



Phase 1B Archaeological Survey

**Bronx Zoo Parking Lot and Roadway Improvements:
Jungle World Road**

Bronx, New York

SHPO Project Review Number: 08PR01059

LPC Project Number: NLA/106-X

Prepared for:

Wildlife Conservation Society
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June 2013

Management Summary

SHPO Project Review Number:	08PR01059
LPC Project Review Number:	NLA/106-X
Involved State and Federal Agencies:	Federal Highway Administration Dormitory Authority of the State of New York
Phase of Survey:	Phase 1B Archaeological Survey
Location Information	
<i>Location:</i>	Jungle World Road; Bronx Park, The Bronx, New York (Block 3120, Lot 20)
<i>Minor Civil Division:</i>	00501
<i>County:</i>	Bronx
Survey Area	
<i>Length:</i>	Approximately 914 meters (3,000 feet)
<i>Width:</i>	18 to 24 meters (60 to 80 feet)
USGS 7.5 Minute Quadrangle Map:	Central Park and Flushing
Archaeological Survey Overview	
<i>Number & Interval of Shovel Tests:</i>	25 at a 30-foot interval, or placed judgmentally
<i>Number & Size of Units:</i>	None
<i>Width of Plowed Strips:</i>	n/a
<i>Surface Survey Transect Interval:</i>	n/a
Results of Archaeological Survey	
<i>Precontact Sites Identified:</i>	None
<i>Historic Sites Identified:</i>	None
<i>Sites Recommended for Phase 2/Avoidance:</i>	None
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Date of Report:	June 2013

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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 project site is located in the vicinity of Boston Road (also known as “Jungle World Road”), which runs along the western side of the Bronx River within the park boundaries (Block 3120, Lot 20). The proposed project would involve the widening of and improvements to Jungle World Road along its entire length—a distance of approximately 3,000 feet—between the Zoo’s southeast corner and the existing bridge over the Bronx River that connects Jungle World Road with the Bronx River Parking Lot in the Zoo’s northeast corner.

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.

In compliance with the above regulations, a Phase 1A Archaeological Documentary Study of the project site was prepared by AKRF, Inc. in February 2013. That study determined that portions of the project site were archaeologically sensitive (discussed in greater detail below). The Phase 1A study was submitted to the New York City Landmarks Preservation Commission (LPC) and the New York State Historic Preservation Office (SHPO) for review and comment. A Phase 1B Archaeological Testing Protocol was also submitted at that time. In a comment letter dated March 21, 2013, LPC concurred with the conclusions and recommendations of the Phase 1A study and requested that a plan for the unanticipated recovery of human remains be added to the testing protocol. In a comment letter dated April 4, 2013, SHPO also concurred with the findings of the Phase 1A study.

B. REVISIONS TO THE PROPOSED PROJECT EAST OF THE BRONX RIVER

As originally proposed, the project was also expected to include renovations in the existing Bronx River Parking Lot and the adjacent overflow parking area to the north. The Phase 1A Archaeological Documentary Study of the proposed project identified this area as having low precontact archaeological sensitivity and moderate to high sensitivity for archaeological resources associated with the historic residential and industrial occupation of that portion of the project site. However, since the completion of the Phase 1A study, the project has been changed. As currently proposed, the existing Bronx River Parking Lot will be reconfigured, repaved, and restriped and a traffic roundabout will be constructed to improve the access and traffic circulation. The formalization of the overflow parking lot to the north of the Bronx River Parking Lot has been eliminated from the proposed project, however, the entrance drive leading to the overflow lot will be paved. One area of archaeological sensitivity was identified in this portion of the project site, in the location of the former Henry Bolton home. The proposed work in this area as part of the revised project will include resurfacing and the reconstruction of curbs. This work is

not expected to extend into archaeologically sensitive depths below the existing parking lot. In addition, no work is currently proposed in the location of the overflow parking lot. Therefore, archaeological testing is no longer necessary within the Bronx Zoo to the east of the Bronx River.

C. RESULTS OF THE PHASE 1A ARCHAEOLOGICAL DOCUMENTARY STUDY: JUNGLE WORLD ROAD

The Phase 1A Archaeological Documentary Study of the proposed Bronx Zoo transportation improvements identified general areas of archaeological sensitivity along the eastern side of Jungle World Road, where less subsurface disturbance was documented. Those areas within the proposed area of disturbance on the eastern side of Jungle World Road that are generally level (with slopes less than 10 to 12 percent), east of the existing utilities, and which were not on or near exposed bedrock outcrops were determined to have moderate sensitivity for precontact archaeological resources and low to moderate sensitivity for historic period archaeological resources.

Two areas of precontact archaeological sensitivity were identified to the east of Boston Road during LPC's 1990 survey of the Bronx Zoo. This assessment included a surface survey of the Bronx Zoo Transportation Facility project site in its entirety. One of these areas was located to the east of the southern end of the project site, opposite the existing Asia World parking lot. Testing was completed in this area as described below. The other area was identified 400 feet to the south of the existing bridge across the Bronx River, in a "small, relatively flat wooded area to the west of the foot path...elevated terrace that is undisturbed, well-drained, and has easy access to potable water and other food and material resources" (Landmarks Preservation Commission 1990: 26). LPC also identified the portion of the Boston Road that passes through the Zoo as:

A transportation artifact that has potential for yielding important information about road construction and technological development over time, as well as for gathering information on historic transportation, communication, and settlement. Archaeological monitoring and data recording should be part of any construction work within the road bed (LPC 1990:25).

However, extensive disturbance has occurred within the roadbed as a result of the installation of utilities and grading and paving associated with road construction and maintenance. These disturbances have likely degraded the significance of any transportation-related features associated with this transportation artifact. Therefore, no testing was completed within the roadbed itself.

