



**Phase 1B Archaeological Survey**

**Bronx Zoo Parking Lot and Roadway Improvements:  
Lot B and Overflow Parking Areas**

**Bronx, New York**

SHPO Project Review Number: 08PR01059

LPC Project Number: NLA/106-X

**Prepared for:**

Wildlife Conservation Society  
2300 Southern Boulevard,  
Bronx, New York 10460

**Prepared by:**

AKRF, Inc.  
440 Park Avenue South, 7th Floor  
New York, NY 10016

**May 2014**

## Management Summary

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<b>SHPO Project Review Number:</b>	08PR01059
<b>LPC Project Review Number:</b>	NLA/106-X
<b>Involved State and Federal Agencies:</b>	Federal Highway Administration Dormitory Authority of the State of New York
<b>Phase of Survey:</b>	Phase 1B Archaeological Survey
<b>Location Information</b>	
<i>Location:</i>	Jungle World Road; Bronx Park, The Bronx, New York (Block 4333, Lot 1)
<i>Minor Civil Division:</i>	00501
<i>County:</i>	Bronx
<b>Survey Area</b>	
<i>Length:</i>	Approximately 1,200 feet
<i>Width:</i>	Approximately 300 feet
<b>USGS 7.5 Minute Quadrangle Map:</b>	Central Park and Flushing
<b>Archaeological Survey Overview</b>	
<i>Number &amp; Interval of Shovel Tests:</i>	6 (placed judgmentally)
<i>Number &amp; Size of Backhoe trenches:</i>	6 (5 feet by 20 feet)
<b>Results of Archaeological Survey</b>	
<i>Precontact Sites Identified:</i>	None
<i>Historic Sites Identified:</i>	One
<i>Sites Recommended for     Phase 2/Avoidance:</i>	One
<b>Report Authors:</b>	A. Michael Pappalardo, MA, RPA, Elizabeth D. Meade, MA, RPA and Jason B. Smith, MS, RPA
<b>Date of Report:</b>	May 2014

## Table of Contents

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Management Summary .....	i
Table of Contents .....	ii
<b>Chapter 1: Introduction and Methodology .....</b>	<b>1</b>
A. Project Overview.....	1
B. Previous Surveys .....	1
C. Survey Methods .....	3
Research Issues Involved .....	3
Field Methodology .....	4
<b>Chapter 2: Results of Survey .....</b>	<b>6</b>
A. Results of Fieldwork .....	8
Backhoe Trenches, Lot B.....	6
Shovel Test Pits, Overflow Parking Lot.....	7
B. Results of Artifact Analysis .....	8
Lot B.....	8
Overflow Parking Lot.....	8
Summary .....	9
<b>Chapter 3: Conclusions and Recommendations .....</b>	<b>10</b>
Conclusions .....	10
Recommendations .....	10
<b>References.....</b>	<b>11</b>
<b>Figures</b>	
<b>Appendix A: Excavation Record</b>	
<b>Appendix B: Artifact Catalog</b>	

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## List of Figures

- Figure 1:** Project Location
- Figure 2:** Lot B Parking Lot Backhoe Trenches
- Figure 3:** Overflow Parking Lot Shovel Test Pits
- Figure 4:** Photographs

**A. PROJECT OVERVIEW**

The Wildlife Conservation Society (WCS), owner and operator of the Bronx Zoo, Bronx, New York, proposes to construct transportation improvements within the Bronx Zoo in the Bronx (see **Figure 1**). The proposed actions include the repaving of the existing Bronx River Parking Lot (“Lot B”) and the installation of new electrical conduits, lighting, and storm water management systems. In addition, several signs will be installed in the unpaved Overflow Parking Lot to the north of Lot B. The proposed work will have linear impacts from 4 to 10 feet below ground surface in Lot B and a small number of isolated impacts to a depth of 4 feet for sign footings in the Overflow Parking Lot (see **Figures 2 and 3**).

The existing Lot B Parking Lot is located on the south side of Boston Road (also known as “Jungle World Road”), which runs within the park boundaries (Block 4333, Lot 1), with the Bronx River to the west and the Bronx River Parkway to the east. The Overflow Parking Lot is located to the north of Lot B, and is bounded by Jungle World Road on the south, the Bronx River on the west and a highway ramp connecting East Fordham Road (Route 1) with the Bronx River Parkway on the east.

WCS proposes to use funds administered by the United States Department of Transportation (USDOT) to pay for certain project costs. Therefore, an environmental analysis is being conducted in accordance with the National Environmental Policy Act (NEPA) of 1969 (NEPA 42 USC §§ 4321, et seq.), and its implementing regulations as set forth in 23 Code of Federal Regulations (CFR) Part 771, 40 CFR Parts 1500-1508, and 49 CFR Part 622. The project will also comply with Section 106 of the National Historic Preservation Act of 1966 (NHPA), as amended; Section 4(f) of the U.S. Department of Transportation Act of 1966; Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations; and other applicable federal statutes, rules, and regulations.

**B. PREVIOUS SURVEYS**

A series of archaeological investigations have been completed to establish presence or absence of previously undocumented archaeological resources. First, the New York City Landmarks Preservation Commission (LPC) was contacted for a preliminary determination of the area of potential effect’s (APE’s) archaeological sensitivity. In a comment letter dated November 5, 2007, LPC concluded that the archaeology APE has the potential for the recovery of remains from 19th century and Native American occupation, and that an archaeological documentary study should be performed. In a comment letter dated March 4, 2008, the New York State Historic Preservation Office (SHPO) concurred that a Phase IA study of the APE should be conducted. At that time, the Project included improvements to Lot B and the Overflow Parking Lot, but did not include changes to Jungle World Road.

*2013 Phase IA Archaeological Resources Study*

In February 2013, after revisions were made to the Project, a Phase IA archaeological study was prepared by AKRF, Inc. to assess the archaeological sensitivity of Lot B, the Overflow Parking Lot, and the portion of the archaeology APE along Jungle World Road.<sup>1</sup> The study concluded that the eastern portion

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<sup>1</sup> AKRF, Inc. (February 2013): Phase IA Archaeological Documentary Study: Bronx Zoo Transportation Facility, Bronx River Parkway, Bronx, NY. Prepared for the Wildlife Conservation Society, Bronx, NY.

of the archaeology APE (i.e., Lot B and the Overflow Parking Lot) possessed low sensitivity for precontact archaeological resources and moderate to high sensitivity for archaeological resources dating to the historic period associated with early-19th century industrial buildings, residential structures, and a church. The Phase IA study determined that the remnants of these structures, as well as domestic shaft features (e.g., privies, cisterns, and wells) associated with them, could be present in this area. Such domestic shaft features can contain important archaeological resources because they were frequently filled with domestic refuse after they were no longer used for their original purposes.

Within the souther portion of the archaeology APE (i.e., Jungle World Road), the level (slopes less than 10 to 12 percent), undisturbed areas on the east side of Jungle World Road were determined to have moderate sensitivity for precontact archaeological resources, and the streetbed and west side of the road were determined to have low sensitivity for precontact and historic-period archaeological resources. The Phase IA recommended Phase IB archaeological testing in those sensitive locations that would be impacted by the Project.

The February 2013 Phase IA study was submitted to LPC and SHPO for review and comment, together with a Phase IB Archaeological Testing Protocol, dated March 2013, outlining a plan for the proposed archaeological testing in the areas of archaeological sensitivity. In a letter dated March 21, 2013, LPC concurred with the conclusions and recommendations of the Phase IA study. In a letter dated April 4, 2013, SHPO also concurred with the findings of the Phase IA study. The Testing Protocol was revised in April 2013 to reflect comments received from LPC on the document.

#### *2013 Phase IB Archaeological Resources Testing*

After completion of the 2013 Phase IA report, the Project design was revised in a way that eliminated anticipated disturbance of areas identified as archaeologically sensitive in Lot B and the Overflow Parking Lot. In accordance with the recommendations of the Phase IA study, Phase IB archaeological testing was conducted in April 2013 in undisturbed, level areas to the east of the streetbed of Jungle World Road. No testing was conducted in Lot B or the Overflow Parking Lot at this time.

A Phase IB archaeological resources report was prepared in June 2013 summarizing the results of the Phase IB testing conducted along Jungle World Road.<sup>1</sup> The Phase IB report concluded that no intact archaeological resources were observed during the completion of the Phase IB testing along Jungle World Road and no evidence was uncovered that would suggest that such resources could be present within the archaeology APE along Jungle World Road. The Phase IB report was submitted to the LPC and the SHPO for review and comment. In a letter dated July 17, 2013, LPC concurred with the conclusions of the Phase IB report, and in a letter dated August 5, 2013, the SHPO concurred with the findings of the Phase IB report.

#### *2014 Phase IB Archaeological Resources Testing*

Following completion of the 2013 Phase IB testing, Project designs progressed and more information was developed related to the location of utilities, stormwater management systems, and other such features. Current Project plans show development of Lot B and the Overflow Parking Lot with Project elements that had not been anticipated when the 2013 testing was conducted. The revised Project includes electrical conduits, lighting, and stormwater management systems in Lot B and installation of signs with foundations in the Overflow Parking Lot. Impacts from these Project-related features would extend from 2.5 to 10 feet below ground surface in discrete areas.

