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Phase 1A Archaeological Documentary Study

Bronx Zoo Transportation Facility

Bronx River Parkway

Bronx, New York

SHPO Project Review Number: 08PR01059

LPC Project Number: NLA/106-X

Prepared for:

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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 1A Archaeological Documentary Study

Location Information

Location: Bronx Park, The Bronx, New York
(Block 4333, Lot 1 and Block 3120, Lot 20)

Minor Civil Division: 00501

County: Bronx

Survey Area

Length: 304.8 to 914.4 meters (1,000 to 3,000 feet)

Width: 18.3 to 243.8 meters (60 to 800 feet)

Total Area Surveyed: 17.2 acres (749,232 square feet)

USGS 7.5 Minute Quadrangle Map: Central Park and Flushing

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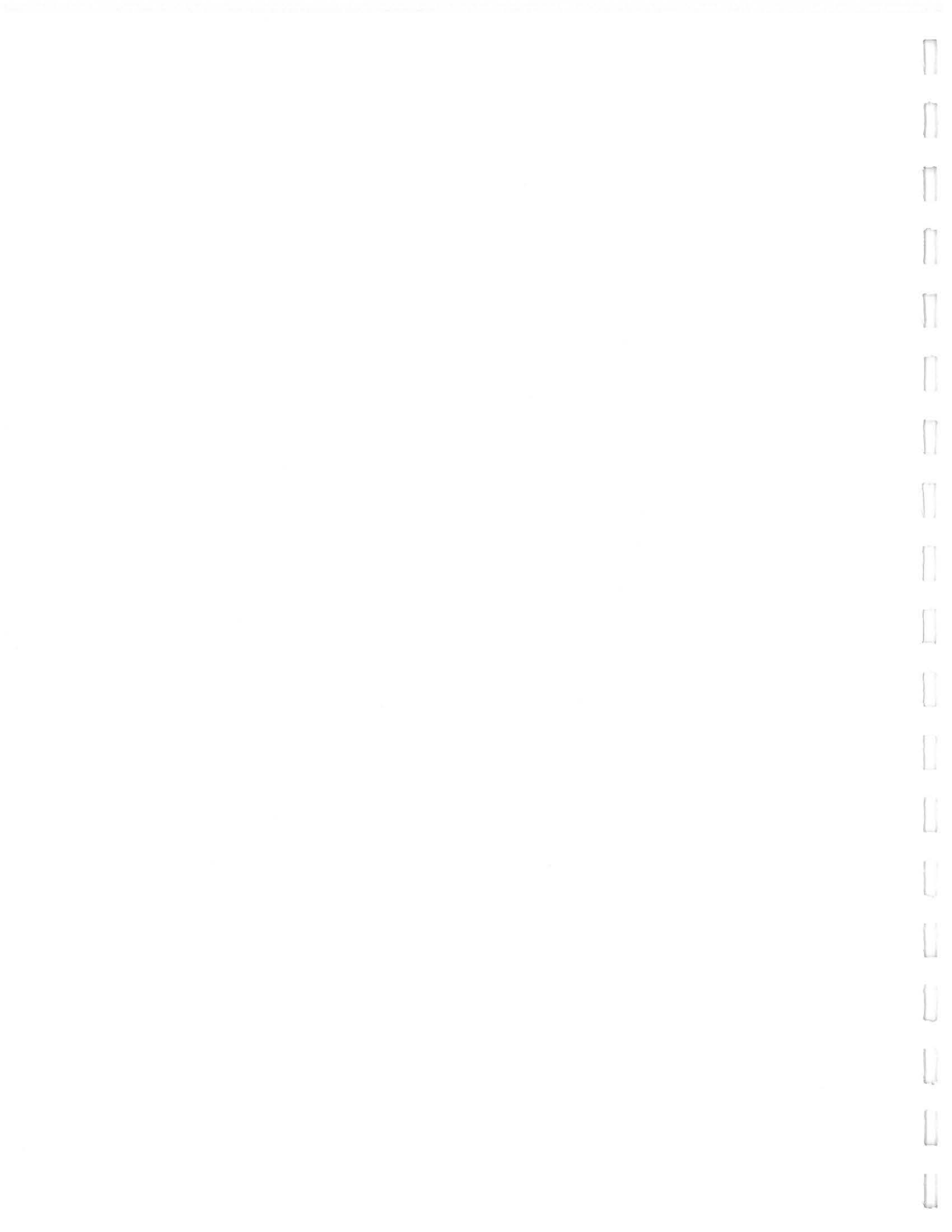
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A. PROJECT OVERVIEW

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, New York (see **Figure 1**). The project site is located in the northeastern portion of the zoo near the Bronx River entrance (Bronx Block 4333, Lot 1) and 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 portion of the project site to the east of the Bronx River (“the eastern portion of the project site”¹) would involve formalization of an existing unpaved parking lot and improvements to the existing parking lot first in the area bounded roughly by the Bronx and Pelham Parkway (also known as Fordham Road) to the north, the Bronx River Parkway to the east, the Bronx River to the west, and an undeveloped portion of the Bronx Zoo to the south (see **Figure 2**). The portion of the project site to the west of the Bronx River (“the western portion of the site”) 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 parking lot in the northeast corner.

The proposed project will involve improvements to parking facilities and entrance structure at Bronx River Gate, in the northeast section of the Zoo. The project includes redesign of the ticket booth at the entrance; reconfiguring the existing paved parking lot at the Bronxdale Gate; formalization of an existing unpaved, overflow parking area located to the west of the paved parking area; and modifications along Jungle World Road to create additional parking spaces along that road. The overflow parking area will be paved and striped for parking, and improved with stormwater infrastructure.

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. RESEARCH GOALS AND METHODOLOGY

The following Phase 1A Archaeological Documentary Study of the Bronx Zoo Intermodal Transportation Facility project site has been designed to satisfy the requirements of the New York State Historic

¹ Because the Bronx River historically served as the dividing line between counties, many historic maps and other sources of information depict either the western or eastern shore of the River, and therefore, only one side of the project site. While the portion of the project site within the Bronx River Parking Area is north of the Jungle World Road portion of the project site, it is referred to in this report as the “eastern portion” due to its location on the eastern side of the River. Similarly, the portion of the proposed project along Jungle World Road is referred to as the “western portion.”

Preservation Office (SHPO) and the New York City Landmarks Preservation Commission (LPC) and it follows the guidelines of the New York Archaeological Council (NYAC). The study documents the history of the proposed project site as well as its potential to yield archaeological resources including both precontact and historic cultural remains. In addition, it also documents the current conditions of the project site and previous cultural resource investigations which have taken place in the vicinity of the APE.

This Phase 1A Archaeological Documentary Study has four major goals: (1) to determine the likelihood that the project site was occupied during the precontact (i.e. Native American) and/or historic periods; (2) to determine the effect of subsequent development and landscape alteration on any potential archaeological resources that may have been located at the project site; (3) to make a determination of the project site's potential archaeological sensitivity; and (4) to make recommendations for further archaeological analysis, if necessary. The steps taken to fulfill these goals are explained in greater detail below.

The first goal of this documentary study is to determine the likelihood that the project locations were inhabited during the precontact or historic periods and any identify activities that may have taken place on the project site that would have resulted in the deposition of archaeological resources. In order to determine the likelihood of the project site's occupation during the precontact and historic periods, documentary research was completed to establish a chronology of the project locations' development, landscape alteration, and to identify any individuals who may have owned the land or worked and/or resided there and to determine if buildings were present on the project locations in the past. Data was gathered from various published and unpublished primary and secondary resources, such as historic maps, topographical analyses (both modern and historic), historic photographs, newspaper articles, local histories, previously conducted archaeological surveys. These published and unpublished resources were consulted at various repositories, including the Main Research Branch of the New York Public Library (including the Local History, Microform, and Map Divisions), the New York Historical Society, the Bronx office of the City Register, the Westchester County Clerk, and the Bronx Historical Society. File searches were conducted at LPC, SHPO, and the New York State Museum (NYSM).¹ On-line textual archives, such as Google Books and the Internet Archive Open Access Texts, were also accessed.

The second goal of this Phase 1A study is to determine the likelihood that archaeological resources could have survived intact on the project site after development and landscape alteration (i.e. erosion, grading, filling, etc.). Potential disturbance associated with paving and utility installation was also considered. Historic maps documenting structures on the project location were analyzed and historic and current topographical maps were compared to determine the extent to which the project locations have been disturbed. Historic maps of the project site were geo-referenced using geographic information systems (GIS) software to accurately overlay the project site boundaries on historic maps. Digital versions of these historic maps dating to 1881, 1895, and 1900 were used to identify the locations of former structures within the project site. These maps were registered to match the 2006 Bronx shoreline as well as historic and current roads in the area. Computer software including *ArcGIS* and *AutoCAD Map* were used to overlay and georeference the digital historic map files.

After identifying the likelihood that archaeological resources were deposited on the project site and that the likelihood that they could remain intact given subsequent development and landscape alteration, a sensitivity determination was made for the project locations for both precontact and historic period resources. As described by NYAC in their Standards for Cultural Resource Investigations and the

¹ Site file research assistance was provided by Croshier Archaeological Research of Pine Plains, New York.

Curation of Archaeological Collections in New York State, published in 1994 and subsequently adopted by SHPO (see page 2):

An estimate of the archaeological sensitivity of a given area provides the archaeologist with a tool with which to design appropriate field procedures for the investigation of that area. These sensitivity projections are generally based upon the following factors: statements of locational preferences or tendencies for particular settlement systems, characteristics of the local environment which provide essential or desirable resources (e.g. proximity to perennial water sources, well-drained soils, floral and faunal resources, raw materials, and/or trade and transportation routes), the density of known archaeological and historical resources within the general area, and the extent of known disturbances which can potentially affect the integrity of sites and the recovery of material from them.

As stipulated by the NYAC standards, sensitivity assessments should be categorized as low, moderate, or high to reflect “the likelihood that cultural resources are present within the project area” (NYAC 1994: 10). For the purposes of this study, those terms are defined as follows:

- **Low:** Areas of low sensitivity are those where the original topography would suggest that Native American sites would not be present (i.e. locations at great distances from fresh and salt water resources), locations where no historic activity occurred before the installation of municipal water and sewer networks, or those locations determined to be sufficiently disturbed so that archaeological resources are not likely to remain intact.
- **Moderate:** Areas with topographical features that would suggest Native American occupation, documented historic period activity, and with some disturbance, but not sufficient disturbance to eliminate the possibility that archaeological resources are intact on the project site.
- **High:** Areas with topographical features that would suggest Native American occupation, documented historic period activity, and minimal or no documented disturbance.

According to NYAC standards, Phase 1B testing is generally warranted for areas determined to have moderate sensitivity or higher. Archaeological testing is designed to determine the presence or absence of archaeological resources that could be impacted by a proposed project. Should they exist on the project locations, such archaeological resources could provide new insight into the precontact occupation of the Bronx, the transition from Native American to European settlement, or the historic period occupation of the project site.

A. GEOLOGY AND TOPOGRAPHY

The Bronx is found within a geographic bedrock region known as the Manhattan Prong of the New England (Upland) Physiographic Province. This region is a “rolling lowland area...of metamorphic rocks” dating to the Early Paleozoic, which began approximately 575 million years ago (Isachsen et al. 2000). Although less is known about the bedrock types to the east of the Bronx River (Schuberth 1968), the bedrock in the vicinity of the project site includes Yonkers Granite Gneiss and Fordham Gneiss dating between 575 and 1,100 million years and Lower Quartzite, Inwood Marble, and Manhattan Schist dating to approximately 435 million years (Isachsen et al. 2000). In addition, a fault runs through the northern portion of Bronx Park, within the Botanical Gardens north of the project site (Schuberth 1968).

Throughout the majority of the Manhattan Prong, the bedrock is covered with glacial till known as the Atlantic Coastal Plain (Schuberth 1968). These deposits were left behind by massive glaciers of up to 1,000 feet thick that retreated from the area towards the end of the Pleistocene. There were four major glaciations that affected the region until approximately 12,000 years ago when the Wisconsin period—the last glacial period—came to an end. The rocks and sand deposits left behind as a result of glacial movements brought about the creation of hundreds of sand hills, or kames, some of which were nearly one hundred feet tall. In many cases, the glaciers transported huge boulders, including the “rocking stone” a tremendous boulder that was naturally deposited within the boundaries of the Bronx Zoo (Reeds 1925).

EASTERN PORTION OF THE PROJECT SITE

A topographical survey of the Bronx east of the Bronx River was completed in 1900 (see **Figure 3**). That map shows that the surface elevation of the eastern portion of the project site was variable, but was for the most part situated between approximately 30 and 50 feet above mean sea level (msl). In several locations throughout the project site, the map depicts clusters of small hills or elevated rock outcrops or boulders. The portion of the project site located to the north of Boston Road is depicted as relatively flat, with the exception of a small elevated area along the eastern border. More variation was evident among the topography to the south of Boston Road. Current topographic information (see **Figure 2**) suggests that the topography has been modified in many areas to create a more even grade throughout portions of the area, presumably in preparation of the site’s use as a parking lot. However, large rocks or boulders, some of which appear in the same locations as those seen on the 1900 map, are visible throughout the project site.

WESTERN PORTION OF THE PROJECT SITE

Topographical surveys of the Bronx west of the Bronx River were completed in 1873 and 1895 (see **Figure 4**). By that time, Boston Road (now Jungle World Road) was present in approximately the same configuration as seen today. The 1895 map depicts steep hills to the east of the road with peaks as high as 60 to 70 feet above sea level and descending to approximately 20 feet above sea level at the riverside. These elevations are consistent with the modern topography within this portion of the project site. The only location that is drastically different appears to be an artificial hill constructed through the addition of fill north of the Jungle World exhibit and south of the Wild Asia Monorail railroad tracks. The area to the west of Boston Road has been modified to a greater extent through the construction of exhibits, artificial bodies of water, and

parking lots. However, the elevations and overall topography are largely similar to the sloping, hilly area depicted on the 1895 topographical survey.

B. HYDROGEOLOGY

Many small streams, rivers, and lakes were also created by the glacial runoff that formed tall hills throughout the region. As temperatures increased and this runoff ceased, many of these small water courses evolved into swamps and marshlands punctuated with brooks and streams while others, such as the Bronx River, continued to etch their way through the glacial bedrock. The project site is bisected by the Bronx River, which although known as one of the few “true rivers of significance in New York City” (Schuberth 1968: 200), is an approximately 30-mile long fresh water stream which runs south towards the Long Island Sound. In some places, the “river” was shallow and narrow enough to be crossed on foot. In the vicinity of the bridge that carries Boston Road over the river was the “fording place,” where the water could be easily crossed (Kelly 1909). This location was “where the travelers of bygone days waded their steeds through the rapid current of the stream” (Spooner 1900: 215).

The course of the Bronx River has been significantly altered over time. An analysis of the River completed by Eric W. Sanderson and Danielle LaBruna in 2005 illustrates how the river has been artificially re-routed since the late 18th century. As a result of the construction of dams, landfilling, and other forms of landscape alteration, the course of the Bronx River was modified during the 18th and early- to mid-19th century but its course also changed to a lesser extent throughout the late-19th century. A historic coast survey dating to 1837 (see **Figure 5**) indicates that a marshy area known as “Bear Swamp” was located to the east of the eastern portion of the project site. While the boundaries of the swamp are not delineated on that map, Sidney and Neff’s 1851 map of the area shows that a portion of it extended into the southern portion of the project site in the vicinity of the modern parking lot. This may have been fed by the small stream that ran through the southern half of the project site toward the east, as depicted on the 1900 topographical survey (see **Figure 3**). An extensive mapping survey completed by Sanderson and LaBruna in 2005 confirmed that Bear Swamp was situated in the vicinity of the swamp and also noted that it was a freshwater swamp.

The 1900 topographical survey of the area indicates that two small streams branched out from the Bronx River south of Boston Road and ran through the project site. Neither stream is still visible on the surface. In addition, two “lakes,” Lake Agassiz (formerly called “Silver Lake”) and the Bronx Lake, are formed by dams within the Bronx River to the west and south of the eastern portion of the project site, respectively. These “lakes” were originally mill ponds constructed in the 18th and 19th centuries, when milling was the predominant industry in the area. The course of the Bronx River appears to have been altered during the last century as well, and some landfilling is apparent in areas.

C. PALEOENVIRONMENT

Due to the extended glacial period that left the Northeast blanketed in thick ice sheets for thousands of years, the area was not inhabited by humans until approximately 11,000 years ago. As temperatures increased, a variety of flora and fauna spread through the region. At this time, large open forests of spruce, fir, pine, and other tree species expanded across the Northeast, interspersed with open meadows and marshland. A wide variety of animal life could also be found, including large mammals such as mammoth, mastodon, caribou, musk ox, moose, as well as smaller mammals such as fox, beaver, hare, and many kinds of marine animals.

Climate changes continued to re-shape the environment of the Northeast as time progressed. As the climate grew increasingly warmer, jack pine, fir, spruce and birch trees were replaced with hardwood forests of red and white pine, oak, and beech (Ritchie 1980). Furthermore, a decrease in glacial runoff resulted in the creation of small bodies of water such as lakes as well as, later on, low-lying marshes and swampy areas. By the time of the Early Archaic period, beginning approximately 10,000 BP, there was

“considerable environmental diversity, with a mosaic of wetlands, oak stands, and a variety of other plant resources...[making it]...an attractive and hospitable quarter for both human and animal populations” (Cantwell and Wall 2001: 53).

Warmer temperatures forced the herds of large mammals to travel north before eventually dying out. The new surroundings attracted other animals such as rabbit, turkey, waterfowl, bear, turtles, and white-tailed deer. The expanded water courses became home to a variety of marine life, including many varieties of fish, clams, oysters, scallops, seals, and porpoises, among others (Cantwell and Wall 2001).

By 5,000 BP, sea levels were only a few meters away from their current locations (Hunter Research 1996) and the modern climate in the northeast was established by approximately 2000 BP (Louis Berger & Associates, Inc. 2001). By that time, the Native American population was flourishing in the area and had developed an intricate culture tied to the natural resources of the region (see Chapter 3).

D. CURRENT CONDITIONS

EASTERN PORTION OF THE PROJECT SITE

The eastern portion of the project site is currently occupied by three main areas: the Bronx River Parking Lot; an overflow parking area; and the Mitsubishi River Walk, a trail that leads along the eastern side of the riverbed. The Bronx River Parking Lot is a large paved area to the south of Boston Road (see **Photograph 1**). The parking lot is lighted and there are several manholes, fire hydrants, and catch basins located within it (see **Photograph 2**). It is enclosed by a fence on its southern, western, and eastern sides and is separated from the Bronx River Parkway to the east by a steep grassy hill with several large rock outcrops. A grassy wooded area is located to the south of the parking lot. An access road leading to the south and an exit ramp leading from the Bronx River Parkway to the entrance gate on Boston Road run through this small area. The northwestern corner of the parking lot is bordered by a bridge which spans the Bronx River (see **Photograph 3**). The river lines the eastern side of the parking lot, which has been strengthened with a cement bulkhead (see **Photograph 4**). The bulkhead does not continue to the north of the bridge (see **Photographs 5 and 6**). The Bronx River is interrupted by two artificial waterfalls which pass over 19th century mill dams (see **Photographs 6 and 7**). The river is crossed by another bridge at the northern end of the project site, along Fordham Road/the Bronx and Pelham Parkway.

The overflow parking area is located to the north of the parking lot, on the opposite side of Boston Road. This unpaved area is very hilly and features many trees and large rock outcrops (Photograph 9). Catch basins were also visible at the bottom of this hilly area, near Boston Road (Photograph 10). The overflow parking area is L-shaped, and continues along the Bronx and Pelham Parkway as far west as the Bronx River. To the west of the southern portion of the overflow parking area along Boston Road is an eco-restroom (identified on **Figure 2**). The basement of this building, which was constructed in 2006, contains ten composting tanks, a hot water heater, and sump pump. A brick transformer house is also located at the southern end of this area, opposite the ticket booths. Throughout the overflow parking area, portable lighting was used to illuminate the area and overhead power or telephone lines were observed, suggesting that few subsurface utilities are situated in this area.

The area of the Mitsubishi Riverwalk is characterized by a series of trails, flat grassy areas, small hills, trees and other vegetation, and large rock outcrops (see **Photographs 11 and 12**). It is situated along the shore of the Bronx River, bordered on the north and east by the overflow parking area, and on the south by the Boston Road. In some locations, the trails are at slightly higher elevations than the surrounding areas and are bordered by small trenches (see **Photograph 13**). There were also areas where large piles of excavated dirt were observed (see **Photograph 13**). The western area of this portion of the project site is bordered to the south by “Turtle Town,” a low-lying area with a small ravine running through it which is fed by a large pipe which is located underneath one of the trails (see **Photographs 14 and 15**). An

elevated “scenic overlook” is located atop a stone wall which provides views of the riverwalk and the waterfalls (see **Photograph 14**). The remainder of the Riverwalk area is covered with dense vegetation and trees. A low concrete wall runs through the trees in the southern part of the riverwalk in the area between the eco-restroom and the river (see **Photograph 16**).

WESTERN PORTION OF THE PROJECT SITE

The western portion of the project site runs along the line of Jungle World Road, which is in line with the historic Boston Road that once ran through the Zoo. Much of the road is at a lower elevation than the surrounding area, suggesting that the road has experienced some grading and was likely constructed within natural depressions that ran (and continue to run) around large rock outcrops. Immediately south of the bridge over the Bronx River, an asphalt path diverges from Jungle World Road and continues along the River’s shoreline (see **Photograph 17**). The road itself continues on a curving path to the south (see **Photograph 18**). Large rock outcrops line the road on both the eastern and western sides, although the tall rock formations are interspersed with steep slopes that lead away from the road (see **Photographs 19** and **20**). In the southern half of the project site, Jungle World Road is bordered by the existing Monorail tracks (which are elevated on concrete footings) and small structures used as administrative office and maintenance space (see **Photographs 21** and **22**).

E. PREVIOUS CULTURAL RESOURCES INVESTIGATIONS

Site file searches conducted at the offices of SHPO and LPC revealed that several cultural resources investigations have been conducted within one mile of the project site (see **Table 1**). The most notable of these is an archaeological assessment of the Bronx Zoo completed by LPC in 1990, which included a surface survey of the Bronx Zoo Transportation Facility project site in its entirety. While this did not entail extensive documentary research, a site walkover and preliminary research suggested that portions of the Bronx Zoo project site were sensitive for both historic period archaeological resources related to the mid to late-19th century occupation of the area as well as precontact resources in certain locations. The report recommended further archaeological research for this portion of the Bronx Zoo property.

**Table 1
Previous Cultural Resources Investigations within 1 Mile of the Project site**

Project Name	Location	Findings	Reference
Phase 1 Archaeological Investigation Bronx River Park	Western side of the Bronx River between East 180th Street and Boston Road	Area determined to be disturbed and no further work was recommended.	Langan Engineering and Environmental Services (2007)
Archaeological Documentary Study: Bronx River Pedestrian Greenway	Bronx River between East Tremont And Westchester Avenues	Some portions of the project site were found to be disturbed while others were determined to be sensitive for both precontact and historic period archaeological resources.	Historical Perspectives, Inc. (2004)
An Archaeological Assessment of Fifteen City-owned Cultural Institutions	The Bronx Zoo, New York Zoological Society	Determined that much of the project site was undisturbed and may be sensitive for both precontact and historic period archaeological resources.	LPC (1990)
Stage 1A Archaeological Assessment: The New York Botanical Garden	Botanical Garden in northern Bronx Park	Site determined to be sensitive for both precontact and historic period archaeological resources and filed testing was recommended.	Historical Perspectives, Inc. (1993)

Table 1 (continued)

Previous Cultural Resources Investigations within 1 Mile of the Project site

Project Name	Location	Findings	Reference
Northeast Corridor Improvement Project	Along transit corridor to the south and east of Bronx Park	Portions of study area determined to be sensitive for precontact archaeological resources.	DeLeuw, Cather/Parsons (1979) Boesch (1996)
Phase 1A Literature Review and Site Assessment and Phase 1B Archaeological Field Reconnaissance Wildlife Conservation Society Center For Global Conservation, Bronx Zoo	Near the northwest corner of the Bronx Zoo	Field testing found no evidence of precontact archaeological resources and much of the area was found to be disturbed.	Hartgen (2005)

A. INTRODUCTION

Archaeologists have divided the time between the arrival of the first humans in northeastern North America and the arrival of Europeans more than 10,000 years later into three periods: Paleo-Indian (11,000-10,000 years before present [BP]), Archaic (10,000-2,700 BP), and Woodland (2,700 BP–AD 1500). These divisions are based on certain changes in environmental conditions, technological advancements, and cultural adaptations, which are observable in the archaeological record.

B. PALEO-INDIAN PERIOD (11,000-10,000 BP)

As mentioned in **Chapter 2**, human populations did not inhabit the Northeast until the glaciers retreated some 11,000 years ago. These new occupants included Native American populations referred to by archaeologists as Paleo-Indians, the forbearers of the Delaware—also called the Lenape Indians—who would inhabit the land in later years.

The Paleo-Indians most likely exploited all the different resources provided by their environment. It has been suggested that they did not only actively hunt the large mammals that roamed about the region (mammoth, mastodons, etc.), but they also hunted and trapped smaller animals and supplemented their diet with fish and gathered plants (Cantwell and Wall 2001).

