eight test units. The results of each locus are described separately. All dates utilized during the discussions of the assemblages are from Miller 2000.

LOCUS 1

Locus 1 encompasses an approximately 120-x10-foot area between the railroad tracks and the businesses and parking lots that line 37th Avenue. Four test units were excavated in Locus 1. Although buried plowzones (Apb horizons) and small to moderate amounts of historic artifacts (n=194) were encountered in each test unit, no undisturbed archaeological deposits were encountered. Most of the buried horizons exhibited some degree of truncation or impact from cut and fill episodes, which indicates heavy disturbances throughout Locus 1. Each test unit is described below.

Test Unit 1

Test Unit 1 was placed roughly midway between AP2 and AP3 (see Figure 5.1), which were probes from the geoarchaeological investigation that encountered potentially intact buried surfaces. Due to the absence of the Bobcat on the first day of field investigations, a 5-x-5-foot square was excavated by hand. After the removal of approximately 2.7 feet of multiple recent and disturbed fill horizons, the actual 3-x-3-foot test unit was excavated within this larger square.

Stratigraphy. Because obvious evidence of the Apb horizon could be seen in the western portion of the larger square, it was assumed that a similar horizon was located to the east. This proved to not be the case, because additional fill horizons were encountered at the same depth as the buried plowzone. The first fill horizon (seen in Figure 5.2 as Fill III) initially consisted of a dark gray sandy loam (10YR 4/1) that partially truncated the Apb horizon. Beneath this layer, another fill horizon (Fill IV in Figure 5.2) cut into both the Apb horizon and the underlying B horizon. Fill IV consisted of a very compact dark yellowish brown (10YR 4/4-4/6) medium grained sand with inclusions of coal ash and cinders. Several rounded and angular cobbles were also encountered in this horizon. These cobbles were located mostly along the eastern extent of Test Unit 1 and were initially thought to be the remnants of a wall. Further investigation determined that the cobbles were randomly placed and did not encounter any mortar or other construction materials, so the cobbles were determined to be part of the fill as opposed to an archaeological feature, such as a foundation. It is entirely possible that both fill horizons represent construction of the railroad embankment.

In order to test the undisturbed soil, Test Unit 1 was expanded 2 feet to the west (Test Unit 1a in Figure 5.2). The small portion of undisturbed soils can be seen in Figures 5.2 and 5.3. The Apb horizon consisted of a dark grayish brown (10YR 4/2) silty loam that capped a yellowish brown

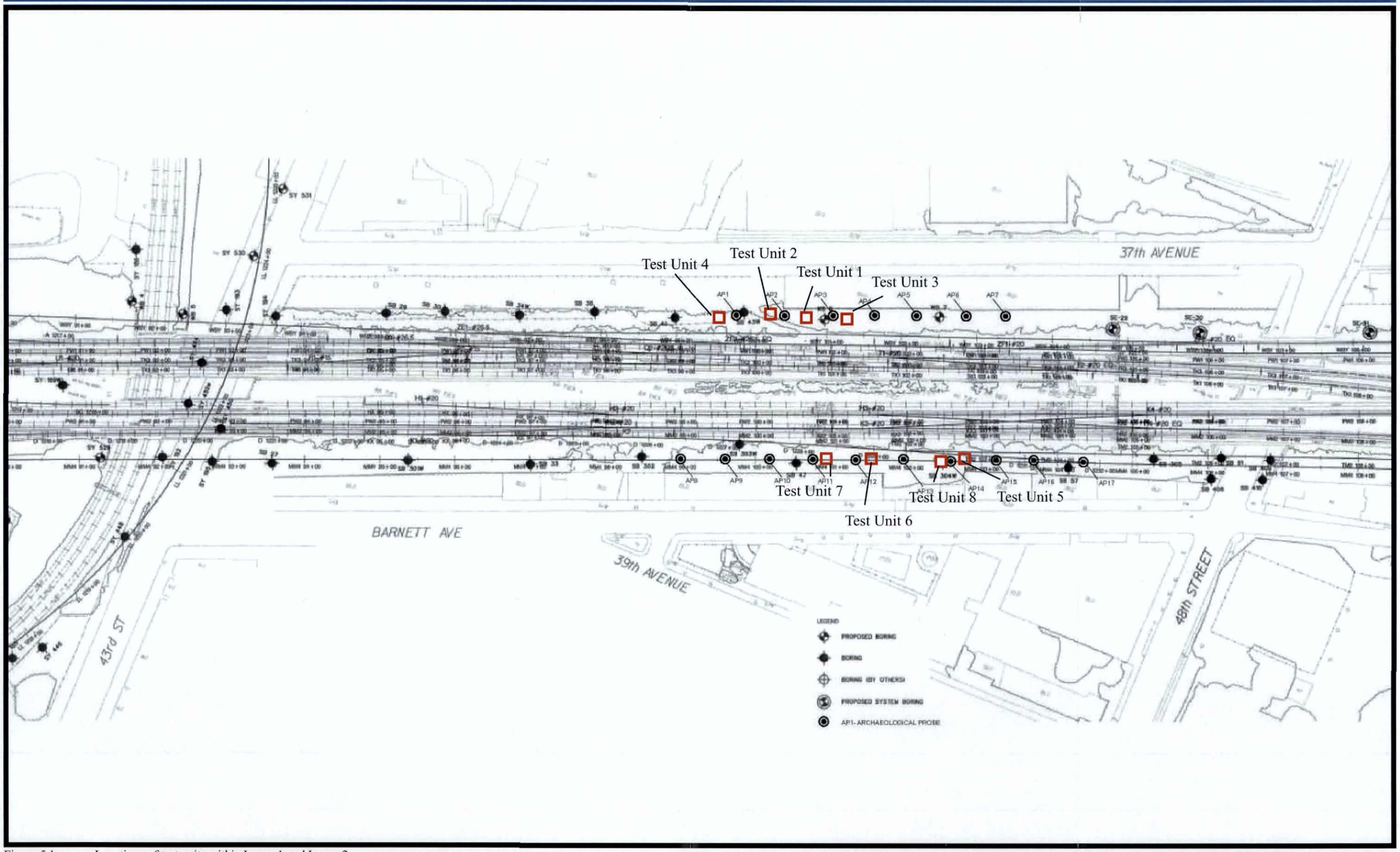
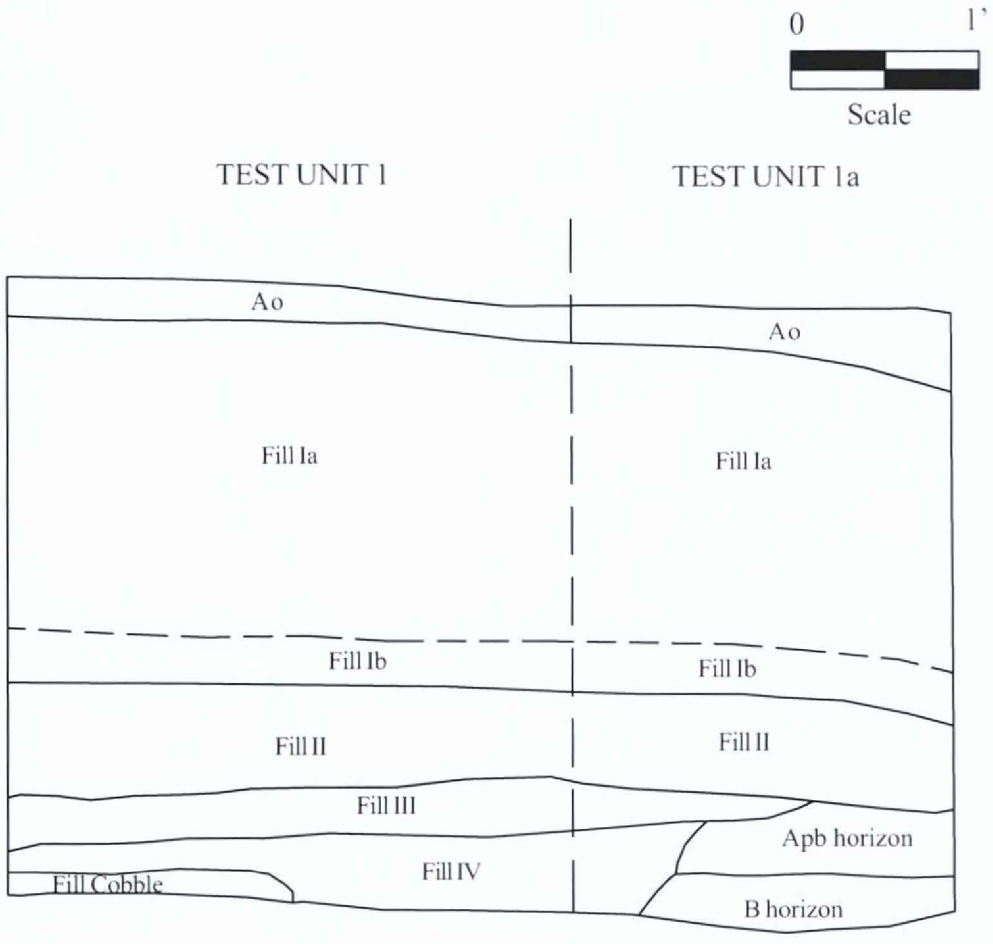


Figure 5.1 Locations of test units within Locus 1 and Locus 2.



Ao horizon: Black (10YR2/1) sandy loam

Fill I: Very dark grayish brown (10YR3/2) mottled with brown (10YR4/3) sandy loam

Fill Ib: Very dark brown (10YR2/2) mottled with brown (10YR4/3) sandy loam

Fill II: Strong brown (7.5YR4/6) medium grained sand

Fill III: Dark gray (10YR4/1) sandy loam

Fill IV: Compact dark yellowish brown (10YR4/4 -4/6) medium-grained sand with coal ash and cinder

Apb horizon: Dark grayish brown (10YR4/2) silt loam

B horizon: Yellowish brown (10YR5/6) sandy clay loam

Figure 5.2 Locus 1, Test Unit 1, profile of north wall.