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<sup>1</sup> AKRF, Inc. (June 2013): Phase 1B Archaeological Survey: Bronx Zoo Parking Lot and Roadway Improvements: Jungle World Road, Bronx, NY. Prepared for the Wildlife Conservation Society, Bronx, NY.

A Testing Protocol was prepared in February 2014 outlining the methodology to be used to conduct additional Phase IB testing in the Project's new areas of disturbance, and the Phase IB testing was conducted in March 2014 in Lot B and the Overflow Parking Lot.

An end-of-fieldwork memorandum, dated April 7, 2014, was prepared to summarize the conclusions of the 2014 Phase IB testing program. The end-of-fieldwork memorandum was submitted to the Delaware Nation, Delaware Tribe, SHPO, and LPC for review via e mail on April 28, 2014. Paper copies were mailed to the Stockbridge-Munsee Community Band of Mohican Indians and the Shinnecock Indian Nation on April 23, 2014.

## C. SURVEY METHODS

All research and fieldwork has been based on the standards of the New York State Education Department Cultural Resources Survey Program Work-Scope Specifications for Cultural Resources Investigations (NYSED 2004) and Standards for Cultural Resources Investigations and the Curation of Archaeological Collections prepared by the New York Archaeological Council (1994) and endorsed by the New York State Office of Parks, Recreation and Historic Preservation (OPRHP). Investigations to identify archaeological resources typically proceed in a two-phase process generally consisting of Phase I (determining the presence of archaeological resources through documentary research and field testing), and Phase II (collecting sufficient data to evaluate NR eligibility).

While documentary research can indicate the likelihood that archaeological resources *may* be present on a site, Phase 1B testing allows archaeologists to determine whether or not those resources are *actually* present. While it is not a full-scale excavation, such testing and artifact collection is sufficient to draw conclusions regarding the potential for significant resources to be present within a project site. If archaeological resources are discovered during Phase 1B testing, archaeologists can also determine if additional fieldwork (i.e., Phase 2 testing) is necessary in order to discover the extent and significance of those resources. The objective of the field testing in Lot B and the Overflow Parking Lot was to ascertain the presence or absence of historical archaeological deposits within the identified areas of archaeological sensitivity and to determine the significance of any recovered resources.

All Phase 1B testing within the project site was completed by archaeologists listed on the Register of Professional Archaeologists (RPA) and was conducted in accordance with the guidelines established by the LPC (2002), the New York Archaeological Council (1994), and OPRHP (2005).

## RESEARCH ISSUES INVOLVED

### *PRECONTACT ARCHAEOLOGICAL RESOURCES*

Before European contact, the Bronx River shoreline was an important hunting and fishing location for the local Native Americans who resided there. After European contact, the Bear Swamp area to the east of the project site became a refuge for those individuals pushed out of their native lands by European settlers. Several precontact campsites and traces of Native American occupation (including petroglyphs and projectile points) have been identified within one mile of the project site at the *Sinaway* village at Bear Swamp. In addition, several Native American trails ran in the vicinity of the project site.

The precontact sensitivity of project sites in the Bronx are generally evaluated by the presence of high ground (but not exceeding 10 to 12 percent slopes), vicinity to fresh water courses, presence of well-drained soils, and proximity to previously identified precontact archaeological sites. The project site is situated in a hilly area with some areas of steep slopes leading down to the fresh-water Bronx River. It is immediately to the west of the Bear Swamp Village and within 1 mile of at least 7 other Native American archaeological sites. It is therefore likely that the project site was utilized by local Native American tribes

for resource exploitation as a temporary hunting, processing, or camping location, but habitation sites may have been further inland where the ground surface was higher and more level.

#### *HISTORIC PERIOD ARCHAEOLOGICAL RESOURCES*

The Overflow Parking Lot portion of the project site was formerly the location of industrial buildings associated with Bolton's Bronx Bleaching, Dying, and Manufacturing Company as well as residential structures that were part of the former village of Bronxdale. The village was established largely by the workers of the bleach factory and by members of the Bolton family. In the early 20th century, these structures were demolished and the area was redeveloped as part of the Bronx Zoo. However, minimal development has occurred in some of the areas of these historic structures. It is possible that the remnants of these structures, as well as domestic shaft features associated with them, including privies, cisterns, and wells, could be present in this area. The Lot B parking lot experienced much less development during the historic period. As reported in the Phase IA report, only a single map documented structure was identified in this area, along the easternmost edge of Lot B, an area that will not be affected by the proposed project. It appears that the Bronx Zoo constructed a fishing pond in a portion of the Lot B parking lot before construction of the current lot.

#### *RESEARCH OBJECTIVES OF THE PHASE 1B ARCHAEOLOGICAL SURVEY*

The objective of the field testing is to (1) ascertain the presence or absence of archaeological deposits on the project site associated with its precontact and/or 19th century occupation; and (2) to determine the significance of any recovered resources. According to the guidelines for cultural resources as laid out in the *CEQR Technical Manual*, the determination of significance of a project site is directly related to whether the identified resource type "is likely to contribute to current knowledge of the history of the period in question" (January 2012 Edition: 9-11). The determination of significance is largely dependent on the research issues that have been identified in the testing protocol.

#### **FIELD METHODOLOGY**

##### *LOT B*

Subsurface testing within the project site was conducted within those areas in Lot B that would be subject to disturbance from the installation of new electrical conduits, lighting, and storm water management systems at the depths and locations identified in Figure 2. Professional standards for excavation, screening, recording features and stratigraphy, labeling, mapping, and photographing any identified archaeological resources were applied during Phase 1B testing.

The Phase 1B testing procedure consisted of the excavation of archaeologically-monitored backhoe trenches. In total, six trenches were excavated: five within the paved parking lot and one in an unpaved area immediately north of the parking lot, on the north side of Jungle World Road (see Figure 2). The trenches varied in depth from 4 to 10 feet and were excavated to the depth of proposed disturbances in each trench location. The first 4 or 5 feet of each trench was mechanically excavated in approximately 6- to 10-inch layers and then shovel skimmed by the field archaeologists. For those trenches excavated beyond 5 feet—the maximum depth for which a trench can be safely entered by the archaeologists as per OSHA regulations—the trenches were excavated in thicker layers depending upon the type of soils encountered. The trench floor was not shovel skimmed between layers because of the advanced depths of the trenches, although soils were closely examined as they were deposited on the at-grade backdirt pile. Artifacts were collected or sampled as observed during monitoring. An Excavation Record of each trench opened as part of this Phase 1B survey is included as **Appendix A**.

### *OVERFLOW PARKING LOT*

As stated above, the Overflow Parking Lot will be impacted by the construction of several signs, each supported by a 1.5 by 1.5 foot concrete foundation (see Figure 3). A representative sample of the sign locations was selected for subsurface testing to assess the likely effect of construction on archaeological resources. Fieldwork consisted of the hand excavation of six shovel test pits (STPs). Each STP had a diameter of approximately 1.5 feet and a depth ranging between 15 inches and almost 4 feet, depending upon the subsurface conditions at each STP location. When examined in the field, a seventh location that had been selected for testing was found to be located on a recently created mound of rock and earth and was not tested due to its visible lack of archaeological potential. During testing, soils were removed stratigraphically and the hand-excavated soils were sifted through standard ¼-inch steel mesh screens. Soil profiles, colors, and textures were recorded. An Excavation Record of each STP opened as part of this Phase 1B survey is included as **Appendix A**.

### *ARTIFACTS*

Collected artifacts were placed in acid-free, polyethylene bags labeled with relevant site and provenience information. Artifacts recovered in the field were transported to the AKRF laboratory for analysis. All laboratory activity was conducted in compliance with guidelines established by the United States Department of the Interior/National Park Service for the Curation of Federally-Owned and Administered Archaeological Collections (36 CFR 79).<sup>1</sup> During processing, artifacts were washed in a solution of warm water and mild detergent. After drying, the artifacts were repackaged in their original field bags and vented to prevent mold. To the extent possible, recovered artifacts were identified as to material, temporal or cultural/chronological association, function, and style following the standard archaeological references. The complete artifact catalogue is located in **Appendix B**.

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<sup>1</sup> <http://www.nps.gov/archeology/tools/36cfr79.htm>

## A. RESULTS OF FIELDWORK

As described in the methods section, two approaches were followed to determine the presence or absence of archaeological resources that could be affected by the proposed action: archaeologically-monitored backhoe trenches in the Lot B parking lot and hand-excavated STPs in the Overflow Lot. The results of testing in each portion of the project site are discussed below. Figure 4 provides photos of each of the two test areas and of each trench and test pit location.

### BACKHOE TRENCHES, LOT B

In total, 6 backhoe trenches were excavated in Lot B. The following table provides a summary of the results of the trench excavations and their locations are depicted on Figure 2.