There was a very distinct Paleo-Indian style of lithic technology, typified by fluted points. These were elaborately detailed stone points that would have been used for a variety of functions, most notably for hunting. They were often made of high-quality imported chert, but were also known to have been crafted from local materials. Other stone tools manufactured at this time included knives, scrapers, drills, and graters. Wood, ivory, and other materials were also used for the manufacture of composite tools, such as hunting spears.

Archaeological evidence suggests that the Paleo-Indians were likely highly mobile hunters and gatherers. They appear to have lived in small groups of fewer than 50 individuals (Dincauze 2000) and did not maintain permanent campsites. In addition, most of the Paleo-Indian sites that have been investigated were located near water sources.

It is because of the close proximity of Paleo-Indian sites to the coastline that so few of them have been preserved in the New York City area. As the glaciers continued to melt, sea levels rose and much of what was once adjacent to the water line became submerged. In fact, only one Paleo-Indian site has been discovered in the entire New York City area—that of Port Mobil, on Staten Island. This location has yielded nothing more than a collection of fluted points and other stone tools characteristic of the period.

C. ARCHAIC PERIOD (10,000-2,700 BP)

The Archaic period has been sub-divided into three chronological segments, based on trends identified in the archaeological record which reflect not only the ecological transformations that occurred during this period, but the cultural changes as well. These have been termed the Early Archaic (10,000–8,000 BP), the Middle Archaic (8,000–6,000 BP) and the Late Archaic (6,000–2,700 BP) (Cantwell and Wall 2001). The Late Archaic is sometimes further divided to include the Terminal Archaic (3,000-2,700 BP).

The aforementioned environmental transformations included a continued post-glacial warming trend, the extension of hardwood forests, and a decrease in glacial runoff which resulted in the creation of lakes and other small bodies of water. There was a subsequent migration of new animal and plant species into the area, while the herds of large mammals traveled north, eventually dying out. The new surroundings attracted smaller animals, such as rabbit, turkey, waterfowl, and white-tailed deer.

As the Archaic period progressed and the number of plant and animal species inhabiting the area increased, the size of the human population did as well. In general, archaeological research has shown that Archaic Native American sites were most often located near water sources. The abundance of food resources which arose during this period allowed the Archaic Native Americans to occupy individual sites on a permanent or semi-permanent basis, unlike their nomadic Paleo-Indian predecessors. These individuals migrated on a seasonal basis within specific territories and consistently returned to and reoccupied the same sites.

The arrival of new food sources allowed the human population to expand their subsistence strategies and at the same time forced them to develop different technologies that would allow such resources to be exploited. Perhaps the most important of these developments was the advent of fishing technology, which occurred during the Middle Archaic in response to an increasing dependence on the area's marine resources. The new technology included hooks and stone net sinkers. In addition, the influx of nut- and seed-bearing foliage resulted in the development of stone mortars and pestles in addition to stone axes used to process plant material.

In order to successfully hunt the smaller game animals that had established themselves in the region, narrower spear points and knives were manufactured, along with weighted spear throwers. Domestic technology was advanced at the same time, with the development of a wider variety of hide scrapers and, later in the period, the introduction of bowls made from steatite or soapstone. Tools continued to be crafted in part from foreign lithic materials, indicating that there was consistent trade among Native American groups from various regions in North America throughout the Archaic period.

Rising sea levels coupled with the dominance of coniferous forests created a habitat that was ill-fitted to human habitation (Boesch 1994). Few Early Archaic sites have been identified in New York City. Most of those that have been identified are located on Staten Island; including Ward's Point, Richmond Hill, the H. F. Hollowell site, and the Old Place site. Sites such as Ward's Point—a domestic habitation location which due to lowered sea levels was originally inland—tend to be deep and stratified and have yielded stone tools related to cooking, woodworking, and hide processing. Many years of constant Native American occupation caused the artifacts to be deeply buried under more recent debris deposits (Cantwell and Wall 2001). However, at the Old Place Site, the only artifacts which were discovered—stone tool assemblages—were found at relatively shallow depths of around 42 inches (3½ feet) (Ritchie 1980).

There are also few Middle Archaic sites in the region. The majority of these tend to consist of large shell middens, which are often found near major water courses such as the Hudson River, although stone points have also been found in such locations. These sites were in great danger of obliteration because of their proximity to the shrinking coastlines.

Unlike the Early and Middle periods, several Late Archaic sites have been found in the New York City area. Two notable sites, Tubby Hook and Inwood, are located at the northern end of the island of Manhattan. Both sites contain large shell middens, while the Inwood site also features rock shelters that were inhabited by Archaic populations. Both sites were continuously occupied for several thousand years.

In addition, many Terminal Archaic sites from all across the city have provided examples of the Orient culture, which is characterized by its long fishtail stone points and soapstone bowls. Although there are extremely elaborate burial sites attributed to the Orient culture on eastern Long Island, none have been identified in the immediate vicinity of New York City.

D. WOODLAND PERIOD (2,700 BP-AD 1500)

The Woodland period represents a cultural revolution of sorts for the Northeast. During this time, Native Americans began to alter their way of life, focusing on a settled, agricultural lifestyle rather than one of nomadic hunting and gathering. Social rituals begin to become visible in the archaeological record at this time. There have been many elaborate human and canine burial sites identified from this period. The first evidence of smoking has also been found—stone pipes have been uncovered at Woodland sites—and it was at this time that pottery began to be produced.

In general, there was a greater emphasis placed on composite tools during the Woodland period. While stone scrapers, knives, and hammerstones were still in use, there was an increased use of bone, shell, and wood in tool making. Furthermore, the development of bows and arrows revolutionized hunting practices. Fishing continued to be important to the local economy and wooden boats and bone hooks were often utilized (Historical Perspectives, Inc. 2005). Many tools were still made from imported materials, indicating that the trade networks established earlier were still being maintained (Cantwell and Wall 2001).

Pottery was introduced into Native American society early in the Woodland period and by the time of European contact in the 1500s, well-crafted and elaborately decorated pottery was being manufactured. Like the Archaic period, the Woodland has been divided into Early, Middle, and Late sections, which differ mostly based on the style of pottery which was produced at that time. Woodland pottery had simple beginnings; the first examples were coil pots with pointed bases, which were made with grit temper. These were replaced during the Middle Woodland period by shell-tempered vessels bearing a variety of stamped and imprinted decorations. As the period drew to a close, the decorative aspect of the pottery was further augmented with the addition of intricate ornamental rims (Louis Berger Group 2004).

Woodland-era sites across North America indicate that there was an overall shift toward full-time agriculture and permanently settled villages. Archaic sites in New York City, however, suggest that the Native Americans there continued to hunt and forage on a part-time basis. This was most likely due to the incredibly diverse environmental niches that could be found across the region throughout the Woodland period (Cantwell and Wall 2001, Grumet 1995). Nevertheless, Woodland societies were considerably more sedentary than were their predecessors and there was some farming of maize, beans, squash, and tobacco. The development of pottery, increasingly complex burial sites, and the presence of domesticated dogs are all consistent with sedentary societies, which have a close association with a particular territory or piece of land.

In the Bronx, a Late Woodland-Early Contact period habitation site named *Ranachqua* was identified at Cypress Avenue between 133rd and what was formerly 130th Streets, to the south of the project site. The exact location of this site is unclear, however, as much of the area below 133rd Street was marshland and firmer terrain was created by landfilling, centuries after the Woodland Period ended. The site reportedly contained shell middens, hearths, and human interments (Bolton 1975). It was excavated by Carver and Bolton in the early 20th century and has since been filled in. The Triborough Bridge approach road now occupies the site (Boesch 1996). Grumet (1981) also identified this site and his map labels the entire area below today's East 161st Street, west of the Bronx River, as being part of *Ranachqua*, which means "the end place."

E. CONTACT PERIOD (AD 1500-1700)

The Woodland period ended with the arrival of the first Europeans in the early 1500s. At that time, the Bronx was inhabited by a group of Delaware (or Munsee) Indians known as the *Wiechquaesgeck* (Grumet 1981). These groups migrated into the area during the Late Woodland (Boesch 1996). Another Indian

tribe, the *Sinawoy*, also appear to have lived in the Bronx, on the east side of the Bronx River (ibid), although they lived along the shores of the Long Island Sound for the most part (Grumet 1981).

With the introduction of European culture into indigenous populations, the way of life once maintained by the Native Americans was thoroughly and rapidly altered. European guns, copper, glass beads, and alcohol soon became incorporated into the Native American economy, while European diseases brought about the demise of huge portions of the population.

Native Americans at first maintained the village sites they had established near water sources and as trade with European settlers intensified, they became increasingly sedentary. However, as the European population increased and required more land, the relationship between the two groups became increasingly adversarial. Fierce wars broke out between the Europeans and the Indians, which was especially true of the *Wiechquaesgeck*. Throughout the 1640s and 1650s, the tribe was at war with both Dutch settlers and other Native American tribes (Grumet 1981). With their numbers depleted, the *Wiechquaesgeck* left the area after selling their land to the British, who had taken over the colony from the Dutch in 1664 (ibid).

The *Sinawoy* were also the frequent victims of European settlers, and by the 1700s, only a small portion of the tribe remained, residing in upstate New York (Boesch 1996). However, a *Sinawoy* village located near the former Bear Swamp was occupied until 1782 (ibid). This area was an “impregnable region...full of bears and other wild animals” that was occupied by the *Sinawoy* “when the filth and noise of European industry had almost completely driven off the Nature-loving Algonquin...[and they] maintained a semisecret village [there] until 1782” (Pritchard 2003: 100). A turtle petroglyph, possibly representing a boundary marker, was found within the boundaries of the Botanical Gardens, less than half a mile to the north of the project site, and may have been associated with this village (ibid).

There are several Contact period archaeological sites that have been identified in New York City, including the Kaeser, Throgs Neck, and Old Ferry Point sites in the Bronx (Grumet 1995).

F. PREVIOUSLY IDENTIFIED NATIVE AMERICAN ARCHAEOLOGICAL SITES

A review of the files at the New York State Museum (NYSM), SHPO, and LPC and of published histories of the Native American occupation of New York City revealed that there are at least 8 Native American archaeological sites, both villages, near the project site (see **Table 2**). Nearly all of these sites have been identified within the boundaries of Bronx Park and the Botanical Gardens. The aforementioned *Sinawoy* village at Bear Swamp was the only habitation site in the vicinity. The village was situated approximately .23 miles to the east of the project site and evidence of the Native American occupation of the area was still visible on the surface into the 1920s (Boesch 1996). The village was situated on a stream known as Downing’s Brook and “was probably a principal station of the *Sinawoy* of the Bronx District” who inhabited the area through 1782 (Bolton 1922: 224). An Indian trail known as “Bear Swamp Road” led to the village. As seen on Bolton’s (1922) maps, this trail crossed through the northeastern corner of the eastern portion of the project site and continued east. While a the trail lined a portion of modern Bronxdale Avenue, nearly all former traces of the trail were eliminated after the construction of Bronx Park and the Bronx and Pelham Parkway.

Another Native American habitation site may have been located on the east side of the Bronx River north of modern Fordham Road (Grumet 1981). This was known as *Achqueehgenom*, meaning “high bank” or “where the path goes over” and it has been suggested that this area served as a boundary between different Native American groups and/or was the location of a shallow wading place in the middle of a trial where the Bronx River could be easily crossed (ibid). Bolton (1922) identifies this village within the southwest corner of Bronx Botanical Garden, to the north of the Bronx Zoo.

A Native American trail dating to the Contact Period led from this village to Manhattan along the line of modern Kingsbridge Road (Boesch 1996). Other smaller sites including camps and shell middens have been identified along the shores of the river in the northern portion of Bronx Park. This area, now part of the Botanical Gardens, also contained a Native American rockshelter and a turtle petroglyph engraved on a glacial boulder, which has since been removed and is on display in a different part of the park (ibid). Many Native American trails ran through the area, including one that bisected Bronx Park in the vicinity of modern Fordham Road (Grumet 1981).

Table 2

Previously Identified Precontact Archaeological Sites Within 1 Mile of the Project Site

Site Name	Site #	Approximate Distance from Project Site	Time Period	Site Type	References
Bear Swamp	<u>Boesch:</u> 43 <u>Bolton:</u> 13	.23 miles (1,200 feet)	Late Woodland- Contact	<i>Siwanoy</i> Village	Boesch (1996) Bolton (1922, 1975)
Bronx River I	<u>Boesch:</u> 46	.19 miles (1,000 feet)	Precontact, possibly Late Woodland	Camp site	Boesch (1996)
Bronx River II	<u>Boesch:</u> 47	0.25 miles (1,250 feet)	Precontact, possibly Late Woodland	Shell Middens	Boesch (1996)
Unnamed	<u>Boesch:</u> 49	.80 miles (4,200 feet)	Precontact, possibly Late Woodland	Camp	Boesch (1996)
New York Botanical Garden I	<u>Boesch:</u> 119	.44 miles (2,300 feet)	Precontact	Camp	Boesch (1996)
New York Botanical Garden II	<u>Boesch:</u> 120	.34 miles (1,800 feet)	Precontact	Rockshelter	Boesch (1996)
New York Botanical Garden III	<u>Boesch:</u> 121	0.25 miles (1,250 feet)	Precontact	Turtle Petroglyph	Boesch (1996)
New York Botanical Garden IV	<u>Boesch:</u> 122	.57 miles (3,000 feet)	Precontact	Projectile Points	Boesch (1996)
<i>Achqueehgenom</i>	<u>Bolton:</u> 119	0.1 miles (500 feet)	Precontact	Fording place	Bolton (1922)

A. THE BRONX: HISTORIC CONTEXT

Although he was not the first to purchase land in the area, the first notable Bronx inhabitant was Jonas Bronck (c.1600-1643), a Dutch or Swedish farmer for whom the Bronx River and the Borough of the Bronx were named (Jenkins 1912). Bronck purchased a large tract of land from Native Americans in 1640 that encompassed all the land south of approximately 161st Street on the western side of the Bronx River, more than 2 miles southwest of the project site. In the early 1640s, a large plot of land was granted to a group of settlers led by John Throgmorton (for whom Throgg's Neck was named) that encompassed most of the land east of the Bronx River and north of the Long Island Sound (ibid). The settlement was named *Vriedlandt*, meaning "land of peace," but within a few years it was destroyed by warring Native Americans and any colonists who survived the attack fled the area, causing it to become a "wilderland" (ibid: 30).

A decade later, Thomas Pell laid claim to much of the land east of the Bronx River, including the project site. At that time, the only substantial settlement in the area was the town of Westchester, along Westchester Creek to the southeast of the project site (Jenkins 1912). In 1663, Edward Jessup and John Richardson were granted a land patent which they settled as the village of West Farms on the western shore of the Bronx River immediately southwest of the project site (ibid). However, this patent appears to have only extended as far north as the area now known as the Bronx Lake, south of the project site. One year later, the British took control of New Amsterdam and the colony was renamed New York. In 1673, the British divided the colony into counties, including Westchester, in which the project site was situated.

In 1680, Jessup and Richardson erected saw and grist mills along the Bronx River in the vicinity of the project site. This established a tradition of milling that continued in the area until the late 19th century. The West Farms area grew particularly industrial, and along the Bronx River in the vicinity of the project site were numerous mills, including snuff, paper, flour, barley, and saw mills as well as paint, carpet, and pottery works (Myers 1940).

Despite this industrial growth, relative to the growing city in Lower Manhattan, the Bronx remained largely vacant during the period of the city's early development. Although individual farms were scattered throughout the area, there were few substantial communities until the early to mid-19th century, only a few "miniscule towns" that were established along the Boston Post Road (Burrows and Wallace 1999: 661). In 1788, the county of Westchester was divided into 5 townships; the project site was located within the Township of Westchester, which included most of the Bronx east of the Bronx River a portion of the county to the west of the river (Jenkins 1912).

While the populations of the other boroughs grew significantly during the colonial period, by the late-18th century, the Bronx was still relatively isolated. In the first half of the 19th century, with the construction of bridges, the Bronx became more accessible to individuals living and working in Manhattan. The Harlem Bridge, the first to be constructed, connected Manhattan's Third Avenue with the Boston Road, which had been established in 1673, although its original route did not enter the project site, as it currently does. However, it was still far enough from the city to be ineffective for daily travel. Nevertheless, with the establishment of railroad lines that connected the Bronx and Manhattan, the newly-accessible Bronx quickly grew. A new bridge was constructed in 1840 to allow the New York and Harlem Railroad to

continue on through the Bronx towards White Plains and other locations in upstate New York and Connecticut (Burrows and Wallace 1999). The Railroad was open for business by 1842.

The newly constructed railroad lines allowed for the continuation of the rapid growth of the Bronx. With the increased accessibility brought to the Bronx by these railroad installations, the area began to become fully populated towards the end of the 19th century. As a result, the portion of the Bronx west of the Bronx River (referred to as the 23rd and 24th Wards of New York County), including a portion of the project site, was annexed to the City of New York in 1874 (Jenkins 1912). The area to the east of the River, including the remainder of the project site, was annexed in 1895 and the entire area officially became the Borough of the Bronx three years later (ibid).

After the Interborough Rapid Transit lines connected the Bronx and Manhattan in 1904, the population of the Bronx continued to grow. As the Lower East Side of Manhattan was crowded with slums, the Bronx became a desirable destination for new immigrants (Homburger 1994). With the advent of the automobile, networks of highways and parkways were constructed throughout the Bronx. The 5-mile northward extension of the Bronx River Parkway, to the east of the project site, was opened in 1951 (*New York Times* 1951). A south-bound ramp connecting the Bronx and Pelham Parkway—which represents the northern boundary of the project site—forms the eastern boundary of the project site.

B. 17TH AND 18TH CENTURY PROJECT SITE HISTORY

Shortly after making his land purchase, Jonas Bronck established a mill and a plantation on the shores of the Bronx River which was burned down by Native Americans and subsequently rebuilt within the next several years (Sack 1974). Bronck's mill was the first of many which would be erected along the waterway (Bolton 1848). Mill dams were constructed to harness water power for use in the mills. Such dams transformed the landscape of the Bronx River, and without them, the River "would be nothing but a narrow silvery stream" (Comfort 1906: 42).

In 1680, the freeholders of Westchester granted to William Richardson¹ and associates the privilege of establishing a saw mill and a corn (grist) mill along the Bronx River (Bolton 1848). Late-18th century maps suggest that the mills were established near the southern end of the Bronx Zoo, although it is unknown if any portion of the project site was developed with mill-related structures at this time. These mills were eventually conveyed to Evert Byvanck. A road connecting Byvanck's Mill with Kingsbridge, near the northern terminus of Manhattan, was constructed in 1704 (Carlson 1955). Byvanck's will, dated 1709, left most of his Westchester property to his wife, Tryntje (also spelled "Wyntie"), with the exception of a house on his plantation which was left to his father, Jan, its occupant at the time (New York Historical Society [NYHS] 1894). Byvanck must have died within three years of the completion of his will because in 1711, his wife conveyed the property and mills—which by that time included two additional grist mills—to her son-in-law, William Provoost. The property was conveyed to Nicholas Brouwer the following year, who leased the property to Daniel Tourner in 1712 and again in 1719 (Carlson 1955).

In 1726, an advertisement ran in the *New York Gazette* which announced the sale of two "grist mills and one saw mill, a good house, and several parcels of upland and meadow" totaling 160 acres in Westchester (Carlson 1955). The purchase would also include the privilege of erecting additional mills and to cut timber for all of Westchester. The advertisement stated that Nicholas Brouwer resided on the land that was up for sale (ibid). It appears that the mills were purchased at this time by Stephen DeLancey, although no deeds were located to confirm such a transaction (see **Appendix A**). After DeLancey's death

¹ Jenkins (1912) states that the privilege was granted to Edward Jessup and John Richardson, the founders of West Farms. However, historic deeds (see **Appendix A**) show that William Richardson was in fact the original owner.

in 1735, the mills passed to his son, Peter, who became known as “Peter of the Mills” (Jenkins 1912). As Peter was an assemblyman, he was often attending to business matters in Manhattan, and the mills and the slaves working in them and in the surrounding farms were largely supervised by his wife, Elizabeth (Ultan and Hermalyn 2000). Peter DeLancey’s will was written in 1760; in it he left everything to his wife and children and ordered them to sell the mills and all his Westchester property upon his death (NYHS 1899). Although Peter died in 1770, the land was not sold until well after the Revolutionary War. As a result of the family’s extended ownership of the property, the area soon became known as “DeLancey’s Mills,” and it is labeled as such on most late-18th century maps.

The mills and the DeLancey mansion were located to the southeast of the western portion of the project site near the southern boundary of the Bronx Zoo, where the former line of Kingsbridge Road once ran. An unnamed map of New York dating to 1778¹ and another unnamed map of the area drafted in 1781² both depict a single, large structure on the eastern shore of the Bronx River near the intersection of the former Kingsbridge Road and a road that led to Eastchester, to the north while additional structures were situated on the western shore of the river near the intersection of the Road to Boston and Kingsbridge Road. The latter map refers to the area as “DeLancay Bridge” (sic), referring to a bridge which would have crossed the Bronx River to allow the Kingsbridge Road to continue uninterrupted. However, other maps, including Hufeland’s (1974) map of Westchester County during the Revolutionary War as well as many documentary sources confirm that both the DeLancey mansion and the mills were situated on the eastern shore of the River opposite the intersection of the Road to Boston and Kingsbridge Road (referred to on the map as the Road to West Farms). Hufeland’s map depicts an unidentified structure at the northwest corner of that intersection, near the southern end of the project site along Jungle World Road.

Both DeLancey’s Mills and the Bronx River played important roles during the Revolutionary War. The DeLanceys were one of the most prominent loyalist families in the region and because many DeLancey men held highly-ranked positions in the British military, they became the target of the American rebels. During the war, a Captain Delancey, a “ruffian given to drink and deeds of outlawry,” inadvertently killed one of his men within the woods on the Delancey property when he had the man “hung up for some trifling offense and, being under the influence of liquor at the time, refused to allow him to be lowered for a considerable time” (*New York Times* 1875: 10).

The Bronx River served as a natural boundary between the American and British troops (Jenkins 1912). After the British had taken control of New York City and the American army was forced northward, the area in between, the Bronx and Westchester, became known as the “Neutral Ground.” Throughout the Revolutionary War, “more mixed fighting [occurred there] than anywhere else in the thirteen states” (Guiterman and Williams 1920: 230). The DeLancey mansion and mills were natural targets, as the woods surrounding them provided adequate protection for approaching troops hoping to attack James DeLancey, Peter’s brother, as he visited his mother, who resided on the estate (Jenkins 1912). A British block house was constructed by James DeLancey across the river from the mills, which is depicted a short distance to the south of the Road to West Farms on the Hufeland map (1974). The block house was a target of American snipers who hid in the branches of the famed “DeLancey Pine,” an enormous tree located near the mills on the east side of the River (Kelly 1909). The block house was destroyed by Colonel Aaron Burr during the course of the war. In addition, the mills served as the Headquarters for British General Howe in 1776, whose troops pillaged neighboring farms (Jenkins 1912) while the mansion house was also purportedly used as the headquarters of George Washington for a period of time (Bolton 1848).

¹ On file at the Library of Congress: <http://hdl.loc.gov/loc.gmd/g3803w.ar117000>.

² On file at the Library of Congress: <http://hdl.loc.gov/loc.gmd/g3802w.ar121100>.

After the American victory in the war, nearly all of the DeLancey family's property was confiscated and sold. However, they appear to have retained the mills and surrounding property near the project site. After the war, the property was owned by Oliver DeLancey, most likely Peter DeLancey's third son, although Stephen DeLancey also had a son named Oliver, who was a Brigadier General in the British army and whose son, also named Oliver, was a Major (Bolton 1848). In 1774, trustees of the town of Westchester sold to James and Oliver DeLancey the rights to land under the Bronx River "and all such lands that have been granted by the town for use of the mills" (Bolton 1848: 255). Oliver DeLancey was recorded in the 1790 Federal Census as a citizen of the Township of Westchester, living in a household with 7 free white individuals, 1 free individual, and 6 slaves (see **Appendix B**). Another household headed by Warren DeLancey was also located in the town of Westchester in that census.

Oliver DeLancey and Joseph Browne, who owned a linseed oil factory on the western side of the Bronx River near DeLancey's Mills, erected a dam across the river between their properties in 1793 (Carlson 1955). Dr. Browne, the brother-in-law of Aaron Burr, would later propose a plan to use the Bronx River as the source of drinking water for New York City, although this plan was never enacted (Koeppel 2000). His property, which he used as a summer home, was located to the south of what is now Bronx Park (Brown 1920). One year before the construction of this dam, Pierre Lorillard, a prominent Manhattan tobacconist, constructed a snuff mill to the north of both DeLancey's Mills and the project site, within the boundaries of the modern Botanical Gardens (Burrows and Wallace 1999).

Immediately after the Revolutionary War, the Boston Post Road was realigned in an attempt to provide a more direct route between New York and Boston. Whereas the original path of the road crossed the Bronx River at Williamsbridge, to the north of the project site, the realigned road crossed the river within the project site, just to the north of where the present bridge is situated. The land on which the new road was constructed was confiscated from the owners (Jenkins 1912). The new road was completed by John B. Coles in 1789 and is often referred to as "Coles' Boston Post Road" (Stegman 1927). It was made a public highway in 1797, after which it greatly increased West Farms' importance as an industrial and residential location (Jenkins 1912).

C. EARLY 19TH CENTURY SITE HISTORY

The DeLancey Family appears to have continued to own the land in the vicinity of the project site for the first several decades of the 19th century, despite Peter's desire to have the property sold after his death. An advertisement was published in the *American Citizen* in 1803 announcing the sale of a mill seat on the Bronx River which included a mansion on the Boston Road (1803). However, it is not clear if this is referring to the DeLancey property or one of the other mills that were located in the area. Oliver DeLancey continues to appear as a Westchester resident in Federal Censuses dating to 1800, 1810, and 1820.