Figure 5.3 Locus 1, Test Unit 1, profile of north wall, facing north.

(10YR 5/6) sandy clay loam B horizon. The interface between these two horizons was distinct and uniform, indicating the presence of a buried plowzone (Apb horizon) as opposed to an older buried A horizon that could have possibly contained evidence of prehistoric occupation.

Assemblage. Test Unit 1 yielded a total of 21 artifacts. Thirteen of these artifacts were recovered from the fill horizon(s) in the east of the test unit; the remaining eight were recovered from the buried plowzone. The artifacts recovered from the fill horizon(s) consist of window glass, creamware sherds (1775–1820), China Glaze pearlware sherds (1775–1810), unidentifiable bottle and container glass sherds (probably modern), leather fragments of a boot or shoe, and unidentifiable metal.

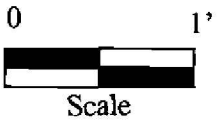
The buried plowzone or Apb-horizon assemblage contained window glass, oyster shell, a redware sherd (1700–1900), and unidentifiable mold-blown container glass (all dates from Miller 2000). The mold-blown container glass is considered unidentifiable because the small size of the specimens make it impossible to determine whether the vessel was blown into the mold via human or machine means. It is possible that these specimens are later or even modern in age. The redware sherd is the TPQ artifact for this assemblage (being the latest dated artifacts, no other artifacts could have been deposited after them). Unfortunately, the rather long and uncertain production age of this variety of coarse earthenware limits its use for dating purposes.

Test Unit 2

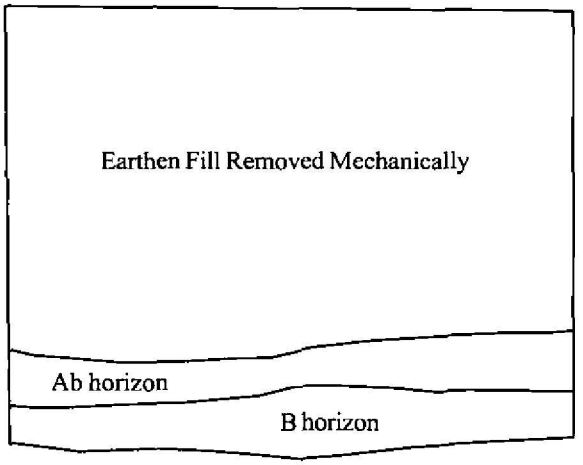
This test unit was placed approximately where AP2 encountered intact, buried soils (see Figure 5.1). After removal of around 1.8 feet of mixed fill materials, the Apb horizon was uncovered and hand excavation commenced.

Stratigraphy. Natural stratigraphy was encountered beneath the fill horizons (Figures 5.4 and 5.5). The first horizon consisted of a shallow, truncated silty sandy loam Apb horizon that was dark grayish brown (10YR 4/2) in hue. This horizon capped the sterile B horizon, which was the same as that observed in Test Unit 1. The interface between the two natural horizons was also similar to that observed in Test Unit 1, indicating a buried plowzone.

Assemblage. Test Unit 2 yielded a total of 21 artifacts. Two of these artifacts were recovered from the overlying fill material and 18 from the buried plowzone (Apb horizon). A single artifact was recovered from the B horizon. The artifacts recovered from the fill horizon consist of a fragment of slate and a possible prehistoric hammerstone. The slate is probably an architectural remnant (i.e., roofing material). Prehistoric groundstone tools, such as hammerstones, are notoriously difficult to identify because end damage can happen through a variety of natural means. The classification of these two artifacts aside, they were recovered from fill horizons and, thusly, are out of context. The 18 artifacts recovered from the Apb horizon consisted of architectural remains (window glass and brick fragments), organic items (coal), household items (ceramics and glass), and an unidentified metal fragment. Excepting one sherd of unidentifiable container glass, the household items comprise the chronologically diagnostic portion of the assemblage. Two sherds of probably Chinese pattern pearlware (1775–1810), two sherds of undecorated pearlware (1775–1830), and three sherds of undecorated whiteware (1820–2007) serve to date the collection. The undecorated whiteware sherds are the TPQ artifacts for the assemblage from Test Unit 2. Unfortunately, while the early date of 1820



TEST UNIT 2



Ab horizon: Dark grayish brown (10YR4/2) silt loam

B horizon: Yellowish brown (10YR5/6) sandy clay loam

Figure 5.4 Locus 1, Test Unit 2, profile of east wall.

Figure 5.5 Locus 1, Test Unit 2, profile of east wall, facing east.

represents the beginning of whiteware's manufacture, undecorated whiteware vessels are still made in the present day. Therefore, it cannot be definitively said that this collection actually dates to the early, mid, or late nineteenth century, much less the early twentieth century and beyond. The presence of the pearlware argues for a possible early-nineteenth-century date, but there is not sufficient archaeological evidence to support this date.

A single unidentifiable sherd of glass was recovered from the upper portion of the B horizon; it can be safely assumed that this is the result of bioturbation.

Test Unit 3

The third test unit within Locus 1 was placed to the east of where AP3 encountered possibly intact soils (see Figure 5.1). These soils were encountered after the removal of approximately 3.4 feet of mixed fill horizons.

Stratigraphy. Natural stratigraphy was encountered beneath the fill horizons (Figures 5.6 and 5.7). The first horizon consisted of a moderately shallow and slightly truncated silty sandy loam Apb horizon that was dark grayish brown (10YR 4/2) in hue. This horizon capped the sterile B horizon, which was the same as that observed in Test Units 1 and 2. The interface between the two natural horizons was also similar to that observed in the previous test units, indicating a buried plowzone.

Assemblage. Sixty-seven artifacts were recovered from the Apb horizon encountered in Test Unit 3. These artifacts consisted of architectural remains (window glass and brick fragments), organic/industrial items (coal and slag), faunal remains (clam and oyster shell), household items (ceramics and glass), and two unidentified metal fragments.

Again, the chronologically diagnostic portion of the assemblage is derived from the household items. A wide range of late-eighteenth- through late-nineteenth-century artifacts were recovered. Ceramic specimens include creamware sherds (1775–1820), various pearlware varieties (1775–1830), whiteware sherds (1820–2007), yellowware sherds (1830–1940), and white granite sherds (1842–1930). Diagnostic glass sherds include mold-blown lamp glass sherds (1859–2007) and machine-made container glass (1889–2007). The TPQ artifacts for this assemblage are the two sherds of machine-made container glass. Because no other artifacts could have been deposited after 1889, it is effectively the age of the assemblage.

Test Unit 4

The final test unit within Locus 1 was placed to the west of where AP1 encountered possibly intact soils (see Figure 5.1). The intact soils were encountered after the removal of approximately 1.9 feet of mixed fill horizons.

Stratigraphy. Natural stratigraphy was encountered beneath the fill horizons (Figures 5.8 and 5.9). Unlike the previous test units, the buried plowzone was a very thick silty sandy loam that was dark grayish brown (10YR 4/2) in hue. Approximately 1.8 feet of Apb horizon was excavated by hand, a much greater amount of plowzone than the previous excavations—probably due to the placement of Test Unit 4 at the base of the ridge/embankment that the railroad tracks occupy. The additional thickness is the result of colluvial activity; soils from