D. SURVEY METHODS

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 along Boston/Jungle World Road was to ascertain the presence or absence of precontact 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 *Sinawoy* 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

Little historic development occurred within the project site with the exception of the construction of the Post Road to Boston, also known as Boston Road or Jungle World Road. The road was constructed through the project site in 1789 and it became a public highway several years later. The road ran through the large country estate of the Lydig family—which owned the property that now makes up most of the Bronx Zoo west of the river—throughout the 19th century until the Zoo was established.

The archaeological assessment of the Bronx Zoo was completed by LPC in 1990 (referenced above) identified the portion of the historic Boston Road that passes through the project site as a “transportation artifact” that could provide additional data about historic road construction and technology. However, the Phase 1A determined that extensive disturbance has occurred within the roadbed as a result of the installation of utilities and grading and paving associated with road construction and maintenance. These disturbances have likely degraded the integrity and significance of any transportation-related features associated with this transportation artifact.

Few traces of the former Lydig property are still visible, although in their 1990 survey of the Bronx Zoo, LPC noted that a historic survey marker was located approximately 24 feet east of Boston Road. It is unknown if the marker is still extant or if it would be situated within the project limits.

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. Therefore, the following research issues have been developed as part of this protocol and are specific to the types of potential archaeological resources that could be encountered within the project site.

The site could produce data about the individuals who resided and/or worked on or traveled along the project site between the precontact period and the late-19th century. With respect to the Native American

occupation of the site, if precontact archaeological resources exist on the project site, they could provide additional information about the earliest occupation of the Bronx River valley.

FIELD METHODOLOGY

Subsurface testing within the project site was conducted within those areas along the eastern side of Boston/Jungle World Road that were identified as potentially sensitive for archaeological resources in the Phase 1A study (see **Figures 2** and **3**). The streetbed itself and all areas to the west were not identified as archaeologically sensitive and were therefore not subjected to Phase 1B testing. 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 25 shovel test pits (STPs). The test pits were placed at approximately 30 foot intervals along the side of the road within areas identified as archaeologically sensitive in those areas with level slopes and where visible disturbance or shallow bedrock was not present. Several STPs were judgmentally placed in areas that were not identified as archeologically sensitive on both the east and west sides of Boston/Jungle World Road to confirm the disturbance of those areas.

Each STP was placed between 2 and 4 feet from the edge of the paved surface. The exact number and placement of individual STPs was dependent upon field conditions. STPs were not placed in areas of steep slopes, exposed bedrock, or obvious disturbance. Each STP measured approximately 18 inches in diameter and was excavated to the depth of clean subsoil, or until excavation could no longer be completed by hand as a result of advanced depth or obstructions (e.g., large rocks or tree roots). 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**.

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).¹ 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 artifact analysis included the identification of the *Terminus Post Quem* (TPQ)—the date after which an artifact was discarded—for each context and the generation of mean beginning and end dates for assemblages. This information was used to ascertain the contemporaneousness of contexts and to establish which assemblages represented primary or secondary deposits. The complete artifact catalogue is located in **Appendix B**.

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

A. RESULTS OF PHASE 1B TESTING**SHOVEL TEST PITS**

In total, 25 STPs were excavated along the line of Jungle World Road between its southern terminus and the bridge that carries it over the Bronx River. The STPs were placed at distances varying from 2 to 9 feet east of the edge of the existing pavement, depending on locations of utilities, visibly disturbed areas, exposed bedrock, and steep slopes. The STPs were placed at an approximately 30 foot interval except in locations that were not considered to be archaeologically sensitive. Of the STPs, all but one were placed along the eastern side of Boston/Jungle World Road. One STP was placed along the western side of the road to confirm disturbance in that area. Other STPs were attempted on the western side of the road but were obstructed by shallow pavement or utilities.

Nearly all of the STPs contained disturbed or redeposited soils or fill materials containing modern refuse or debris. In many STPs where subsoil was reached, those sediments appeared to be disturbed or contained glass fragments or decaying bedrock. Several STPs contained what may have been a buried ground surface (an “A horizon”), however these strata were ambiguous and often disturbed or redeposited. The lack of a consistent soil profile and the visible evidence of prior grading suggest that the roadbed and the area to the east have been heavily modified, possibly more than once as the road has been reconstructed for various uses.

B. ARTIFACT SUMMARY

A total of 530 artifacts was recovered during the excavation of the 25 STPs opened along Jungle World Road. An overwhelming majority of the artifacts (72 percent) was 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. Some fragments were very thick, suggesting that they came from older bottles, however, these fragments were often found in the same contexts as thinner fragments similar to that used in modern glass bottles. Few base or finish fragments were included within the assemblage and few mending pieces were identified. It therefore appears that the glass fragments included within the assemblage represent numerous bottles manufactured over a large period of time.

These fragments were likely deposited along the side of Boston/Jungle World Road and subsequently re-deposited and redistributed as a result of disturbance associated with road construction and maintenance. Similarly, very few ceramic fragments were included within the assemblage, as were a number of milk glass fragments, some of which may have been part of canning jar lid seals. However, all of these were small or highly fragmentary, suggesting repeated disturbance and redeposition. Because of the highly fragmentary nature of these artifacts and the lack of identifiable diagnostic information, these objects could not be dated.

A number of large, rusted metal objects was observed in the field but not collected. Smaller metal objects collected and analyzed appeared to be car or machine parts. Other metal objects included modern nails and a partial key for a modern Master lock. A large quantity of 20th century plastic (including forks/utensils, construction netting, and other unidentifiable plastic fragments) was also collected. The only items for which dates could be assigned were late-20th century artifacts. These included a New York

City subway token manufactured between 1970 and 1980 from STP 1 (DeCesare et al. 2012); a 1964 Jefferson Nickel (from STP 8); a 1972 Roosevelt Dime (from STP 10); orange plastic construction netting (from STP 13); and an aluminum pull tab (from STP 14). In addition, STP 1 also contained a glass marble with no visible seams or marks, suggesting that it was machine-made and produced after 1926 (Randall 1971).