A tract of land on both sides of the River that included the DeLancey mansion and mills was purchased or leased by David Lydig, a paper miller, in the early 1800s for use as a summer residence (Carlson 1955). David Lydig invested in a flour mill after the Revolutionary War and appears to have rented land from the DeLanceys before he purchased the land in the late 1820s or early 1830s (Jenkins 1912 and McNamara 1996). A memorial plaque placed on the Zoo in honor of the family (described in greater detail below) indicates that the Lydig family began to reside on the land in 1802. As a result of Lydig's occupation of the site, the natural waterfalls within the Bronx River near 180th Street, formerly known as Delancey's Falls, became known as Lydig's Falls (McNamara 1996).

Lydig was living in the area prior to his purchase of the DeLancey property, possibly as early as 1803. In 1822, the mills and former DeLancey mansion were destroyed by a fire that was reported by the *New York Daily Advertiser* which, ironically, was printed on paper made in the mills (Carlson 1955). The mills were burned again in 1845 at which time they were rebuilt on the western side of the river (Comfort

1906). During Lydig's ownership, the area was heavily wooded with a "scarcely perceptible trail" (ibid: 46). A circa 1825 lithograph of "Lydick's" mill by J. Milbert is reproduced in Kouwenhoven (1953: 125). The image, which likely depicts the eastern side of the river, depicts a large house and mill on the waterfront, as well as what appears to be the superstructure of a well near the waterfront. The purity of the water within the Bronx River made it an ideal source of potable water for local residents (Koeppel 2000).

D. THE LYDIG ESTATE WEST OF THE BRONX RIVER

The Lydig property originally covered both the eastern and western portions of the project site. Randel's 1821 map of the area depicts Lydig's property near the intersection of Boston Road with the former Kingsbridge Road. The map depicts four structures near the Lydig estate: two on either side of the river. One of the structures to the west of the river, possibly near the southern end of the project site, is identified as a mill. In 1824, David Lydig leased the land that now makes up most of the eastern portion of the project site to James Bolton, who established a bleach factory on the site, as discussed below in **Section E: The Bolton Bleachery** (Carlson 1955). The Lydig family retained the land on the western side of the river, which would remain in the family until Bronx Park was established in the late-19th century.

THE LYDIG FAMILY

David Lydig was the son of Philip Leidig, a baker who made sea biscuits in his Manhattan shop during the late 18th century (McNamara 1992). Philip Leidig had been born in Germany and moved to New York in 1760 where he became a successful businessman and prominent citizen of the British colony (Pelletreau 1907). He was one of the founders of a German Lutheran church in lower Manhattan, where Hessian soldiers worshipped during the Revolutionary War, at which time Leidig was providing bread to the British army (ibid).

Among his other endeavors, his son, David, became a successful real estate investor and in 1831, purchased a home at 34 Laight Street in an "aristocratic neighborhood" in lower Manhattan (ibid: 398). David Lydig's purchase of the mile-long land in West Farms for use as his summer home was one of his many real estate investments. During a visit in 1839, former New York City mayor Philip Hone wrote that Lydig's property in West Farms was "in fine order" with "a profusion of roses and other flowers...and lovely scenery" (ibid: 398). David Lydig married Catherine Mesier and they had one son, Philip Mesier Lydig (ibid). Because he used the Bronx property as a summer home, David Lydig appeared as a Manhattan citizen in censuses dating between 1800 and 1820. Those censuses indicate that he had a large household made up of both family members and slaves, although by 1820, only free individuals of African descent lived in the Lydig home. The Lydig family could not be located in the 1830 census.

David Lydig died in 1840 and his son, Philip M. Lydig inherited the property and the fortune his father had amassed (Daly 2000). The 1840 census notes that Phillip Lydig was a resident of Westchester. His household was large and included many family members as well as three individuals of African descent, most likely the family's servants. By the end of the 19th century, the Lydig family had amassed a tremendous amount of wealth and had become politically well-connected through marriage and business alike (Daly 2000). As a result of his wealth, Philip retired early and "lived the life of a country squire until he sold his property to the Parks department" in the 1880s (McNamara 1992: 19). Philip and his wife, Catherine Suydam, had seven children, including Philip M. Lydig, Junior, who was born in Manhattan in 1837. Philip Lydig, Junior was a prominent lawyer who served in the Civil War and rose to the rank of colonel (Pelletreau 1907). His sister maintained a diary during the Civil War in which she documented both the family's travels to and from their country seat at West Farms and important battles and other events that occurred at the time (Daly 2000). One year before his death in 1868, his wife, Pauline Heckscher, gave birth to his son, Philip M. Lydig III, in the Lydig home at West Farms (Pelletreau 1907).

The Lydig family maintained the natural beauty of their estate, preserving the area that came to be known as “Lydig’s Woods” and cultivating a portion of the land (New York Zoological Society 1904). The woods were publicly accessible due to their close proximity to the Boston Road, and by the 19th century earned a reputation as a place where a great number of mysterious deaths occurred (*New York Times* 1875). Thought to be haunted as a result of Captain Delancey’s actions during the Revolutionary War, a number of suicides occurred in the woods, as well as several murders. One particular tree in the woods was so commonly used for suicide by hanging that local residents chopped down a large branch that once hung over the Boston Road to prevent future deaths. At least one suicide occurred in an abandoned greenhouse on the Lydig estate.

The number of deaths on the Lydig estate may have been partly due to the fact that the property was not occupied year-round. The family was recorded at their home on Laight Street in both the 1850 and 1860 federal censuses. The earlier census—which mistakenly lists their last name as “Varick”—identifies Philip M. Lydig, Senior as a farmer, and indicates that he and his wife resided with their seven children and one domestic servant who is identified as being of mixed Caucasian and African ancestry. Lydig’s real estate holdings were valued at \$100,000 in that census. The 1860 census indicates that only Philip M. Lydig III was residing at the family’s home on Laight Street, along with five servants. It is possible that the other members of the family were at the home in West Farms at the time the census was taken and were therefore not included in the census for either location.

They were recorded in both enumerations of the 1870 census.¹ The first enumeration was recorded in August 1870, when the family was residing at the West Farms home for the summer. The family at that time including the elderly Philip M. Lydig, Junior,² his wife, Kate, and daughters Rose and Florence. Living with them were six servants, including a cook, a laundress, and a coachman, all of whom were Irish immigrants, and a coachman of African descent who had been born in Maryland. The second enumeration of the census was recorded in January 1871, when the family was residing in their home at 34 Laight Street in Manhattan. Six servants lived with the family at that time, none of whom were those who had been recorded in the earlier census. Therefore, the family may have kept both houses fully staffed or they may have hired temporary or seasonal workers while they were living in West Farms. Their incredible wealth would have allowed them to maintain a large staff. The first enumeration of the census indicates that Philip Lydig, Junior owned \$400,000 in real estate and had a personal estate of \$10,000. He died in February 1872 (*New York Times* 1872a). The 1880 census indicates that Pauline Lydig and Philip M. Lydig III were living with her family in New Jersey while Catherine Lydig and her son, David, continued to reside at the West Farms estate with a team of servants.

THE DEVELOPMENT OF THE LYDIG PROPERTY

The 1837 coastal survey by Charles Renard (see **Figure 5**) indicates that all of the structures associated with the Lydig property up to that time were located to the south of the Road to Kingsbridge, and were therefore outside of the western portion of the project site. It is likely that structures were not erected on the western side of the project site until, as mentioned above, the mills were relocated there after a fire in

¹ The 1870 census was taken twice in several areas, including New York City. The first enumeration of the census was completed in the summer of 1870 and the second enumeration of the 1870 census was taken in January 1871 at the request of many individuals who feared that urban populations were under-represented in censuses. The second enumeration is the first census to include street addresses for each family and is therefore a more accurate reference in the search for the residents of a particular property.

² Pelletreau (1907) states that Philip M. Lydig, Junior was born in 1799, although the first enumeration of the 1870 census lists his age as 75 (born 1795) and the second enumeration lists his age as 65 (born 1805). The ages for Lydig’s wife and daughters also differ between the two enumerations.

1845. Lydig's mills included "a raceway [that] brought water to three overshot waterwheels, which were later replaced by turbines" (Landmarks Preservation Commission 1990: 20).

The 1851 Sidney and Neff and 1853 O'Connor maps reflect the construction of Philip M. Lydig, Junior's new home within what is now the southern section of the Bronx Zoo, west of Jungle World Road.¹ The latter map provides more detail about the estate, depicting driveways and outbuildings surrounding the home. However, these structures were all at a distance from the Boston Road and none appear to have been in or adjacent to the western portion of the project site, which is depicted as a hilly, wooded area.

Beers' 1868 atlas of West Farms depicts the southern portion of the Lydig estate, which at that time included seven structures (see **Figure 6**). The main home is depicted far west of Boston Road, within the estate along the approximate line of Daly Avenue (named after Judge Charles Daly, Philip M. Lydig Senior's son-in-law), then called Catherine Street. An outbuilding is shown on the map to the northeast of this home and west of the line of modern Vyse Street, then called Chestnut Street. On the eastern side of Boston Road just north of Bronx Park South, just southwest of the project site, was an ice house operated by G. Keller. The ice house likely operated seasonally, as the frozen Bronx River served as an important source of ice during the winter months (Garvin 1979). The ice house was previously operated by Austin C. Chandler, to whom Philip M. Lydig rented 20 acres of the river for the purposes of cutting ice (Carlson 1955).

Four other buildings owned by Philip M. Lydig, likely the early-19th century mill buildings, were located on either side of the river within what is now the southern portion of the Bronx Zoo. These structures are also depicted on an 1873 topographical survey produced by the Parks Department, which does not depict any structures along Boston Road in the vicinity of the western portions of the project site.

The 1885 Robinson Atlas depicts proposed roads running through the Lydig estate, which do not appear to have ever been constructed although the Lydig home was still standing at that time. These roads are also depicted on an 1878 plan depicting the proposed new layout of the Lydig estate. With the exception of G. Keller's ice house to the southeast of the project site, no structures are depicted along Boston Road on the 1885 Robinson map.

As will be discussed in greater detail in **Section F**, below, the Lydig family sold the property to the City of New York in the late-19th century and the land was converted into a public park and later, the Bronx Zoo. 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 near the road's midpoint (due east of the Reptile House). The marble marker, which was flush with the ground surface, measured 7 inches square with a conical hole in the top and was inscribed with the Roman numerals "LXIV." LPC (1990) stated that it was not likely that the marker served as a mile marker along Boston Road, but was rather a survey marker identifying a property line. Access to this area was restricted at the time a site walkover was completed and it is unknown if the marker is still extant.

E. HISTORICAL SUMMARY OF THE BOLTON BLEACHERY

As previously mentioned, in 1824, David Lydig leased the land that now makes up most of the eastern portion of the project site to James Bolton with the privilege of purchasing the property in the future for \$9,000 (Carlson 1955). Bolton was an Englishman who immigrated to the United States in 1818 "bringing with him a knowledge of the art of textile finishing" at a time when few in the country knew how to finish cotton goods (Bolton 1972: 1). After first settling in Pennsylvania, James Bolton and his

¹ The site of the mansion is now occupied by the Carter Giraffe Building (Landmarks Preservation Commission 1990).

young son, Thomas, settled in Westchester to establish a factory while James' wife, Catherine, remained behind in England. Bolton chose the land within the project site because of its "vital water supply" and "delightfully rolling hills, clay loam [that] produced all kinds of grains and was ideal for grass and pasturage...almost every kind of fruit tree flourished among oaks, chestnuts, birches, and hickory...[and it was] freely watered by springs and rivulets" (Bolton 1972: 3). Around 1820, Bolton formed a partnership with Peter Schenck and his brother-in-law, Samuel Pilling and within the next few years, the three men established a bleachery on the project site to bleach, dye, print, and finish cotton goods (ibid). It was formally incorporated in 1825 as the "Bronx Bleaching and Manufacturing Company" (Spooner 1900). Although the factory was definitely constructed on the project site at the time, Burr's 1829 map indicates that only paper mills were situated in the area.

Bolton purchased the approximately 100 acre plot of land from Lydig in 1826 (Carlson 1955). That year, he built a home for his family (see Building 1, below); up until that point he and Thomas had lived in a nearby home on Boston Road that they rented from the Thwaite family (Bolton 1972). The home constructed by Bolton was located in the northeastern corner of the property south of Fordham Road (now the Bronx and Pelham Parkway) and east of a now non-existent road that led to Lorillard's snuff mills to the north (see **Figure 7**).

A deed recorded in 1827 shows that Peter Schenck, Pillings, Bolton, and their wives conveyed the property, dam, and mills to the bleachery company. The deed shows that the factory complex included a dam and tail race (which formed the "lake" currently known as Lake Agassiz and formerly called "Silver Lake"), a stone mill building, a boiling and chemical house, 2 drying sheds, a beetling house,¹ a yarn house, a wagon shed, a covered passageway, a house for the steam boiler, a blacksmith shop, and outdoor drying frames. In addition to the main Bolton house, the property also featured dwelling houses near the dam, and near the road, as well as a barn, stable, and two adjoining stone houses. An 1838 fire destroyed the bleaching house and it was subsequently rebuilt. These buildings appear on the 1837 United States Coastal survey (see **Figure 5**), which depicts at least 5 structures to the north of Boston Road and west of the road leading to Lorillard's mills. Additional structures were located near the northeast corner of those two roads, although it is unclear if they were situated within the project site. Historic Photographs of the bleachery buildings² show that many of them were constructed on or behind stone walls that projected out into the river.

The company also maintained an office in the "Cotton District" of Lower Manhattan, to which some of the executive members of the company commuted daily via train or steamboat (Carlson 1955). Historic directories dating to the mid and late 19th century show that the office was located at first on Leonard Street and then on Worth Street (see **Appendix C**).

In 1842, the Bolton Company purchased additional land from David Lydig on the west side of the Bronx River (Carlson 1955). This was the property on which the Bolton Tape Mill was situated and for which a new, 2-story brick building was constructed in 1844 (ibid). That company was founded by James Bolton's nephew, also named James, in 1829. Like many members of the extended Bolton family, James had emigrated from England to work in the Bolton factories (Bolton 1972). A map of the property produced in 1841 (see **Figure 8**) depicts the property presumably included in the sale as well as a small portion of the bleachery property. Subsequent maps show that the tape mill was north of Boston Road and was therefore well outside the western portion of the project site.

¹ Beetling is a water-powered hammering process.

² On file at the New York Historical Society and the New York Public Library.

The map shows that the course of the Bronx River had been significantly altered as a result of the construction of the mill dam and stone mill of the Bronx Bleaching Company. The map also depicts a carpenter shop and a blacksmith shop on the bleachery property. A *Westchester Times* article published on May 10, 1889 stated that a carpenter shop situated on the grounds of the bleachery had formerly been a paper mill; this may be the same building. However, these buildings, perhaps with the exception of the blacksmith shop, appear to be situated outside of the project site. The map also notes a large area on the western side of the river where rock had been cut away and another area in the center of the river where “stones washed up.”

Pillings and Schenck were bought out of the company in 1842 and 1852, respectively, and after James Bolton’s retirement in 1854, his son Thomas became the president of the company (Bolton 1972). A historic deed recorded in 1856 showed that the property on which the bleachery buildings were situated was transferred to Thomas Bolton, Senior. On Beers’ 1868 map of Bronxdale (see **Figure 7**), the company is labeled as “Thomas Bolton & Sons Bronx Bleach & Dye Works.” Four of Thomas’ sons, James M., Henry B., John W., and Thomas, Junior, joined him in running the company. James Bolton died in 1869 and was buried in the Westchester Cemetery but was later removed to the Bolton family plot in Woodlawn Cemetery (ibid). Thomas Bolton retired in 1873 and he died 6 years later. After his retirement, his four sons took over the business and it was renamed the “James M. Bolton and Brothers Bronx Bleaching Company” (ibid). Only 5 years after Thomas Bolton, Senior’s retirement, the firm filed for bankruptcy after several years of poor credit which left the firm “embarrassed” (*New York Times* 1878: 3). Ultimately, James and John Bolton left the company and it was run by Thomas Bolton, Junior, and his brother Henry. They were later joined by William H. Birchall, the nephew of Thomas Bolton, Senior’s wife who had been adopted by the Boltons after being orphaned as a small child and who later became president of the bleachery (ibid).

In 1887, many of the factory buildings including the main building, store room, and drying room, were completely destroyed by a fire. The original structures were depicted on Bromley’s 1881 map of Bronxdale (see **Figure 9**). They were rebuilt that same year, however, in 1889 the land was condemned by the City of New York in order to allow for the construction of the Bronx Park. In 1890, the company moved down the river to a larger property near 177th Street along the Bronx River and the following year the original Bolton factory buildings were demolished. The company was renamed “The Bronx Company” in 1892 and after a wartime surge in business during World War I, the company shut down in 1929 (Bolton 1972).

HISTORICAL SUMMARY OF THE VILLAGE OF BRONXDALE

As the Bolton bleachery grew, the small village of Bronxdale grew around it and the histories of the two are intricately linked. Although the town was to the north of the Village of West Farms, the two villages were closely interconnected and the communities of both were closely related (Jenkins 1912). Bronxdale was nicknamed “the Bleach” because “the whole pulse and beat of life in Bronxdale was tuned to the schedule of the factory” (Bolton 1972: 10). Ninety percent of the village’s residents were employed at the Bolton factory (*New York Times* 1887). The Boltons owned many houses in the town which were rented out to factory employees, many of whom were English immigrants, and others to Bolton family members (Myers 1940). An article published in the *Westchester Herald* in 1839 noted that the village was “a scene of comfort, neatness, and prosperity” for the approximately 50 men employed at the Bolton factory at the time (ibid). In the winter, when the mill pond froze over, ice was harvested from Lake Agassiz and stored in nearby buildings before being sold (Carlson 1955).

Throughout the end of the century, the village remained a relatively simple place consisting of a Methodist Episcopal Church, 2 stores, a blacksmith shop, approximately 20 cottages inhabited by factory employees (see below for individual property histories), and an iron bridge which allowed the Boston Road to cross the Bronx River (Bolton 1972). The “quaint” cottages were “built in the English fashion

and populated with its stock of Lancashire folk” (Comfort 1906: 46). Bronxdale featured “tall elms and maples shade the streets and cottages, whose porches in summer [were] abloom with yellow honeysuckle and crimson roses” and “fruit trees and little gardens, chicken yards and goat stables, [added] to the effect of rustic simplicity” (*New York Tribune* 1906a: B3). The town was centered on the Boston Road, which was intersected by a “tortuous hill rising street called Shadfish Lane” (ibid). The name Shadfish Lane is not referred to elsewhere, and may refer to the Road to Lorillard’s Mills or the former Bear Swamp Road, both of which formerly intersected with the Boston Road near Bronxdale.

The town’s unpaved dirt roads were lighted with gas lamps and, having no sewers or water mains, residents maintained privies and wells (which were often adjacent) in their backyards (Myers 1940). The Boltons were pillars of the community, and were members of committees sponsoring village picnics in Lorillard’s Woods (presumably to the north of the village in or near the Lorillard property) and coordinated and participated in dramatic and musical recitals many of which were associated with the local Methodist Episcopal Church (Bronxdale Scrapbook 1881-90). In addition, Thomas Bolton, Senior, served as a Justice of the Peace for the township of Westchester (Spooner 1900).

F. TRANSFORMATION INTO A ZOOLOGICAL PARK

After the successful creation of Central Park in Manhattan in the mid-19th century, New York City began to pursue the creation of other large parks in other areas of the city. City officials scoured the Bronx, then the Annexed District of Manhattan, and in 1884 identified locations suitable for parkland. One of these locations was the Bronx Park, the large area now occupied by the Bronx Botanical Gardens and Zoo. The more than 650-acre location was ideal for a park as much of the land was undisturbed and it retained “a picturesque loveliness that satisfies but never satiates” (Mullaly 1887: 67). The river running through the area was also ideal, as “a brook...is an attraction which very few parks possess” (ibid: 57). It was suggested that additional land on the eastern side of the river be added to the park in the future, once the remainder of the Bronx had been annexed to the City, in order to preserve the beauty of the river (ibid). It was feared that as the advent of public transportation increased the population of the area, “the Bronx [would] be transformed from one of the most exquisite spots to a common receptacle for the drainage of that section, and eventually, becoming a public nuisance, be condemned to the uses of a common sewer, which, as safeguarded to the public health, will have to be constructed along the bed of the once picturesque stream, which will have thus disappeared forever” (Commission to Select and Locate Lands for Public Parks 1884: 106).

The Lydig family sold their estate to the city for the construction of Bronx Park. The Lydig estate was “in a wild and totally neglected condition, with features of great natural beauty, but bearing many marks of vandalism” (NYZS 1904: 41). Despite this, the estate was a “carefully protected and preserved...beautiful native forest” thanks to the family (ibid). In 1903, Mrs. Lydia Lydig Sturgis, the daughter of Philip M. Lydig, Junior, paid for the construction of the Lydig Memorial Gate near the southern entrance to the Zoo at Boston Road (NYZS 1904). The gate is still present within the Zoo, although it is located at the top of a steep hill and the metal archway that formerly connected the two stone pillars that make up the gate is no longer present.

The land for the eastern part of the park was acquired through condemnation in 1888 and the eastern portion of the project site was originally included in an area reserved for a public playground (Bridges 1974a). The original boundaries of the park did not include a row of small houses in the village of Bronxdale on the northern side of the Boston Road (Lots A through J, below), as seen in Hornaday’s early 20th century map of the Zoo, although the remainder of the project site was part of the park (see **Figure 10**). Before the land was condemned, it was appraised by the Commissioners of the Parks Department (*New York Times* 1886). Most of the land taken was occupied by the Lydig and Lorillard estates and the Bronx Bleaching Company. In total, 38 plots of land were confiscated for the Park. Much

of that land belonged to the estate of Ann Bolton, the wife of Thomas Bolton, Senior, who was compensated with \$267,320.40—although her trustees appealed for more money—and David Lydig received \$52,512.00 (*New York Times* 1888). The Lorillard and Neal families were also paid large sums when their land was confiscated. The Neal or Neill family owned a large estate on the southern side of Boston Road. An undeveloped portion of their estate entered the southern half of the project site, in the location of the modern Bronx River Parking Lot.

After the land was obtained in 1888, the transformation of the southern half of the Bronx Park into a zoological garden continued. The prospect of creating a zoological park in one of the Bronx parks—especially one that would be superior to the zoo in Central Park—was suggested early on. The report prepared by the Commission to Select and Locate Land for Public Parks in the Bronx states that “a park system that failed to include a zoological garden would be wanting in one of the most essential requisites” (1884: 39). In the early 1890s, a group known as the Boone and Crockett Club—composed of a group of big-game hunters including Theodore Roosevelt, who had not yet been elected to the Presidency of the United States—were interested in the creation of a large-scale zoological park in New York City (Grinnell and Roosevelt 1897). In 1895, many members of that group formed the New York Zoological Society (NYZS) and formally petitioned the City’s Sinking Fund for land on which to build the zoo the following year (*ibid*). Their goal was to create a zoological park unlike any other in America, one in which herds of animals lived in their natural habitats. The construction of such a park in the Bronx received very strong public support (Bronx Museum of the Arts 1986). David Lydig, Phillip M. Lydig III, Thomas Bolton, Junior, John W. Bolton, and William H. Birchall were all members of the NYZS (NYZS 1897).

William Hornaday, the first president of the NYZS and the man credited with the creation and success of the Zoo, surveyed all of the new park land and chose the southern half of the Bronx Park for the location of the zoo based on 10 criteria: accessibility, shade, surface contour, natural water supply, seclusion, natural building sites, evenness of temperature, possibilities for sewerage, absence of swamp influence, and contiguity to freight railway (NYZS 1897). He said of the land, “I shall never cease to enjoy my discovery of South Bronx Park...nature has made a marvelously beautiful and perfect combination of ridge and hollow, glade and meadow, rock, river, lake, and virgin forest, and that man has mercifully preserved it all from defacement and destruction.” (Bridges 1974a: 31). According to Hornaday, the site was also perfect because, “it [was] the spot where the greatest results can be accomplished with the least money, and in the shortest time” (NYZS 1897: 34).

In 1898, the City turned over control of the southern half of the Bronx Park to the NYZS and construction began immediately (Pindar 1917). The initial phases of construction included clearing “away the storm and flood debris that had accumulated” in the river, which at that time was “little more than an open sewer and watery garbage dump...choked with tree snags, ash heaps, and the junk discards of the villages and towns clustered along its banks, and the New York Central Railroad, whose tracks paralleled it” and the raw sewage that poured into it (Bridges 1974a: 282). A sewer running the full length of the park was proposed in 1895, but it was not constructed immediately (*ibid*). The City paid for the construction of some of the buildings on the Zoo property, as well as for walks, roads, sewers, etc., and annual maintenance and upkeep (Pindar 1917). In 1898, the NYZS proposed additional developments, such as the installation of sewer and Croton water mains, the reconstruction of the Bolton dam, the construction of service roads, fences, cleaning the River, and the installation of Bronx water supply pipes to all the ponds in the zoo (NYZS 1898).