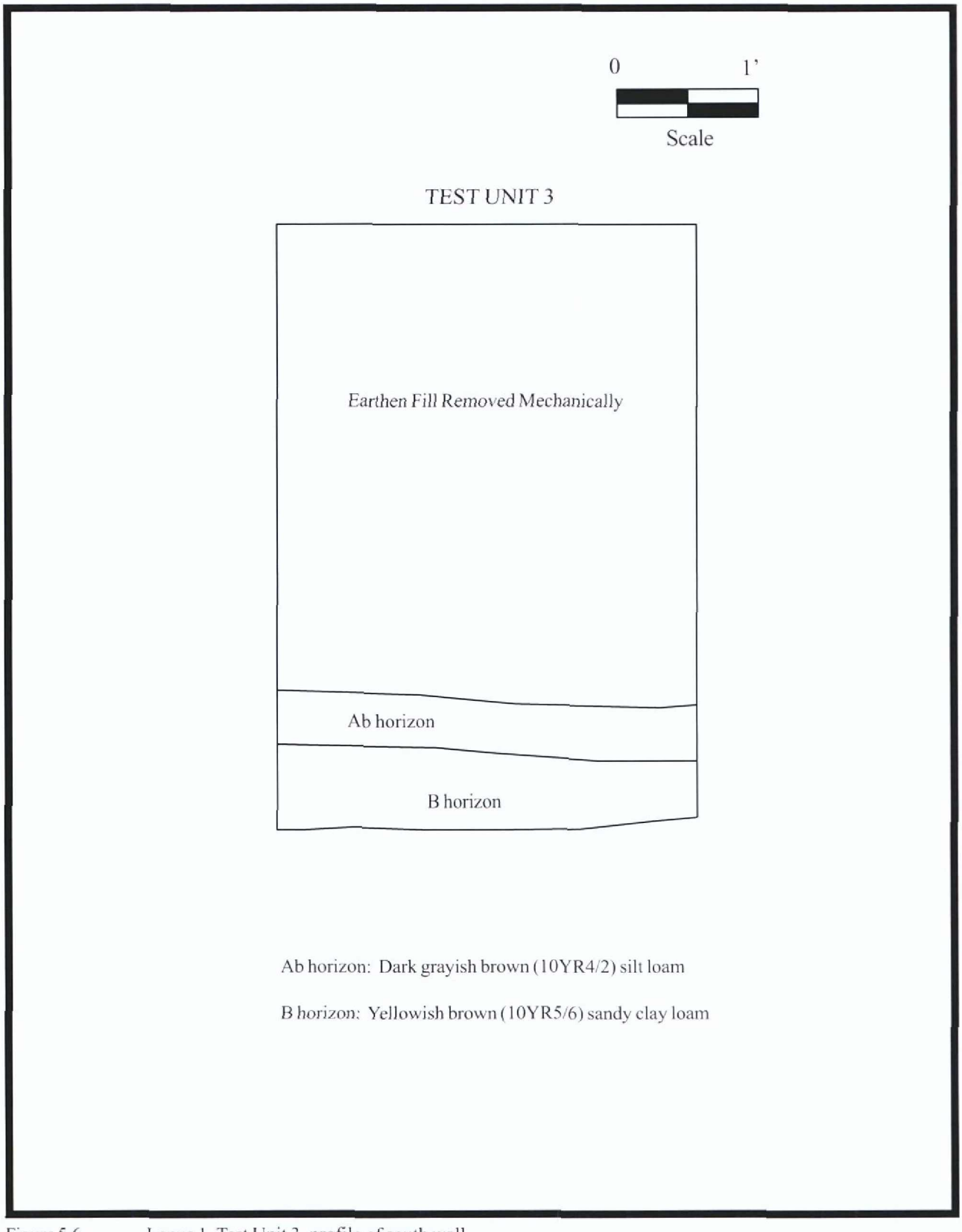
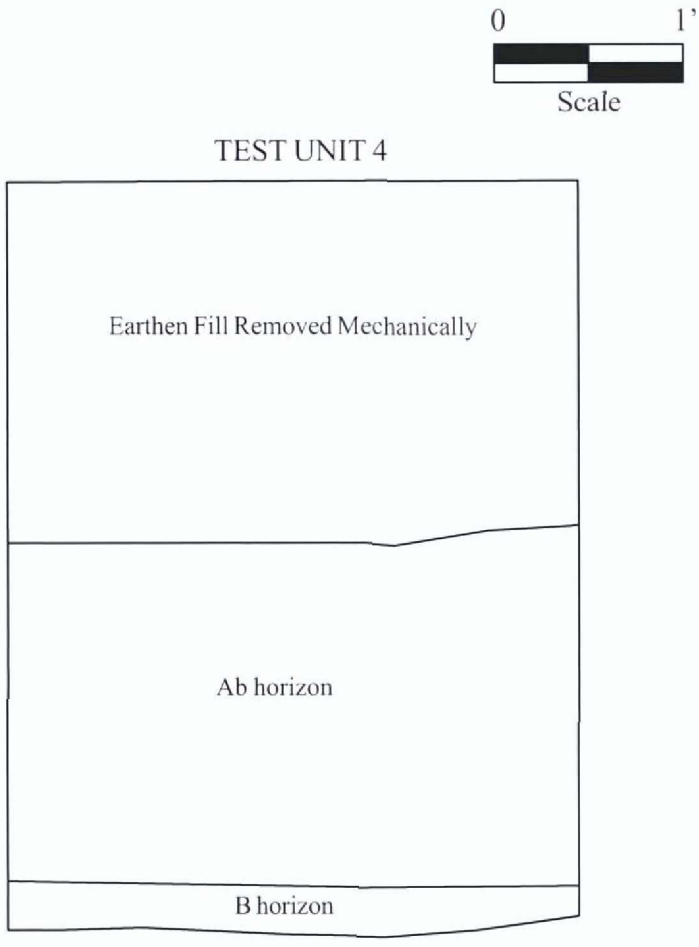


Figure 5.6 Locus 1, Test Unit 3, profile of south wall.

Figure 5.7 Locus 1, Test Unit 3, profile of south wall, facing south.



Ab horizon: Dark grayish brown (10YR4/2) silt loam

B horizon: Yellowish brown (10YR5/6) sandy clay loam

Figure 5.8 Locus 1, Test Unit 4, profile of south wall.

Figure 5.9 Locus 1, Test Unit 4, profile of south wall, facing south.

farther upslope have been redeposited at the base of the ridge/embankment via erosion. This horizon capped the sterile B horizon, which was the same as that observed in all the previous units. Again, the interface between the two natural horizons was distinct and uniform, indicating a buried plowzone versus a potentially prehistoric-aged buried A horizon.

Assemblage. Eighty-five artifacts were recovered from the Apb horizon encountered in Test Unit 4. This represents the largest assemblage obtained from Locus 1, which is probably the result of the thickness of the Apb horizon. Thirty-five percent (n=30) of the assemblage consisted of non-diagnostic architectural remains, such as window glass, brick fragments, roof slate fragments, and heavily corroded unidentifiable nails. Other non-diagnostic materials included coal and oyster shell fragments, a white ball clay pipe stem fragments, and a glass toy marble. Household items (n=47) comprise the bulk of the assemblage. Excepting some unidentifiable porcelain, stoneware, and glass sherds, this portion of the assemblage furnished all of the diagnostic artifacts. As in Test Unit 3, the diagnostic artifacts span a rather long period of time. The early end of the date range is represented in a clouded glaze sherd (1740–1770), creamware sherds (1775–1820), and pearlware sherds (1775–1820). The later time periods are represented in whitewares (1820–2007), white granite sherds (1842–1930), and machine-made bottle sherds (1889–2007). The machine-made bottle sherds furnish the TPQ date for this assemblage, placing it in the late nineteenth century, as no artifacts could have been deposited after 1889. The wide ranges of dates exhibited in this horizon are, again, probably the result of long-term redeposition of local garbage. Furthermore, the fact that this horizon represents erosional redeposition indicates that the recovered artifacts have effectively undergone redeposition twice: first, when they were scattered across the agricultural field; and second, when erosion carried them downhill. This circumstance probably led to the relatively large amount of artifacts recovered and the long date range they represent.

LOCUS 2

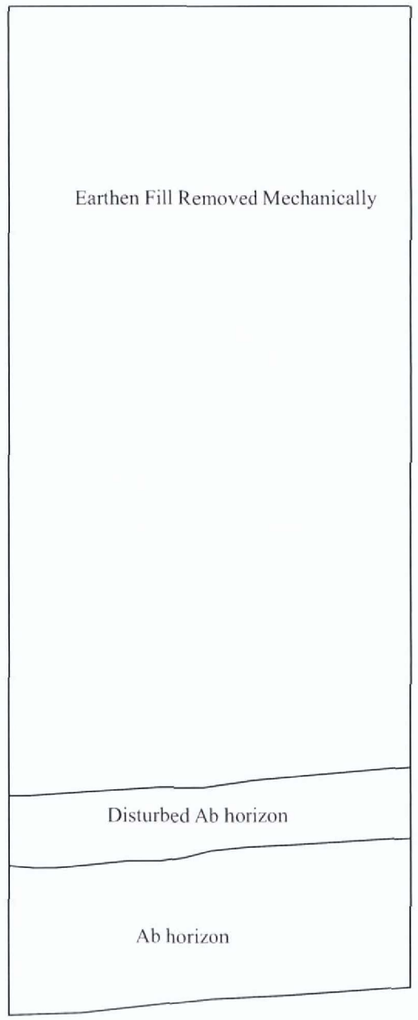
Locus 2 encompasses an approximately 180-x-10-foot area between the railroad tracks and the businesses that line Barnett Avenue (see Figure 5.1). Four test units were excavated in Locus 2. Although an "intact" plowzone (Apb horizon) and small to moderate amounts of historic artifacts (n=245) were encountered in each test unit, no undisturbed archaeological deposits were encountered. As opposed to Locus 1, none of the buried plowzones exhibited any evidence of impact from cut and fill activity. The Apb horizons appeared to have been merely buried or filled over, and not disturbed further during this process. Each test unit is described below.

Test Unit 5

This test unit was placed approximately where AP14 encountered intact, buried soils (see Figure 5.1). After removal of around 0.6 feet of mixed fill materials, the Apb horizon was uncovered and hand excavation commenced.

Stratigraphy. Natural stratigraphy was encountered beneath the fill horizons (Figures 5.10 and 5.11). The first horizon consisted of a non-truncated silty sandy loam Apb horizon that was dark grayish brown (10YR 4/2) in hue. This horizon capped the sterile B horizon, which was the same as observed in Locus 1. The interface between the two natural horizons was also similar to

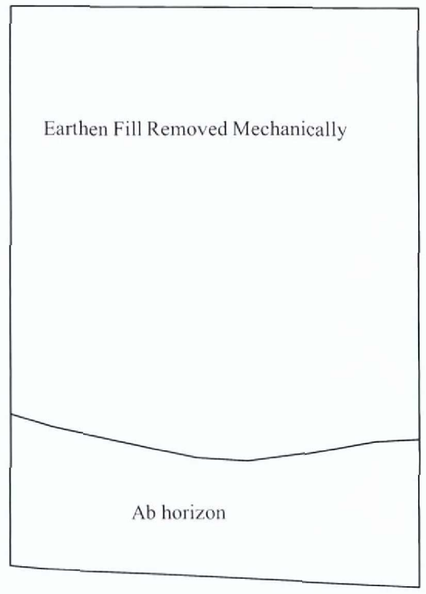
TEST UNIT 7, Profile of South Wall



Disturbed Ab horizon: Dark grayish brown (10YR4/2) silt loam mixed with earthen fills

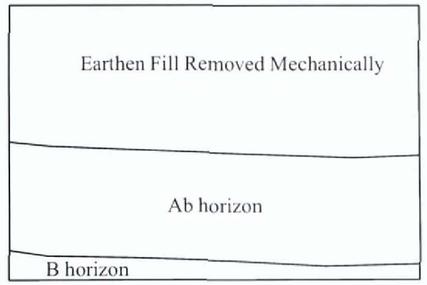
Ab horizon: Dark grayish brown (10YR4/2) silt loam

TEST UNIT 6, Profile of South Wall



Ab horizon: Dark grayish brown (10YR4/2) silt loam

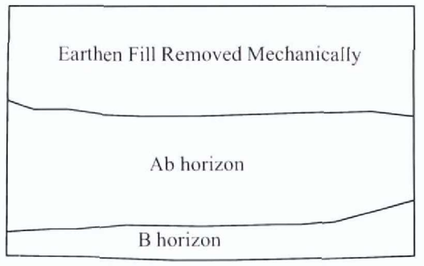
TEST UNIT 8, Profile of South Wall



Ab horizon: Dark grayish brown (10YR4/2) silt loam

B horizon: Yellowish brown (10YR5/6) sandy clay loam

TEST UNIT 5, Profile of East Wall



Ab horizon: Dark grayish brown (10YR4/2) silt loam

B horizon: Yellowish brown (10YR5/6) sandy clay loam

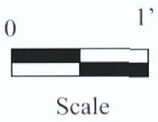


Figure 5.10 Locus 2, profiles of all test units.