The artifact assemblage collected from the area along Jungle World Road therefore represents a highly fragmentary collection of artifacts that were likely disturbed and redeposited (possibly more than once) in the late 20th century.

The 25 STPs that were excavated along the western and eastern sides of Boston/Jungle World Road showed that the roadbed and its immediate vicinity have been disturbed. This disturbance was likely caused as a result of the construction, grading, paving, and maintenance of the road as it was transformed from a colonial road to a modern thoroughfare and again for use within the zoological park. A consistent, intact buried original ground surface was not observed in the area identified as archaeologically sensitive in the Phase 1A study. In addition, the artifacts recovered during the Phase 1B testing are largely consistent with late-20th century refuse. A significant quantity of bottle glass fragments which appears to represent many different vessels with few mends suggests the disturbance and redeposition of the soils near the road surface. The remaining areas within the portions of the project site that were identified as archaeologically sensitive in the Phase 1A but were not subjected to Phase 1B testing featured steep slopes or visible disturbance.

No intact archaeological resources were observed during the completion of the Phase 1B testing and no evidence was uncovered that would suggest that such resources could be present within the project site. Therefore, the proposed improvements along Jungle World Road are not expected to impact archaeological resources and no further archaeological investigations (e.g., a Phase 2 survey) are recommended.

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Figures



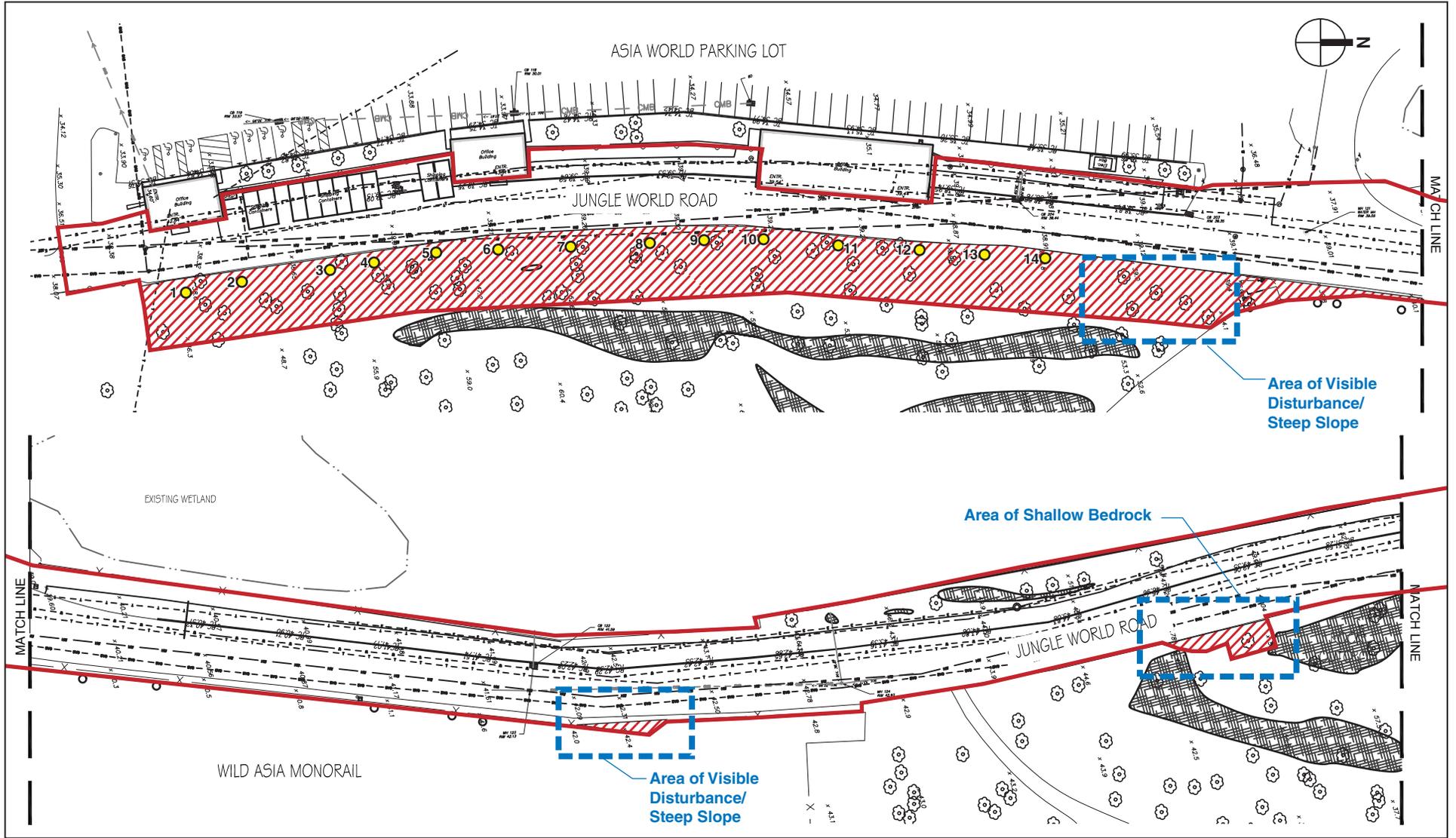
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 *Project Site Boundary
(Revised Since the Completion
of the Phase 1A Study)*