**Table 1**  
**Results of Backhoe Trenches**

Trench Number	Location (Figure 2)	Dimensions	Depth	Results
1	West side of parking lot	5 by 20 feet	4.5 to 6 feet	Multiple fill layers to 4.5 feet; 2 utility lines at 4 feet; sands to 6 feet between utilities; ground water at 4 feet 10 inches
2	Southern portion of parking lot	5 by 20 feet	10 feet	Multiple fill layers to 6 feet; buried ground surface with misc. 20th c. artifacts and root remains at 3.5 feet; possible earlier ground surface and peat at 6 feet; ground water at 9 feet; coarse sand and bedrock at 9-10 feet
3	Center of lot	5 by 20 feet	10 feet	Multiple fill layers to 3.3 feet; remnant of disturbed buried ground surface; sterile silty clay from 6 to 8 feet; fine sands to 10 feet
4	North-central portion of lot	5 by 20 feet	4 feet	Multiple fill layers to 4.3 feet
5	Southeastern portion, near exit gate	5 by 20 feet	4 feet	Multiple fill layers to 4 feet; modern refuse such as chain-link fencing observed extending into floor of finished trench
6	Unpaved area on north side of Jungle World Road	5 by 20 feet	10 feet	Multiple fill layers to 3 feet; remnant of disturbed buried ground surface with misc. 20th c. artifacts and root remains; ground water at 8 feet; dense clays to 10 feet

Prior to the excavation of each trench, its location was marked on the parking lot surface with spray paint and the asphalt was cut to a depth of approximately 3 to 4 inches. After discovery of utilities in the first trench (See Photo 4), remote sensing was utilized to mark out buried utilities in the vicinity of the remaining trenches (Photo 1). The field archaeologists encountered approximately 3 inches of asphalt and up to 4 inches of a compact asphalt bedding material in each of the trenches except for Trench 6, which was excavated in a grassy area north of the paved lot (Photo 1). The asphalt and bedding material was stockpiled separately from the other excavated soils for later disposal off site. After the completion of each trench, it was refilled with the excavated soils to a depth of approximately 6 inches below pavement

and then was compacted with the backhoe bucket. The trenches were then filled with bedding material to a depth of 3 inches below grade before the trenches were repaved.

After removal of asphalt and bedding, excavation encountered various layers of mixed sandy fill in each of the trenches and the remains of buried ground surfaces below the fill in three of the trenches. The fill was deepest in Trench 2 (6 feet), the trench excavated furthest to the south and having the lowest elevation. Only 3.3 feet of fill was encountered in Trench 6, the trench excavated furthest to the north and in the area with the highest elevation. This observation seems to indicate that the difference in elevation from the north to south sides of the Lot B parking lot was more pronounced in the past and that various filling episodes occurred that attempted to make the area more level and raise the grade in the vicinity of the Bronx River (see Photo 2).

Based on the presence of mid- to late-20th century refuse, the fill deposits appear to have been deposited over the past several decades. Two utility lines, an electrical conduit and a water pipe, were encountered in Trench 1 at a depth of approximately 4 feet, indicating more recent excavation and refilling. Neither line was broken by the backhoe bucket. Though they no longer appear to be in use, they were avoided and excavation was only able to reach the target depth of 6 feet in an approximately 6-foot-wide gap between the two utilities.

Several inches of the remnants of a disturbed buried topsoil layer were encountered beneath the fill deposits in Trenches 2, 3, and 6 (see Photos 6 and 9). These layers would have been at or near the ground surface for some period of time before the overlying fill layers were deposited. It is possible that this layer could have also been encountered in Trenches 1, 4, and 5 if excavation had proceeded deeper in those trenches (excavation only proceeded to the maximum depth of potential impacts from the proposed action in each area). In Trenches 2 and 6, it seems that temporary new ground surfaces were established after deposition of fill onto the natural original ground surface, before later being buried by additional fill deposits.

In Trench 2, two buried ground surfaces were encountered: the first at a depth of about 40 inches and the second at a depth of 6 feet below ground surface. The field archaeologists observed a well-preserved, modern looking wooden stake extending vertically from the darker soil of the shallower, and therefore more recent, ground surface. The upper end of the stake was broken and the bottom end terminated in a 45 degree point. The 2-inch by 4-inch stake may have supported a sign. The preservation and modern appearance of the stake is further indication of the relatively recent deposition of fill across the Lot B project site.

The buried topsoil layers were identified through soil coloration, consistency, and the presence of roots, some of which were still covered in bark. The top of this layer was carefully shovel skimmed and examined. The interface between the overlying fill and the top of the buried topsoil layers undulated and was varied, indicating that grading or other ground surface disturbance occurred before deposition of fill. After removal of the buried ground surfaces, the interface of the topsoil and underlying lighter soils was also shovel skimmed and examined for the presence of features.

No features or possibly significant concentrations of artifacts were observed in any of the trenches.

Groundwater appeared at a depth of between 4 feet 10 inches below the modern ground surface in Trench 1, the closest trench to the Bronx River, and 8 feet in Trench 6, the trench located furthest from the river and at the highest elevation. Though obscured by slumping trench walls and water, the excavator appeared to have encountered bedrock at a depth of 10 feet below ground surface in Trench 2.

### **SHOVEL TEST PITS, OVERFLOW PARKING LOT**

In total, 6 STPs were excavated in the Overflow Parking Lot. The following table provides a summary of the results of the test pit excavations and their locations are depicted on Figure 3.

Each test pit was hand excavated in stratigraphic layers. A normal stratigraphic sequence of topsoil followed by subsoil was only encountered in one of the test pits, STP 1. The other test pits revealed

varying amounts of fill followed by subsoil or a disturbed topsoil layer. Small quantities of fragmentary non-diagnostic artifacts and modern refuse were recovered from all of the STPs. The soils in STPs 2, 3, and 4 were excessively compact, most likely due to their use as roadways (see Photos 11 and 14).

**Table 2**  
**Results of Shovel Test Pits**

<b>Test Pit Number</b>	<b>Location (Figure 3)</b>	<b>Results</b>
1	Southern portion of lot next to trail	10 inches of topsoil followed by subsoil to almost 4 feet; a small quantity of historic and modern artifacts was recovered
2	Southern portion of parking lot	Disturbed area; shallow remnant of original ground surface to 6 inches; sterile subsoil to 3 feet
3	Eastern edge of lot on highland next to roadway	Disturbed area; very compact gravel roadbed to 3 inches; disturbed soil to 7 inches; sterile subsoil to 2.5 feet
4	North-central portion of lot	Encountered portion of southern side of buried wooden barrel; remains included deteriorating wooden staves and rusted metal hoops; apparently filled with soil and large cobbles; no associated artifacts
5	South-central portion of lot near trails	Test location on substantial quantity of modern fill; not excavated
6	Northwest portion of lot adjacent to roadway	10 inches of compact fill/redeposited soil; several inches of remnant of disturbed original ground surface; sterile subsoil to 3 feet; large rock obstacle at bottom of pit
7	Western edge of overflow lot; less than 50 feet northeast of bank of Bronx River	Bedrock encountered at a depth of 15 inches

Only one of the test pits, STP 4 (Photo 12), encountered a possible historic resource. During wall cleaning after completion of the STP, decaying wood was observed emerging from the pit’s north wall. Additional hand clearing revealed a possible wooden feature (Photo 13). The test pit was subsequently expanded to the north an additional 12 by 18 inches in order to expose more of the possible feature. This additional testing exposed what was identified as the curved southern side of a buried wooden barrel. The barrel’s vertically oriented wooden staves were identifiable but badly deteriorated. The horizontal metal barrel hoops were in better condition than the staves but were heavily rusted. A portion of the wooden staves fell away from the barrel during cleaning revealing a mixture of dark soil and large cobbles in the barrel’s interior. The small number of artifacts observed during excavation of STP 4 did not appear to be associated with the feature and no artifacts were observed in the small exposed portion of the feature’s interior. The exposed portion of the barrel was photographed and sketched before being reburied.

**B. RESULTS OF ARTIFACT ANALYSIS**

The recovered artifact assemblage includes a variety of small and fragmentary mostly undateable refuse, though some artifacts could be dated to the 19th and/or 20th centuries. A total of 375 artifacts were collected though some classes of artifacts, such as nails and window glass, were only sampled. The collection consists of domestic refuse such as ceramic tableware fragments, architectural materials such as sewer pipe fragments, ceramic tile fragments, window glass, various building materials, and metal fasteners, glass bottle fragments, and various clearly modern items such as a plastic coated golf ball, a piece of plastic jewelry and toys, and modern beverage containers. The small numbers of ceramic fragments that may date to the 19th century were too small to be diagnostic and were recovered from disturbed contexts. No prehistoric artifacts were observed.

**LOT B**

Various quantities of artifacts were observed and sampled in each of the six trenches, leading to a collection of 272 artifacts. The vast majority of these materials were recovered from the large deposits of mixed fill layers. Since the origin of the fill material is unknown and it contains a mixture of various classes of modern and historic materials, it has no research value. The artifacts recovered from the

remains of buried ground surfaces were examined more closely given their greater potential informational value. However, as discussed in greater detail below, the small quantities of artifacts recovered from the two buried ground surfaces in Trench 2, and the buried ground surfaces in Trenches 3 and 6 were disturbed and of no research value.

Two buried ground surfaces were encountered in Trench 2. The first was encountered at a depth of 3.5 feet below the modern ground surface and contained only a single fragment of unidentifiable ceramic and a wire nail. The second buried ground surface was 6 feet below the modern grade and yielded only a few brick fragments, some cement, and window glass. Additional brick fragments were observed in the soils excavated 2 feet below the deeper buried ground surface, suggesting disturbance at the time this area was filled in.