Figure 5.11 Locus 2, Test Unit 5, profile of east wall, facing east.

that observed in the previous locus (distinct and uniform), indicating a buried plowzone as opposed to a potentially prehistoric-aged buried A horizon.

Assemblage. Fifty-four artifacts were recovered from the Apb horizon encountered in Test Unit 5. Eleven of these artifacts consist of chronologically non-diagnostic architectural remains, such as brick fragments, window glass, and roof slate. Other non-diagnostic artifacts include a coal fragment and a clay pigeon fragment. Household items comprise the bulk of the assemblage (n=41) and provided the dates for this horizon. Redware sherds (1700–1800), green shell-edged pearlware sherds (1800–1835), pearlware/whiteware sherds (1775–2007), and various whiteware sherds (1820–2007) provided general dates for this assemblage. Some of these dates are very general, such as the redware, as its rather long and uncertain production age limits its use for dating purposes. The pearlware/whiteware sherds (n=25) are also problematic. The small size of the specimens made it impossible to positively identify them as either whiteware or pearlware, adding a degree of uncertainty to their ultimate chronology. Some specific dating was possible, as a flow blue transfer printed whiteware sherd (1845–2007) provides the TPQ date for this assemblage.

Test Unit 6

This test unit was placed approximately where AP12 encountered intact, buried soils (see Figure 5.1). After removal of approximately 3.2 feet of mixed fill materials, the Apb-horizon was uncovered and hand excavation commenced.

Stratigraphy. Natural stratigraphy was encountered beneath the deep fill horizons (Figures 5.10 and 5.12). The first horizon consisted of a non-truncated silty sandy loam Apb horizon that was dark grayish brown (10YR 4/2) in hue. This horizon capped a sterile B horizon, which was the same as observed in Locus 1. The marked change in fill depths over a 60-foot distance is probably the result of natural contours and elevations. Test Unit 5, to the east, was probably located near the crown of a natural ridge, and this test unit is farther down slope.

Assemblage. Forty-six artifacts were recovered from the Apb horizon encountered in Test Unit 6. Four of these artifacts represent non-diagnostic architectural remains, such as window glass and corroded nails. The remainder of the assemblage consists of household items, which provide general dates for assemblage. Slip decorated redware sheds (1750–1850), a brown painted pearlware sherd (1795–1830), pearlware/whiteware sherds (1775–2007), whiteware sherds (1820–2007), yellowware sherds (1830–1940), and a machine-made bottle glass sherd (1889–2007) provide a wide range of dates for the assemblage. The machine-made bottle glass sherds provide the TPQ date for the assemblage.

Test Unit 7

This test unit was placed approximately where AP11 encountered intact, buried soils (see Figure 5.1). After removal of approximately 5.5 feet of mixed fill materials, the Apb horizon was uncovered and hand excavation commenced.

Stratigraphy. Natural stratigraphy was encountered beneath the deep fill horizons (Figures 5.10 and 5.13). The first horizon consisted of a thick, non-truncated silty sandy loam Apb horizon that was dark grayish brown (10YR 4/2) in hue. This horizon capped the sterile B horizon,

Figure 5.12 Locus 2, Test Unit 6, profile of south wall, facing south.

Figure 5.13 Locus 2, Test Unit 7, profile of south wall, facing south.

which was the same as observed in all previous excavations. Again, a marked change in fill depths occurs, over only a 30-foot distance in this instance. This is also probably the result of natural contours and elevations. If Test Unit 6 were located farther down slope than Test Unit 5, this test unit was probably located at the base of the ridge or hilltop; this also explains the 1.7-foot-thick Apb horizon, as erosion from upslope led to more deposition.

Assemblage. Ninety artifacts were recovered from the Apb horizon encountered in Test Unit 7. Similar to Test Unit 4 in Locus 1, a nearly double-thick buried plowzone found at the base of a slope contained a large amount of artifacts. Twenty-three of these artifacts consist of chronologically non-diagnostic architectural remains, such as window glass, brick fragments, and heavily corroded nails. An oyster shell fragment, coal fragments, a white ball pipe stem fragment, and a white ball clay pipe bowl fragment were also recovered. The bulk of the assemblage consists of household items (n=55), which provide general dates. Examples include various pearlware sherds (1775–1833) various whiteware sherds (1820–2007). One of the whiteware varieties, a blue painted specimen with a molded pattern (1840–1890), provides the TPQ date for the assemblage.

Test Unit 8

This test unit was the final excavation within Locus 2. Its position was based on the stratigraphic information obtained from Test Units 5 through 7. The increasing fill depths to the west of Test Unit 5 indicated the presence of an older ridge or hilltop that had been filled in for either the railroad or nearby businesses. If it is assumed that Test Unit 5 occupied the crest of this former landform, than any intact deposits or occupational evidence would be located on the crest versus the hillside, or the potentially marshy base of the slope. Therefore, Test Unit 8 was placed between Test Units 5 and 7 in order to further test the top of this landform (see Figures 5.1). This placement also clarifies why the test units are not listed in chronological order in Figure 5.10. Figure 5.10 shows the test units' horizontal placement across Locus 2 in order to show a cross section of the actual former landform and explicate the logic behind Test Unit 8's location.

Stratigraphy. Similar to Test Unit 5, natural stratigraphy was located beneath a relatively shallow (1-foot) fill deposit. The underlying Apb horizon was non-truncated, dark grayish brown (10YR 4/2) silty sand loam. Sterile B-horizon soil, similar to that found across both loci, lay beneath the buried plowzone. The profile of Test Unit 8 can be seen in Figures 5.10 and 5.14. The profile of Test Unit 8 indicates that the tested area corresponds to the crest of the former ridge or hilltop.

Assemblage. Fifty-five artifacts were recovered from the Apb horizon encountered in Test Unit 8. Architectural remains, such as window glass, brick fragments, and nails, comprise 22% (n=12) of the assemblage. A fragment from a white ball clay pipe bowl was also recovered. Household items, such as ceramics and glass, comprise the remainder of the assemblage. A redware sherd (1700–1800), creamware sherds (1775–1820), pearlware varieties (1775–1803), a whiteware sherd (1820–2007), white granite sherds (1842–1930), and machine-made bottle sherds (1889–2007) date the assemblage from the late eighteenth century on into the late nineteenth century. The machine-made bottle sherds provide the TPQ date for the assemblage.

Figure 5.14 Locus 2, Test Unit 8, profile of north wall, facing north.

6
Summary, Conclusions, and Recommendations

SUMMARY

In December 2007, URS performed a Phase IB archaeological investigation in support of the East Side Access Project. The East Side Access Project will provide new Long Island Railroad (LIRR) service to Grand Central Terminal in Manhattan. This work will involve construction of retaining walls—one to the north of the embankment (Locus 1) and one to the south of the embankment (Locus 2)—between 43rd and 48th Streets, with filling behind those walls adjacent to the existing embankment. The Phase IB fieldwork began with the mechanical removal of 0.8 to 5.6 feet of fill that covered the intact soil deposits. Once completed, hand excavation commenced in order to avoid any inadvertent disturbances to intact deposits. Four 3-x-3-foot test units (eight total) were placed in each of the two loci. These test units encountered buried plowzones (or Ap horizons) that contained a mixture of mostly late-nineteenth-century artifacts. Overall, 439 artifacts were recovered. Most of these artifacts are small in size and probably represent materials that were redeposited during agricultural activities.

Locus 1

Locus 1 encompasses an approximately 120-x-10-foot area between the railroad tracks and the businesses and parking lots that line 37th Avenue. Four test units were excavated in Locus 1. Although buried plowzones (Apb horizons) and small to moderate amounts of historic artifacts (n=194) were encountered in each test unit, no undisturbed archaeological deposits were encountered. Test Unit 1 only possessed a minimal Apb horizon; most had been disturbed by later construction activities that may have been associated with the construction of the railroad. Minimal artifacts were recovered; the only diagnostic artifact consisted of a redware sherd that does not offer a truly useful date (1700–1800). Test Unit 2 exhibited a truncated Apb horizon that contained 18 artifacts. The TPQ date is provided by an undecorated sherd of whiteware, another historic artifact possessing a long manufacturing range that does not allow for informative dates (1820–2007). Test Unit 3 also exhibited a truncated buried plowzone. The recovered artifacts span in date from the late eighteenth century into the late nineteenth century. Two sherds of machine-made container glass provide the TPQ date (1889–2007). Test Unit 4 was the only excavation that did not exhibit a truncated or disturbed Apb horizon. The unit's position at the base of a slope led to a very thick buried horizon, which was the result of colluvial erosion. The assemblage ranged in date from the mid-eighteenth century into the late nineteenth century. Again, machine-made bottle glass provides the TPQ date (1889–2007). Because the buried plowzones encountered in the excavations are essentially the same horizon, the TPQ date of 1889 can be applied to all of Locus 1.

Locus 2

Locus 2 encompasses an approximately 180-x-10-foot area between the railroad tracks and the businesses that line Barnett Avenue. Four test units were excavated in Locus 2. Although an "intact" plowzone (Apb horizon) and small to moderate amounts of historic artifacts (n=245) were encountered in each test unit, no undisturbed archaeological deposits were encountered. As

opposed to Locus 1, none of the buried plowzones exhibited any evidence of impact from cut and fill activity. The Apb horizons appeared to have been merely buried or filled over, and not disturbed further during this process.