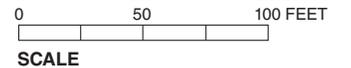
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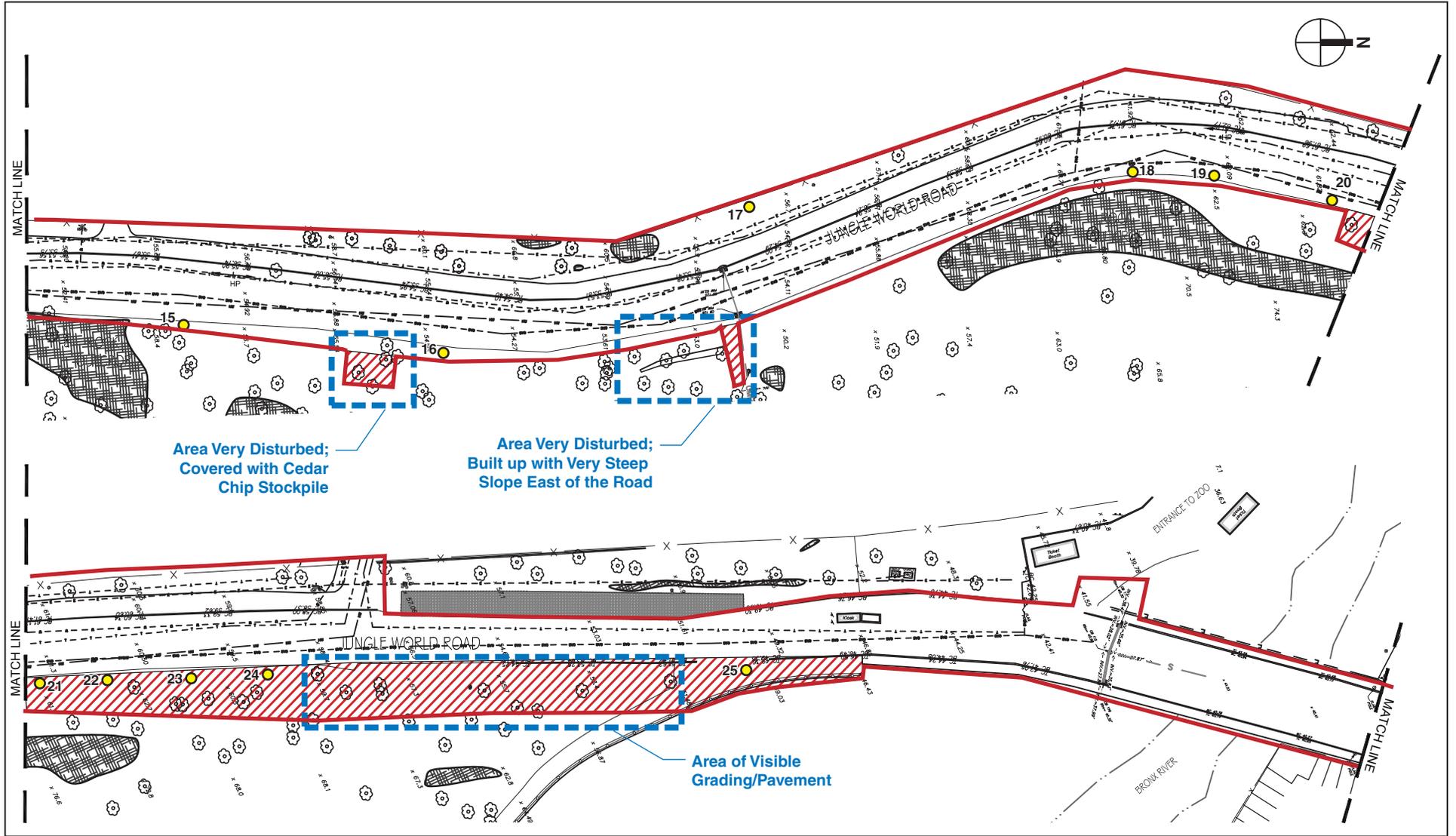
USGS 7.5 Minute Topographic Map -
Flushing and Central Park Quads
Figure 1



- Project Site Boundary
- Shovel Test Pit and Number
- Areas of Archaeological Sensitivity, Excluding Areas with Slopes Greater than 10 Percent and Areas with Exposed Bedrock



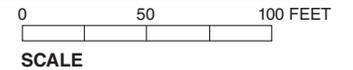
Phase 1B Testing Locations:
Jungle World Road, South Half
Figure 2



— Project Site Boundary

17 ● Shovel Test Pit and Number

▨ Areas of Archaeological Sensitivity, excluding areas with slopes greater than 10 percent and areas with exposed bedrock



Phase 1B Testing Locations:
Jungle World Road, North Half
Figure 3



Looking south along the eastern side of Jungle World 1
at an area of visible disturbance



Disturbance along the southern side of Jungle World Road 2

Appendices

Appendix A:

Excavation Record

STP	Level	Opening Depth (in)	Closing Depth (in)	Soil Color*	Soil Type	Comments
1	1	0	16	10YR3/4 dark yellowish brown	Loose sandy silty loam	Opened at base of slope; miscellaneous modern and late-20th century artifacts.
2	1	0	12	10YR2/2 very dark brown	Silty sand	Fill with dense glass and metal wires.
	2	12	20	10YR4/3 brown	Sandy silt	
	3	20	24	10YR4/6 dark yellowish brown	Sandy silty loam	Less glass than Level 3; lighter lens with brick fragments.
	4	24	26	10YR4/3 brown	Very compact sandy silty loam	
3	1	0	9	10YR2/2 very dark brown	Silty sand	Large metal objects not collected.
	2	9	15	10YR4/2 dark grayish brown	Silty sand	
	3	15	24	10YR4/4 dark yellowish brown	Sandy loam with roots	Not subsoil; but may have subsoil mixed in.
4	1	0	10	10YR3/2 very dark grayish brown	Silty sand	Modern refuse and large metal objects not collected.
	2	10	17	10YR4/4 dark yellowish brown	Very sandy loam	Disturbed and/or redeposited.
	3	17	24	10YR5/4 yellowish brown	Compact silty sand	Disturbed subsoil with glass and brick.
5	1	0	12	10YR3/2 very dark grayish brown	Silty sand with heavy gravel and roots	Bottom of STP obstructed by a large rock.
6	1	0	8	10YR2/2 very dark brown	Silty sand with gravel	
	2	8	16	10YR3/2 very dark grayish brown	Silty sand with compact heavy gravel	
	3	16	21	10YR4/4 dark yellowish brown	Compact sandy silty loam	Possible disturbed remnant of a buried A horizon; large, heavy rusted metal objects not collected.
	4	21	27	10YR4/6 dark yellowish brown	Compact silty sand	Possible disturbed B horizon.
7	1	0	6	10YR2/2 very dark brown	Silty sand	Glass and modern refuse.
	2	6	13	10YR4/2 dark grayish brown	Very dense slightly silty sand with large gravel	Some glass, possibly came from level 1.
	3	13	16	10YR3/3 dark brown	Silty sand	Possible disturbed remnant of a buried A horizon.
	4	16	21	10YR4/6 dark yellowish brown	Silty sandy loam	Possible disturbed B horizon; bottom of STP obstructed by large rock.
8	1	0	6	10YR2/2 very dark brown	Silty sand	Redeposited fill with dense roots at the bottom. Modern plastic not collected.
	2	6	11	10YR3/4 dark yellowish brown	Silty sand with gravel and rock	
	3	11	19	10YR4/6 dark yellowish brown	Silty sand	Subsoil; one piece of glass near the top of the level; may be transitional from level 2.