A slightly larger number of artifacts were collected from the buried ground surface in Trench 3, at a depth of 42 inches below the modern grade. This collection consisted of: barbed wire fencing, brick fragments, whiteware and white granite dish fragments, various colors of bottle glass, and window glass. The collection also included two fragments of the neck of a Pepsi bottle. The design, known as the Pepsi “wave” bottle was in use from 1940 to 1948, discontinued, and then re-issued from 1952 to 1958 (Lockhardt 2010).

Trench 6 was excavated approximately 20 feet from a large mature tree (see Photo 1). A buried ground surface was encountered in this trench beneath multiple layers of mixed fill and shallow pockets of coal ash. This trench contained the greatest number of artifacts of all of the trenches, over 80. Most of these artifacts came from the mixed fill layers and included a variety of domestic refuse, possibly associated with the homes that once stood further to the north and east in the Overflow Parking Lot. The buried ground surface contained only 5 artifacts: a mint green tile fragment, a fragment of a whiteware dish, and a few pieces of bottle glass. The bottle glass fragments included a base embossed with the maker’s mark of Owens-Illinois Glass Company. Based upon the makers’ mark, as well as the embossed Duraglass name and date of production on the bottom, this bottle fragment dates to 1941. An additional 19 artifacts were recovered from the 24 inches of soil excavated from beneath the buried ground surface, suggesting soil disturbance and redeposition.

### **OVERFLOW PARKING LOT**

Artifacts were recovered from each of the STPs for a total of 103 artifacts in the Overflow Parking Lot. A quarter of these artifacts (n=25) were non-diagnostic bottle glass. While a variety of glass colors was observed—including various shades of aqua, brown, blue, green, and pink—most of the fragments were clear glass. No base or finish fragments and no mending pieces were identified within the glass assemblage. The ceramic assemblage, just under 25 percent of the artifacts collected (n=21), was extremely small and fragmentary. The test pit locations all were previously the location of driveways or other historic activity and the small fragmentary nature of the artifacts and the compactness of the excavated soils may be result of these activities.

Based on the review of the mixture of modern refuse and historic artifacts collected during excavation of the test pits, it appears that the project site was covered with fill since the last third of the 20th century. No intact deposits of significant or possibly significant historic artifacts or features were observed, which the possible exception of the buried barrel. In addition, no prehistoric artifacts or possible prehistoric features were observed in the Overflow Parking Lot.

### **SUMMARY**

The small and/or highly fragmentary nature of both assemblages suggests repeated disturbance and redeposition. Because of the highly fragmentary nature of these artifacts and the lack of identifiable diagnostic information, these objects generally could not be dated. The fill deposits included a number of clearly 20th century objects such as plastic toys and modern beverage containers. The artifact assemblage collected from the parking areas therefore represents a highly fragmentary collection of artifacts that were likely deposited during the mid-20th century.

**CONCLUSIONS**

Phase IB archaeological testing was conducted in the Lot B and Overflow parking areas resulting in the recovery of a mixture of undateable, historic, and modern artifacts recovered from fill deposits and/or disturbed soil layers. Due to their disturbed context and lack of significance the artifacts are of no research value.

It appears that the Lot B Parking Lot had a lower elevation and sloped more steeply downward toward the Bronx River than the current ground surface until sometime after the mid-20th century. The original ground surface appears to have been graded or otherwise disturbed before the deposition of several layers of fill, possibly in anticipation of construction of the existing paved parking lot. No archaeological resources were observed during excavation of the trenches and it can be concluded that it is unlikely that intact archaeological resources will be impacted by the proposed action in the Lot B Parking Lot.

The Overflow Parking Lot also appears to have been disturbed by past historic and modern land use. All but one of the test pits encountered fill and disturbed soils for the first several inches. Historic maps examined during preparation of the Phase 1A Documentary Research Report indicate that the Overflow Parking Lot was the site of extensive 19th century residential and industrial development. It is possible that the buried barrel encountered in Test Pit 4 is associated with the Bronx Bleach & Dye Works, depicted in this general area on the 1881 G.W. Bromley Atlas of Westchester County, NY (Figure 8 in the 2013 Phase 1A Report). Possible uses of the buried barrel include drainage, water collection, and sanitary purposes. The barrel could also have had a more mundane function such as support for an above ground post or sign.

**RECOMMENDATIONS**

No additional archaeological analysis is recommended for the Lot B Parking Lot or the Overflow Parking Lot. It is recommended that the area immediately surrounding the location of the buried barrel (as depicted on Figure 3) identified in Test Pit 4 be avoided to preserve potential archaeological resources in place. During e-mail correspondence conducted on April 4, 2014, WCS and the DDC Design Team have agreed to eliminate the proposed sign location that could have impacted the buried barrel from the proposed actions. Therefore, the possible historic resource will not be impacted by the project and will remain intact in its current location. In the absence of archaeological resources that could be impacted by the proposed project, no additional fieldwork is recommended.

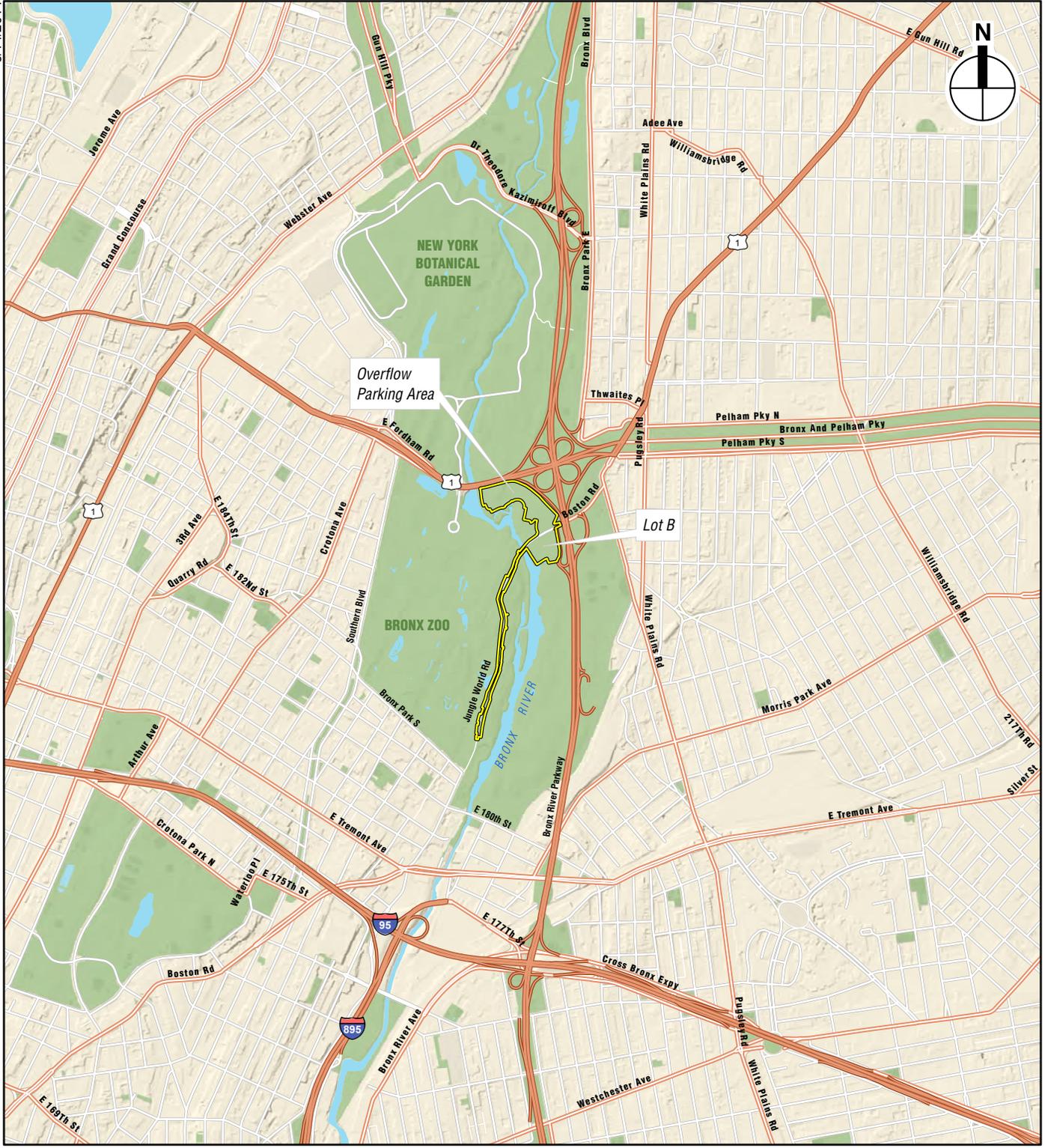
## References

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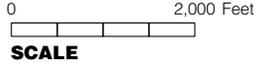
- AKRF, Inc.  
February 2013 *Phase 1A Archaeological Documentary Study: Bronx Zoo Transportation Facility; Bronx River Parkway, Bronx, New York.* Prepared for the Wildlife Conservation Society, Bronx, NY.
- June 2013 *Phase 1B Archaeological Survey: Bronx Zoo Parking Lot and Roadway Improvements: Jungle World Road, Bronx, New York.* Prepared for the Wildlife Conservation Society, Bronx, NY.
- April 7, 2014 End of Fieldwork Memo, Archaeological Survey of Parking Areas, Memorandum to New York City Department of Design and Construction
- Landmarks Preservation Commission (LPC)  
1990 *Draft: Design Through Archaeology: An Archaeological Assessment of Fifteen City-Owned Cultural Institutions.* For the New York City Department of Consumer Affairs.  
2002 "Landmarks Preservation Commission Guidelines for Archaeological Work in New York City." Available online at:  
<http://www.nyc.gov/html/lpc/downloads/pdf/pubs/ayguide.pdf>
- Lockhardt, Bill  
2010 *Bottles on the Border: The History and Bottles of the Soft Drink Industry in El Paso, Texas, 1881-2000.* Available online at: [www.sha.org](http://www.sha.org)
- New York Archaeological Council  
1994 "Standards for Cultural Resource Investigations and the Curation of Archaeological Collections in New York State." Available online at:  
<http://nyarchaeology.org/assests/standards/NYACStandards.pdf>
- New York State Office of Parks, Recreation, and Historic Preservation  
2005 "New York State Historic Preservation Office (SHPO) Phase I Archaeological Report Format Requirements." Available online at:  
<http://nysparks.com/shpo/environmental-review/documents/PhaseIReportStandards.pdf>