Excavation of four test units in Locus 2 revealed "intact" buried plowzones (Apb horizons) and a small to moderate amount (n=245) of artifacts. Test Unit 5 possessed an "intact" Apb horizon that once occupied the crest of a ridge or hilltop. The recovered artifacts were minimal; a flow blue transfer printed whiteware sherd (1845–2007) provides the TPQ date for this assemblage. Test Unit 6 also exhibited an "intact" Apb horizon, which was deeper buried than that of Test Unit 5. This is because Test Unit 6 is located farther downhill from Test Unit 5, and additional fill materials were necessary to level the area. A sherd of machine-made container glass provides the TPQ date for this excavation (1889–2007). Test Unit 7 exhibited an even deeper buried plowzone. It is surmised that if Test Unit 5 was at the crest of the former hill, than Test Unit 7 was at the base. The encountered Apb horizon was also very thick, due to soil eroding from the hilltop to the east. A blue painted whiteware sherd with a molded pattern (1840–1890) provides the TPQ date for this excavation. Test Unit 8 was located between Test Units 5 and 6 in order to further investigate the buried hilltop. Again, the buried plowzone was "intact" and undisturbed in the construction of nearby railroad. Locus 2 was apparently only subjected to fill activities, as opposed to Locus 1, where extensive cut and fill activities physically impacted most of the buried plowzone. Again, machine-made bottle glass provides the TPQ date (1889–2007). Because the buried plowzones encountered in the excavations are essentially the same horizon, the TPQ date of 1889 can be applied to all of Locus 2.

CONCLUSIONS

Locus 1

Excepting Test Unit 4, the buried horizon(s) encountered in the geoarchaeological assessment (Morin and Wagner 2007) was truncated and disturbed. While this horizon was intact in Test Unit 4, erosional forces (i.e., slopewash) led to near constant redeposition of soils. None of these buried horizon(s) represent intact, primary deposits. Furthermore, the recovered artifacts are generally rather small specimens and represent very wide date ranges, spanning the eighteenth and nineteenth centuries, and possibly into modern times. The very wide date range and the mostly small sizes of these diagnostic artifacts points to redeposition. Before the advent of formalized garbage collection, artifacts that were broken and discarded would quite often end up in agricultural fields; this would either be done immediately or at longer intervals. If immediate removal to a field was inconvenient, individual households centrally collected garbage in convenient areas (i.e., cisterns, dry wells, or pits). Eventually, when these collection areas neared capacity, the artifacts would then be moved to agricultural fields. Annual plowing tends to break these artifacts into even smaller fragments and move them horizontally across the landscape. This movement could occur over long periods of time, such as that represented in the date ranges of the assemblage. Based on the background research (see Chapter 3), the project area may have been utilized agriculturally as late as 1901, when the Pennsylvania Railroad began the demolition of everything between Skillman Avenue and Northern Boulevard, wiping out all the original Dutch farmsteads. The 1889 TPQ date of the Apb horizon could be the result of this

early-twentieth-century construction; it is not surprising to find early machine-made bottles in such an area.

The long-term usage of the project area, followed by construction activities that capped/destroyed the agricultural fields, left behind a mostly disturbed buried plowzone (Apb horizon) that contained small artifacts spanning nearly 120 years. The artifacts contained in this horizon are the product of secondary redeposition and do not represent primary deposits or date to any specific occupation of Locus 1 (i.e., Hessian and/or British occupation of Sunnyside). The recovered artifacts are the product of redeposition and generalized field scatter.

Locus 2

Although the buried plowzones of Locus 2 were not obviously impacted during the railroad's construction, they still represent an inherently disturbed context resulting from agricultural activities (i.e., disking and plowing); none of these buried horizon(s) represent intact, primary deposits. Again, the recovered artifacts are generally rather small specimens and represent very wide date ranges, spanning the eighteenth and nineteenth centuries—possibly even into modern times. The very wide date range and the mostly small sizes of these diagnostic artifacts points to same redeposition described for Locus 1. The 1889 TPQ date of the Apb horizon could be the result of this early-twentieth-century construction; it is not surprising to find early machine-made bottles in such an area.

The long-term usage of the project area, followed by construction activities that capped the agricultural fields, left behind a buried plowzone (Apb horizon) that contained small artifacts spanning nearly 120 years. The artifacts contained in this horizon are the product of secondary redeposition and do not represent primary deposits or date to any specific occupation of Locus 2 (i.e., Hessian and/or British occupation of Sunnyside). The recovered artifacts are the product of redeposition and generalized field scatter.

RECOMMENDATIONS

In both loci, the encountered buried horizon(s) represents an inherently disturbed context due to agricultural activities; none of these buried horizon(s) represent intact, primary deposits. Furthermore, additional disturbances have severely truncated and disturbed most of the surviving plowzone horizon in Locus 1. Although not observably disturbed, the buried horizon in Locus 2 also represents an inherently disturbed context because of agricultural activities; this buried horizon does not represent an intact, primary deposit. The artifacts contained in both loci are the product of secondary redeposition and do not represent primary deposits or date to any specific occupation, such as the Hessian and/or British occupation of Sunnyside. No further archaeological work is recommended for either Locus 1 or Locus 2 within the East Side Access Project, Area 12.

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Appendix A
Artifact Inventory

Appendix A Artifact Inventory for East Side Access Area 12

FS	Provenience	Artifact Count	Group	Class	Material	Object	Typology	Surface/ Decoration	Colors	Element	Comments	Begin Date	End Date
1	TU 1A, Level 1	2	Fauna	Shell	Oyster	Shell				Fragment			
1	TU 1A, Level 1	1	Household	Ceramic	Coarse Earthenware	Sherd	Red Bodied	Lead Glazed	Brown	Body		1700	1900
1	TU 1A, Level 1	2	Household	Glass		Container Glass	Mold Blown		Aqua	Body			
1	TU 1A, Level 1	1	Household	Glass		Container Glass	Mold Blown		Colorless	Body			
1	TU 1A, Level 1	1	Household	Glass		Container Glass	Mold Blown		Dark Green	Body			
1	TU 1A, Level 1	1	Architectural	Glass		Window Glass							
2	TU 1, Level 1	1	Personal	Other	Leather	Shoe Part					fragments of a leather shoe with metal eyelets		
2	TU 1, Level 1	2	Architectural	Glass		Window Glass			Aqua				
2	TU 1, Level 1	2	Household	Glass		Bottle Glass	Mold Blown		Dark Green	Body			
2	TU 1, Level 1	1	Household	Glass		Container Glass	Unidentified		Blue	Base			
2	TU 1, Level 1	2	Household	Ceramic	Refined Earthenware	Sherd	Pearlware	Painted	Blue	Rim/Body	not same vessel, probably china glaze	1775	1810
2	TU 1, Level 1	2	Household	Ceramic	Refined Earthenware	Sherd	Creamware	Undecorated		Body		1775	1820
2	TU 1, Level 1	1	Household	Ceramic	Refined Earthenware	Sherd	Creamware	Dipt	Brown	Body		1790	1820
2	TU 1, Level 1	2	Unknown	Metal	Iron	Unidentified Metal Object					heavily corroded		
3	TU 2, Level Fill	1	Tool	Lithic	Unknown	Hammerstone					questionable		
3	TU 2, Level Fill	1	Architectural	Lithic	Slate	Lithic Fragment							
4	TU 2, Level 1	3	Architectural	Ceramic		Brick Fragment							
4	TU 2, Level 1	4	Other	Other	Coal	Coal Fragment							
4	TU 2, Level 1	1	Unknown	Metal	Iron	Unidentified Metal Object							
4	TU 2, Level 1	1	Architectural	Glass		Window Glass			Aqua				
4	TU 2, Level 1	1	Household	Glass		Container Glass	Mold Blown		Green	Body			
4	TU 2, Level 1	1	Household	Glass		Container Glass	Mold Blown		Amber	Body			
4	TU 2, Level 1	2	Household	Ceramic	Refined Earthenware	Sherd	Pearlware	Painted	Blue	Body	probably chinese pattern, mend	1775	1810
4	TU 2, Level 1	2	Household	Ceramic	Refined Earthenware	Sherd	Pearlware	Undecorated		Body		1775	1830
4	TU 2, Level 1	3	Household	Ceramic	Refined Earthenware	Sherd	Whiteware	Undecorated		Body		1820	2007
5	TU 2, Level 2	1	Household	Glass		Glass Fragment	Unidentified		Colorless	Fragment			
6	TU 3, Level 1	1	Household	Ceramic	Refined Earthenware	Plate Sherd	Whiteware	Printed	Red	Body		1828	2007
6	TU 3, Level 1	6	Household	Ceramic	Refined Earthenware	Sherd	Whiteware	Printed	Blue	Rim/Body	many vessels	1820	2007