An 1896 map of the proposed New York Zoological Park, as the Bronx Zoo is formally named,¹ was drawn by the NYZS to reflect their early vision for the Zoo. Within the eastern portion of the project site, the map depicts several structures in the area near Lake Agassiz, which was a proposed habitat for waterfowl. However, it does not appear that these structures were ever constructed, as they do not appear on NYZS' 1899 map of the zoo as it had been completed by the time the Zoo opened in November of that year (*New York Times* 1899). The 1896 map does not depict any proposed developments to the east of Boston Road in the vicinity of the western portion of the project site. Few developments were proposed on the western side of the road, with the exception of a large bison range along the southern portion of the road and a rest station to the north, both of which are depicted on the 1899 plan of the Zoological Park. Both maps depict large rock outcrops to the east of Boston Road in the southern portion of the park.

With the exception of the restrooms and a boat house in the former location of the ice house at the foot of Bronx Park South, no structures associated with the Zoo appear to have been constructed within or immediately adjacent to either half of the project site through the end of the 19th century. The 1899 map reflects the replacement and realignment of Fordham Road with Pelham Avenue, the precursor to the Bronx and Pelham Parkway. The work was completed in 1899 and involved the raising of the grade in the area by approximately 5 feet (NYZS 1899b). The map also shows that a small road was constructed to the west of the Road to Lorillard's mills, leading from Pelham Avenue to the Bronx River entrance to the Zoo, located at the Boston Road Bridge on the eastern side of the River. Another path led to the Zoo's nursery (to the south of the eastern half of the project site) from the Boston Road through the eastern side of the Zoo. This road was constructed in 1899-1900 (NYZS 1900). These paths are not depicted on the 1900 topographic survey of the eastern portion of the project site (see **Figure 3**). In addition, the entire area to the south of Boston Road in the eastern half of the Zoo was intended to remain open to the public at all times as "pleasure grounds" (NYZS 1897).

G. 20TH CENTURY SITE HISTORY

As previously discussed, the Bronx Zoo began expanding in the early 20th century. The 1900 topographic survey of the Bronx shows that no structures were situated within the project site with the exception of those on Lots A through H and J in the former village of Bronxdale. That property was added to the land of the Zoological Park circa 1906 (NYZS 1906). In addition, only the dam forming Bronx Lake and foundations of the former Lydig mill remained at the beginning of the 20th century (Jenkins 1912). As seen on the 1902 Sanborn map (see **Figure 11**), the former Lydig estate was no longer recognizable as the land had been converted into a zoological park.

The NYZS had been interested in acquiring the property as early as 1903 and had convinced the Neill family, who owned the large estate to the south of the project site to sell their land even though the Zoo owned a great deal of undeveloped land on the eastern side of the Bronx River (*New York Tribune* 1906a). At the time of the Zoo's acquisition of the land, most of it was owned by William H. Birchall (who had purchased most of the old Bolton property in the late 19th century) and William H. Bolton, the son of Thomas Bolton, Junior (ibid). Other landowners in the area were Jacob Roder, Job Smith, and the Willis family (ibid). Additional land was added to the zoo at that time, including all the property between the original eastern boundary of the park (the former farm line of the David Lydig estate) and the former line of Bronx Park East, to the east of the project site.

Plans to develop the zoo's property on the eastern side of the river began even before the new land was acquired. The NYZS Annual Report for the year 1902 stated that the group intended to protect and

¹ Hornaday greatly disliked the term "Bronx Zoo," calling it "undignified, offensive to the Zoological Society, and injurious to the Park" (Bridges 1974b: 15).

develop the land, which was “not heretofore enclosed,” and noted that the river was in bad condition (NYZS 1903). When the city proposed an extension of a rapid transit viaduct through the park, the NYZS protested the impact such a development would have on both the animals and the natural setting of the area and the project was eventually canceled (NYZS 1904). A 1907 act reserving land on either side of the river was another attempt to preserve the environmental quality of the area and to prevent the river’s continued pollution (Bridges 1974a).

In 1903, the NYZS dredged “great quantities of earth” from the bottom of Lake Agassiz for use in “the extensive grading and filling operations necessary...east of the Bronx River and South of Pelham Parkway” and in other areas of the park (NYZS 1904: 76). All of Lake Agassiz was deepened at this time and approximately 3 feet of earth was removed from a mud flat in Lake Agassiz (ibid). The lake was deepened by another 4 feet the following year, and more grading took place in the northern part of the park near the lake. At that time, the “solid masonry core” of the small island separating the dams at the southern end of Lake Agassiz was raised by 3 feet to prevent further damage caused by the overflowing waters (NYZS 1905). This involved the digging of a channel and creating a small dam to divert the river so the work could be completed. The banks of the lake were also graded in some locations and turned into sandy shores in others so that the lake would “no longer be choked by aquatic vegetation” (ibid: 72). The northern shore of the Lake was also fenced in an attempt to keep out stray dogs which had been entering the zoo and killing sheep.

The 1898, 1908, and 1914 Sanborn maps and Hornaday’s map of the zoo created in 1907 (and published in 1915) depict a wetland area bordering the eastern side of Lake Agassiz. This is not depicted on earlier maps and even appears to cover the locations of some of the buildings of the Bolton bleachery. It is possible that the wetlands developed naturally after the removal of the Bolton mill buildings as the lake overflowed onto the nearby shore and as materials were later dredged and the lake expanded.

As the development of the eastern side of the park continued, the last remaining houses of the former village of Bronxdale were torn down “to make the park symmetrical and to preserve old trees” (*New York Tribune* 1906a: B3). It was suggested by the *New York Tribune* at the time that the City had paid far too much for the land, perhaps the result of inflated estimates provided by local assessors who were also landowners. The properties purchased by the city included “a shanty for which the owner was ashamed to collect any rent and a rocky plot formerly traded for three goats and an old musket... [that were sold] at boomtown rates” (ibid). Another article appeared in the same paper on the same day, stating that the City’s purchase, which was authorized by the Board of Estimates in 1905, amounted to what the land was worth regardless of local assessed values (*New York Tribune* 1906b). The high prices were paid because it was thought best to “buy [the land] when it is cheap and some day, when The Bronx is densely inhabited, it will prove a blessing” (ibid: 6).

By 1911, walks, pavilions, fences, paths, etc. had been constructed throughout the eastern portion of the park and “the village of Bronxdale with its disreputable shanties [had] been at last eliminated” (NYZS 1912: 49). A concrete bridge was constructed across the brook that ran through the nursery, in the area of the modern Bronx River Parking Lot (ibid). The following year, repairs were made to the Boston Road Bridge and new walks with concrete steps were constructed in the woods located between the boathouse near the Bronx Lake and the Boston Road. Additional marshy areas were drained, graded, and filled on the east side of the Bronx River using more than 12,000 cubic yards of fill (NYZS 1913). The area east of the Bronx River was also plagued by small but repeated fires in 1912 (ibid).

A panoramic drawing of the zoo created in 1913 depicts the eastern portion of the project site as a large, wooded area with few developments. The map does appear to show a small portion of Lake Agassiz entering the area now occupied by the Mitsubishi River Walk. The former Henry B. Bolton home and several associated outbuildings are depicted along the southern side of the Boston Road. The drawing also depicts a small pond and a boat landing with a nearby pavilion to the south of the Boston Road.

Hornaday's 1907 map depicts the pond, but the boat landing is not shown, suggesting that it was built between 1907 and 1913. The 1914 Sanborn map suggests that this was located at the southern end of the zoo, south of the project site. That map shows no structures other than the Henry B. Bolton home located in the eastern portion of the project site, which was vacant except for a few paths leading to the Boston Road from the north and the south. Within the western portion of the project site, these maps depict little development along Boston Road with the exception of the buffalo range to the west of the road, the eastern section of which is identified as the "Buffalo Breeding Range" on Hornaday's map. The 1914 Sanborn map depicts a public comfort station to the west of Boston Road to the south of the project site, and a large play ground to the west of the road to the north, in the vicinity of the former tape mill.

No changes appear within the eastern or western portions of the project site on the 1946 or 1950 Sanborn maps. A map of the zoo produced circa 1948 depicts the eastern portion of the project site as vacant woodland, just north of the Farm-in-the-Zoo, which was created in the 1942 to display domesticated farm animals (Bridges 1974a). Within the western portion of the project site, the existing parking lot on the western side of Boston Road is depicted on the former Buffalo Breeding Range, although the 1950 Sanborn continues to depict that area as the latter.

In 1935, the first stretch of the Bronx River Parkway was opened, although it did not yet extend as far north as the Bronx Zoo (Bridges 1974a). The project had been in development for approximately 20 years. In 1937, the NYZS agreed to cede some land to the City so that a 5 mile-long northward extension of the Parkway could be built, resulting in the demolition of the Zoo's former nursery buildings to the south of the project site (ibid). Construction of the new extension was not completed until 1951, and the Parkway extension was opened to drivers in January of that year (*New York Times* 1951).

An undated map of the zoo¹ produced after the construction of the Parkway extension showed several developments within the project site. To the north of the Boston Road, trails were laid out and a large building was constructed as part of a "conservation exhibit" which at the time was under construction. The trails appear to correspond roughly with those of the Mitsubishi Riverwalk, as seen on **Figure 2**. The undated map also is the first to depict the construction of the Bronx River Parking Lot, which had a 327 car capacity and was first opened in 1953 (*New York Times* 1953). That same year, a small pool was opened to allow fishermen to practice casting, although it had been constructed several years earlier (*New York Times* 1951). The casting pool was located to the west of the Bronx River parking lot, separated by a small path that led to the Farm-in-the Zoo, and has since been covered by the expanded parking lot. In 1963, the farm closed and two years later its buildings were converted into the Institute for Research in Animal Behavior (Bridges 1974a).

The 1977 Sanborn map of the Zoo depicts only minor changes to the project site (see **Figure 12**). A comfort station is depicted on that map near the eastern portion of the project site in the vicinity of the eco-restroom that stands there today. No additional structures were depicted within this portion of the project site. The western portion of the project site was also largely unchanged, with the exception of the construction of the monorail system to the east of Boston Road. A small animal shelter is depicted on that map to the north of the monorail. The Buffalo Entrance is still identified on the map, however the Buffalo Range had been replaced with a series of pathways, cable car lines, and grounds occupied by fallow deer and plains animals. To the north, the former playground was developed with "Bird World."

Sanborn maps from 1989 and 2005 also show that no developments have occurred within the project site in recent years.

¹ In the collection of the New York Public Library.

H. SUMMARY OF INDIVIDUAL LOTS IN THE BRONXDALE PORTION OF THE PROJECT SITE

The 1868 Beers atlas is the first to depict the small village of Bronxdale in great detail showing both structures and owners' names (see **Figure 7**). Within the eastern portion of the project site, the map depicts multiple structures within the Bolton Bleachery property, including what the Bolton homestead, factory buildings, and multiple domestic structures along Boston Road. These structures have been categorized by individual property and their histories are summarized below.

The homes along Boston Road do not appear to have ever been assigned street numbers, however, Sanborn maps dating to 1898 and 1908 (see **Figures 13** and **14**) designate 9 historic lots referred to as Lots A through H and J. Attempts were made to use historic deeds, census records and directories to identify the residents of these buildings, however, this proved quite difficult due to the lack of house numbers and because the buildings' owners were most often not those who inhabited them. The census records included below represent possible residents based on comparisons to historic maps and deeds and with the assumption that individuals listed in sequential order on census ledgers lived on adjacent properties.

THE BOLTON ESTATE

The Bolton estate occupied most of the land bounded by the Bronx River to the west, Fordham Road to the north, the Road to Lorillard's Mills to the east, and Boston Road to the south. This area also included Historic Lots A through H and J, as depicted on the 1898 and 1908 Sanborn maps, which were initially owned by the Bolton family but are discussed elsewhere in this analysis. A combination of domestic and industrial structures was located on this property from the 1820s, when the bleachery was established, through the early 20th century, when the last of the buildings were demolished to make way for the Bronx Park.

THE BLEACHERY BUILDINGS

The first map to depict individual buildings on the site is the 1837 United States Coastal Survey, although portions of this map are missing and it is not very accurate. Findlay's 1841 map of the land of David Lydig depicts several structures of the bleachery, including a stone mill, carpenter shop, and a blacksmith shop, however these appear to be outside of the project site. Both Sidney and Neff's 1851 map and O'Connor's 1853 map depict clusters of buildings along the shore of the Bronx River near the dam. The latter map is more detailed, depicting at least 8 structures as part of the mill complex. Fewer are shown in the area on Beers' 1868 atlas (see **Figure 7**), which is more accurate and provides a greater amount of detail than previous maps. That map labels the property, "T. Bolton & Sons Bleach and Dye Works." Of the nine structures that the Beers map shows were located on the Bolton estate in 1868, four are situated within the boundaries of the project site. Although the map does not distinguish between industrial and residential structures, it appears that the structures closest to the shore were those of the bleachery while the structure along the Road to Lorillard's mills was the Bolton's home (discussed below). Two additional structures stood between the mill and the residence.

The buildings appear largely unchanged on the 1881 Bromley atlas (see **Figure 9**). The two structures situated between the mills and the Bolton home appear to have been demolished and a single, smaller structure erected in the vicinity. An additional structure had been constructed a short distance to the southwest of the Bolton home. As stated above, many of the factory buildings were destroyed by fire in 1887 and rebuilt shortly thereafter. However, after the land was condemned by the City of New York to allow for the construction of the Bronx Park, the company moved to a new location to the south in 1890. The buildings last appear on a USGS map dating to 1891 and by the publication of Bien's 1892 atlas, they had been demolished.

JAMES BOLTON HOME

Beers' 1868 atlas depicts a structure located closest to the southwest corner of Fordham Road (which is first depicted on O'Connor's 1853 map as a proposed street) and the Road to Lorillard's mills. This was likely the Bolton homestead, which was described as being located in the northeastern corner of the Bolton property (Bolton 1972). O'Connor's 1853 map seems to suggest that a structure, presumably residential, surrounded by 3 outbuildings stood further to the west than the structure seen on the Beers map, but this is inconsistent with later maps and historic photographs which show that the home was located along the Road to Lorillard's mills.

The Bolton's 3-story stone house was built by James Bolton as a 2-family home separated into east and west halves. Numerous generations of Bolton family members resided in the house (Bolton 1972). Behind the house, "the factory buildings were distantly visible across an expanse of meadow and hill" (Bolton 1972: 5).

To the south of the house was a 150-yard long meadow and the house itself was surrounded with "spacious grounds with flower and vegetable gardens, grape arbors, pear and apple trees...[and a] croquet green on the east side" (Bolton 1972: 19). It was heated with coal, lighted with kerosene lamps, had a cold-storage vault under the house, and, having no indoor plumbing, featured 2 large wells and privies for water gathering and sanitation purposes (ibid). At a "considerable distance to the southeast" of the house were stables, a carriage house, and a cottage for the liveryman while a barn was located closer to the Boston Road (ibid). None of these descriptions of outbuildings correspond directly with historic maps, however. Beers' atlas shows that James Bolton owned a significant amount of property along Boston Road (discussed below), but it appears that these were inhabited by factory employees and their families and were not necessarily used as stables, etc. The two structures depicted to the east of the building presumed to be the Bolton home on the 1868 Beers map may have been outbuildings associated with it.

James Bolton was first recorded as a resident of Westchester in the 1840 census (although a Thomas Bolton, presumably his son, was listed as a resident of that town in the 1830 census). James Bolton was not identified in census records again until 1860. Documentary evidence suggests that James and Thomas Bolton, Senior both lived in the 3-story stone house (Bolton 1972), however, no evidence could be identified which could confirm when these men lived in the home or who else may have lived there. It appears that Thomas Bolton, Senior, moved to a different residence as early as 1846 (discussed below). However, James Bolton owned a substantial amount of land in the area and it is not clear if he resided in this home until his death or if he moved to another residence on one of his many properties. The 1868 Beers map indicates that James Bolton lived on a large estate to the northeast of the project site where he may have moved after he retired. An advertisement published in 1872, three years after his death, stated that his approximately 100 acre estate along the road from New York to White Plains (likely White Plains Road, east of the project site) was for sale (*New York Times* 1872a).

The house was demolished circa 1904 and it was reportedly so well-built, dynamite was needed to take the building down (Comfort 1906). However, it does not appear on either the 1898 Sanborn map or the 1900 topographical survey. A 2-story dwelling with a small barn or stable in the rear is shown in the vicinity on the 1908 Sanborn. That structure had been demolished by the time of the publication of the 1914 Sanborn map.

THOMAS BOLTON, SENIOR, HOME

The Beers map shows one other (presumably) residential structure on the Bolton property. A large rectangular building owned by Thomas Bolton, Senior, was located on the northern side of the Boston Road on the eastern shore of the Bronx River, adjacent to but outside of the project site. The O'Connor map of 1853 and Dripps map of 1872 also depict this structure and show that it was situated on its own

lot, perhaps to distinguish the home from the nearby factory buildings. The building is also depicted on the 1881 Bromley and 1893 Bien maps; the latter attributes the building to the Bolton estate.

The only map to depict the building in significant detail is the 1898 Sanborn map, which shows it as a 2-story double-dwelling separated into eastern and western halves. The building is depicted in several historic photographs. The building is not depicted on the 1900 topographical survey and appears to have been demolished shortly before that map was produced. The property associated with this home appears to have been sold to Thomas Bolton, Senior, from his father in 1846. The deed recording the land transaction mentions that stables were on the property at the time of the sale and mentions that land was reserved for the construction of a road. The 1868 Beers map depicts a small lane running along the easterly side of the house.

This suggests that Thomas Bolton moved out of his father's home and built his own double-house on a different portion of the property, however, early census records cannot confirm this. Thomas Bolton was recorded in the 1850 census as a store-keeper residing in the township of Westchester. He lived there with his wife, Ann, 8 children, his adopted nephew, and his sister, also named Ann. This census does not suggest that he shared his home with another family, though it is possible that the double-home was counted as two independent homes in the census. Interestingly, however, in the 1860 census, Thomas Bolton is listed as living in one home with his wife and two oldest sons while his younger children and adopted nephew were recorded as living in a different home in a different part of the village.

In a recollection of his childhood, Thomas Bolton's great-grandson, Jonathan Myers wrote that his grandfather, Thomas, and uncle, Thomas Bolton, Junior, shared the house that stood just east of the Bronx River (Myers 1940). However, Myers' descriptions of the house are inconsistent, and sometimes appear to be describing James Bolton's home. For example, he explains that a garden stood between the rear of the home and the Pelham Parkway/Fordham Road, however, the bleachery would have been situated in the expansive tract of land between the rear of the Thomas Bolton home and road to the north. Bolton (1972) states that Thomas, Senior, lived in the main Bolton house with James Bolton, however, census records do not suggest that the two men lived in the same home in 1860. Census records from 1870 show that Thomas Bolton, Senior, and Thomas Bolton, Junior, lived in almost adjacent homes, separated only by the home of George Anderson, a Methodist clergyman and his wife and infant daughter. However, it is possible that both men lived in the double home and that because both men were so invested in the nearby Methodist Episcopal Church, they may have shared their home with the minister. The 1880 census, taken after Thomas Bolton, Senior's death, shows that his widow, Ann, continued to reside near her son, Thomas Junior, presumably in the same house.

LOT A

Beers' 1868 map indicates that this lot was much larger at that time, when it was occupied by W. Greenholgh. A man named William Greenhalph (sic) was recorded in the 1860 census as living in the township of Westchester and was listed in the census ledger adjacent to Hannah Turner, who owned the home across the street (see Building 20, below) and in the vicinity of the home of Thomas Bolton, Senior. Greenhalph was an English carpenter who lived with his wife, Martha, their 4 children, and Job Smith and his son, Ephraim, both of whom worked as bleachers. Greenhalph's estate was valued at \$35,000, which indicates that he owned a substantial amount of land elsewhere.

The family had left the area by 1870, as the census of that year shows that Greenhalph and his family were residents of the town of Yonkers. The 1871 Findlay map depicts a small structure on the property (which is much smaller than that seen on the 1868 map) surrounded by fences on three sides and it does not attribute a name to the structure. The 1881 Bromley atlas (see **Figure 8**) depicts the property but again does not provide its owner's name, although the 1893 Bien map confirms that it was the owned or occupied by R. Bolton. In the 1870 census, Robert B. Bolton was living adjacent to James Williams, who

owned the home on Lot B (discussed below). Bolton worked in the Dye works and lived on the property, assessed at \$2,000, with his wife Lavinia, his young son, and an Irish domestic servant. James Bolton did have a son named Robert, but it is unclear if he is the same man or if it is another Bolton relative. No deeds were recorded to indicate the sale of land to Robert Bolton, so if he was James Bolton's son, it is possible that he inherited the land after James' death in 1869.

Robert Bolton is listed in historic directories dating between 1885 and 1887 as working in "bindings" at the Bronx River near Pelham Avenue (now the Bronx and Pelham Parkway) and residing in Bronxdale. The 1880 census lists Robert Bolton as the proprietor of the tape mills across the river from the project site and shows that he and his wife had two additional children. However, it is not clear if the Boltons still lived on the property. A directory dating to 1890 lists his profession as "linings" and notes that he worked at both the Manhattan office of the Bronx Company at 115 Worth Street and the Bronx office on Boston Road and shows that he lived near the Bronx River.

This property was not included within the initial plot of land confiscated for the establishment of the Bronx Park and was included in the park by 1906 (NYZS 1906). Robert Bolton was not recorded as a resident of the Bronx in the 1900 census and it is not known if anyone continued to reside in the home. The house was depicted on both the 1898 and 1908 Sanborn Insurance maps, which are identical and depict it as a 2-story brick or stone structure with no outbuildings. The 1900 topographic survey of the Bronx does, however, indicate that two small outbuildings were situated in the northeast corner of the property, adjacent to the fence marking the rear lot line. By the time of the publication of the 1914 Sanborn map, the buildings had been demolished and the property was incorporated into the Bronx Zoo.

LOT B

This property is depicted on the 1868 Beers atlas as one of three homes (including Buildings 12 and 13) owned by James Bolton, Senior. There are no indications that he ever lived on the property. The 1871 Findlay map is the first to associate an individual, J. Williams, with this home, which is depicted as a single structure bordered by fences on three sides. It is unknown who resided in the home prior to this, but it is likely that the occupants were mill employees and their families. The 1860 census suggests that an English shoemaker named William Thompson resided adjacent to William Greenhalgh with two men, James and Jonathan Thompson, who were possibly his brothers, a young boy named William Thompson who was likely his son, and Nancy, Eliza, Squire, and Jonathan Ridley, who ranged in age from 23 to 13 and only one of whom had an occupation listed: Squire, who was a carpenter. While it is not known for certain, it is possible that these individuals lived on this property in 1860. William Thompson was also recorded in the 1850 census with his wife Jane, and Nancy, Eliza, Squire, and John Thompson, and another English shoemaker named John Ellenthroess. The family is listed as living in one home with four other families, including a man named Robert Bolton, but not the same Bolton mentioned above. It is possible that in 1850 these individuals resided in a 4-family dwelling that was located in former Lot I, just outside the project site.

In 1868, James Bolton sold a tract of land to James B. Williams for \$1,500. The censuses of 1850 and 1860 shows that James Williams had been living in the home of his father, Nicholas, which appears to have been located several houses down the street on Lot E. By 1870, census records show that James Williams lived next to Robert Bolton. James was recorded as a store keeper and his wife, Mary, as keeping house. They lived with their infant daughter and a 15-year old woman named Hattie Wallen, who is not recorded as a domestic servant and her relationship to the Williams family is unknown.

The Williams' building is depicted on the 1881 Bromley atlas, but no name was attributed to it at that time. The 1893 Bien map shows it to be the property of J. Bolton. Three J. Boltons were recorded as Westchester residents in the 1880 census, none in the vicinity of Robert Bolton, who may have lived on lot A. Regardless of the tenant, the Williams family continued to own the land, as a deed was recorded in

1903 that transferred property from James and Mary Williams to William H. Birchall and Thomas Bolton, Junior.

This property was not included within the initial plot of land confiscated for the establishment of the Bronx Park and was included in the park by 1906 (NYZS 1906). It is not known if anyone continued to reside in the home after the Williams sold the property. The house was depicted on both the 1898 and 1908 Sanborn Insurance maps, which are identical and depict it as a 2-story brick or stone structure with a small wood frame outbuilding in the northwestern corner of the property. The 1900 Topographic survey of the Bronx indicates that up to 6 small outbuildings (3 of which were adjacent) were situated throughout the rear yard of the property. By the time of the publication of the 1914 Sanborn map, the building had been demolished and the property was incorporated into the Bronx Zoo.

LOT C

Like Lot B, Lot C was depicted on the 1868 Beers map as the property of James Bolton, Senior. Unlike Lot B, however, Lot C appears to have remained the property of the Bolton family and was leased to various tenants, mostly English immigrants who were employed at the bleachery, throughout most of the 19th century.

The 1860 census suggests that the house was occupied by Thomas Chaddock, a 42 year-old English watchman, who lived next door to the Thompson family who appear to have lived on Lot B. Chaddock lived there with his wife, Ann, sons William (who was employed as a dyer) and Jon (who was employed as a bleacher), and daughters Mary, Charlotte, and Sarah. The 1870 census shows that Thomas Chadwick (sic) and his family lived in the home next to James Williams. Despite the similarities in the name, this does not appear to be the same tenant as identified in the 1860 census. Thomas Chadwick was a 62 year-old dyer who shared the home with his wife, Hannah, sons William (also a dyer) and Thomas and daughter Adelaide (who worked in the paper mills).