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STP	Level	Opening Depth (in)	Closing Depth (in)	Soil Color*	Soil Type	Comments
9	1	0	12	10YR2/2 very dark brown	Silty sand	STP placed upslope to avoid an existing water line (9 feet from the road's edge). Little rock.
	2	12	19	10YR4/3 brown	Gravel	
	3	19	22	10YR3/6 dark yellowish brown	Silty sandy loam	Possibly natural.
10	1	0	9	10YR2/2 very dark brown	Silty sand with roots	Modern plastic not collected.
	2	9	18	10YR4/3 brown	Silty sand with heavy gravel	No cultural material.
11	1	0	10	10YR3/3 dark brown	Silty sand with heavy roots	STP 11 feet south of road; Modern refuse not collected.
	2	10	15	10YR4/2 dark grayish brown	Silty sand with gravel	
	3	15	20	10YR3/6 dark yellowish brown	Slightly silty sand with some gravel and rock	Large rock obstructing the bottom.
12	1	0	6	10YR2/2 very dark brown	Sandy loam with roots	STP 12 feet south of road; Modern refuse on the surface not collected.
	2	6	15	10YR4/2 dark grayish brown	Sandy loam with concrete	
	3	15	22	10YR4/3 brown	Silty loam	Possibly a buried A horizon; rocks at bottom.
13	1	0	10	10YR2/2 very dark brown	Sandy loam	STP 14.5 feet south of road; Modern refuse not collected.
	2	10	18	10YR4/4 dark yellowish brown	Silty clayey loam	Possibly subsoil; roots and large rocks at the bottom of the level
14	1	0	7	10YR2/2 very dark brown	Silty sandy loam with roots	STP 10 feet south of road
	2	7	15	10YR3/3 dark brown	Silty sand with heavy gravel	Rock obstruction at the bottom; similar to subsoil with decomposing bedrock.
15	1	0	8	Alternating thin layers of sand and gravel with mixed artifacts in the top two-thirds.		
16	1	0	16	STP 5 feet south of road; Mixed levels of redeposited fill; mostly 10YR3/2 (very dark grayish brown) silty sand with gravel and a lighter brown sand		
	2	16	22	10YR4/2 dark grayish brown mottled with 7.5YR3/4 Dark Brown	Sandy silt	Old soil associated with decomposing bedrock, likely a buried A and subsoil that was graded away.
17	1	0	6	West side of Jungle World Road, STP 16 feet north of the existing curb; Mixed silty sand and gravel; encountered utility marking tape (possible electric line?) and stopped excavation. Attempted a second STP 30 feet to the north, but it was obstructed by shallowly buried rock or pavement.		
18	1	0	7	10YR3/3 dark brown	Silty sand with gravel	STP 3 feet south of road; Mixed glass and refuse.
	2	7	14	10YR4/4 dark yellowish brown	Silty sand with large cobbles	
	3	14	20	10YR5/6 yellowish brown	Very fine silty sand	Possible subsoil. Some glass observed, but it may have fallen from the top during excavation.
19	1	0	6	10YR3/2 very dark grayish brown	Sandy loam	STP 3 feet south of road; Bedrock encountered at bottom of level.
20	1	0	4	10YR2/2 very dark brown	Fin silty sand	STP 1 foot south of road; Fill with little glass and refuse.
	2	4	6	n/a	Dense ash with coal	Some glass
	3	6	11	10YR4/3 brown	Silty sand with rock and gravel	
	4	11	16	10YR5/6 yellowish brown	Very compact fine sand with decomposing rock	

Appendix A: Excavation Record

STP	Level	Opening Depth (in)	Closing Depth (in)	Soil Color*	Soil Type	Comments
21	1	0	4	10YR3/2 very dark grayish brown	Fine silty sand	STP 1 foot south of road
	2	4	7	10YR2/1 black	Asphalt and gravel	
	3	7	10	10YR3/4 dark yellowish brown	Silty sand with gravel	
	4	10	18	10YR5/3 brown	Fine silty sand with decomposing bedrock	
22	1	0	4	10YR4/1 Dark gray	Fine silty sand	
	2	4	8	10YR2/1 black	Asphalt and gravel	
	3	8	13	10YR4/4 dark yellowish brown	Silty sand with gravel	Mixed and disturbed
	4	13	17	10YR6/6 brownish yellow	Fine silty sand with rock	
23	1	0	4	10YR2/2 very dark brown	Fine silty sand	STP 3 feet south of road; Modern plastic sampled.
	2	4	7	10YR2/1 black	Asphalt with sandy silt	
	3	7	11	10YR5/4 yellowish brown	Silty sand	
	4	11	16	10YR3/4 dark yellowish brown	Silty sand with decaying bedrock	
24	1	0	6	10YR2/2 very dark brown	Fine silty sand	STP 3 feet south of road.
	2	6	13	10YR3/3 dark brown	Disturbed fill	Contained brick, gravel, and asphalt.
	3	13	20	10YR4/4 Dark yellowish brown	Fine silty sand with rock	Somewhat disturbed subsoil.
25	1	0	7	10YR2/2 very dark brown	Silty sand	STP 2.5 feet south of road.
	2	7	17	10YR5/6 yellowish brown	Very compact silty sand	No cultural material.