Appendix A Artifact Inventory for East Side Access Area 12

FS	Provenience	Artifact Count	Group	Class	Material	Object	Typology	Surface/ Decoration	Colors	Element	Comments	Begin Date	End Date
6	TU 3, Level 1	1	Household	Ceramic	Refined Earthenware	Sherd	Yellowware	Undecorated		Body		1830	1940
6	TU 3, Level 1	1	Household	Ceramic	Refined Earthenware	Sherd	Whiteware	Undecorated		Base	remenant of a blue printed makers mark	1820	2007
6	TU 3, Level 1	2	Household	Ceramic	Refined Earthenware	Sherd	Pearlware	Painted	Blue	Rim/Body	dark blue floral	1775	1830
6	TU 3, Level 1	1	Household	Ceramic	Refined Earthenware	Sherd	Pearlware	Painted	Yellow	Body		1795	1830
6	TU 3, Level 1	5	Household	Ceramic	Refined Earthenware	Sherd	Creamware	Undecorated		Body		1775	1820
6	TU 3, Level 1	2	Household	Ceramic	Refined Earthenware	Sherd	Pearlware	Undecorated		Body		1775	1830
6	TU 3, Level 1	11	Household	Ceramic	Refined Earthenware	Sherd	Whiteware	Undecorated		Body		1820	2007
6	TU 3, Level 1	8	Household	Ceramic	Refined Earthenware	Sherd	White Granite	Undecorated		Rim/Body		1842	1930
6	TU 3, Level 1	3	Household	Ceramic	Refined Earthenware	Pitcher Sherd	White Granite	Undecorated		Rim	mend	1842	1930
6	TU 3, Level 1	4	Household	Ceramic	Porcelain	Sherd	Hard Paste Porcelain	Undecorated		Body/Base			
6	TU 3, Level 1	6	Architectural	Glass		Window Glass			Aqua				
6	TU 3, Level 1	2	Household	Glass		Lamp Glass	Mold Blown		Colorless			1859	2007
6	TU 3, Level 1	2	Household	Glass		Container Glass	Machine Made		Aqua	Body		1889	2007
6	TU 3, Level 1	3	Household	Glass		Container Glass	Mold Blown		Colorless	Body			
6	TU 3, Level 1	1	Fauna	Shell	Oyster	Shell							
6	TU 3, Level 1	1	Fauna	Shell	Clam	Shell							
6	TU 3, Level 1	2	Unknown	Metal	Iron	Unidentified Metal Object							
6	TU 3, Level 1	1	Industrial	Metal	Unknown	Slag							
6	TU 3, Level 1	1	Other	Other	Coal	Coal Fragment							
6	TU 3, Level 1	3	Architectural	Ceramic		Brick Fragment							
7	TU 4, Level 1	1	Fauna	Shell	Oyster	Shell				Fragment			
7	TU 4, Level 1	1	Personal	Ceramic	Clay	Pipe Stem							
7	TU 4, Level 1	1	Personal	Glass		Marble			White, Blue	Complete			
7	TU 4, Level 1	2	Architectural	Lithic	Slate	Lithic Fragment							
7	TU 4, Level 1	2	Architectural	Ceramic		Brick Fragment							
7	TU 4, Level 1	4	Other	Other	Coal	Coal Fragment							
7	TU 4, Level 1	11	Architectural	Metal	Iron	Nail	Unidentified				heavily corroded		
7	TU 4, Level 1	15	Architectural	Glass		Window Glass			Aqua				
7	TU 4, Level 1	1	Household	Glass		Container Glass	Machine Made		Aqua	Body		1889	2007
7	TU 4, Level 1	3	Household	Glass		Container Glass	Mold Blown		Colorless	Body			

Appendix A Artifact Inventory for East Side Access Area 12

FS	Provenience	Artifact Count	Group	Class	Material	Object	Typology	Surface/ Decoration	Colors	Element	Comments	Begin Date	End Date
7	TU 4, Level 1	1	Household	Glass		Container Glass	Mold Blown		Dark Green	Body			
7	TU 4, Level 1	2	Household	Glass		Container Glass	Mold Blown		Green	Body			
7	TU 4, Level 1	1	Household	Glass		Bottle Glass	Mold Blown		Dark Green	Body	Probably from a panel medicine bottle. Embossed "...CHI..."		
7	TU 4, Level 1	2	Household	Ceramic	Stoneware	Sherd	Gray/Buff Bodied Salt Glazed			Body			
7	TU 4, Level 1	4	Household	Ceramic	Refined Earthenware	Sherd	White Granite	Undecorated				1842	1930
7	TU 4, Level 1	5	Household	Ceramic	Refined Earthenware	Sherd	Pearlware	Undecorated		Body		1775	1830
7	TU 4, Level 1	9	Household	Ceramic	Refined Earthenware	Sherd	Whiteware	Undecorated		Body		1820	2007
7	TU 4, Level 1	6	Household	Ceramic	Refined Earthenware	Sherd	Creamware	Undecorated				1775	1820
7	TU 4, Level 1	2	Household	Ceramic	Porcelain	Sherd	Hard Paste Porcelain	Undecorated		Body/Base			
7	TU 4, Level 1	1	Household	Ceramic	Refined Earthenware	Sherd	Whiteware	Shell Edge	Blue	Rim		1820	1860
7	TU 4, Level 1	1	Household	Ceramic	Refined Earthenware	Sherd	Whiteware	Printed	Red	Body		1828	2007
7	TU 4, Level 1	1	Household	Ceramic	Refined Earthenware	Sherd	Whiteware	Printed	Black	Body		1820	2007
7	TU 4, Level 1	7	Household	Ceramic	Refined Earthenware	Sherd	Whiteware	Printed	Blue	Body	all different vessels	1820	2007
7	TU 4, Level 1	1	Household	Ceramic	Refined Earthenware	Sherd	Creamware	Dipt	Brown	Body		1790	1820
7	TU 4, Level 1	1	Household	Ceramic	Refined Earthenware	Sherd	Clouded Glaze		Purple	Body		1740	1770
8	TU 5, Level 1	2	Household	Ceramic	Coarse Earthenware	Sherd	Redware	Lead Glazed	Brown	Body		1700	1900
8	TU 5, Level 1	1	Other	Ceramic	Clay	Clay Pigeon Fragment			Black				
8	TU 5, Level 1	1	Other	Other	Coal	Coal Fragment							
8	TU 5, Level 1	1	Architectural	Ceramic		Brick Fragment							
8	TU 5, Level 1	1	Architectural	Lithic	Slate	Lithic Fragment							
8	TU 5, Level 1	9	Architectural	Glass		Window Glass			Aqua				
8	TU 5, Level 1	1	Household	Glass		Container Glass	Mold Blown		Dark Green	Body			
8	TU 5, Level 1	4	Household	Glass		Container Glass	Mold Blown		Colorless	Body			
8	TU 5, Level 1	3	Household	Ceramic	Porcelain	Sherd	Hard Paste Porcelain	Painted	Blue	Base	probably chinese pattern		

Appendix A Artifact Inventory for East Side Access Area 12

FS	Provenience	Artifact Count	Group	Class	Material	Object	Typology	Surface/ Decoration	Colors	Element	Comments	Begin Date	End Date
8	TU 5, Level 1	25	Household	Ceramic	Refined Earthenware	Sherd	Pearlware/White ware	Undecorated		Body/Base		1775	2007
8	TU 5, Level 1	1	Household	Ceramic	Refined Earthenware	Sherd	Whiteware	Printed	Blue	Body		1820	2007
8	TU 5, Level 1	1	Household	Ceramic	Refined Earthenware	Sherd	Whiteware	Printed	Flow Blue	Body		1845	2007
8	TU 5, Level 1	1	Household	Ceramic	Refined Earthenware	Sherd	Whiteware	Shell Edge	Blue	Rim		1840	1860
8	TU 5, Level 1	3	Household	Ceramic	Refined Earthenware	Sherd	Pearlware	Shell Edge	Green	Rim/Body		1800	1835
9	TU 6, Level 1	1	Hardware	Metal	Copper Alloy	Nail				Fragment	Head only		
9	TU 6, Level 1	3	Architectural	Glass		Window Glass			Aqua				
9	TU 6, Level 1	1	Household	Glass		Container Glass	Mold Blown		Dark Green	Body			
9	TU 6, Level 1	1	Household	Glass		Glass Fragment	Unidentified		Aqua				
9	TU 6, Level 1	1	Household	Glass		Bottle Glass	Machine Made		Colorless	Body/Base		1889	2007
9	TU 6, Level 1	1	Household	Ceramic	Coarse Earthenware	Sherd	Redware	Slip Decorated		Body		1750	1850
9	TU 6, Level 1	4	Household	Ceramic	Coarse Earthenware	Sherd	Redware	Unglazed		Body			
9	TU 6, Level 1	1	Household	Ceramic	Stoneware	Sherd	Gray/Buff Bodied Salt Glazed	Painted	Blue	Body			
9	TU 6, Level 1	4	Household	Ceramic	Refined Earthenware	Sherd	Yellowware			Body		1830	1940
9	TU 6, Level 1	2	Household	Ceramic	Refined Earthenware	Sherd	Pearlware/White ware	Dipt		Body		1795	1840
9	TU 6, Level 1	5	Household	Ceramic	Refined Earthenware	Sherd	Whiteware	Printed	Black	Body	all different	1820	2007
9	TU 6, Level 1	1	Household	Ceramic	Refined Earthenware	Sherd	Pearlware	Painted	Brown	Body	floral	1795	1830
9	TU 6, Level 1	1	Household	Ceramic	Porcelain	Sherd	Hard Paste Porcelain	Undecorated		Rim			
9	TU 6, Level 1	20	Household	Ceramic	Refined Earthenware	Sherd	Pearlware/White ware	Undecorated		Body		1775	2007
10	TU 7, Level 1	1	Fauna	Shell	Oyster	Shell							
10	TU 7, Level 1	1	Personal	Ceramic	Clay	Pipe Bowl				Fragment			
10	TU 7, Level 1	1	Personal	Ceramic	Clay	Pipe Stem				Fragment			
10	TU 7, Level 1	11	Architectural	Glass		Window Glass			Aqua				
10	TU 7, Level 1	1	Household	Glass		Container Glass	Mold Blown		Colorless	Body			
10	TU 7, Level 1	2	Architectural	Ceramic		Brick Fragment							
10	TU 7, Level 1	9	Other	Other	Coal	Coal Fragment							
10	TU 7, Level 1	10	Architectural	Metal	Iron	Nail	Unidentified				heavily corroded		
10	TU 7, Level 1	3	Household	Ceramic	Coarse Earthenware	Sherd	Redware	Slip Decorated		Body			