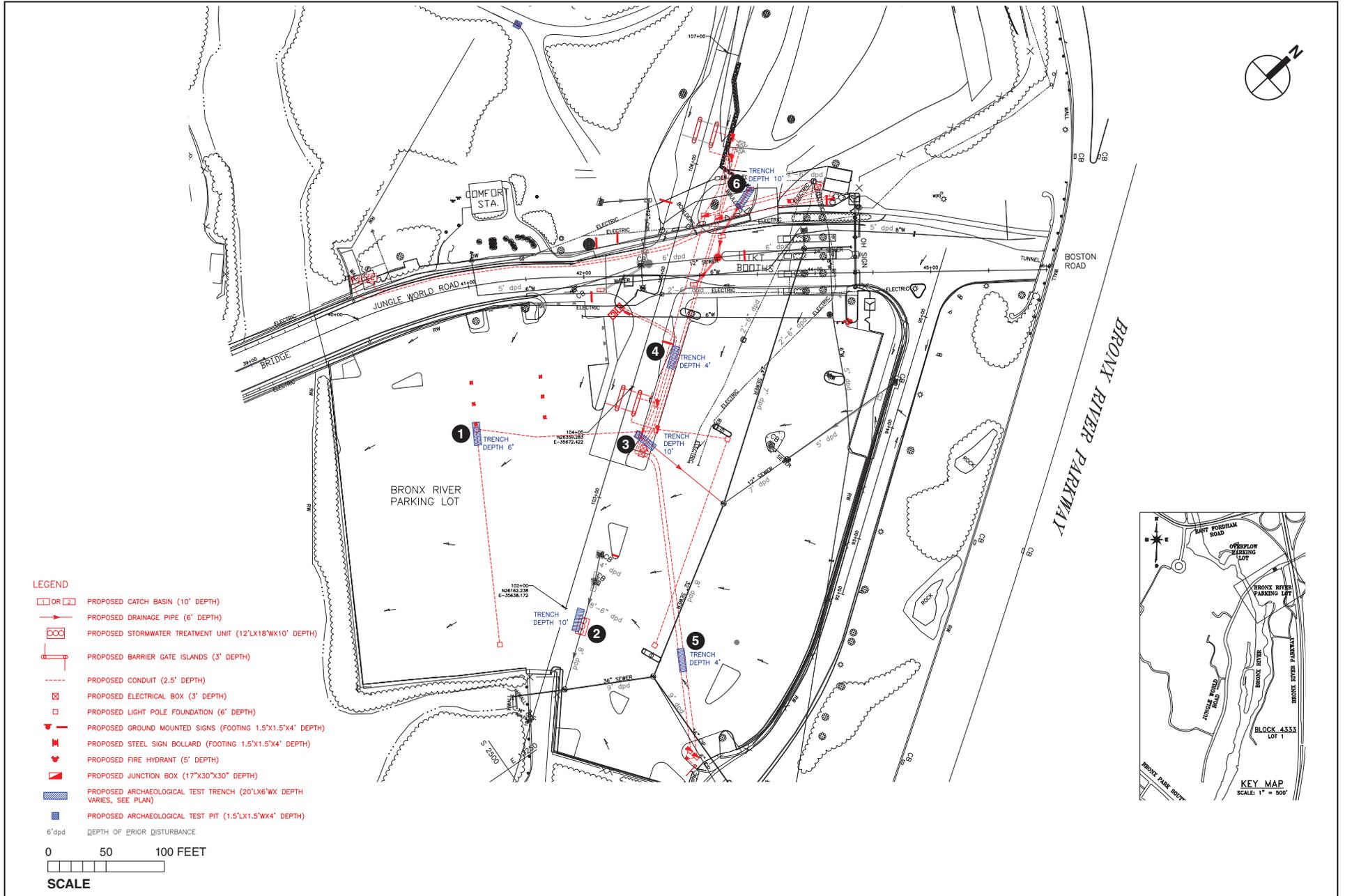
## Figures

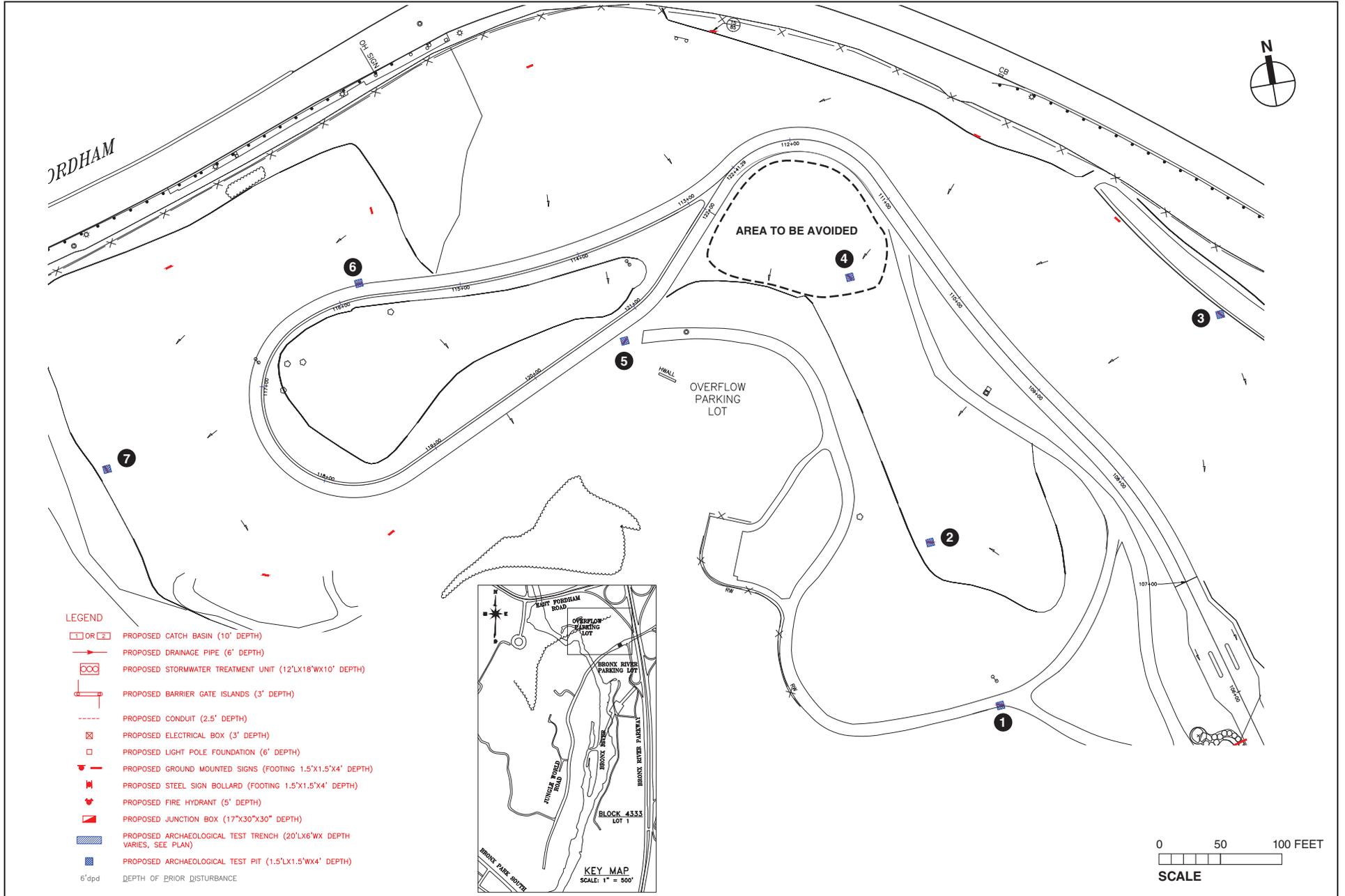
5/14/2014



 Project Site









Facing south from north edge of Lot B showing utility mark out for Trench 6. Lot B parking lot is to the left 1