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	Car part?	Cap	Rusted metal	1		
1	1	Marble	marble	glass	1	after 1926	yellow with green and orange swirls; no visible marks, machine made (Randall 1971)
1	1	Subway Token	Token	brass	1	1970-1980	(DeCesare, et al. 2012)
1	1	Bottle glass	body fragment	clear glass	1		embossed with "...NE PI..." and images of fruit
1	1	Bottle glass	body fragment	clear glass	1		very thick; embossed with partial "t?"
1	1	Bottle glass	base fragment	clear glass	1		very thick; embossed with "REGIST..."
1	1	Bottle glass	body fragment	glass	1		slightly pinkish hue; very thick
1	1	Bottle glass	body fragment	clear glass	1		embossed with "...NE P..."
1	1	Bottle glass	body fragment	clear glass	9		varying thicknesses
1	1	Bottle glass	body fragment	clear glass	4		embossed ridges; no mends.
1	1	Bottle glass	body fragment	pink glass	1		
1	1	Bottle glass	base fragment	brown glass	1		embossed with dots and ridges around base.
2	1	Unidentified.	fragment	rubber	1		
2	1	Bottle glass	rim fragment	clear glass	1		Milk bottle.
2	1	Bottle glass	body fragment	aqua glass	1		embossed "...GISTER/BOTTLE"
2	1	Bottle glass	body fragment	aqua glass	4		varying shades of blue
2	1	Bottle glass	neck fragment	clear glass	1		embossed "...FOR..." in small letters
2	1	Bottle glass	body fragment	clear glass	10		varying thicknesses
2	1	Bottle glass	body fragment	clear glass	3		embossed ridges; varying thicknesses.
2	1	Bottle glass	body fragment	clear glass	1		embossed with "...S S..." in small letters
2	1	Bottle glass	body fragment	pink glass	1		
2	1	Bottle glass	body fragment	brown glass	1		
2	2	Brick	fragments	brick	5		
2	2	Ceramic dish?	rim fragment	whiteware	1		
2	2	Ceramic dish?	base fragment	Refined white earthenware	1		possible pearlware? Very fragmentary.
2	2	Ceramic dish?	base fragment	whiteware	1		
2	2	shell	fragment	shell	1		very small and very worn.
2	2	Bottle glass	body fragment	aqua glass	2		very thick
2	2	Bottle glass	body fragment	light green glass	1		very thin
2	2	Bottle glass	body fragment	brown glass	1		very thick
2	2	Bottle glass	body fragment	clear glass	7		
2	2	Bottle glass	body fragment	clear glass	1		embossed ridge

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STP #	Level #	Artifact Type	Object/Part	Material	Count	Production Date	Comments
2	lens below 2	Bottle glass	body fragment	clear glass	2		varying thicknesses
2	lens below 2	Brick	fragment	brick	1		
3	1	Unidentified	Large metal cylinder	metal	1		screw threads on interior, 1-inch diameter; 1.6 inches long
3	1	Fork	handle and partial tines	plastic	4		all mend
3	1	Utensil	neck fragment	plastic	1		
3	1	Zip tie	fragment	plastic	1		
3	1	Ceramic dish?	fragment	whiteware	3		
3	1	Bottle glass	body fragment	green glass	3		
3	1	Bottle glass	body fragment	brown glass	1		
3	1	Bottle glass	body fragment	clear glass	2		
3	2	Cufflink?	fragment	metal	1		small oval with incised decorations and arched
3	2	Ceramic dish?	fragment	whiteware	1		
3	2	Bottle glass	rim fragment	clear glass	1		milk bottle?
3	2	Bottle glass	body fragment	clear glass	2		
3	2	Bottle glass	body fragment	clear glass	1		partial embossed lines
3	2	Coal	fragment	coal	1		
3	2	Bottle glass	body fragment	green glass	1		
3	2	Bottle glass	body fragment	brown glass	1		
3	2	Bottle glass	body fragment	aqua glass	1		
3	3	Wire nail	fragments	rusted iron	2		
3	3	Spike?	whole	rusted iron	1		large and heavily encrusted with rust
3	3	Brick	fragment	brick	1		
3	3	Bottle glass	body fragment	dark green glass	1		
3	3	Bottle glass	body fragment	dark blue glass	1		may be part of a bottle neck
3	3	Bottle glass	body fragment	aqua glass	2		
3	3	Glass	fragments	clear glass	2		very thick, small fragments
3	3	Bottle glass	body fragment	clear glass	1		very thin
3	3	Ceramic dish?	fragment	whiteware	2		
4	1	Bottle glass	body fragment	clear glass	71		Varying thicknesses
4	1	Bottle glass	body fragment	light green glass	1		
4	1	Bottle glass	body fragment	aqua glass	2		
4	1	Bottle glass	body fragment	brown glass	1		
4	1	Bottle glass	lip fragment	clear glass	1		partial remnants of screw threads
4	1	Bottle glass	base fragment	clear glass	1		oval-shaped machine-made base; sides embossed with "...O..." and ringing bells; base stippled and embossed with: "K. A.../NE..."
4	1	Glass vessel	body fragment	milk glass	8		
4	1	Coal	fragment	coal	2		