Appendix A Artifact Inventory for East Side Access Area 12

FS	Provenience	Artifact Count	Group	Class	Material	Object	Typology	Surface/ Decoration	Colors	Element	Comments	Begin Date	End Date
10	TU 7, Level 1	31	Household	Ceramic	Refined Earthenware	Sherd	Whiteware	Undecorated				1820	2007
10	TU 7, Level 1	11	Household	Ceramic	Refined Earthenware	Sherd	Pearlware	Undecorated		Body		1775	1830
10	TU 7, Level 1	2	Household	Ceramic	Porcelain	Sherd	Hard Paste Porcelain	Undecorated		Body			
10	TU 7, Level 1	2	Household	Ceramic	Refined Earthenware	Sherd	Pearlware	Dipt		Body		1782	1810
10	TU 7, Level 1	1	Household	Ceramic	Refined Earthenware	Sherd	Whiteware	Printed	Blue	Body		1820	2007
10	TU 7, Level 1	1	Household	Ceramic	Refined Earthenware	Sherd	Whiteware	Molded Pattern	Blue	Rim		1840	1890
10	TU 7, Level 1	2	Household	Ceramic	Refined Earthenware	Sherd	Pearlware	Painted	Brown	Rim	single line on edge of rim	1810	1833
10	TU 7, Level 1	1	Household	Ceramic	Refined Earthenware	Sherd	Whiteware	Painted	Red	Rim	single line on edge of rim	1820	1890
11	TU 8, Level 1	1	Household	Ceramic	Coarse Earthenware	Sherd	Red Bodied	Lead Glazed	Brown	Rim		1700	1900
11	TU 8, Level 1	1	Personal	Ceramic	Clay	Pipe Bowl			White	Fragment			
11	TU 8, Level 1	1	Hardware	Metal	Copper Alloy	Nail				Complete			
11	TU 8, Level 1	10	Architectural	Glass		Window Glass							
11	TU 8, Level 1	1	Architectural	Ceramic		Brick Fragment							
11	TU 8, Level 1	1	Household	Glass		Container Glass	Mold Blown		Dark Green	Body			
11	TU 8, Level 1	6	Household	Glass		Container Glass	Machine Made		Colorless	Body		1889	2007
11	TU 8, Level 1	1	Household	Ceramic	Refined Earthenware	Sherd	Pearlware	Painted	Yellow, Brown	Body		1795	1830
11	TU 8, Level 1	1	Household	Ceramic	Refined Earthenware	Sherd	Whiteware	Printed	Blue	Body		1820	2007
11	TU 8, Level 1	1	Household	Ceramic	Refined Earthenware	Sherd	Pearlware	Painted	Blue	Body		1779	1830
11	TU 8, Level 1	11	Household	Ceramic	Refined Earthenware	Sherd	Creamware	Undecorated		Body		1775	1820
11	TU 8, Level 1	11	Household	Ceramic	Refined Earthenware	Sherd	Pearlware	Undecorated		Body		1779	1830
11	TU 8, Level 1	5	Household	Ceramic	Refined Earthenware	Sherd	White Granite	Undecorated		Body		1842	1930
11	TU 8, Level 1	1	Household	Ceramic	Porcelain	Tea Cup Handle	Hard Paste Porcelain	Undecorated		Handle			
11	TU 8, Level 1	2	Household	Ceramic	Porcelain	Sherd	Hard Paste Porcelain	Undecorated		Body			
11	TU 8, Level 1	1	Household	Ceramic	Porcelain	Sherd	Hard Paste Porcelain	Painted	Blue	Body			

Appendix B
Resumes of Key Personnel

URS

Edward M. Morin, M.S., RPA

Program Manager/Senior Archaeologist

Areas of Expertise

Cultural Resource Management Studies

Section 106 of the National Historic Preservation Act

Archaeological Surveys and Excavations

Historic Preservation

Regulatory Agency Liaison and Coordination

Public Outreach

Years of Experience

With URS: 8 Years

With Other Firms: 20 Years

Education

M.S./1980/Rensselaer Polytechnic Institute/Archaeology

M.A./1978/St. Louis University/American Studies

B.A./1975/Westfield State College/History

Continuing Education

4-Hour Field/Construction Safety Training (OSHA 29 CFR 1926) (URS HS&E 12/1/2006)

8-Hour Annual OSHA Refresher Course (URS HS&E, 11/15/2006)

Two-Day Seminar in NEPA, Project Development & Section 4(f) (FHWA, Trenton, New Jersey, 2002)

Cultural Resource Management in New York State (Office of Parks, Recreation and Historic Preservation, Niagara, Canada, 2001)

Section 106 Principles and Practices (SRI Foundation, Dover, Delaware, 2000)

Registration/Certification

Register of Professional Archaeologists

Overview

Mr. Morin has over 28 years of experience in conducting and supervising urban archaeological investigations. He has directed archaeological and historical assessments, National Register evaluations, and archaeological data recovery efforts. Prior to joining URS, Mr. Morin served as Staff Archeologist with the National Park Service, Denver Service Center, Applied Archeology Center, and Senior Archaeologist for Louis Berger & Associates, Inc. In those positions, his responsibilities included conducting and contracting archaeological investigations at historic and industrial sites within the Northeast, and Mid Atlantic States; budgeting and design of research; direction of fieldwork, laboratory analysis, and report preparation; and project management. Mr. Morin's particular expertise is in the area of historic urban and industrial archaeology.

Examples of Relevant Experience

Phase IB Investigations of the Atlantic Yards Arena and Redevelopment Project, Brooklyn, New York, conducted for Forest City Ratner Companies. Project Manager for subsurface investigations that entailed he excavation of eight test trenches within two areas in Block 1119, Lot 1, and three test trenches in Block 1127, Lots 55 and 56. Since no evidence of either intact deposits or features was encountered, no further work is recommended for this area.

Geoarchaeological Assessment for Sunnyside, Queens Rail Complex (Queens Area 12), MTA/LIRR East Side Access Project, Construction Contract CH053, Queens, New York, conducted for MTA New York City Transit/Long Island Railroad. Principal Investigator for conducting a geoarchaeological assessment within Area 12 of the Sunnyside Yards Railroad Complex in Queens, New York. The goal was to provide the necessary information on the nature, location, and extent of intact and original soil surfaces within Area 12 and the depth of twentieth-century fills above these surfaces. Wholly or partially intact surface horizons marking the original land surface were identified at six locations. Therefore, additional investigations (Stage 1B) were recommended in order to determine the presence/absence of cultural deposits within the two locations of Area 12 that retain intact soils.

Spring Street Church Site, New York, New York, conducted for Bayrock/Sapir Organization, LLC. Project Manager for the investigation of human skeletal remains from 242-246 Spring Street These investigations were requested by the New York City Department of Buildings (DOB) and New York City Landmarks Preservation Office (LPC). The specific goals of the archaeological examinations were to recover previously identified human remains and to determine whether or not additional, potentially intact burials or related funerary features and artifacts were contained within portions of the site. The process involved eight primary steps or stages of work, including: 1) detailed background research regarding the sequence of

historical occupation of the site; 2) the identification of potential descendant populations; 3) the collection and documentation of known skeletal remains; 4) the controlled investigation of previously unexcavated, or partially excavated portions of the site to verify the presence or absence of additional human remains or burials; 5) the exhumation and documentation of any intact historic burials that may be present; 6) the analysis and inventorying of all human remains recovered from the site (including materials previously collected by the ME staff); 7) the reburial of recovered skeletal remains in a manner to be decided in consultation with any identified descendant population; and 8) the preparation of a final project report.

East Side Access Project, conducted for MTA New York City Transit/Long Island Railroad. Project Archaeologist responsible for helping to develop a Construction Protection Plan (CPP) and an Advance Field Testing Plan (AFTP) for the protection of historic structures and archaeological resources during the course of the project.

Phase III Data Recovery of an 18th Century Section of Battery Wall, Battery Park, New York, New York, conducted for Dewberry/LMS. Co-Principal Investigator for data recovery investigation of the remains of an 18th century stonewall associated with the Battery that once protected Fort George in Lower Manhattan.

Phase IA Documentary Study, East Side Access Ventilation Shaft, Park Avenue, New York, New York, conducted for AKRF and the MTA New York City Transit/Long Island Railroad. Principal Investigator for conducting a documentary study of a proposed site for a ventilation shaft. 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 20th-century fills above these surfaces. This information was needed in order to determine if proposed construction activities would extend to a depth that would encounter the historic and/or prehistoric surfaces that might contain archaeological resources.

Phase IA Archeological Investigation, Rehabilitate Battery Weed Seawall and Dock, Fort Wadsworth Unit, Gateway National Recreation Area, Staten Island, New York, conducted for the National Park Service, Denver Service Center. Principal Investigator for developing a program for an archaeological resources investigation at Battery Weed in Fort Wadsworth, Staten Island, New York. The goal of the investigation was to collect and synthesize documentary information regarding the prehistory and history of the project area; prepare a series of recommendations for further archaeological work, to include field testing if required; and to prepare a project report documenting the investigation for use by National Park Service personnel.

Modified Phase I Cultural Resources Inventory, Floyd Bennett Field, Jamaica Bay Unit, Gateway National Recreation Area, Brooklyn, New York, conducted for the National Park Service, Denver Service Center. Principal Investigator for a cultural resources inventory in support of the proposed replacement of aging electrical cables. The goals of the investigations were to 1) identify areas of disturbance and fill that may be excluded from further investigation; and 2) identify areas with the potential

for prehistoric and historic archaeological sites that should be avoided or mitigated during the replacement of the electrical cables.

Addendum, Phase IA Archaeological Study, 3-7 Wooster Street, Borough of Manhattan, New York City, New York, conducted for Extended Management Company, Inc., Newark, New Jersey. Principal Investigator for an addendum Phase IA study in order to provide additional background research to adequately address revisions requested by the New York City Landmarks Preservation Commission to another firm's previously conducted study.

Phase IA Archaeological Assessment of the Shaft 17B Complex in Sunnyside, Queens, New York, conducted for Jenny Engineering Corporation, Springfield, New Jersey. Principal Investigator for conducting and archaeological assessment of a 63,950 square foot area for a proposed shaft complex. The study provided information on the potential for the presence of archaeological resources within the site that are associated with British military occupation during the Revolutionary War.

Phase IA Documentary Study, East Side Access Ventilation Shaft, 38th Street, New York, New York, conducted for the MTA New York City Transit/Long Island Railroad. Principal Investigator for conducting a documentary study of a proposed site for a ventilation shaft in a 25 x 100-foot lot. 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 20th-century fills above these surfaces. This information was needed in order to determine if proposed construction activities would extend to a depth that would encounter the historic and/or prehistoric surfaces that might contain archaeological resources.