Findlay's 1871 map labels the property (surrounded on three sides by a fence) and the brick house contained on it as "No. 1" of James Bolton's estate, suggesting that the map was drafted at the time that this lot (along with several others) were intended to be sold. An advertisement that was published in the *New York Times* in April, 1872 advertised the sale of James Bolton's properties including a store on Boston Road which was probably the one on Lots H and J, described below (*New York Times* 1872b). The home remained in the Bolton family, however, as it was purchased in 1871 by Ann Bolton, the wife of Thomas Bolton, Senior. The home is depicted on Bromley's 1881 map, but no name is attributed to it. Bien's 1893 map shows that the home was owned by the Bolton Estate and deeds show that Ann Bolton was still the owner. The 1880 census does not indicate who lived on the property at that time.

This property was not included within the initial plot of land confiscated for the establishment of the Bronx Park and was included in the park by 1906 (NYZS 1906). Although Ann Bolton died in 1882 (*New York Times* 1882), the property remained part of her estate until 1893, when her estate's executors (her children) formally put the property under their own names, William H. Birchall, Thomas Bolton, Junior, Henry B. Bolton, John W. Bolton, and Catherine Bolton. Several months later, Birchall purchased the property from his cousins. At that time, Birchall was purchasing large quantities of property in the area, mostly former parts of the Bolton estate. It is not known if anyone continued to reside in the home after this time.

The house was depicted on the nearly-identical 1898 and 1908 Sanborn Insurance maps, which depict it as a 2-story brick or stone structure with a large wood-frame outbuilding in the northwestern corner of the property, which is identified on the 1898 map as a "second class store or dwelling" and on the 1908 map as a barn or stable. The 1900 topographic survey of the Bronx indicates that 2 additional small outbuildings were situated throughout the rear yard of the property. By the time of the publication of the

1914 Sanborn map, the building had been demolished and the property was incorporated into the Bronx Zoo.

LOT D

The ownership history of Lot D is identical to that of Lot C. Lot D was labeled as Lot No. 2 on Findlay's 1871 map, and was sold from James Bolton's estate to Ann Bolton, then to her children, and finally to William H. Birchall in 1893. The two lots were sold together in all land transactions. Lot D was occupied by a single home, a two family house separated into western and eastern halves. The 1860 census suggests that the western half was occupied by Thomas King, an English math teacher, his wife Mary, sons George H. (a tailor), Edward, and William G. and daughters Mary A. and Martha J. The eastern half of the building was occupied by Abraham Hall, an English weaver, his wife, Hannah, son Samuel, and daughters Ellen and Hannah.

Findlay's 1871 map shows that the home was made of brick and was surrounded by a fence on three sides. The 1870 census suggests that only one family was residing in the house at that time, which could mean that the other half was vacant, but it is not known which half. The only family listed in the census between Thomas Chadwick and Nicholas Williams, who resided in the homes on Lots C and E on either side, was that of Abel Holt. Holt, an English printer, lived there with his wife, Nancy, and daughters Sandy, Sillie, and Kate.

The home is depicted on Bromley's 1881 map, but no name is attributed to it. Bien's 1893 map shows that the home was owned by C. Bolton, possibly Ann Bolton's daughter Catherine who had inherited the land with her brothers. A woman names Cassie Bolton was recorded as living with her mother, Ann, in the 1880 census, however that census does not clearly indicate who lived on Lot D.

This property was not included within the initial plot of land confiscated for the establishment of the Bronx Park and was included in the park by 1906 (NYZS 1906). The house was depicted on both the 1898 and 1908 Sanborn Insurance maps, which depict the double house as a 2-story brick or stone structure. A small wood-frame outbuilding is depicted in the northwestern corner of the property on the 1898 map but it is not depicted on the latter map. The 1900 Topographic survey of the Bronx depicts one large and one small outbuilding in the center of the rear yard and an additional small structure in the front yard of the eastern half of the building. By the time of the publication of the 1914 Sanborn map, the building had been demolished and the property incorporated into the Bronx Zoo.

LOT E

Lot E was depicted on the 1868 Beers atlas as the property of J. Williams. The 1860 census suggests that the building was occupied by the father of James B. Williams, Nicholas, an English tape manufacturer who lived there with his wife, Sarah, son James, daughters Ann E. and Adeline, and an Irish domestic servant. His real estate was valued at \$1,600 (only slightly more than James paid for a nearby piece of land 17 years later) and his personal estate at \$5,000. A deed recorded in 1851 showed that Sarah Williams had purchased land from James Bolton.

This property was depicted on Findlay's 1871 map as the property of N. Williams. It is depicted on that map as containing a house adjacent to the western property line that was surrounded by a fence on three sides. Williams appears to have continued to have lived on the property through the 1870 census, in which he is listed as a retired manufacturer. His wife Sarah and daughter Ann were still members of his household, as were Charles and Marya Hitchcock. Charles Hitchcock is listed as a storekeeper.

The home is depicted on Bromley's 1881 map, but no name is attributed to it. Bien's 1893 map depicts a building in the area of Lot E, but also does not name its owner while Nicholas Williams is referred to as the owner of a building further north. However, Bien's map does not appear to accurately depict the

placement of individual structures. The 1880 census does not clearly indicate who lived on Lot E at that time.

This property was not included within the initial plot of land confiscated for the establishment of the Bronx Park and was included in the park by 1906 (NYZS 1906). The property was sold by Sarah and Nicholas Williams to James B.W. Logan in 1903. It is not known if anyone continued to reside in the home after that time and the 1900 census does not indicate who resided there.

The house was depicted on both the 1898 and 1908 Sanborn Insurance maps as a 2-story brick or stone structure (though the latter map notes that it had an attic). A large wood-frame outbuilding is depicted as a “second class store or dwelling” in the northeastern corner of the property on the 1898 map but it is not depicted on the 1908 map. The rear yard structure is also depicted on the 1900 topographic survey. By the time of the publication of the 1914 Sanborn map, the building had been demolished and the property incorporated into the Bronx Zoo.

LOT F

Lot F was depicted on the 1868 Beers atlas as the property of Thomas Bolton, Senior, but no building was located on the lot at the time. This property was depicted on Findlay’s 1871 map as the property of T. Bolton. It is depicted on that map as containing a brick house surrounded by a fence on three sides.

Because no structure was located on the property in 1868, it is difficult to trace the property history using census records. The family listed after Nicholas Williams in the 1860 census was that of John Scowcraft, an English dyer who lived there with his wife, Sarah, daughter Mary as well as James King, a bleacher, and his wife Mary, and one Irish domestic servant. In the 1870 census, the Scowcraft family appears after both Nicholas Williams and Henry B. Bolton. The 1868 Beers map shows that Bolton resided in the home across the street from Thomas Bolton’s empty lot. Therefore, it appears that the census taker in 1870 first visited Williams’ house, then crossed Boston Road to visit Henry B. Bolton’s home, but it is not clear if the Scowcraft home was located next to Williams’ home or Bolton’s. The 1870 census indicates that the family of John Scowcraft resided there. The household contained John Scowcraft, Senior, employed as a dyer, wife Mary, daughter Mary, son John, and daughter Phoebe. However, it is also possible that this family lived on the property to the east of Henry B. Bolton’s land, which was owned by his brother, Thomas Bolton, Junior (discussed below).

Lot F is once again depicted as an empty lot on Bromley’s 1881 atlas. Bien’s 1893 map depicts a building in the area of Lot F but also does not name its owner and appears to include an extra structure in its vicinity which does not appear on any other maps and appears to be an error. The 1880 census does not clearly indicate who lived on Lot F.

This property was not included within the initial plot of land confiscated for the establishment of the Bronx Park and was included in the park by 1906 (NYZS 1906). The house was depicted on both the 1898 and 1908 Sanborn Insurance maps, which depict the house as a square, 2-story dwelling and the latter map notes that it had a basement. A small square outbuilding is depicted approximately 10 to 15 feet behind the house on both maps. The 1900 topographical survey depicts 5 small outbuildings scattered throughout the rear yard. By the time of the publication of the 1914 Sanborn map, the building had been demolished and the property incorporated into the Bronx Zoo.

LOT G – BRONXDALE M.E. CHURCH

Lot G was formerly occupied by a Methodist Episcopal (M.E.) church, referred to as either the Bronxdale M.E. Church or, later, the Centenary M.E. Church. The congregation was established on the Bolton property in the early 1830s. James Bolton’s great-grandson, John Henry Myers, wrote in 1940 that Methodism in Bronxdale began in 1831 when a room in a 2-story (with basement) frame building referred

to as “the Soldier’s Barracks” near the “present” (in the 1940s) location of the mill office was used to hold religious services; however as both the Bronxdale and West Farms locations of the bleachery had closed by that time, it is unclear to what location Myers was referring and the original church may have been located near the bleachery’s second location in West Farms. Eventually, the congregation moved into a room in James Bolton’s home and then into an unused wheelwright’s shop which they referred to as “Little Trinity” (Myers 1940).

A deed was recorded in 1842 in which the Trustees of the Methodist Parsonage of Bronxdale (which included Thomas Bolton) granted a plot of land to Thomas Bolton. The deed states that the land had been granted to the trustees by Andrew Findlay, the maker of the 1871 map of Bolton’s property and also a Westchester Justice of the Peace, in 1837. The land is described as being along the Boston Post Road between the lands of the late Oliver DeLancey, James Bolton, and Henry Turner, suggesting that it was along the southern side of the Boston Road.

In 1866, James Bolton sold a plot of land along Boston Road later known as Lot G at the eastern end of the project site to the trustees of the M.E. Church (which included Thomas Bolton Senior and Junior, Nicholas Williams, John Scowcraft, Morrison Beardsley, Robert Bolton, and James B. Williams, all of who lived in nearby homes) in exchange for five dollars. The church was constructed soon after and dedicated by 1867 (Myers 1940). Thomas Bolton, Senior, was an important member of the congregation as was his son, Thomas, who served as the church’s organist for many years (Bolton 1972). In 1880, the minister at the church was Reverend James Kay, who also worked as an engineer at the bleachery. Kay was recorded in the 1880 census living in the vicinity of Robert and Henry Bolton and he may therefore have lived in one of the nearby homes.

The church is depicted on all late-19th century maps and the 1871 Findlay map shows that its footprint was an irregular polygon. The 1898 Sanborn atlas depicts it as L-shaped, likely as a result of a schoolroom that was added to the rear of the church in 1881 (Bronxdale Scrapbook 1881-90). The schoolroom is more clearly delineated on the 1908 Sanborn and the 1900 Topographical map refers to the church as “Centenary M.E. Church.” The church was not included within the initial plot of land confiscated for the establishment of the Bronx Park and was included in the park by 1906 (NYZS 1906). The property was expected to fetch a “handsome price” from the City upon the condemnation of the land (*New York Tribune* 1906a: B3). It stood on the grounds until 1910 (Bronxdale Scrapbook 1881-90).

LOTS H AND J

Lots H and J are two separate properties (Lot H borders Boston Road and Lot J is its rear yard), although not all maps appear to differentiate between them. The western halves of these lots including portions of the structures within them appear to be included within the project site. Lot H included barns and a stable that were situated on the southern side of the Boston Road. These are also depicted on the 1868 Beers atlas but they appear to be part of the property to the west, which was owned by Thomas Bolton. Maps show that Lot J contained a large stable, which may have been the large barn/stable associated with the main Bolton home which as mentioned previously, was located at a significant distance to the southeast of the house.

The 1868 Beers atlas depicts the lots as part of a larger property owned by James Bolton, Senior, which at that time contained three buildings, one of them a store. The structure depicted in the southwestern corner of the lot, closest to the project site, is attributed to I. Entwistle. James Bolton leased this property to Isaac Entwistle and Robert Greenhalgh in 1864. The deed that recorded the transaction stated that before this lease, the property, which also contained a barn and a stable, was used as a house and grocery store by John Hitchcock. The barns and stables appear to have been located on the opposite side of Boston Road, as depicted on the 1871 Findlay map. The property was again leased to John Hitchcock in 1868 though the deed, which lists Entwistle as the occupant, was recorded in 1869.

The 1860 census suggests that Entwistle and Greenhalgh (spelled Endusill and Greenhalch) were neighbors and lived in the vicinity of the Thwaites and Smith families, which suggests that they resided to the northeast of the project site. Greenhalgh's residence is depicted on the 1868 Beers map opposite John Hitchcock's residence at a significant distance to the east of the project site. The men were listed in the census as a bleacher and a mill wright, respectively, and neither was identified as store owners or grocers. Jonathan Hitchcock, however, does appear in the 1860 census as a grocer and appears to have lived closer to the location of the store and may have resided on Lots H and/or J. Hitchcock lived with his wife, Hannah, sons Jonathan (a clerk, presumably in his father's store), Charles, and Lewis, and a domestic servant and a laborer.

Lots H and J were among those sold in after James Bolton's Death and J are described on Findlay's 1871 map as Lots 4 and 5, respectively. That map shows that Lot J was vacant and bordered by a board fence while Lot H was occupied by the large brick store. A classified advertisement published in the *New York Times* in 1872 lists the sale of the store property as well as the adjacent land on both sides of Boston Road (*New York Times* 1872b). The article notes that the store was occupied by John Hitchcock. However, no one by that name was listed as a resident of the Town of Westchester in the 1870 census. Like Lots C and D, Lots H and J were transferred from James Bolton's estate to Ann Bolton in 1872.

An article published in the *New York Times* in 1872 reported that a Bronxdale grocery store owned or operated by Mott Beardsley burned down (*New York Times* 1872c). While it is not clear if this was the same store (the Beers map of 1868 shows that another store was located to the east near the intersection of Boston Road and the Road to Lorillard's snuff mills), a man named Mott Beardsley was recorded in the 1870 census in the vicinity of the other individuals mentioned above although he is listed as working in a milling house, not a store. He is listed in the 1880 census as Morrison Beardslee, a machinist and also appears by that name in the list of trustees of the nearby M.E. Church.

However, it does not appear that Beardsley operated the store for very long as another *New York Times* article from 1874 reported that a wood-frame building used as a country store and dwelling by John Livingston and owned by Thomas Bolton had burned down (*New York Times* 1874a). It is no doubt that this building was on Lot H, as it is described as being adjacent to both the M.E. church and a 4-family tenement (depicted to the east of Building 17A on Findlay's 1871 map), which both sustained damages from the fire. Another article published in the same paper and on the same day noted that the upper floors of the grocery store were used as club rooms (*New York Times* 1874b). A grocer named John Livingston was recorded in the 1880 census as a Westchester resident who lived with his wife, son, and adopted daughter; he is listed after Robert Greenhalgh and before Henry Turner. Census records from 1870 also show that he was working as a grocer in the nearby village of West Farms. He and his family lived on White Plains Road by 1900, according to the census of that year.

It was said that Livingston's grocery store was where mail riders and stage coaches on the Boston Post Road stopped to change horses (*New York Tribune* 1906a). Other sources state that the horses changed at Johnson's Tavern, just north of Lydig's mills (Kelly 1909). It is not clear if the tavern and the grocery store were one and the same.

The store is depicted on Bromley's 1881 map, but no name is attributed to it. Bien's 1893 map depicts a building in the area but also does not name its owner. Like Lots C and D, these lots were also transferred from the executors of Ann Bolton's estate to William H. Birchall in 1893. These properties were not included within the initial plot of land confiscated for the establishment of the Bronx Park and were not included in the park until 1906.

The store on Lot H was depicted on both the 1898 and 1908 Sanborn Insurance maps as a double 2-story dwelling separated into eastern and western halves while Lot J was depicted as containing a large stable which is labeled on the latter map as vacant. The 1900 topographical survey depicts two small

outbuildings in the rear the building on Lot H, one of which may have been situated partly within the project site, although the building itself appears to have only bordered the project site. By the time of the publication of the 1914 Sanborn map, the building had been demolished and the property was incorporated into the Bronx Zoo.

THOMAS BOLTON, JUNIOR PROPERTY

This property appears on the 1868 Beers atlas on a triangular plot of land developed with two structures, the easternmost of which appears to be the aforementioned barn and/or stable across the street from Lot H. The Beers atlas identifies the land as the property of T.B., presumably Thomas Bolton Junior, as his father is referred to on the map as "T.B. Sen." The 1871 Findlay map which depicts the barns on the eastern portion of the property does not depict the main structure on this property in its entirety, but does depict the northeastern corner of the brick-front building and also indicates that it was owned by Thomas Bolton. It is depicted on Bromley's 1881 map, but no name is attributed to it and the barns to the east are not shown. Bien's 1893 map is too inaccurate in this area to identify the presence of this building.

It is not possible to determine the occupants of this home based on the order of census records, although it is possible that the Scowcraft family referred to earlier lived here. As stated earlier, Thomas Bolton, Junior appears to have lived with his father in the double-home on the northern side of the Boston Road at the shore of the Bronx River.

This property was included within the initial plot of land confiscated for the establishment of the Bronx Park but the building was not torn down immediately. It appears on the 1898 Sanborn Insurance map directly opposite the M.E. Church, as it appears on both the 1868 Beers and 1871 Findlay maps. However, the 1898 Sanborn map indicates that this building was situated extremely close (approximately 5 feet) to Henry B. Bolton's dwelling located directly to the west. The 1868 Beers atlas suggests that there was more space between the two buildings. The structure is not depicted on either the 1900 topographical survey or the 1908 Sanborn map. The property is now situated under the current Bronxdale Parking Lot.

HENRY B. BOLTON HOME

This building appears on the 1868 Beers atlas as a large house owned by H. Bolton, referring to Thomas Bolton, Senior's second son, Henry B. Bolton. The home is depicted on Bromley's 1881 map, but no name is attributed to it. Bien's 1893 map is too inaccurate in this area to identify the presence of this building. The home appears on the 1898 and 1908 Sanborn maps as a large, 2-story dwelling, one half of which had an attic. The latter map appears to be in error, however, as the structure appears to have been demolished on the 1900 topographic survey.

Census records seem to indicate that Henry B. Bolton resided in this home, although no conveyance records could be located to confirm that he owned the property. A lease was recorded showing that Ann Bolton leased property to Henry Bolton in 1882, and it is possible that Ann and/or Thomas Bolton were the property's actual owners.

Henry B. Bolton appeared in the 1860 census next to the home in which his nieces and nephews, the children of Thomas Bolton, Junior, were living, although Thomas himself lived elsewhere. Bolton, who is listed as a manufacturer of muslins and who lived only with his wife, Sarah, also resided near Morrison Beardsley, who is discussed above. In the censuses of 1870 and 1880, Henry and Sarah are recorded in the same neighborhood. They had no children, but lived with a domestic servant. At the time of his death in 1895, Bolton was living in a home on 175th Street in West Farms (*New York Times* 1895).

This property was included within the initial plot of land confiscated for the establishment of the Bronx Park but the building was not torn down immediately. It appears on the 1898 Sanborn Insurance map approximately 5 feet to the east of the dwelling owned by his brother, Thomas (discussed previously).

While this building does not appear on the 1900 topographic survey, the 1908 Sanborn map suggests that it was still standing. The latter map depicts the home as a 2-story dwelling.

The Annual Report of the New York City Parks Department for 1900 showed that Henry B. Bolton's house was 2.5 stories, measured 24.8 by 28.8 feet with a 15 by 20 foot extension on the east side, a veranda in the rear, and a water closet (Carlson 1955). These measurements do not match the 1898 Sanborn map exactly, but the eastern extension and rear veranda are both present on the map. The home may also be the structure depicted on Hornaday's map of the zoo drawn in 1907 (published 1915) on the southern side of Boston Road near the eastern edge of the park. This may also be the 19th century Bolton home mentioned in LPC's 1990 archaeological analysis of the Bronx Zoo. Unlike the remainder of the structures in the project site, this structure is depicted on the 1914 Sanborn map, to the east of a small lane that led to the Zoo's nursery to the south. The house was still standing in 1950, as seen on a Sanborn map of that year; however, it had been demolished by the time of the publication of the 1977 Sanborn map. It appears that it was demolished around the same time that the Bronx River Expressway and Bronxdale Parking Lot were constructed through the eastern side of the zoo.

TURNER HOME

The 1868 Beers map depicts a large estate to the south of the Boston Road on the eastern shore of the river that the map indicates was the property of "Mrs. Turner." This building is also depicted on the 1853 O'Connor map, which shows that the home was approached by a small road that connected to the Boston Road. However, that map also indicated that it was part of the property of the tape factory across the River. There is no evidence that this home was ever associated with the tape mill. The 1860 census shows that a woman named Hannah Turner, a relative named Mary, her children Jane, Henry (a carpenter), James (a painter), Joseph (a carpenter), Mary, William, and Ellen, as well as two boarders who worked as a blacksmith and an engineer, lived on the property. Turner's estate was valued at \$4,000.

No members of the Turner family were recorded as residents of the Town of Westchester in the 1870 Census. The Turner family is listed as the owners of the building on the 1881 Bromley atlas.¹ Henry Turner and his family, including wife Mary, and children Sarah, Nellie, Lettie, Clara, Henry, and Joseph, appear to have continued to reside in the house and are listed in the 1880 census in the same neighborhood as Henry B. Bolton and John Livingston, who have been discussed previously.

No historic deeds could be located which clearly referred to this property. It is possible that the property remained in the hands of the Turner family for many generations. As mentioned previously, Nicholas Brouwer conveyed some land to Daniel Tournier in the early 1700s. A Supreme Court case from 1853, *Thorp v. Raymond*, involved a lawsuit over a piece of property in the vicinity of the former DeLancey's Mills. Thorp's great-great-grandfather had been Nicholas Brouwer. In 1801, a woman named Hannah Turner (who could not have been the one listed as age 50 in the 1860 census, as she would have been born circa 1810) granted land to Oliver DeLancey even though she was legally insane and under coverture (meaning she could not sell her property without the consent of her husband or his heirs). Raymond's counter argument was that Oliver DeLancey had owned the land before 1801, as he had leased a portion of it to James Bathgate, who owned a lot of property in the area and is often recorded adjacent to or near Oliver DeLancey in early census records. The property was later conveyed to David Lydig. The Court ruled in favor of Raymond as the statute of limitations had run out (Williams 1901). While this case may not refer to the property located within the project site, it does indicate that the Turner family had maintained a long presence in the area.

¹ The plate depicting the entire town of Westchester in the 1881 Bromley atlas indicates that the Turner family continued to own the building. However, the plate depicting only the village of Bronxdale, included in this report as **Figure 9**, shows the building but does not provide the name of the owner.

I. PREVIOUSLY IDENTIFIED HISTORIC PERIOD ARCHAEOLOGICAL SITES

File searches at SHPO and LPC indicate that no previously identified historic period archaeological sites have been identified within one mile of the project site.

A. CONCLUSIONS

As part of the background research for this Phase 1A Archaeological Documentary Study, various primary and secondary resources were analyzed, including historic maps and atlases, historic deeds, historic photographs, newspaper articles, local histories, census records, and historic directories. The information provided by these sources was analyzed to reach the following conclusions:

DISTURBANCE ASSESSMENT

In its assessment of the property in 1990, LPC determined that the area was “generally undisturbed and considered to be archaeologically sensitive” (LPC 1990: 23). The project site has experienced some disturbance as a result of grading, filling, and paving associated with the establishment, development, and maintenance of the Bronx Zoo. In addition, disturbance occurred as a result of the construction of major parkways in the area, including the Bronx and Pelham Parkway to the north and the Bronx River Parkway to the east.

EASTERN PORTION OF THE PROJECT SITE

Minimal development has occurred in the area now occupied by the Bronxdale Parking Lot (the eastern portion of the project site). The topographic survey of 1900 shows that the elevation of the area at the beginning of the 20th century was at approximately 30 feet above sea level and sloped upward to the east. Current topographic information shows that the elevations are approximately the same, although some disturbance would have occurred as a result of grading and paving associated with the construction of roads and pathways. The slope at the eastern end of the parking lot, bordering the Bronx River Parkway, is much steeper and it is likely that this area was built up as part of the construction of the Parkway. The construction of a casting pool on the western side of the parking lot may have resulted in additional disturbance. It is not clear how deep the pool was or if land was excavated for its construction. The area to the north of the casting pool would have experienced some disturbance when the new Boston Road Bridge was constructed and the road realigned. Finally, stormwater catch basins, fire hydrants, manholes, and electric lighting show that some utility lines run under the parking lot. The only utilities visible on historic maps are water lines in the beds of the Boston Road and the Bronx and Pelham Parkway which first appear on the 1908 Sanborn map. Such utility lines may have disturbed up to 5 feet of soil underneath portions of the parking lot.

In the northern portion of this half of the project site, few utilities appear to be present. Stormwater catch basins are located in the Boston Road and at the southern end of the overflow parking area. In the vicinity of the eco-restroom, which has a basement, storage tanks were visible. Finally, a large pipe was visible in the area of the Mitsubishi Riverwalk, from which water poured out into “Turtle Town.” Portable lighting is used in that area and overhead power lines are present, suggesting that no subsurface electric lines are present in this area. However, as stated above, this area was transformed by multiple episodes of grading and filling during the early 20th century. The 1900 topographical survey shows that the northeastern portion of the area was located at approximately 50 feet above mean sea level and it sloped downward to the west toward the river (USGS maps dating to 1891 and 1900 suggest that this area was between 40 and 50 feet above mean sea level, but the 1900 topographic survey seems to be more accurate). The 1908

Sanborn map shows that in the vicinity of Lots A through H and J, the Boston Road sloped upward from 32 feet to 40 feet above sea level between the Bronx River and the eastern end of the project site.