Facing northwest from south of Lot B showing change in elevation from northeast (right side of photo) to southwest (left side of photo). The Bronx River is beyond the left side of this photo. The standing water in the left foreground drains into the Bronx River and is a few feet lower than the elevation of the parking lot adjacent to it 2



Facing south from just north of Trench 4. The Bronx River extends along the tree line in the background of this photo **3**



Facing southeast showing completed Trench 1. Note electrical conduit extending from wall towards bottom of photo and water line in background **4**



Facing northwest showing in progress excavation of Trench 2 5



Facing northwest showing north wall of Trench 3. Note multiple layers of fill and remnants of original dark gray brown sandy silt ground surface at trench bottom 6



Facing west showing west wall profile of Trench 4 and mixed modern gravelly fill 7



Facing north showing north wall profile of Trench 5 and mixed modern gravelly fill 8



Facing west showing the west wall profile of Trench 6. Note multiple layers of modern fill followed by remnant of the original ground surface and subsoil at bottom of photo at a depth of about 3 feet below ground surface 9



Facing north from south of STP 2 showing area recently stripped of ground cover and mature tree in the background 10



Facing north showing excavation of STP 3. Note topography and compacted gravel roadway 11



Facing northwest showing excavated STP 4 and general vicinity 12



Facing north showing expanded STP 4 and buried wooden barrel. Note horizontal barrel straps 13



Facing west from the location of STP 6, which was excavated on the shoulder of the gravel roadway on the right side of the photo 14



Facing southwest showing excavated STP 7 (on left) and general vicinity. The Bronx River is 15  
beyond the trees and brush in the photo background



Possible bedrock in floor of the completed STP 7 at a depth of less than one foot. 16  
Trowel indicates north

## Appendices

**Appendix A:**

**Excavation Record**

STP	Level	Opening Depth (in)	Closing Depth (in)	Soil Color*	Soil Type	Comments
1	1	0	10	10YR3/2 very dark gray brown	Sandy silty loam	Topsoil mixed with historic artifacts and gravel
	2	10	24	7.5YR4/4 brown	Clay loam	
	3	24	41	7.5YR4/6 strong brown	Clayey silt	Sterile subsoil with roots
2	1	0	1	10YR2/2 very dark brown	Silty sand	Gravel and wood chips present
	2	1	6	10YR3/3 dark brown	Silty sand	Remains of original ground surface
	3	6	36	7.5YR5/6 strong brown	Clay loam with roots	Subsoil with some misc artifacts in upper levels; heavy roots in upper 24 in.
3	1	0	3	10YR4/2 dark grayish brown	Silty sand	Angular gravel from densely compacted road bed
	2	3	7	10YR4/3 brown	Silty sand	Disturbed soil
	3	7	30	7.5YR4/6 strong brown	Silty loam	Sterile Subsoil
4	1 S1/2	0	6	10YR2/2 very dark brown	Loamy silt	
	2 S1/2	6	22	10YR3/4 dark yellowish brown	Sandy silt	Few artifacts; encountered portion of a buried wooden barrel; remains included deteriorating wooden staves and rusted metal hoops. Artifacts recovered NOT associated with the barrel.
	1 N1/2					Expanded to the south to uncover top of buried barrel revealed in south wall of S half of STP. Barrel was filled with soil and large cobbles, no associated artifacts.
5				N/A	N/A	Not excavated; located on substantial quality of modern fill
6	1	0	10	10YR3/2 very dark gray brown	Silty sand	Compacted fill/redeposited soil mixed with artifacts, brick, and cobbles
	2	10	13	10YR2/2 very dark brown	Compact silty sandy loam	Buried A, stripped. Very clean
	3	13	34	10YR4/6 dark yellowish brown	Clay loam	Sterile subsoil with bedrock, rock obstruction and several large roots
7	1	0	15	10YR3/2 very dark gray brown	Silty clay loam	Bottom obstructed by chunks of bedrock. Assorted refuse/artifacts recovered.
<b>Sources:</b> Soil colors are based on Munsell Soil Color Charts, Year 2000, Washable Edition.						

**Bronx Zoo Parking Lot and Roadway Improvements—Phase 1B Archaeological Survey**

Trench	Level	Opening Depth (in)	Closing Depth (in)	Soil Color*	Soil Type	Comments
1	1	0	4	N/A	N/A	Asphalt & Gravel bedding
	2	4	54		Sandy Fill	Alternate layers of fill with asphalt chunks and historic artifacts. Utility lines at 48 in.
	3	54	72	10YR4/4 dark yellowish brown	Fine sand	Standing water at 58 in.
2	1	0	4	N/A	N/A	Asphalt & Gravel bedding
	2	4	50	10YR4/2-4/3 dark grayish brown-brown	Mixed fill	
	3	50	55	10YR2/1 black	Slightly silty sand with large rocks and wood	Disturbed buried ground surface
	4	55	72	10YR4/1 dark gray	Silty clay loam with gravel	Redeposited light stuff with small number of historic artifacts
	5	72	75	10YR4/2 dark grayish brown	Silty clay	Peat/Buried A
3	1	0	4	N/A	N/A	Asphalt.
	2	4	40			Fill/Rubble
	3	40	46	10YR3/2 very dark gray brown	Fine Silty Sand	Possible ground surface or leeching from fill
	4	46	72	10YR4/2 dark gray brown	Fine sandy silt	
	5	72	96	10YR5/1 gray	Silty clay	
	6	96	110	10YR5/4 yellowish brown	Fine sand	
	7	110	120	10YR6/6 brown with 10YR 7/2 light gray	Fine to medium sand	
4	1	0	7	N/A	N/A	Asphalt & Gravel bedding
	2	7	36	10YR4/6 dark yellowish brown	Fill	Mixed sand, rubble, rocks
	3	36	51	10YR3/2 very dark gray brown	Silty sand with some loamy clay	Mixed/Disturbed with rocks and 20th C. artifacts
5	1	0	5	N/A	N/A	Asphalt & Gravel bedding
	2	5	22	10YR4/4 dark yellow brown	Sand	Clean
	3	22	42			Multiple layers of mixed fill with large rocks
	4	42	48	10YR2/2 very dark brown	Sandy loam	Remains of chain link fence sticking out of wall
6	1	0	36			Multiple layers of fill
	2	36	39	10YR3/3 dark brown	Silty Loam	Buried A with misc. 20th century artifacts and root remains
	3	39	60	10YR4/6 dark yellowish brown	Sandy loam	Subsoil

**Sources:** Soil colors are based on Munsell Soil Color Charts, Year 2000, Washable Edition.

**Appendix B:**

**Artifact Catalog**

STP #	Level #	Artifact Type	Object/Part	Material	Count	Production Date	Comments
1	1	Architectural	body fragment	brick	2		
1	1	Ceramic	body fragment	American Blue & Gray	1		"? & S"
1	1	Glass, bottle	body fragment	clear	1		
1	2	Ceramic	body fragment	Whiteware	2		mend
1	2	Metal	body fragment	nail	5		
2	2	Architectural	body fragment	clay	2		brick?
2	3	Architectural	body fragment	brick	2		
2	3	Glass, bottle	body fragment	amber	1		
2	3	Glass, bottle	body fragment	clear	1		
2	3	Glass, window	body fragment	clear	1		
3	2	Architectural	body fragment	brick	2		
3	2	Ceramic	body fragment	Redware	7		red-brown interior and exterior glaze
3	2	Glass, window	body fragment	clear	1		
3	2	Metal	fragment	horseshoe	1		
4	1	Glass, bottle	body fragment	clear glass	3		3 different bottles
4	1	Shell, clam	body fragment	shell	1		
4	2	Architectural	body fragment	brick	2		
4	2	Ceramic	body fragment	Refined Redware	1		
4	2	Ceramic	body fragment	Whiteware	1		
4	2	Glass, window	body fragment	clear	2		
4	2	Faunal	fragment	bone	3		
4	3	Faunal	fragment	bone	1		
4		Metal	whole	spike	1		6 3/4 in long
4	1 - Expanded to the north over barrel	Architectural	body fragment	brick	4		
4	1 - Expanded to the north over barrel	Architectural	body fragment	mortar	1		
4	1 - Expanded to the north over barrel	Ceramic	body fragment	Whiteware	3		
4	1 - Expanded to the north over barrel	Glass, window	body fragment	clear	1		
4	1 - Expanded to the north over barrel	Glass, unknown	body fragment	clear	1		curved
4	1 - Expanded to the north over barrel	Metal	whole	nails	2		finishing nails
4	1 - Expanded to the north over barrel	Other	fragment	coal	1		
5	1	Architectural	body fragment	brick	3		