Appendix B: Artifact Catalog

STP #	Level #	Artifact Type	Object/Part	Material	Count	Production Date	Comments
4	2	Bottle glass	body fragment	clear glass	24		Varying thicknesses
4	2	Coal	fragment	coal	1		
4	2	Glass vessel	body fragment	milk glass	1		
4	2	Bottle glass	body fragment	aqua glass	2		
4	2	Brick	fragment	brick	1		
4	2	Ceramic dish?	fragment	whiteware	1		very small fragment; glaze on one side has been lost.
4	3	Brick	fragment	brick	3		
4	3	Coal	fragment	coal	1		
4	3	Bottle glass	body fragment	clear glass	6		Varying thicknesses
4	3	Glass vessel	body fragment	milk glass	1		
4	3	Bottle glass	body fragment	aqua glass	1		
4	3	Wire nail	fragments	rusted iron	2		
4	3	Ceramic dish?	handle base fragment	whiteware	1		
4	3	Ceramic dish?	body fragment	whiteware	1		Hand painted green and purple floral design
5	1	Unidentified metal	whole	metal	1		1.8-inch diameter metal circle, .3 inches thick, with .2-inch hole through center
5	1	Bottle glass	body fragment	clear glass	10		
5	1	Bottle glass	base fragment	clear glass	2		very thick; do not mend
5	1	Bottle glass	body fragment	clear glass	1		partially embossed with small wavy lines.
5	1	Bottle glass	body fragment	light green glass	1		
5	1	Bottle glass	body fragment	brown glass	1		
5	1	Ceramic dish?	body fragment	refined white earthenware	1		
6	1 and 2	Flat glass	fragment	very light green glass	1		large, thick flat glass fragment
6	1 and 2	Bottle glass	body fragment	light green glass	1		
6	1 and 2	Bottle glass	body fragment	green glass	1		
6	1 and 2	Bottle glass	body fragment	clear glass	5		Varying thicknesses
6	1 and 2	Bottle glass	body fragment	brown glass	1		very thick
6	3 and 4	Bottle glass	body fragment	yellow-brown glass	1		
6	3 and 4	Bottle glass	body fragment	dark green glass	1		thick
6	3 and 4	Mirror	fragment	glass	1		clear glass with metallic coating on one side
6	3 and 4	Bottle glass	body fragment	clear glass	17		Varying thicknesses
6	3 and 4	Shell	fragment	shell	1		very small and worn
6	3 and 4	Brick	fragment	brick	2		
7	1	Sunglasses Lens	whole	plastic	1		right eyepiece
7	1	Ceramic dish?	base fragment	refined white earthenware	1		porcelain?
7	1	Bottle glass	lip fragment	aqua glass	1		partial crown finish
7	1	Bottle glass	body fragment	aqua glass	2		
7	1	Bottle glass	body fragment	clear glass	6		
8	1 and 2	Jefferson Nickel	whole	copper and nickel	1	1964	
8	1 and 2	Ceramic bowl?	body fragment	whiteware	2		

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STP #	Level #	Artifact Type	Object/Part	Material	Count	Production Date	Comments
8	1 and 2	Bottle glass	body fragment	dark green glass	2		
8	1 and 2	Bottle glass	body fragment	aqua glass	1		
8	1 and 2	Bottle glass	body fragment	clear glass	1		
8	1 and 2	Bottle glass	body fragment	clear glass	1		Embossed ridges
8	1 and 2	Bottle glass	body fragment	clear glass	1		Three embossed stripes made of tiny parallel lines around fragment; large, embossed ridge
8	3	Bottle glass	body fragment	clear glass	1		Embossed ridges
9	1	Bottle glass	base fragment	aqua glass	2		Mend; embossed with "CO...[section missing]...OZ" on front; circular base is embossed "1/A"
9	1	Bottle glass	lip fragment	clear glass	1		milk bottle top fragment with capseat finish.
9	1	Bottle glass	body fragment	clear glass	1		
9	1	Bottle glass	body fragment	brown glass	1		
9	2	Bottle glass	body fragment	brown glass	1		
9	2	Bottle glass	base fragment	clear glass	1		slight pinkish tint; very large "4" embossed on bottom.
10	1	Roosevelt Dime	whole	copper and nickel	1	1972	Denver mint
10	1	Bottle glass	body fragment	clear glass	5		Varying thicknesses
10	1	Bottle glass	body fragment	light aqua glass	1		
10	1	Mirror	fragment	glass	1		aqua glass with metallic coating on one side
10	1	Glass vessel	rim fragment	clear glass	2		mend; undecorated rim, possibly from a jar.
11	1	Screw	whole	metal	1		2.5-inch Phillips head screw
11	1	Bottle glass	body fragment	clear glass	12		thin; possibly all from the same vessel
11	1	Bottle glass	base fragment	clear glass	2		stippled design around base
11	1	Bottle glass	base fragment	clear glass	1		chevron design around base
11	1	Bottle glass	neck/mouth fragment	clear glass	1		1-inch diameter bottle mouth; screw threads, machine made
11	1	Bottle glass	body fragment	brown glass	2		
11	2	Bottle glass	base fragment	clear glass	2		do not mend; may not be from the same bottle, but are of the same type; stippled design around base. One fragment embossed with "...7" and the other "2 17" over three parallel lines above a single perpendicular line.
11	2	Bottle glass	body fragment	clear glass	3		
12	1	Bottle glass	body fragment	clear glass	1		ridged lines around bottom; possible condiment bottle?
12	1	Bottle glass	body fragment	clear glass	1		embossed "...RT"
12	1	Bottle glass	body fragment	clear glass	1		
12	1	Bottle glass	body fragment	light aqua glass	1		
13	1	Construction netting	fragment	plastic	1	Late-20th century-present	orange
13	1	Bottle glass	shoulder fragment	clear glass	1		embossed with alternating square pattern.
13	1	Bottle glass	body fragment	clear glass	1		ridged lines around bottom; possible condiment bottle?
13	1	Bottle glass	body fragment	clear glass	1		embossed with "K..."
13	1	Bottle glass	body fragment	clear glass	1		
13	1	Bottle glass	body fragment	clear glass	1		embossed with pattern; possibly a sun?
13	1	Bottle glass	base fragment	clear glass	2		Mend