Other late 19th and early 20th century topographic maps (including USGS maps from 1891, 1897, and 1900 and Bien and Vermule's 1891 topographic atlas) show that there was another elevated area in the northwest corner of the project site that reached a height of approximately 60 to 80 feet above sea level. This is likely the rock outcrop that is currently situated in the project site and which reaches heights of 60 to 70 feet. However, the elevations in the vicinity of the Mitsubishi Riverwalk are between 40 and 60 feet suggesting that the area in the vicinity of the "scenic overlook" to the east of the waterfalls has been elevated with landfill. Therefore, it appears that the original slopes are present in the vicinity of Lots A through H and J and in the northwestern portion of the project site in the vicinity of some of the buildings of the Bolton bleachery.

WESTERN PORTION OF THE PROJECT SITE

The streetbed of Boston Road has been disturbed as a result of the installation of utilities, grading, and paving. Current site surveys depict water, gas, sewer, electric, and telecommunications lines running through the entire length of the streetbed. To the west of the road, some areas have been disturbed as a result of the construction of buildings, parking lots, or roads/pathways. Less disturbance has been documented to the east of the road, where surface topography has remained largely consistent since the late-19th century. With the exception of the existing monorail and a small animal shelter, no development has been documented in this portion of the Zoo. Utility lines are present within the streetbed and in some locations, these lines continue east of the existing road (see **Figures 2B** and **2C**).

PRECONTACT SENSITIVITY ASSESSMENT

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 in the vicinity of the project site became an important 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 as 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 their 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 (Boesch 1996). The project site is situated in a hilly area adjacent 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. Boesch (1996) stated that such types of sites should be expected within the grounds of the Zoological Park.

EASTERN PORTION OF THE PROJECT SITE

Native American sites are often found at generally shallow depths, usually within 5 feet of the precontact ground surface. The landscape of the project site has undergone many alterations which have occurred over the last two centuries, including the rerouting of the Bronx River, the construction of buildings used for industrial and domestic purposes, the installation of utilities, the construction of paved roads and highways, the casting pool, and the Bronxdale Parking Lot as well as the documented filling and grading of the site. LPC did not identify the project site as one with more than "zero to minimal sensitivity" for precontact archaeological resources (LPC 1990: 26). Therefore, the eastern portion of the project site is determined to have low sensitivity for undisturbed precontact period archaeological resources.

WESTERN PORTION OF THE PROJECT SITE

While some areas of the western portion of the project site have been disturbed as a result of the construction and pavement of Boston Road and facilities associated with the Zoo, portions of the area to the east of Boston Road do not appear to have been disturbed. Two areas of precontact archaeological sensitivity were identified to the east of Boston Road during LPC's 1990 survey of the Zoo. One of these areas was located to the east of the southern end of the project site, opposite the existing parking lot. 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). The remainder of the Zoo property was identified as having either no archaeological sensitivity or low archaeological sensitivity.

Therefore, the level (slopes less than 10 to 12 percent), undisturbed areas to the east of Boston Road are determined to have moderate sensitivity for precontact archaeological resources. The streetbed and areas to the west are determined to have low sensitivity for precontact archaeological resources.

HISTORIC SENSITIVITY ASSESSMENT

EASTERN PORTION OF THE PROJECT SITE

The eastern 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. 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.

In the location of the former Bolton estate, little disturbance has been documented in the northern portion of the estate, where the main Bolton homestead and some of the factory buildings were located. At least one of the factory buildings may have been situated in the location of the scenic overlook to the east of the falls, which appears to have been altered through landfilling and paving. There does not appear to have been significant disturbance in the vicinity of the home of Thomas Bolton, Senior, as well. Little disturbance is also documented in the area where the structures on former Lots A through H and J once stood. 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.

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. Typically, wells or cisterns were located reasonably close to a house for use in washing or cooking, while privies were often situated further away from the house for sanitary and privacy purposes (Wheeler 2000). Portions of these shaft features are often encountered on residential lots because they are located at great depths and are often undisturbed by subsequent construction. Cisterns and privies have been identified at depths of 10 to 15 feet below grade (Cantwell and Wall 2001). Wells would have been excavated to the depth of the water table.

Within the parking lot to the south of the Boston Road, some disturbance would have occurred as a result of the lot's construction. However, it is possible that structural remnants and complete or truncated domestic shaft features associated with the homes of Henry B. Bolton and Thomas Bolton, Junior, could be present beneath the surface of the parking lot. Finally, the former Turner home is also present beneath the parking lot, though archaeological resources associated with it may have been disturbed during the construction of the casting pool that was located in the area in the mid-20th century.

Therefore, the project site is determined to have moderate to high potential for the recovery of historic archaeological resources related to the 19th century industrial and residential occupation of the area. As

the village of Bronxdale was mostly inhabited by working-class English immigrants employed by the Bolton bleachery, archaeological resources dating to the 19th century could provide substantial insight into the lives of working class English immigrants as well as the wealthier residents of the area, the Bolton family. Finally, additional information about 19th century industrial practices could also be obtained through the excavation of the former bleachery building sites. If the remains of the bleachery, worker's housing, and home of the wealthier citizens can be identified and investigated, such resources could provide substantial insight into the interaction between the working and upper classes and how they related to the industry that supported this community.

LPC's 1990 assessment of the Bronx Zoo property identified several areas of potential archaeological resources. They identified an old stone wall on the eastern side of Lake Agassiz, a cement/stone fence wall running north from the Boston Road Bridge, and deposits of coal, ash, and glass fragments on trails through the area. None of these, with the exception of the cement wall running north from the bridge, were identified on the site during a site walkover conducted as part of this archaeological assessment. It is possible that these were obscured by vegetation. LPC also noted the original Boston Road Bridge abutments, which are still present within the project site, and the site of a 19th century house, presumably that of Henry B. Bolton, that had been located in the area now occupied by the Bronxdale Parking Lot.

WESTERN PORTION OF THE PROJECT SITE

In their 1990 survey of the Bronx Zoo, LPC 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. Areas to the east and west of the existing road have steep slopes or rock formations. No historic structures or other development have been documented within this portion of the project site, which was occupied by Boston Road throughout almost all of the historic period. As a result of the extensive disturbance that has occurred within the roadbed since the 20th century, the Boston/Jungle World Road portion of the project site is determined to have low archaeological sensitivity.

Some areas to the east of the roadbed do not appear to have been disturbed. However, portions of the project site to the east of the roadbed have steep slopes and exposed bedrock. Those areas within the western portion of the project site that are east of the existing utilities, generally level, and do not have exposed bedrock are therefore determined to have low to moderate sensitivity for historic period archaeological resources.

B. RECOMMENDATIONS

Phase 1B archaeological testing is recommended in those areas within the eastern portion of the project site that appear to be undisturbed or are situated below disturbed levels (i.e. below the Bronx River Parking Lot) and that would be impacted by the proposed project (see **Figure 15**). Within the western portion of the project site, Phase 1B archaeological testing is recommended in undisturbed, level areas to the east of the streetbed of Boston/Jungle World Road (see **Figures 16A** and **16B**). The Phase 1B archaeological testing would be completed in advance of construction in order to determine the presence or absence of archaeological resources within the project site.

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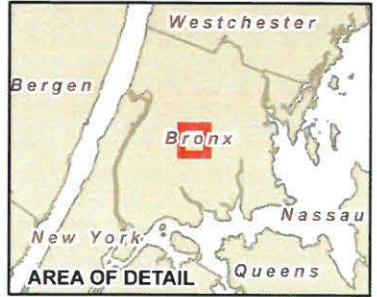
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Figures

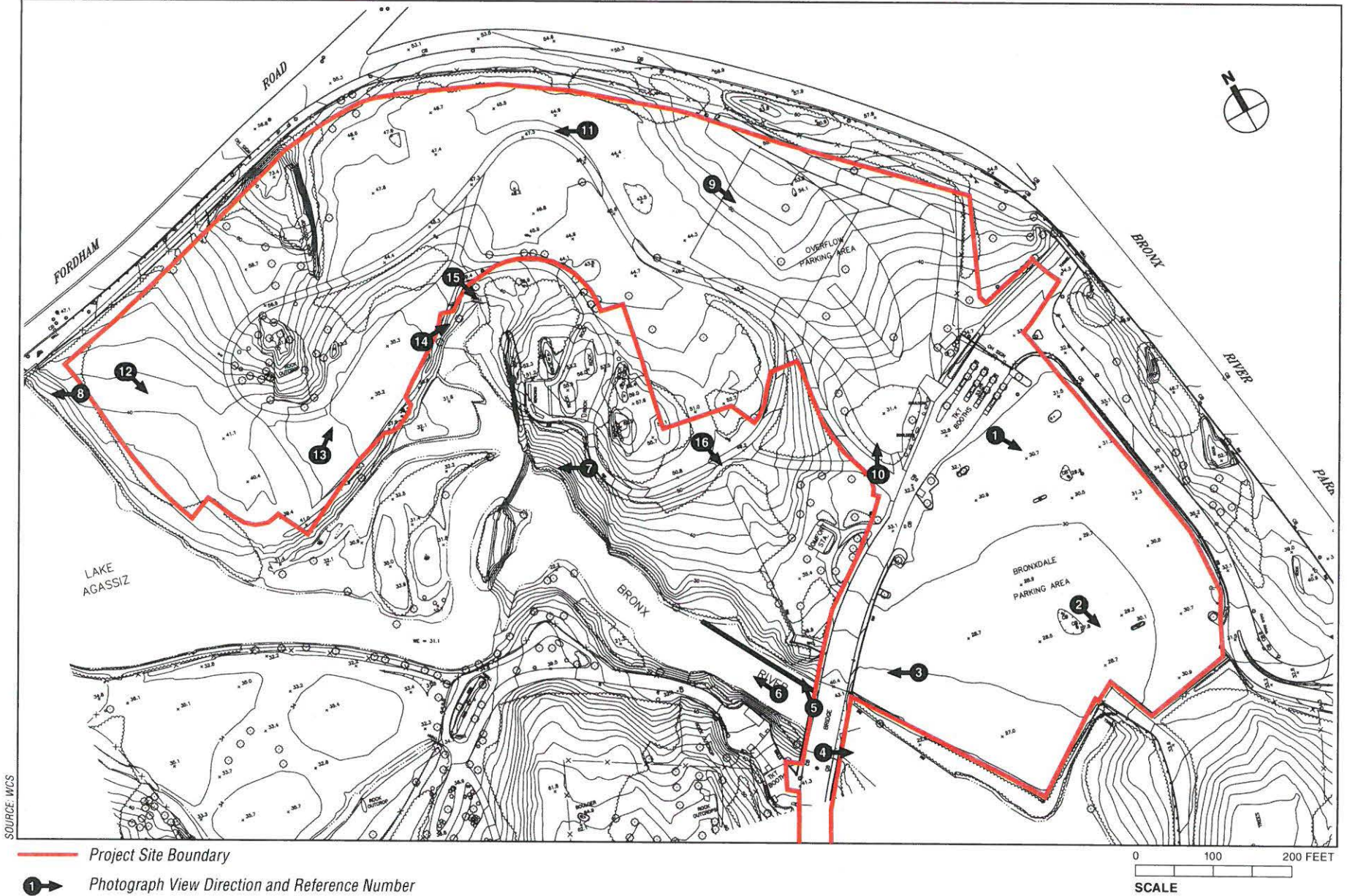


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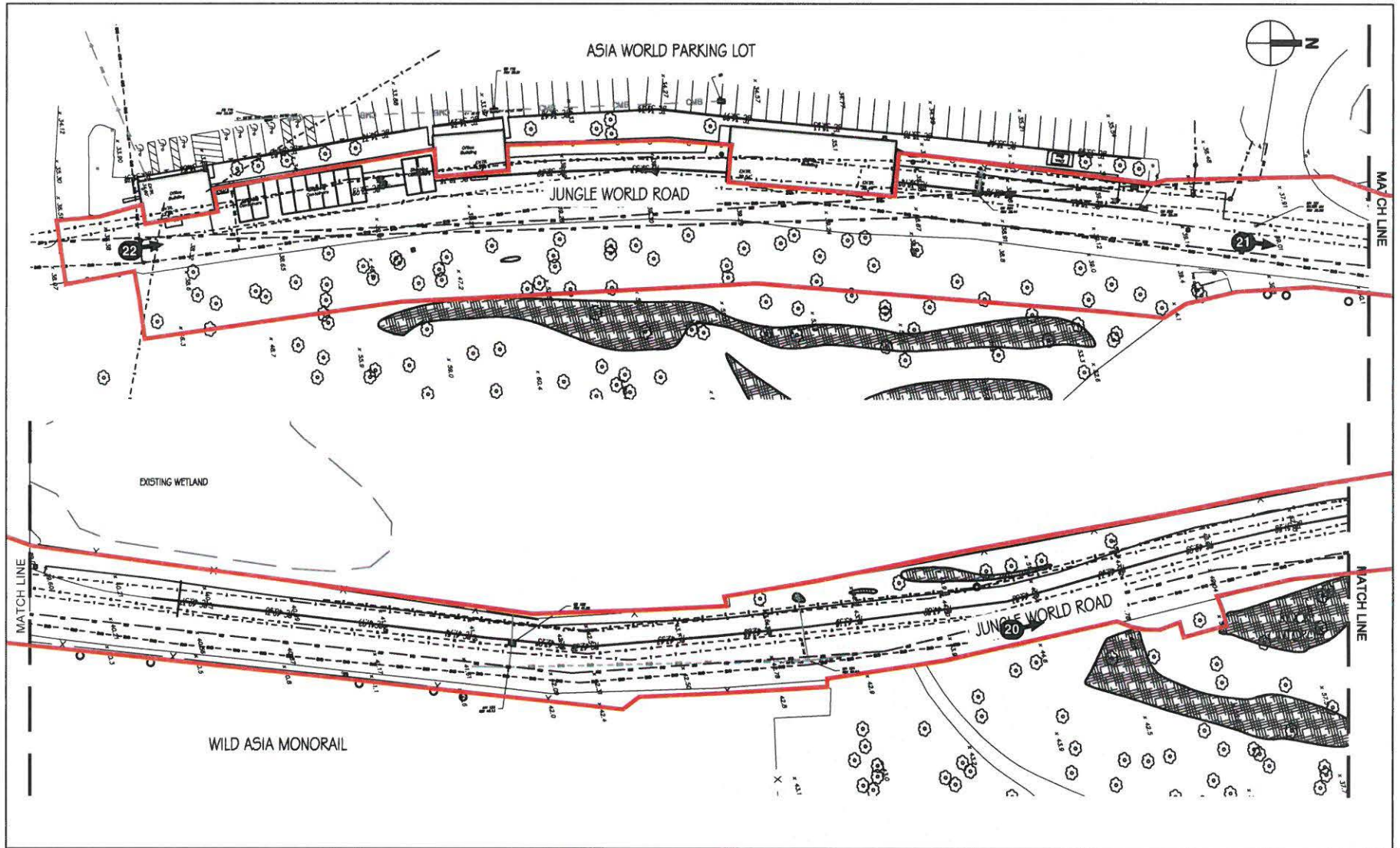
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SCALE



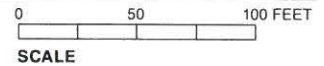
USGS 7.5 Minute Topographic Map -
Flushing and Central Park Quads
Figure 1



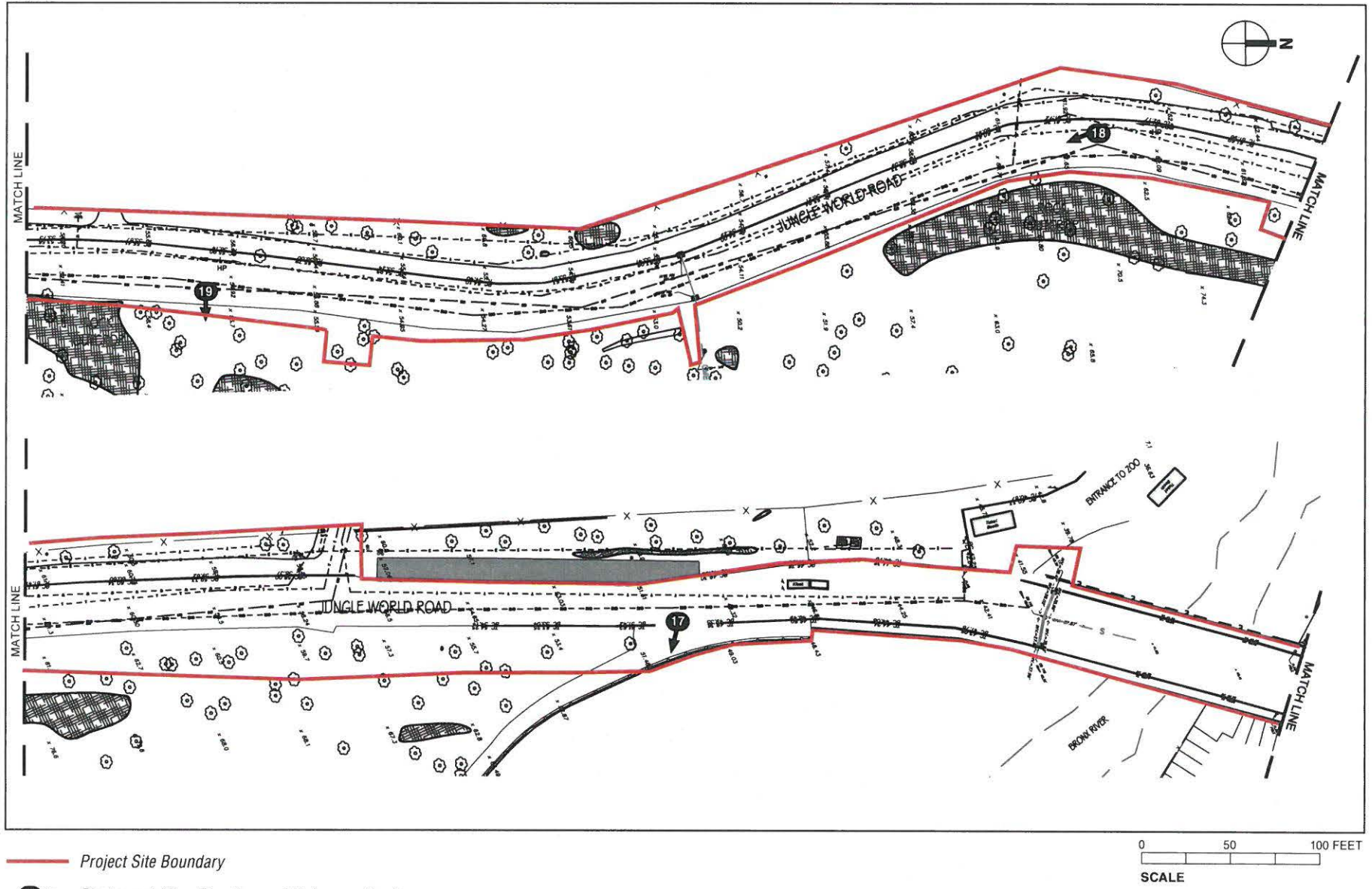
Existing Conditions of the Eastern Portion of the Project Site
Figure 2A



-  Project Site Boundary
-  Photograph View Direction and Reference Number



Existing Conditions of the
Southern Half of Jungle World Road
Figure 2B



Existing Conditions of the
Northern Half of Jungle World Road
Figure 2C



- Project Site Boundary
- Modern Bronx River Shoreline
- Modern Street Lines

NOTE: Map georeferenced using ArcGIS and AutoCad map Software. There may be a margin of error of approximately 10 to 5- feet. Green line shows the original park boundaries

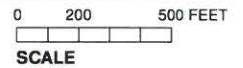
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Topographical Survey and New Street System of Borough of the Bronx, Easterly of the Bronx River, 1900