**Bronx Zoo Parking Lot and Roadway Improvements—Phase 1B Archaeological Survey**

STP #	Level #	Artifact Type	Object/Part	Material	Count	Production Date	Comments
6	1	Ceramic	body fragment	Redware	1		
6	1	Ceramic	whole	tile	1		white hexagon
6	1	Ceramic	body fragment	Whiteware	1		light blue transfer print
6	1	Ceramic	body fragment	Refined White Earthenware	1		very small
6	1	Glass, bottle	body fragment	clear	12		
6	1	Glass, bottle	body fragment	green	4		
6	1	Glass, bottle	body fragment	light blue	1		
6	1	Glass, flat	body fragment	clear	4		
6	1	Metal	fragment	unknown	1		thin and corroded
6	1	Other		coal	3		
6	2	Glass, bottle	body fragment	green	1		
6	2	Glass, window	body fragment	clear	2		
6	2	Plastic	body fragment	red	1		
6	3	Architectural	body fragment	brick	1		
6	3	Glass, window	body fragment	clear	1		
7	1	Ceramic	body fragment	Whiteware	1		Flow blue type pattern
7	1	Ceramic	body fragment	stoneware	1		brown interior glaze
7	1	Glass, bottle	body fragment	clear	4		different bottles
7	1	Metal	unknown	unknown	1		corroded and heavy
7	1	Waste		Slag	1		
			<b>Total artifacts</b>		<b>103</b>		

Appendix B: Artifact Catalog

Trench #	Depth	Artifact Type	Object/Part	Material	Count	Production Date	Comments
1	0"-10"	Ceramic	base fragment	Pearlware	1		
1	0"-10"	Ceramic	rim fragment	Pearlware	1		indiscernable blue decoration
1	0"-10"	Ceramic	rim fragment	Whiteware	1		
1	0"-10"	Ceramic	rim/body fragment	White Granite	1		
1	0"-10"	Ceramic	body fragment	Stoneware	1		yellow interior glaze, reddish brown exterior glaze
1	0"-10"	Glass, bottle	body fragment	clear glass	1		
1	0"-10"	Glass, flat	body fragment	blue green glass	1		
1	0"-10"	Glass, flat	body fragment	clear glass	1		
1	0"-10"	Shell, clam	body fragment	shell	1		
1	0"-10"	Toy	rifle stock	plastic	1		1 3/4 in long
1	10"-16"	Architectural	body fragment	cement tile	1		thick concrete body, glazed exterior finish
1	10"-16"	Architectural	body fragment	tile, floor/wall	4		white, do not mend but may be from same or similar tiles
1	10"-16"	Ceramic	body fragment	Pearlware	1		indiscernable blue decoration
1	10"-16"	Ceramic	body fragment	Redware	1		undecorated, flowerpot?
1	10"-16"	Ceramic	body fragment	Whiteware	1		light blue transfer print
1	10"-16"	Ceramic	body fragment	Whiteware	2		undecorated, 2 different vessels
1	10"-16"	Ceramic	rim/body fragment	Whiteware	1		
1	10"-16"	Ceramic	base fragment	Whiteware	1		
1	10"-16"	Ceramic	body fragment	White Granite	2		mend
1	10"-16"	Ceramic	body fragment	Yellowware	1		
1	10"-16"	Glass, bottle	body fragment	green glass	3		3 different bottles
1	10"-16"	Glass, bottle	rim/body fragment	clear glass	1		milk bottle
1	10"-16"	Glass, flat	body fragment	clear glass	2		varying thicknesses
1	10"-16"	Shell, clam	body fragment	shell	1		
1	16"-22"	Ceramic	body fragment	Pearlware?	1		glaze mostly gone
1	16"-22"	Ceramic	body fragment	tile, floor/wall	1		mends to one piece from Trench 1, 10"-16"
1	16"-22"	Glass, unknown	body fragment	clear	1		flat glass with green paint(?) on one side
1	16"-22"	Mortar	body fragment		2		blue paint on exterior; likely from same source
1	22"-31"	Architectural	door knob	porcelain	1		white
1	22"-31"	Ceramic	body fragment	tile, floor	1		brick red; 1/2 inch thick
1	22"-31"	Ceramic	rim/body fragment	Whiteware	1		blue shell-edge
1	22"-31"	Metal	whole	iron	1		iron wire?
1	22"-31"	Metal	whole	unknown	1		flattened coiled spring?
1	34"	Faunal	whole	bone	1		
1	34"	Metal	whole	wire nail	2		2 nails
2	0"-14"	Ceramic	body fragment	Porcelainous ware	2		2 different vessels
2	0"-14"	Ceramic	body fragment	White Granite	1		blue floral design on exterior

**Bronx Zoo Parking Lot and Roadway Improvements—Phase 1B Archaeological Survey**

Trench #	Depth	Artifact Type	Object/Part	Material	Count	Production Date	Comments
2	0"-14"	Ceramic	body fragment	unknown	1		undecorated cream exterior
2	0"-14"	Glass, bottle	body fragment	amber	1		
2	14"-22"	Architectural	body fragment	fire brick	1		pale yellow
2	26"-32"	Ceramic	body fragment	White Granite	1		
		Glass, bottle	body fragment	clear	1		
		Glass, bottle	body fragment	green	1		
		Glass, flat	body fragment	clear frosted	1		
		Glass, milk	body fragment	milk	1		
2	32"-40"	Architectural	body fragment	vitrified pipe	1		
2	32"-40"	Architectural	fragment	tile and mortar	1		2 tiles, one black, one white, mortared together, tiles are 3/4 in x 3/4 in
2	32"-40"	Ceramic	body fragment	whiteware	1		
2	32"-40"	Ceramic	rim/body fragment	whiteware	1		gold floral design
2	32"-40"	Glass, bottle	body fragment	amber	1		
2	32"-40"	Glass, bottle	body fragment	amber	1		embossed with a leaf
2	32"-40"	Glass, bottle	base/body fragment	clear	1		
2	32"-40"	Glass, bottle	body fragment	clear	1		
2	32"-40"	Glass, flat	body fragment	clear	1		1/4 in thick
2	32"-40"	Glass, unknown	body fragment	milk	1		3/4 in thick, ribbing on one side, smooth on opposite side
2	32"-40"	Metal	whole	iron	1		iron wire
2	32"-40"	Stone	body fragment	slate	1		
2	40"-48"	Architectural (?)	body fragment	ceramic	1		pale yellow exterior, curved, interior appears burned
2	40"-48"	Metal	body fragment	iron wire	1		
2	66"	Other	fragment	coal	1		
2	70"	Architectural	body fragment	brick	1		
2	72"-78"	Architectural	body fragment	brick	2		
2	72"-78"	Architectural	body fragment	cement	1		
2	72"-78"	Glass, window	body fragment	clear	1		
2	108"	Architectural	body fragment	brick	1		
3	6"-10"	Ceramic	body fragment	Porcellainous ware	1		
3	6"-10"	Ceramic	whole	tile	1		white hexagon
3	6"-10"	Ceramic	body fragment	Whiteware	1		
3	6"-10"	Ceramic	body fragment	Refined white earthenware	1		
3	6"-10"	Glass, bottle	body fragment	green	1		
3	6"-10"	Glass, window	body fragment	clear	1		
3	6"-10"	Metal	body fragment	iron	1		nail? Ends are corroded
3	10"-16"	Architectural	body fragment	brick	1		
3	10"-16"	Architectural	body fragment	vitrified pipe	2		
3	10"-16"	Ceramic	body fragment	Porcellainous ware	1		

Appendix B: Artifact Catalog

Trench #	Depth	Artifact Type	Object/Part	Material	Count	Production Date	Comments
3	10"-16"	Ceramic	base fragment	Porcellainous ware	1		
3	10"-16"	Ceramic	body fragment	tile	1		
3	10"-16"	Ceramic	base fragment	Whiteware	1		
3	10"-16"	Glass, bottle	body fragment	amber	1		
3	10"-16"	Glass, bottle	body fragment	clear	1		
3	10"-16"	Metal	fragment	metal	1		unknown object
3	16"-19"	Ceramic	body fragment	Porcellainous ware	1		
3	16"-19"	Ceramic	rim/body fragment	Redware	1		flower pot?
3	16"-19"	Glass, bottle	body fragment	clear	2		different bottles
3	19"-27"	Ceramic	body fragment	Porcellainous ware	1		
3	19"-27"	Ceramic	body fragment	Redware	1		
3	19"-27"	Ceramic	body fragment	tile	2		
3	19"-27"	Ceramic	body fragment	White Granite	1		
3	19"-27"	Ceramic	body fragment	Whiteware	1		
3	19"-27"	Glass, bottle	body fragment	amber	1		
3	19"-27"	Glass, bottle	body fragment	clear	1		
3	19"-27"	Glass, bottle	base fragment	clear	1		
3	19"-27"	Glass, flat	body fragment	clear	1		7/16 in thick
3	19"-27"	Glass, flat	body fragment	clear	1		
3	19"-27"	Glass, unknown	body fragment	frosted clear	1		
3	19"-27"	Shell, clam	body fragment	shell	1		
3	27"-32"	Architectural	body fragment	brick tile	1		3/4 in thick
3	27"-32"	Ceramic	body fragment	whiteware	1		
3	27"-32"	Ceramic	body fragment	White Granite	7		No mends but similar in all ways
3	27"-32"	Ceramic	body fragment	redware	2		flower pot?
3	27"-32"	Glass, bottle	body fragment	amber	1		
3	32"-34"	Ceramic	rim/body fragment	Redware	1		flower pot
3	32"-34"	Metal	whole	wire nail	1		
3	34"-45"	Architectural	body fragment	brick	3		
3	34"-45"	Architectural	body fragment	fire brick	1		pale yellow
3	34"-45"	Ceramic	rim/body fragment	Whiteware	1		
3	34"-45"	Ceramic	rim/body/base fragment	Whiteware	2		small plate
3	34"-45"	Ceramic	rim fragment	Whiteware	1		
3	34"-45"	Glass, bottle	body fragment	clear	1		
3	34"-45"	Glass, bottle	body fragment	green	1		
3	34"-45"	Glass, flat	body fragment	clear	1		
3	34"-45"	Glass, window	body fragment	clear	1		
3	34"-45"	Metal	whole	iron	1		wire
3	34"-45"	Other	whole	unknown	1		burned decorative item
3	45"-47"	Ceramic	base/body/rim fragment	White Granite	1		bowl