Appendix B: Artifact Catalog

STP #	Level #	Artifact Type	Object/Part	Material	Count	Production Date	Comments
14	1	Bottle glass	body fragment	clear glass	6		
14	1	Bottle glass	base fragment	aqua glass	1		Very work; embossed "N..."
14	1	Bottle glass	body fragment	aqua glass	1		Partial embossed letters present but illegible.
14	1	Bottle glass	body fragment	clear glass	1		ridged lines on one side; possible condiment bottle?
14	1	Pull tab	whole	aluminum	1	Late-20th century	
14	2	Screw-on bottle cap	whole	aluminum	1		logo may be present under concretion
15	1	Unidentified	fragment	plastic	1		black plastic fragment with faint pattern of intersecting ellipses on one side
15	1	Bottle glass	body fragment	aqua glass	1		
15	1	Bottle glass	body fragment	green glass	1		
15	1	Bottle glass	body fragment	clear glass	6		
15	1	Bottle glass	base fragment?	clear glass	1		possible base fragment, has embossed curved lines
16	1	Washer	partial	metal	1		encrusted with rust
16	1	Bottle glass	body fragment	clear glass	2		
16	1	Ceramic dish?	body fragment	porcelain?	1		
16	1	Unidentified	fragment	plastic	1		clear plastic with inscribed parallel lines; possible headlight fragment?
16	1	Key	fragment	metal	1		Inscribed "Master" on one side and "3399" on the other.
16	1	Ceramic dish?	body fragment	whiteware	1		blue transfer print
16	2 (POSSIBLY FROM 1)	Bottle glass	body fragment	light aqua glass	1		
17	1	Unidentified	fragment	white plastic	1		
17	1	Unidentified	fragment	aluminum	1		has a wire and plastic fragment attached to it
17	1	Shell	fragment	shell	1		
18	1	Bottle glass	base fragment	brown glass	1		stippled design around base; partial remnants of embossed numbers
18	1	Bottle glass	body fragment	brown glass	1		partial remnant of embossed number, "2"
18	1	Button	whole	ivory plastic	1		two holes
18	1	Safety glass?	fragment	clear glass	3		broken along planes
18	1	Bottle glass	body fragment	light aqua glass	8		varying thicknesses; some have partial remnants of embossed letters or designs
18	2	Bottle glass	body fragment	light aqua glass	9		varying thicknesses; some have partial remnants of embossed letters or designs
18	2	Glass vessel	fragment	milk glass	1		varying thicknesses; some have partial remnants of embossed letters or designs
18	3	Bottle glass	body fragment	light aqua glass	3		
18	3	Bottle glass	body fragment	clear glass	1		
19	1	Bottle glass	body fragment	clear glass	1		somewhat flat on one side with a curved edge; could possibly be part of a glass plate or some other type of vessel.
19	1	Bottle glass	body fragment	light aqua glass	1		
20	1 and 2	Coal	fragment	coal	1		

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STP #	Level #	Artifact Type	Object/Part	Material	Count	Production Date	Comments
20	1 and 2	Bottle glass	body fragment	clear glass	1		Remnants of embossed star or floral pattern and "TH..."
20	1 and 2	Bottle glass	body fragment	light brown glass	1		
20	1 and 2	Unidentified	fragment	plastic	1		possibly part of the bowl of a plastic spoon or spork.
21	1 and 2	Glass vessel	fragment	milk glass	2		
21	1 and 2	Bottle glass	body fragment	clear glass	3		varying thicknesses; partial embossed "S" on one fragment
21	1 and 2	Unidentified	fragment	plastic	1		
21	3	Glass vessel	fragment	milk glass	5		
22	1 and 2	Bottle glass	body fragment	clear glass	5		one fragment embossed, "CO."
22	1 and 2	Bottle glass	body fragment	light aqua glass	2		mend
23	1	unidentified	fragment	black plastic	4		
23	1	unidentified	fragment	green plastic	1		
23	1	Nail	whole and fragment	iron	5		some encased in rusty concretion; one is bent
23	1	Unidentified metal cylinder	whole	metal	1		.4-inch diameter
23	1	unidentified	fragment	metal	1		clump of twisted, rusty metal
23	1	Bottle glass	base and body fragments	brown glass	3		base fragment has stippled design
23	1	Bottle glass	base fragment	dark brown glass	1		stepped-concentric circles on base interior with checked pattern inscribed.
23	1	Bottle glass	body fragment	clear glass	3		one fragment embossed with "SH"
23	1	Bottle glass	body fragment	light aqua glass	2		
23	3	Brick	fragment	brick	2		very small
24	1 and 2	Brick	fragment	brick	9		
24	1 and 2	Bottle glass	body fragment	clear glass	13		varying thicknesses; one appears to have deep ridges
24	1 and 2	Bottle glass	body fragment	light aqua glass	1		
24	1 and 2	Bottle glass	body fragment	dark green glass	1		
24	1 and 2	Slag or clinker?	fragment	unidentified	1		
24	1 and 2	Glass vessel	fragment	milk glass	2		
24	1 and 2	Ceramic dish?	fragment	whiteware	1		very small
24	3	Glass vessel	fragment	milk glass	8		
24	3	Bottle glass	body fragment	clear glass	4		
24	3	Bottle glass	body fragment	light aqua glass	5		
24	3	Brick	fragment	brick	3		
25	1	Unidentified plastic tube	fragment	white plastic	3		
25	1	nail	fragment	iron?	1		encased in rust
25	1	Floor tile?	fragment	coarse earthenware?	1		white glaze on one side, unfinished on the other
25	1	Shell	fragment	shekk	2		very small and worn
25	1	Brick	fragment	brick	1		
25	1	Glass vessel	fragment	purple	1		
TOTAL:					530		