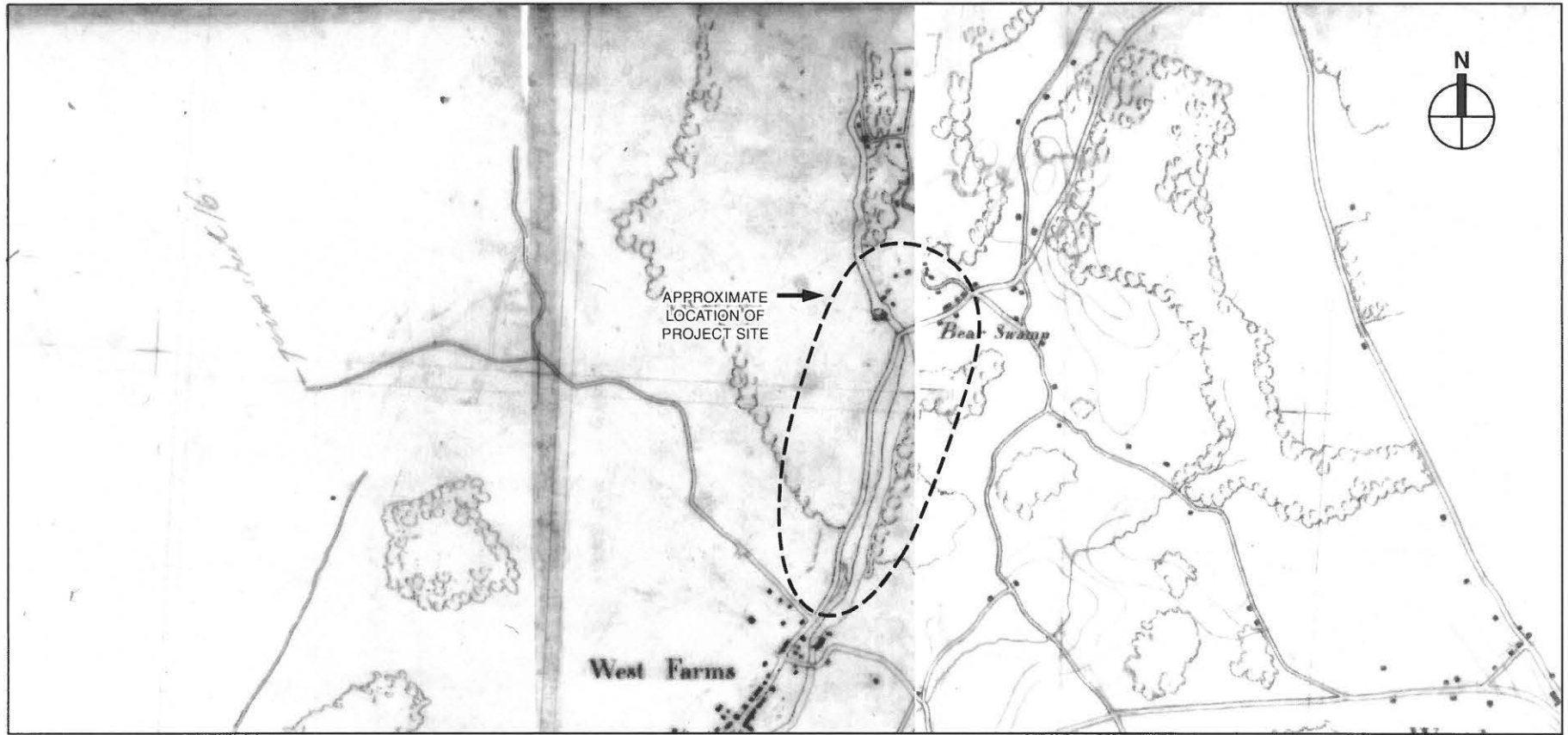
Figure 3



- Project Site Boundary
- Modern Shoreline

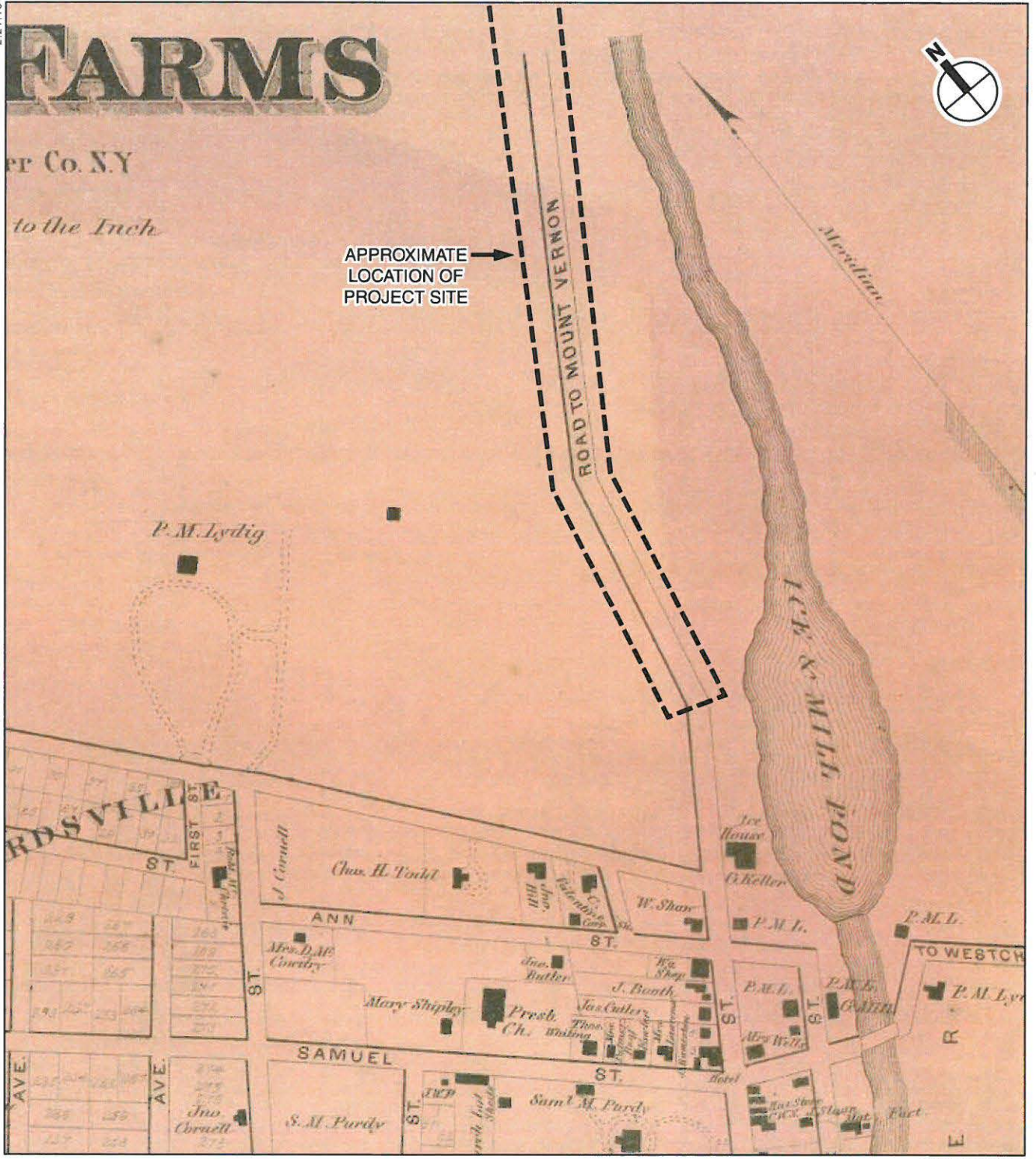


New York Topographical Bureau, 1895 Map
Figure 4



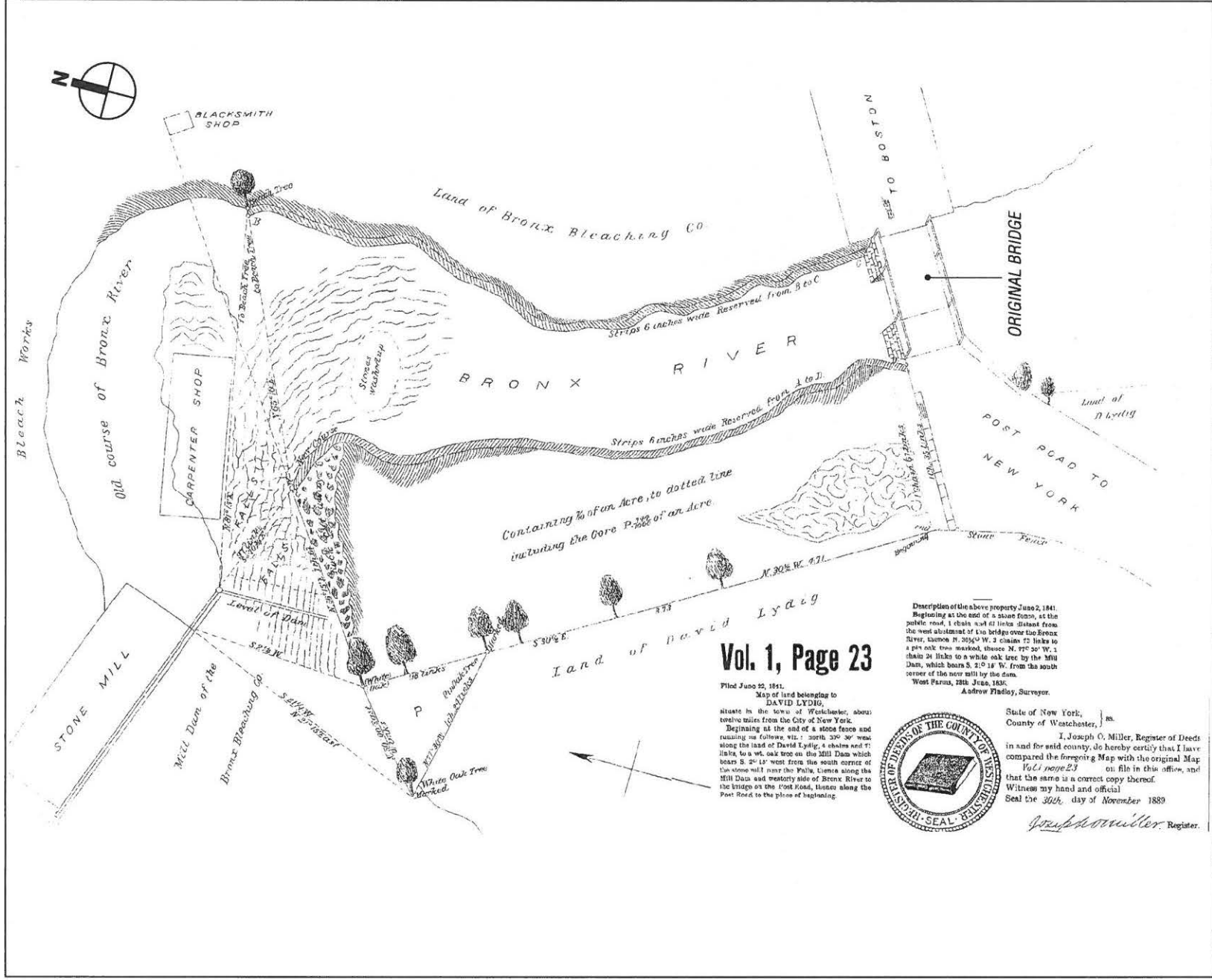
NOTE: Project Site Split Across Two Pages

2.21.13



NOT TO SCALE

Atlas of New York and Vicinity: West Farms
F.W. Beers, 1868
Figure 6



Vol. 1, Page 23

Filed June 22, 1841.
 Map of land belonging to
DAVID LYDIG,
 situate in the town of Westchester, about
 twelve miles from the City of New York.
 Beginning at the end of a stone fence and
 running as follows, viz: north 30° 30' west
 along the land of David Lydig, 4 chains and 71
 links, to a wet oak tree on the Mill Dam which
 bears S. 2° 15' west from the south corner of
 the stone mill over the Falls, thence along the
 Mill Dam and westerly side of Bronx River to
 the bridge on the Post Road, thence along the
 Post Road to the place of beginning.

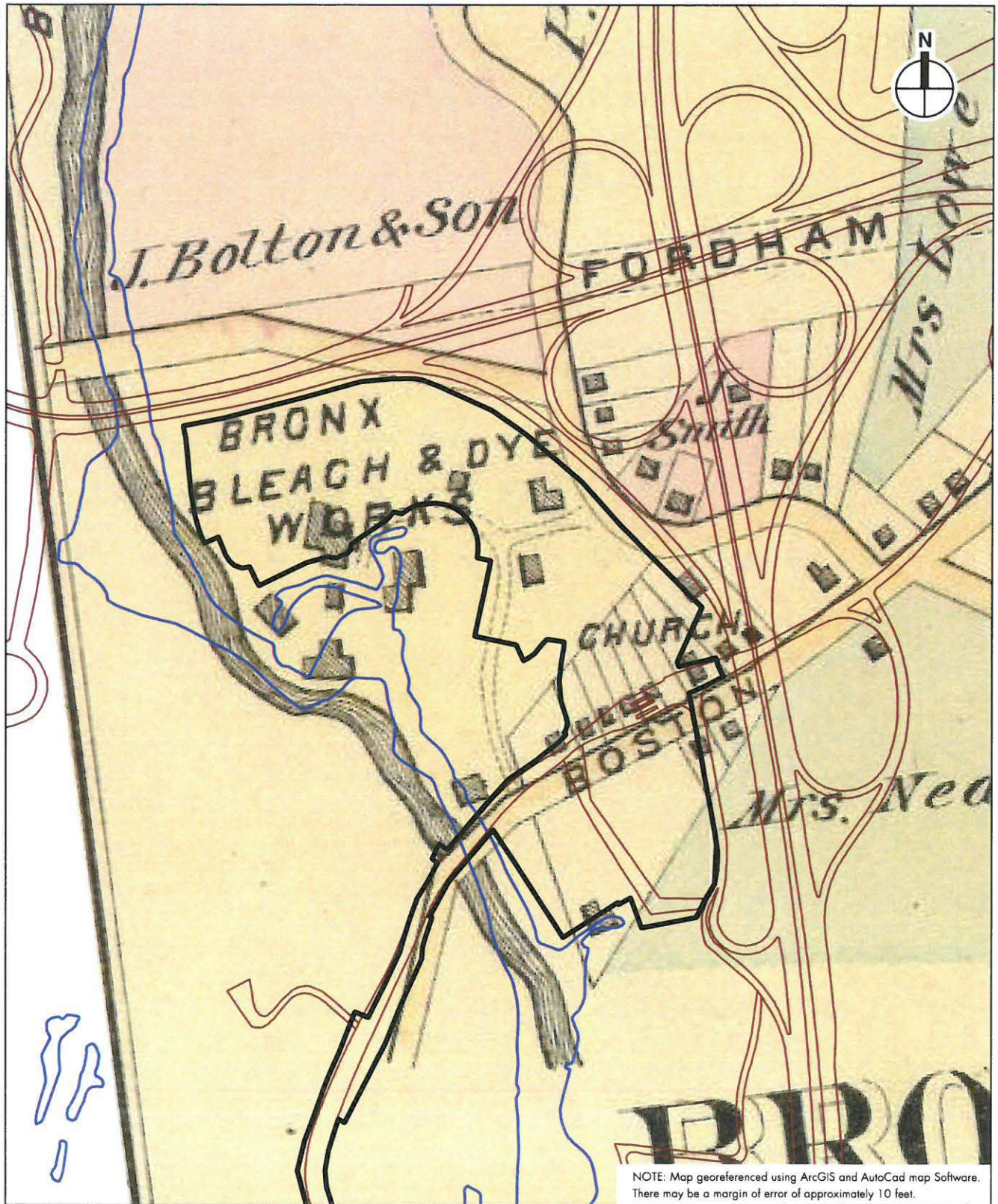
Description of the above property June 2, 1841.
 Beginning at the end of a stone fence, at the
 public road, 1 chain and 41 links distant from
 the west abutment of the bridge over the Bronx
 River, thence N. 20° 45' W. 2 chains 72 links to
 a pine oak tree marked, thence N. 77° 30' W. 1
 chain 24 links to a white oak tree by the Mill
 Dam, which bears S. 2° 15' W. from the south
 corner of the new mill by the dam.
 West Farms, 28th June, 1836.
 Andrew Fladley, Surveyor.



State of New York,
 County of Westchester,
 I, Joseph O. Miller, Register of Deeds
 in and for said county, do hereby certify that I have
 compared the foregoing Map with the original Map
 Vol. one 23 on file in this office, and
 that the same is a correct copy thereof.
 Witness my hand and official
 Seal the 30th day of November 1889
 Joseph O. Miller, Register.

Map shows portion of project area north of Boston Road Bridge and East of Bronx River

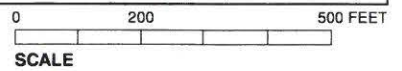
NOT TO SCALE

Map of Land Belonging to David Lydig
A. Findlay, 1841; copied by E. Robinson 1890
Figure 8



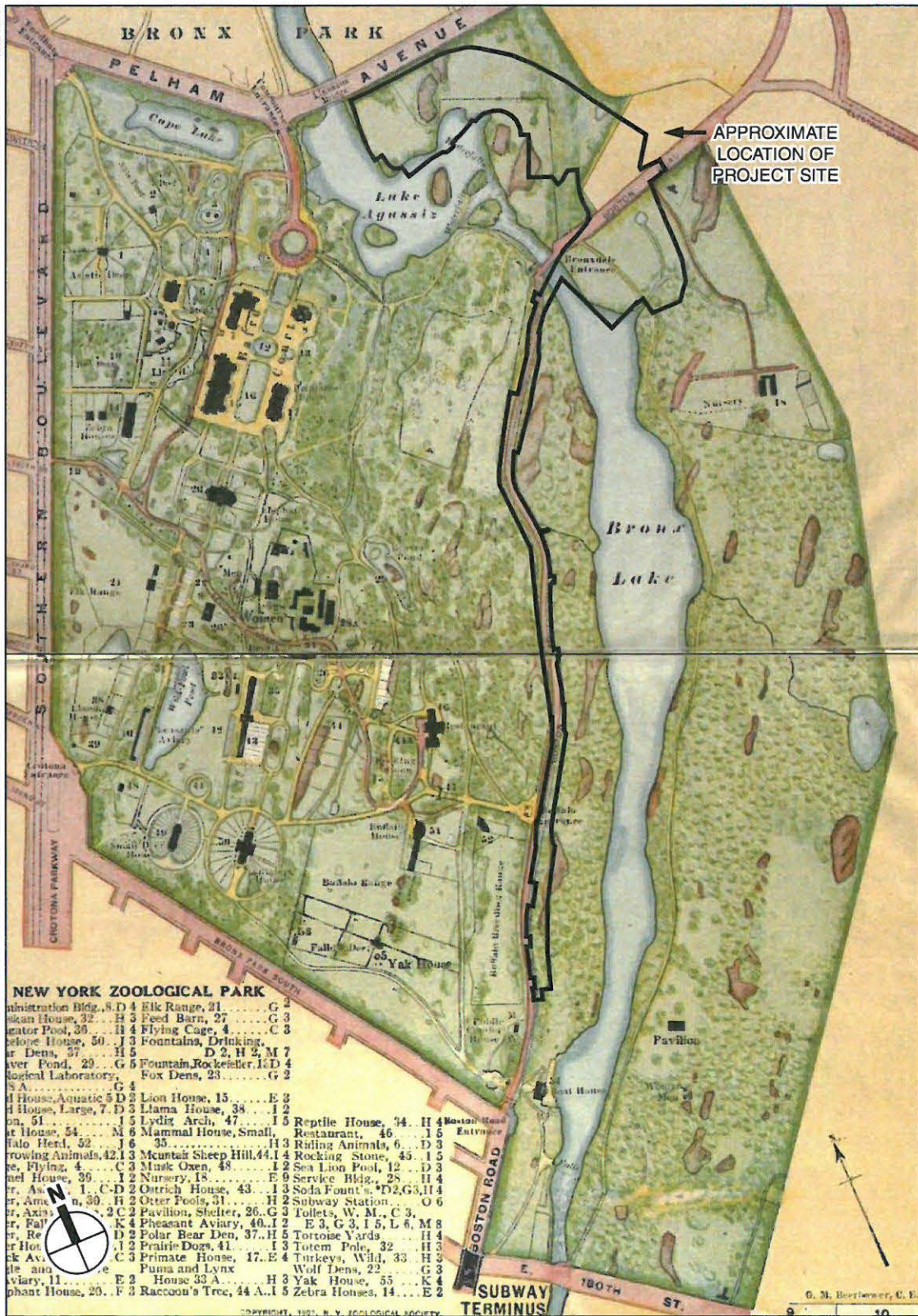
-  Project Site Boundary
-  Modern Bronx River Shoreline
-  Modern Street Lines

NOTE: Map georeferenced using ArcGIS and AutoCad map Software.
There may be a margin of error of approximately 10 feet.



Atlas of New York and Vicinity
G.W. Bromley, 1881

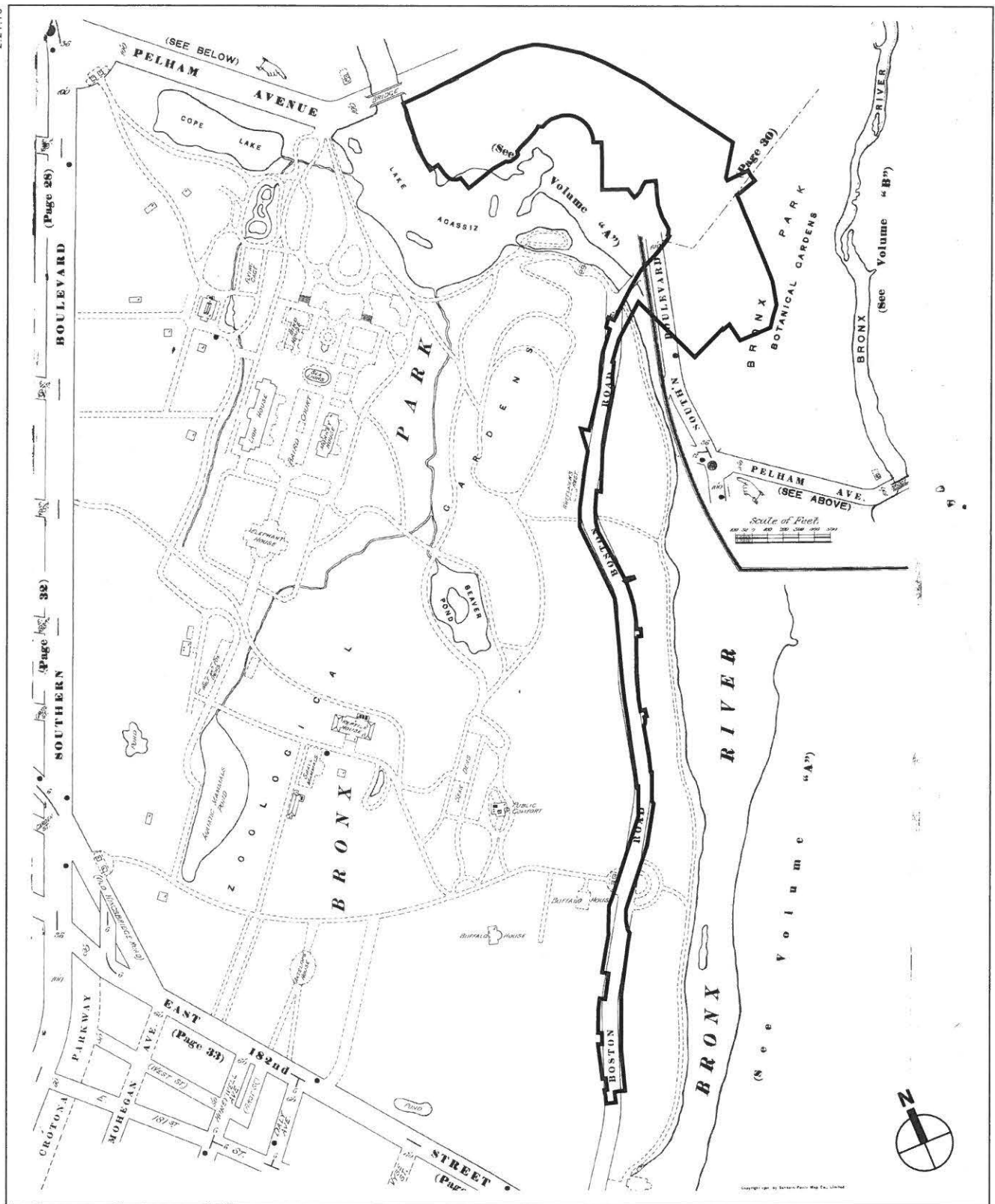
Figure 9



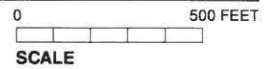
APPROXIMATE LOCATION OF PROJECT SITE

NOT TO SCALE

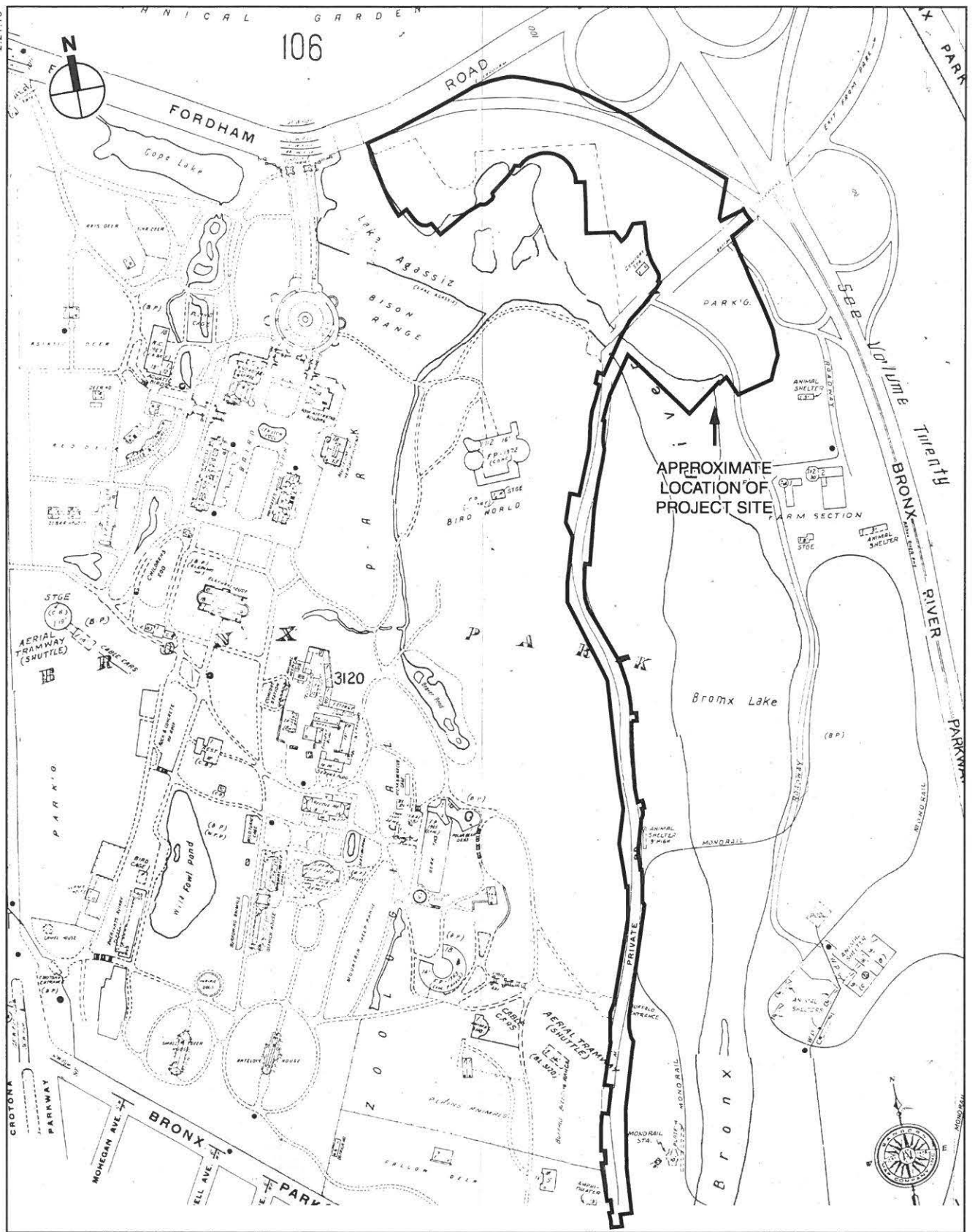
Map of Bronx Zoo, from Hornaday (1915) Figure 10