Bronx Zoo Parking Lot and Roadway Improvements—Phase 1B Archaeological Survey

Trench #	Depth	Artifact Type	Object/Part	Material	Count	Production Date	Comments
3	45"-47"	Ceramic	rim fragment	Whiteware	1		
3	45"-47"	Glass, bottle	body fragment	amber	1		
3	45"-47"	Glass, bottle	body fragment	clear	1	1940-1948/ 1952-1958	embossed with "PEPSI COL"/ design known as Pepsi "wave" bottle (Lockhardt 2010)
3	45"-47"	Glass, bottle	body fragment	clear	2		2 different bottles
3	45"-47"	Glass, flat	body fragment	clear	2		one is ribbed, the other smooth
3	45"-47"	Other	fragment	coal	1		
3	45"-47"	Waste		Slag	1		
3	47"-54"	Architectural	body fragment	brick	2		
3	47"-54"	Ceramic	body fragment	Whiteware	1		
3	47"-54"	Glass, bottle	base fragment	clear	1		
3	47"-54"	Glass, window	body fragment	clear	1		
3	47"-54"	Shell, clam	body fragment	shell	1		
3	Backdirt from S Wall 0-46"	Glass, bottle	body fragment	clear	1	1940-1948/ 1952-1958	embossed with "PEPSI"/ design known as Pepsi "wave" bottle (Lockhardt 2010)
3	Backdirt from S Wall 0-46"	Glass, bottle	body/base fragment	clear	1	1941	Bottom of bottle embossed with the mark of the Owens-Illinois Glass Company and Duraglas/www.sha.org
4	4"-12"	Architectural	body fragment	fire brick	1		pale yellow
4	4"-12"	Ceramic	base fragment	Porcellainous ware	1		
4	4"-12"	Ceramic	body fragment	tile	2		pale yellow
4	4"-12"	Ceramic	body fragment	Whiteware	2		2 different vessels
4	4"-12"	Glass, window	body fragment	green	1		
4	12"-18"	Ceramic	whole	tile	3		1 square white tile, 1 hexagonal white tile, 1 square yellow tile
4	21"-27"	Architectural	body fragment	fire brick	1		
4	21"-27"	Glass, window	body fragment	clear	1		
4	21"-27"	Metal	whole	hook	1		corroded
4	27"-31"	Architectural	body fragment	quartz tile	1		white
4	27"-31"	Ceramic	body fragment	Porcellainous ware	1		
4	31"-38"	Architectural	body fragment	brick	1		
4	31"-38"	Glass, bottle	body fragment	frosted clear	1		
4	38"-42"	Architectural	fragment	mortar and ceramic tile fragments	1		fragments of yellow, dark green and light green tile
4	38"-42"	Glass, bottle	body fragment	blue	1		
4	38"-42"	Glass, bottle	body fragment	clear	2		2 different bottles
4	38"-42"	Glass, flat	body fragment	clear	1		1/4 in thick
4	38"-42"	Glass, window	body fragment	clear	1		
4	38"-42"	Metal	whole	wire nail	3		
5	12'-24'	Glass, bottle	body fragment	blue-green	1		
5	24"-36"	Architectural	body fragment	vitrified pipe	1		
5	24"-36"	Glass, bottle	body fragment	clear	1		

Appendix B: Artifact Catalog

Trench #	Depth	Artifact Type	Object/Part	Material	Count	Production Date	Comments
5	24"-36"	Glass, bottle	body fragment	green	1		
5	24"-36"	Metal	whole	wire nail	1		
5	24"-36"	Shell, clam	body fragment	shell	1		
6	0"-6"	Glass, bottle	body fragment	clear	2		different bottles
6	0"-6"	Glass, window	body fragment	clear	1		
6	0"-6"	Metal	whole	wire nail	1		
6	0"-6"	Other	whole twist cap	metal	1		white; flattened
6	0"-6"	Other	beverage pull tab	metal	1		
6	0"-6"	Other	whole golf ball		1		"Maxfli"
6	0"-6"	Other	whole battery		1		corroded; C type?
6	6"-16"	Glass, bottle	base fragment	clear	1		
6	6"-16"	Metal	body fragment	wire nail	1		
6	6"-16"	Other	beverage pull tab	metal	1		
6	16"-21"	Architectural	body fragment	brick	3		
6	16"-21"	Glass, bottle	body/rim fragment	clear	1		milk bottle
6	16"-21"	Glass, architectural	body fragment	clear	1		1/4 in thick
6	16"-21"	Other	beverage pull tab	metal	1		corroded and now part of a concretion
6	21"-25"	Architectural	body fragment	vitrified pipe	1		
6	21"-25"	Architectural	body fragment	fire brick	1		pale yellow
6	21"-25"	Ceramic	body fragment	Porcellainous ware	2		
6	21"-25"	Ceramic	base fragment	Porcellainous ware	1		
6	21"-25"	Ceramic	body fragment	Whiteware	1		light blue transfer print
6	21"-25"	Ceramic	body fragment	Whiteware	1		
6	21"-25"	Glass, bottle	body fragment	clear	4		
6	21"-25"	Glass, unknown	body fragment	red	1		
6	21"-25"	Metal	body fragment	wire nail	2		
6	21"-25"	Metal	body fragment	electrical conduit	1		corroded
6	21"-25"	Metal, unknown	body fragment	unknown	2		flat and corroded
6	25"-33"	Architectural	body fragment	vitrified pipe	1		
6	25"-33"	Ceramic	body fragment	Redware	1		
6	25"-33"	Ceramic	body fragment	Refined Redware	1		
6	25"-33"	Ceramic	body fragment	tile	1		white square
6	25"-33"	Glass, bottle	rim/body fragment	clear	1		milk bottle
6	25"-33"	Glass, bottle	base fragment	clear	1		
6	25"-33"	Glass, bottle	body fragment	clear	3		
6	25"-33"	Glass, flat	body fragment	clear	1		ribbed
6	25"-33"	Metal, unknown	body fragment	unknown	2		corroded
6	25"-33"	Metal, unknown	body fragment	unknown	1		14 1/2" in long
6	33"-36"	Ceramic	body fragment	tile	1		mint green
6	33"-36"	Ceramic	base fragment	Whiteware	1		
6	33"-36"	Glass, bottle	body fragment	clear	2		2 different bottles
6	33"-36"	Glass, bottle	base fragment	clear	1	1929-1954/1959	Base is embossed with the mark of

Bronx Zoo Parking Lot and Roadway Improvements—Phase 1B Archaeological Survey

Trench #	Depth	Artifact Type	Object/Part	Material	Count	Production Date	Comments
							Owens-Illinois Glass
6	Coal Ash ~36"	Glass, bottle	body fragment	blue	1		embossed with "New York"
6	Coal Ash ~36"	Glass, bottle	body fragment	clear	1		embossed with "HEF..." milk bottle?
6	Coal Ash ~36"	Glass, bottle	body fragment	clear	1		embossed lines
6	Coal Ash ~36"	Glass, bottle	base/body fragment	clear	1		panel bottle
6	Coal Ash ~36"	Glass, bottle	body fragment	clear	2		
6	Coal Ash ~36"	Glass, bottle	base/body fragment	green	1		
6	Coal Ash ~36"	Glass, bottle	body fragment	green	1		
6	Coal Ash ~36"	Glass, unknown	body fragment	whitish-green	1		
6	36"-42" beneath the ash	Glass, bottle	body fragment	clear	1		embossed with letters which are fragmented
6	36"-42" beneath the ash	Glass, bottle	body fragment	clear	1		
6	42"-54"	Ceramic	body fragment	Redware	3		flower pot?
6	42"-54"	Ceramic	body fragment	Whiteware	1		
6	42"-54"	Ceramic	body fragment	Whiteware	1		light blue transfer print
6	42"-54"	Glass, window	body fragment	clear	1		
6	54"-60"	Ceramic	body fragment	Whiteware	1		
6	54"-60"	Glass, bottle	body fragment	blue-green	1		
6	Backdirt possibly from coal ash	Ceramic	body fragment	Whiteware	1		
6	Backdirt possibly from coal ash	Glass, bottle	body fragment	blue	2		
6	Backdirt possibly from coal ash	Glass, bottle	body fragment	clear	4		4 different bottles, all have fragments of embossing
6	Backdirt possibly from coal ash	Glass, bottle	body fragment	clear	1		
6	Backdirt possibly from coal ash	Glass, bottle	body fragment	green	2		
6	Backdirt possibly from coal ash	Glass, other	body fragment	clear?	1		melted
6	Backdirt possibly from coal ash	Other		slag	1		
				<b>Total artifacts</b>	<b>272</b>		