Phase I Archeological Investigations within the Gateway National Recreation Area at the Jacob Riis Bathhouse, Jamaica Bay Unit, New York, conducted for the National Park Service, Denver Service Center. Principal Investigator for conducting archaeological investigations at the Jacob Riis Bathhouse, Breezy Point, New York. Excavations through the concrete floor of the courtyard revealed heavily disturbed sandy fill related to the construction of the bathhouse. Disturbance included numerous utilities and a buried roadbed composed of oiled clinker and gravel. No further work was recommended since the investigations revealed that the development of the courtyard would not impact any archeological deposits.

Phase I Archeological Investigations within the Gateway National Recreation Area at the Jamaica Bay Wildlife Refuge, Broad Channel Island, Jamaica Bay Unit, New York, conducted for the National Park Service, Denver Service Center. Principal Investigator for conducting archaeological investigations at the Visitor Contact Station and Building 101 of Jamaica Bay Wildlife Refuge. Excavations revealed levels of recently disturbed soil capping a thick layer of landfill. The recovered artifacts consisted of architectural/structural material (with a small number of container glass fragments). No further work was recommended because the investigations indicated that proposed development of the two sites would not impact any archaeological deposits.

Cultural Resources Assessment, 1440 Story Avenue, Bronx, New York, conducted for the MTA New York City Transit. Principal Investigator for conducting documentary sturdy or a 12-acre site proposed for a warehouse complex. The study provided information on the potential for the presence of archaeological resources within the site.

Phase IB/II Archaeological Field Investigation, 101-117 Worth Street, New York, New York, conducted for AKRF, New York, New York. Principal Investigator for Phase IB archaeological investigations of mid 19th to mid 20th century foundation remains and yard areas. Responsible for budgeting and design of research, direction of fieldwork, laboratory analysis, and report preparation. The Phase IB investigation consisted of both machine-excavated test trenches and hand-excavated test units, as well as monitoring of construction activities 150 x 260-foot site in lower Manhattan. The investigation identified two sections of intact stonewalls associated respectively with the Broadway Tabernacle Church (1835 – 1857) and a late-nineteenth-century commercial building, along with the truncated remains of a mid-nineteenth-century well and a buried Holocene surface.

Reconstruction of the Stone Street Historic District, New York, New York, conducted for the New York City Department of Design and Construction. Principal Investigator for archaeological monitoring of the Stone Street reconstruction project. Provided the oversight and inspection of an archaeological contractor conducting monitoring services associated with the installation of a water main, catch basins and streetscape improvements.

1983 – 1991 Archaeologist, Louis Berger & Associates, Inc.

Phase II Archaeological Investigation of the Washington Street Urban Renewal Area, Site I, for Shearson Lehman/American Express, New York, New York, conducted for the New York City Public Development Corporation. Field Supervisor responsible for conducting the day-to-day excavations and crew supervision at the site, in addition to involvement with analysis and write up. Involved the testing of nineteenth century industrial and commercial remains in a 450 x 500-foot project area. It was the first West Side archaeological site systematically tested in lower Manhattan.

Phase III Mitigation of Barclays Bank, 100 Water Street, New York, New York, conducted for London and Leeds Corporation. Crew Chief responsible for the supervision of a six-person archaeological field crew, in addition to involvement with analysis and report write up. Involved the mitigation of late seventeenth to early nineteenth century domestic deposits and structural remains on a 100 x 200-foot site for the proposed construction of the Barclays Bank Office Tower.

Professional Societies/Affiliations

Professional Archaeologists of New York City
Council for Northeast Historical Archaeology, Board Member
Society for Historical Archaeology, Associate Journal Editor
Society for Industrial Archaeology
Archaeological Society of New Jersey

URS

Daniel Eichinger

Field Supervisor

Areas of Expertise

Cultural Resource Management Studies

Archaeological Surveys and Excavations

Computerized Inventories and Database Management

Historic Preservation

Public Outreach

Years of Experience

With URS: 12 Years

With Other Firms: 4 Years

Education

B.A./1993/University of Delaware/Anthropology and Philosophy (dual major)

Continuing Education

8-Hour Annual HAZWOPER Refresher Course (URS Corporation, 2006)

40-Hour HAZWOPER Training (Professional Safety Training Services, Inc. 2004)

Adult/ CPR Training (American Red Cross, 2007)

Overview

Mr. Eichinger has fifteen years of experience in all phases of cultural resource management. Mr. Eichinger has directed the excavations of all phases of both prehistoric and historic sites in the Middle Atlantic States and been responsible for their subsequent reporting. He has also participated in all aspects of laboratory analysis of prehistoric and historic artifacts, and has extensive experience with in-field computerized inventories, database management, and GPS systems.

Project Specific Experience

Texarkoma Pipeline Phase I Archaeological Survey, conducted for Texas Gas Incorporated. Supervised field crews for a 400+ mile natural gas pipeline across portions of Arkansas and Mississippi.

Site Assessment, First and Second Pennsylvania Brigades Cantonment (1779 – 1780), Morristown National Historical Park, conducted for the National Park Service. Directed excavations to locate remains of soldiers' huts from the Revolutionary War encampment near Morristown, New Jersey.

Phase IB Archaeological Survey, DuPont Salem River Public Access Boat Ramp, Salem County, New Jersey, conducted for E.I. DuPont de Nemours. Survey identified small Early through Late Woodland encampment (Site 28SA176).

Phase II Survey Archaeological Investigation, Drainage Structure, Route 3, Whitefield, Coos County, New Hampshire, conducted for the New Hampshire Department of Transportation. Excavations of the foundations of a tenement / milking station (27CO65) associated with the late 19th century dairy industry in New Hampshire.

Phase I Terrestrial Archaeological Survey for the Proposed Cape Coral VA Clinic, conducted for the U.S. Department of Veteran Affairs.

Preliminary Cultural Resources Assessment, Corridor Analysis Report for County Road 540A, conducted for the Polk County Board of Commissioners. Small survey amongst the citrus groves of Southern Florida. Survey documented a small Archaic through Woodland era encampment.

Phase I Archaeological of Alternative Corridors for the Elizabethton Northern Connector Project, Carter County, Tennessee, conducted for Tennessee Department of Transportation. Located seven archaeological sites, including a Late Archaic through Mississippian Village.

Phase IB Archaeological Survey for Proposed Improvements to NH Route 4A Lebanon-Enfield 13185D Project, Enfield, Grafton County, New Hampshire, conducted for New Hampshire Department of

Transportation. Surveyed areas within Enfield's Lower Shaker Village, the ninth Shaker community established in the United States.

Phase IB Archaeological Investigation of Site 27CO61 (Crawford Boarding House), Coos County, New Hampshire, conducted for New Hampshire Department of Transportation. Investigations located the foundations of the Crawford Boarding House, which was active from circa 1870 to 1907.

Phase IB Archaeological Survey for Drainage Structure, Whitefield, Coos County, New Hampshire, conducted for New Hampshire Department of Transportation. Investigations around the former sites of the Maine Condensed Milk Company (27CO65) and the Whitefield Manufacturing Company Bobbin Mill.

Phase II/III Archaeological Investigations at the Hick's Site Outlier (18ST1-22), Historic St. Mary's City, St. Mary's County, Maryland, conducted for St. Mary's College. Excavations adjacent to a circa 1720-1745 plantation house within Historic St. Mary's City, Maryland's first settlement.

Comprehensive Inventory of State-Owned Artifacts in Virginia City and Nevada City Montana conducted for the Montana Heritage Commission. Field Director for an inventory of the total contents of 36 buildings in two museum towns. Over 90,000 artifacts relating to the Westward Expansion and Gold Rush were inventoried using handheld computers and a laptop computer.

Phase III Excavations at the Port Kennedy Industrial Village (36MG34), conducted for the Pennsylvania Department of Transportation. Archaeological data recovery within the workers' housing at a mid-19th century industrial village associated with both limestone mining/kiln and iron furnace operations. The site is located within the present-day Valley Forge National Historic Park.

Phase I Archaeological Investigations at Great Falls National Park, conducted for the National Park Service. Field Director for the investigations for a proposed bicycle / pedestrian walkway, parking lots improvements, and the construction of a protecting flood wall for the historic Great Falls Tavern.

Phase I / II Terrestrial Archeological Survey, Maryland Route 210 Wetland Mitigation at the Parker Berry Farm, Prince George's County, Maryland, conducted for the Maryland State Highway Administration. Field Director for investigations that documented two separate prehistoric archaeological sites, one of which encompassed a Contact Period Native American hamlet.

Phase II Archaeological Investigations for the Proposed Greenbrier Pipeline, Pulaski and Giles Counties, Virginia, conducted for the Greenbrier Pipeline Company, LLC. Field Director for a series of ten Phase II investigations associated with a proposed pipeline from Charleston, West Virginia to Raleigh, North Carolina.

Archaeological Data Recovery Riversdale Manor Dependency, Prince George's Counties, Maryland, conducted for the Maryland-National Capital Park and Planning Commission. Field Director for Phase III archaeological excavations within and around the Riversdale Manor dependency (18PR390). The excavations resulted in the documentation of the remnants of an earlier structure located beneath the existing building.

Germantown Avenue Bridge Replacement Site 36PH106, Archaeological Data Recovery, Philadelphia, Pennsylvania, conducted for the City of Philadelphia. Field Director for the Phase III archaeological investigations conducted to mitigate adverse effects to the Paul Site (36PH106), an 18th to 19th century occupation.

Phase I/II Archaeological Investigations for the Proposed Norfolk Southern Railway Company's Saltsburg to Clarksburg Spur, Armstrong Township, Indiana County, Pennsylvania, conducted for the Norfolk Southern Railway Company. Field Director for a Phase I and Phase I/II archaeological investigation. As a result of these investigations, three previously recorded prehistoric sites were relocated, their boundaries revised, and five additional sites (one prehistoric, four historic) were documented.

Data Recovery Investigations of the Wilson Tract Site (36CH687), S.R. 0202, Section 400, Tredyffrin Township, Chester County, Pennsylvania, conducted for the Pennsylvania Department of Transportation. Field Director for excavations at this Circa AD 1780-1820 farmstead.

Professional Societies/Affiliations

Middle Atlantic Archaeological Conference

Chronology

1994- present: URS Corporation
1990-1994: University of Delaware Center for Archaeological Research