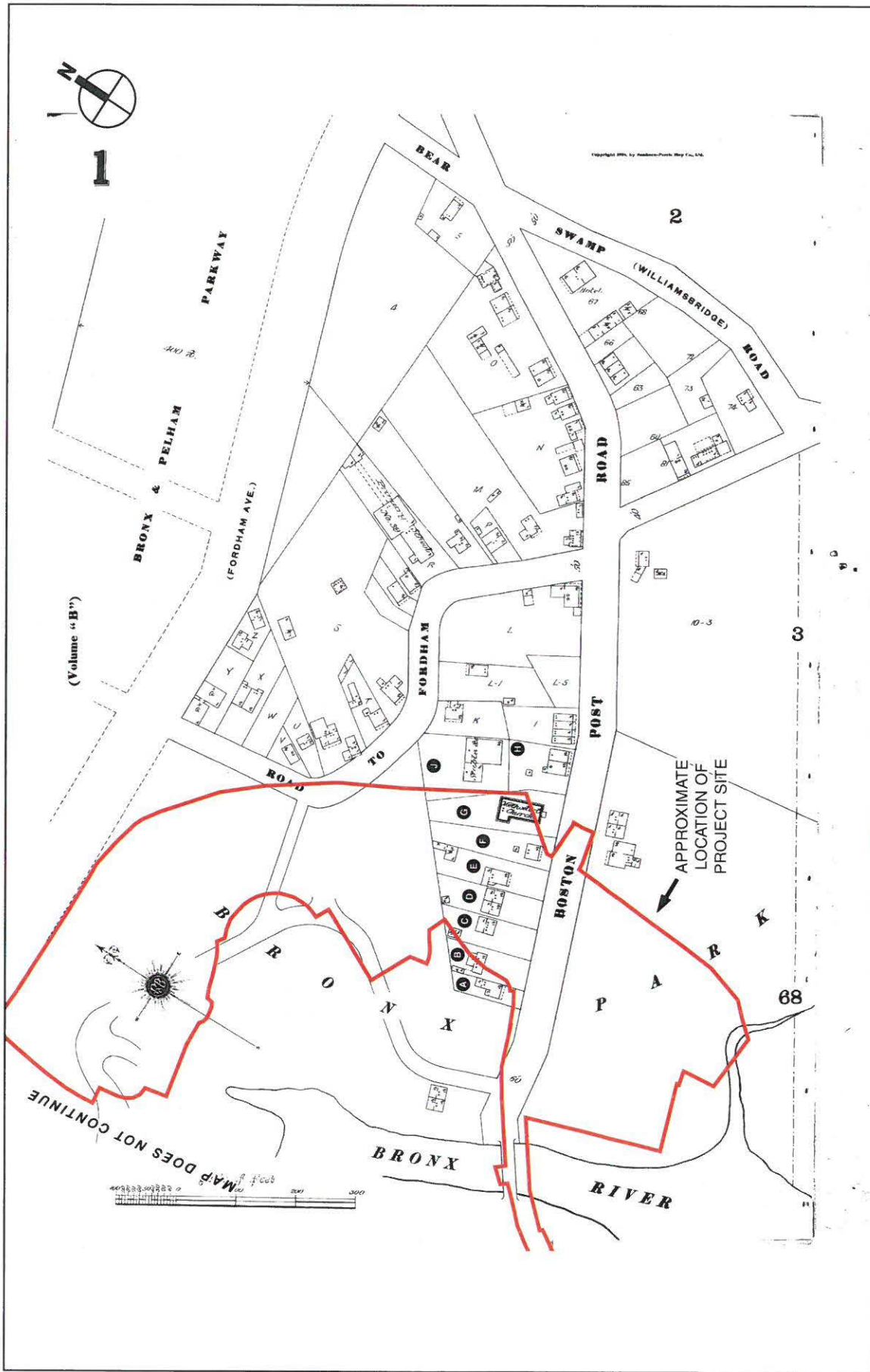


— Approximate Project Site Boundary



2.21.13



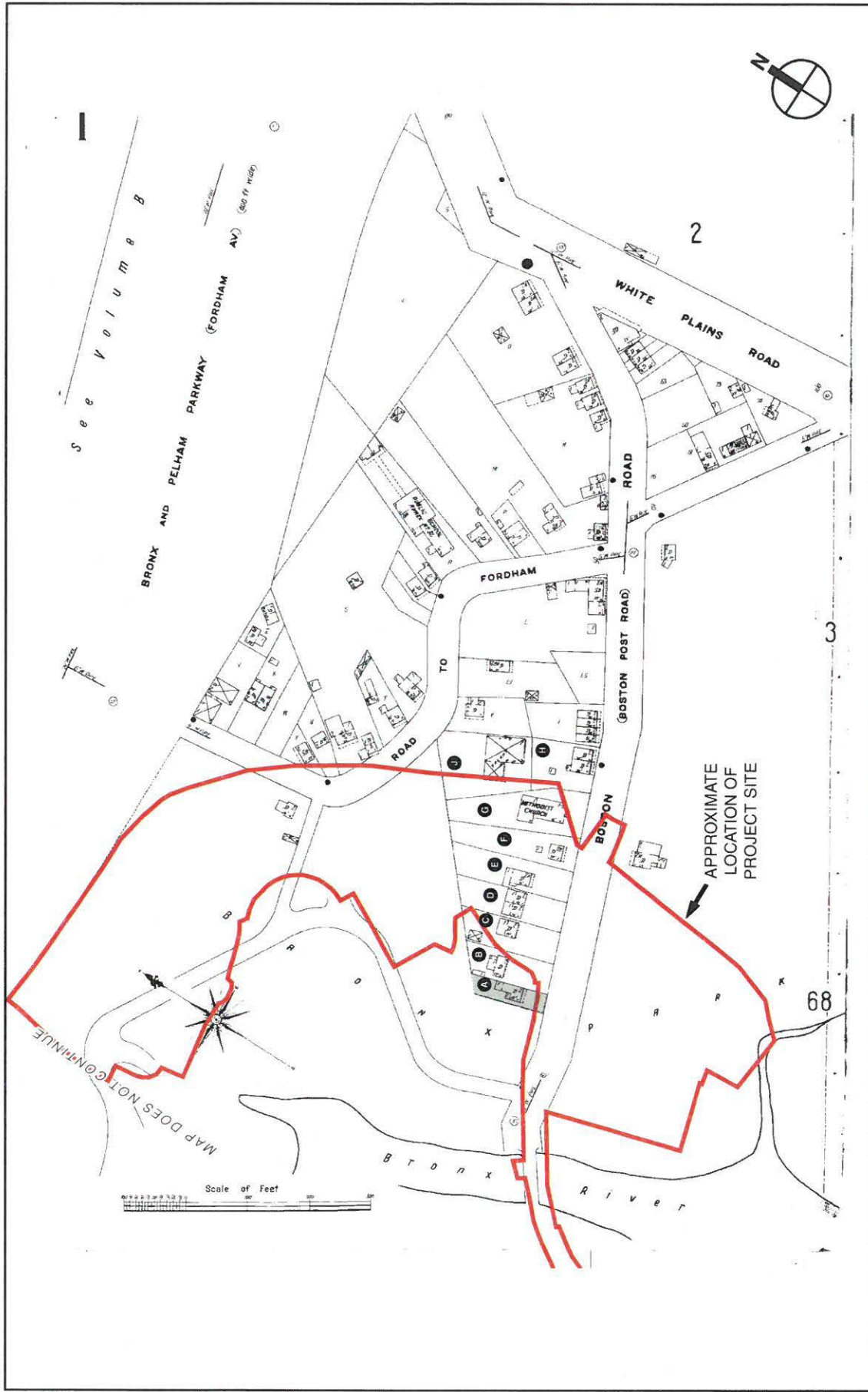


Ⓐ Historic Lot

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SCALE

Sanborn Insurance Map, 1898
Figure 13

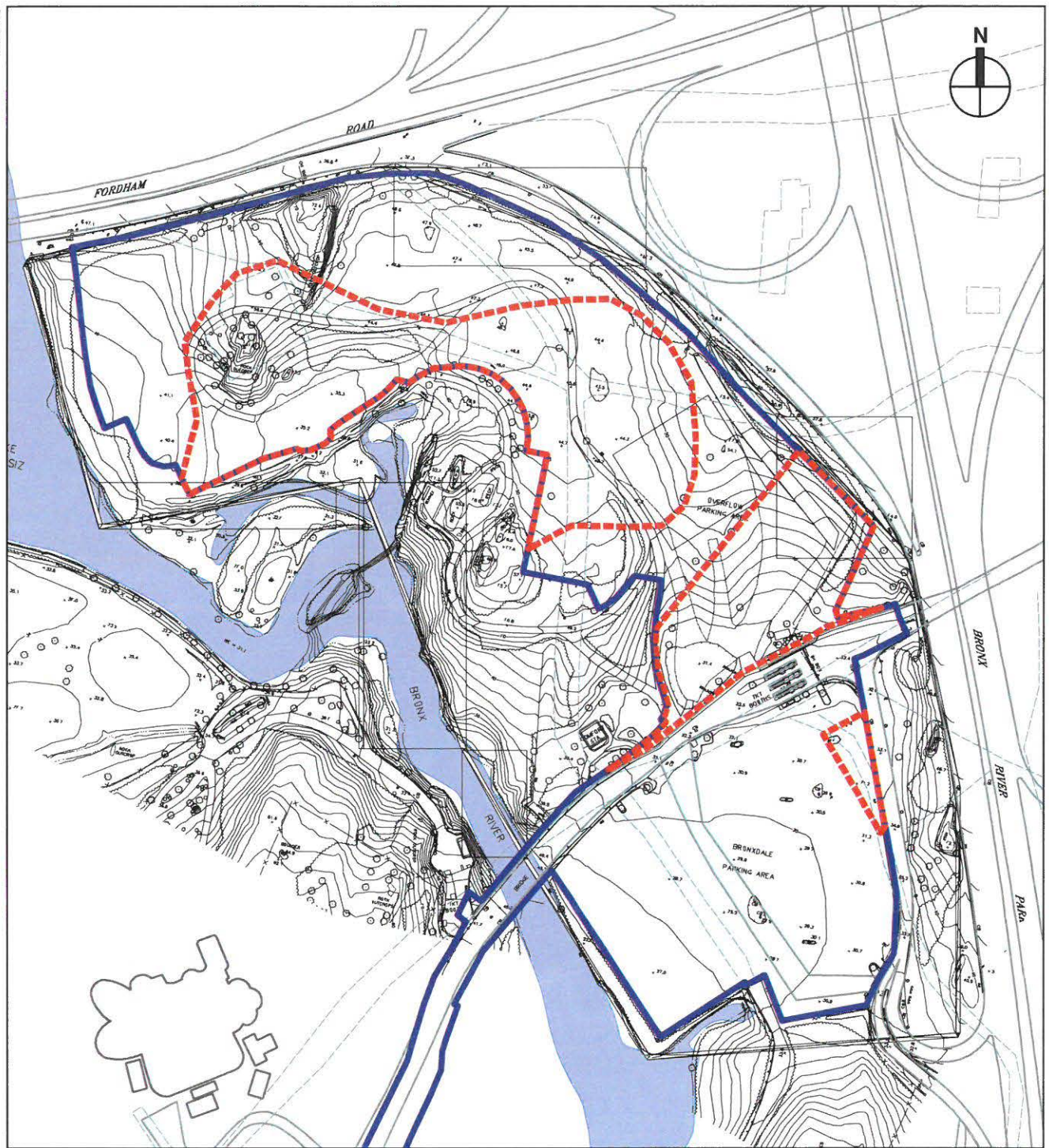
BRONX ZOO



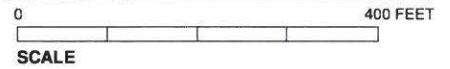
● Historic Lot

BRONX ZOO

Sanborn Insurance Map, 1908
Figure 14

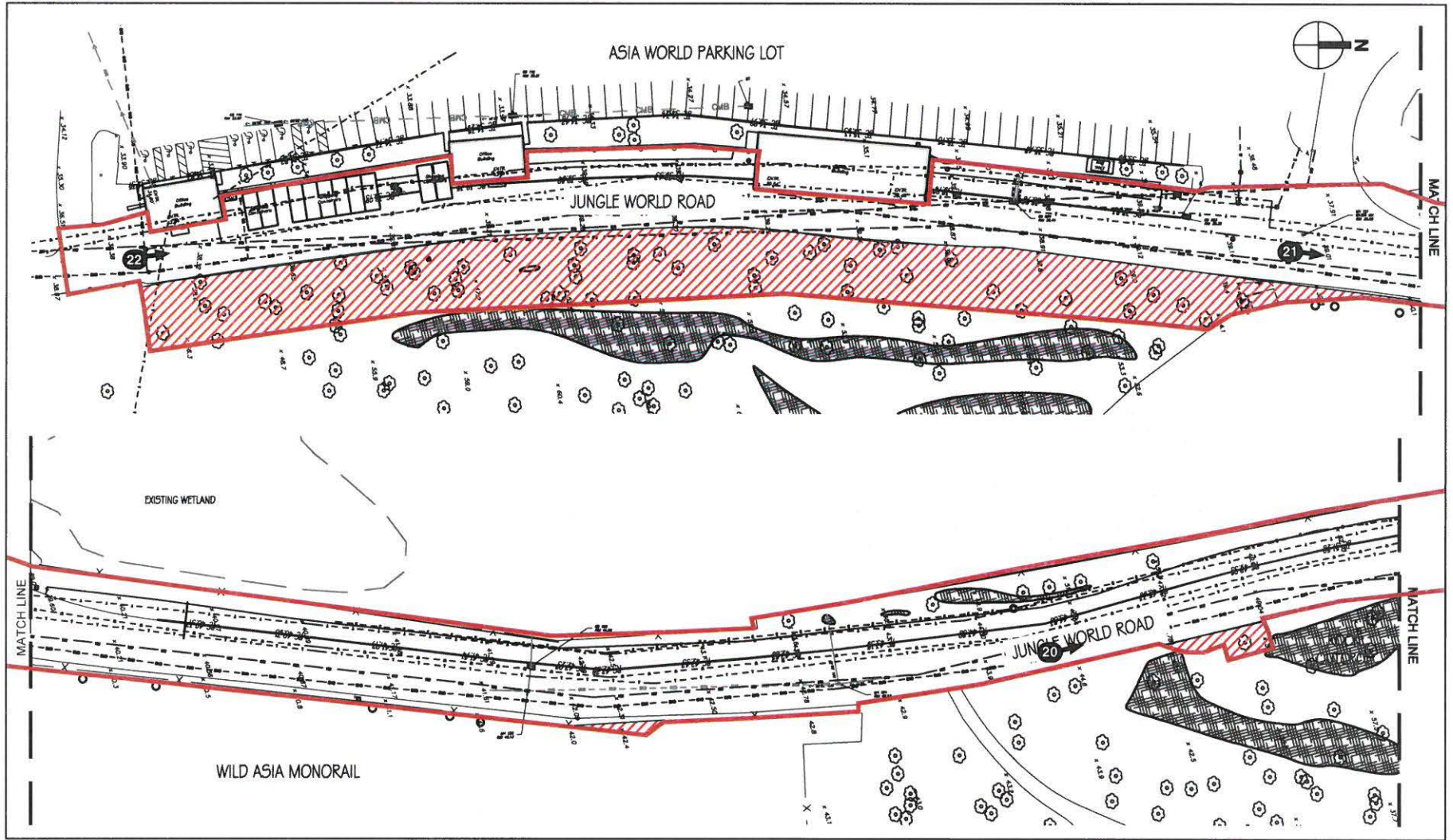





- Project Site Boundary
- - - Areas of Archaeological Sensitivity
- Modern Street & Building Lines

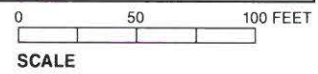


NOTE: Historical maps georeferenced using ArcGIS. There may be a margin of error +/-20 feet due to different mapping accuracies.

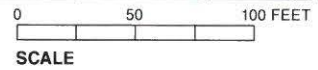
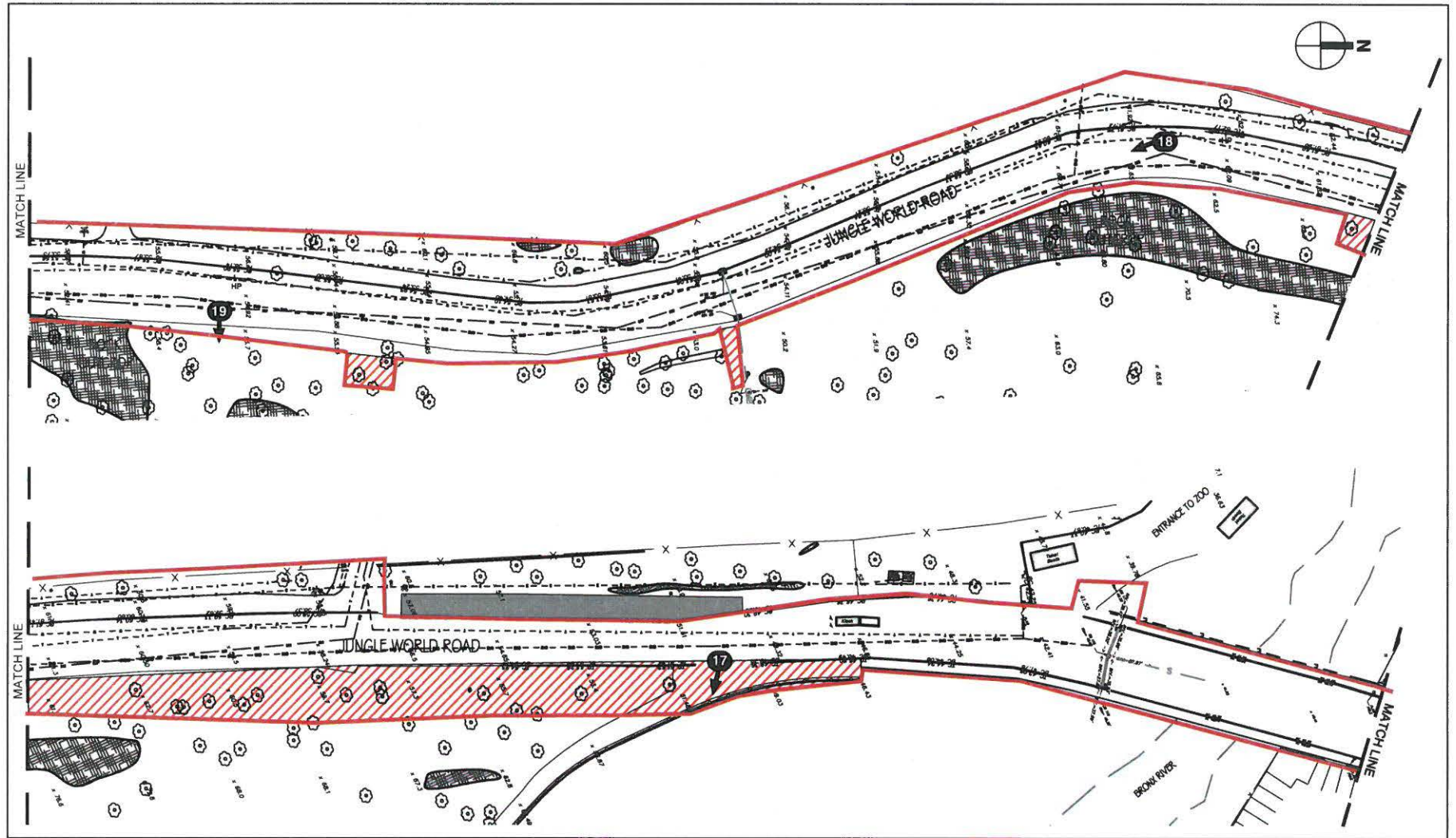
Areas of Archaeological Sensitivity within the Eastern Portion of the Project Site






-  Project Site Boundary
-  21 → Photograph View Direction and Reference Number
-  Areas of Archaeological Sensitivity, Excluding Areas with Slopes Greater than 10 Percent and Areas with Exposed Bedrock



Areas of Archaeological Sensitivity:
Western Half of the Project Site
Figure 16A



-  Project Site Boundary
-  Photograph View Direction and Reference Number
-  Areas of Archaeological Sensitivity, excluding areas with slopes greater than 10 percent and areas with exposed bedrock

Areas of Archaeological Sensitivity:
Western Half of the Project Site
Figure 16B

Photographs



Bronxdale Parking Lot and adjacent hilly area, looking southeast 1



Catch basins in Bronxdale Parking Lot 2



Bridge over Bronx River at Boston Road, looking northwest 3



Bronx River and retaining wall along western side of parking lot, looking southeast 4



Remnants of stone footing of original Bronx River Bridge north of the present bridge, looking east 5



Bronx River, looking north towards falls and dam constructed in the 19th century 6



Close-up of dam and falls showing original stone wall on western side, looking northwest 7



Bridge over Bronx River at Fordham Road 8



View of overflow parking area showing variations in elevation; looking south toward Bronxdale Parking Lot (in background) 9



Catch basin in southern portion of overflow parking area and large boulder characteristic of those in the area 10



Grassy area north of the Mitsubishi River Walk; looking west 11



Grassy area bordering eastern shore of the River; looking south 12



Path on Mitsubishi River Walk and excavated dirt (at left); looking northeast 13



"Turtle Town" and scenic overlook near falls; looking southeast 14



Large pipe near turtle habitat, water flows outward from the pipe; looking south 15



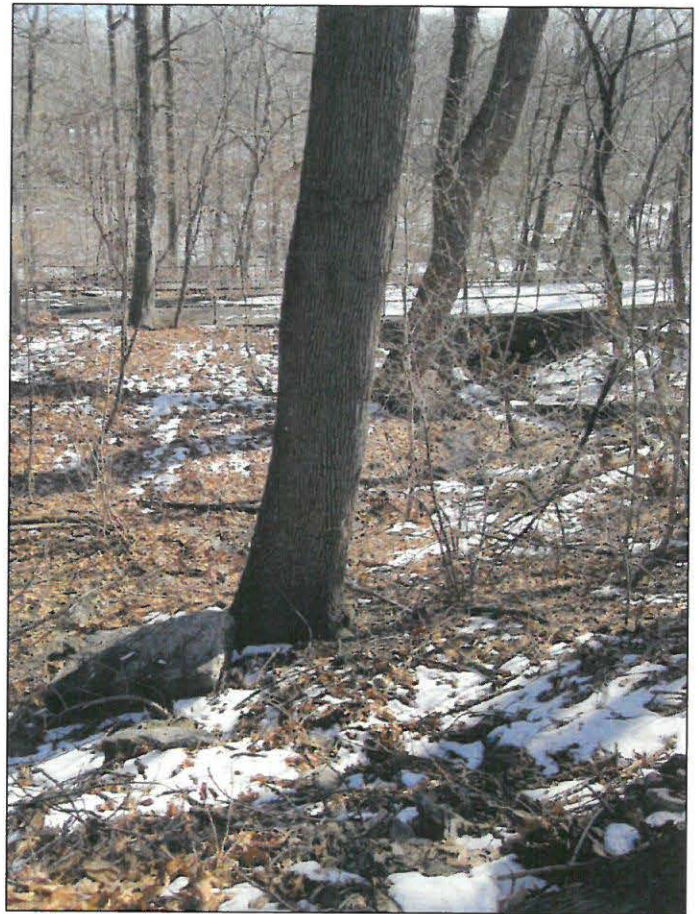
Low concrete wall running through woods between the eco-restroom and the river; looking southwest 16



An asphalt path leading up a steep slope south of Jungle World Road 17
immediately west of the existing bridge



View south along Jungle World road 18



Looking east towards a culvert leading to a drain beneath the asphalt path east of Jungle World Road **19**



View north at the rock outcrops to the east of Jungle World Road **20**



Looking north along Jungle World Road; the concrete footings and tracks of the Bengali Express Monorail are at the right of the photograph 21



The southern terminus of Jungle World Road, looking north 22

Appendix C:

Historic Directories

Year	Name	Occupation	Primary Address	Home Address
1841	Lydig, Philip		34 Laight	
	Lydig, widow of David		34 Laight	
1848	Lydig, Philip		34 Laight	
	Lydig, Danny	widow of David	34 Laight	
1850	Lydig, Philip		34 Laight	
1856	Lydig, Philip M.			34 Laight
1869	Bolton, James M.	Agent	55 Leonard	Westchester
	Bronx Bleaching, Dyeing, and Printing Company		55 Leonard	
1870-1	Bolton, James M.	Agent	55 Leonard	Westchester
1874-5	Bolton, James M.	Dyer	55 Leonard	Westchester
	Bolton, John W.	Dyer		W. Farms
	Bolton, Thomas C.	Painter		W. Farms
1885-1886	Bolton, John W.	Dyer	Bronx n. Kingsbridge Road	1777 West Farms Road
	Bolton, Robert B.	Bindings	Bronx River n. Pelham Av	Bronxdale, NY
	Bolton, Thomas, Junior	Agent	115 Worth	Union Av n. Lorillard Ln
1886-1887	Bolton, John W.	Dyer	Bronx n. Kingsbridge Road	1777 West Farms Road
	Bolton, Robert B.	Bindings	Bronx River n. Pelham Av	Bronxdale, NY
	Bolton, Thomas, Junior	Agent	115 Worth	Pelham Av n. Lorillard Ln
1890	Bolton, Robert B.	Linings	115 Worth and Boston Road	n. Bronx River
	Bronx Co.	Bleachers, dyers, and printers of cotton goods	115 Worth	
	Manley, James B	Horses	Webster Av n. S. Boulevard	Bronx River Park
	Sloan, Franklin H.	Mats	2068 Bronx	Bronxdale, NY
1897 NYZS Member List	William H. Birchall			177th Street, Bronx River
	John W. Bolton			1777 West Farms Road
	Thomas Bolton, Junior			Minford Place, Boston Avenue, City

Sources: Historic Directories accessed at the New York Historical Society and at through www.fold3.com and <http://www.ancestry.com>.

Appendix B: Summary of Census Research

Year	Location	Name	Occupation	Listed Age	Place of Birth
1880 (cont'd)	Village of Bonxdale Bronxville	Morrison Beardslee	Machinist	56	N.J.
		Elizabeth Beardslee	Keeping House	43	England
		Jennie Beardslee	Teacher	22	N.Y.
		Emma Beardslee		3	"
		Henry Bolton	Proprietor of Bleachery	49	N.Y.
		Sarah Bolton	Keeping House	47	"
		Mary Downs	Servant	34	Ireland
		Samuel Brooks	Works in Bleachery	37	England
		Ann Brooks	Keeping House	35	"
		William Brooks		2	N.Y.
		Robert Greenhalgh	Unemployed	41	England
		Clementina Greenhalgh	Keeping House	33	"
		Greenhalgh	Works in Bleachery	414	"
		Harry Roberts			
		John Livingston	Grocer	38	Ireland
		Martha Livingston	Keeping House	40	Penn.
		George Livingston	Attends School	12	N.Y.
		Margaret McCarthy	At Home	16	"
		Henry Turner	Carpenter	46	N.Y.
		Mary Turner	Keeping House	43	England
		Sarah Turner	Tape Weaver	18	N.Y.
		Nellie Turner	Tape Winder	6	"
		Lottie Turner	Attends School	13	"
		Clara Turner	"	8	"
		Henry Turner	"	5	"
		Joseph Turner	"	2	"
		Robert Bolton	Prop. Of Tape Mills	41	N.J.
		Lavinia Bolton	Keeping House	41	Penn.
	Harvey Bolton	Attends School	10	N.Y.	
	Marion Bolton		5	"	
	Roberta Bolton		8/12	"	
	James Kay	Engineer	49	England	
	Elizabeth Kay	Keeping House	37	"	
	Joseph Kay	Tape Weaver	18	N.Y.	
	James Kay	Attends School	12	"	
	Mary Kay		3	"	
	Thomas Bolton	Prop. Of Bleachery	42	N.Y.	
	Frances Bolton	Keeping House	40	"	
Alice Bolton	Attends School	12	"		
William Bolton	Attends School	9	"		
Augusta Bolton		5	"		
Emily Bolton		3	"		
Florence Bolton		2	"		
Ann Bolton	Keeping House	74	England		
Cassie Bolton	At Home	32	N.Y.		
William Birchall	Prop. of Bleachery	36	Penn.		
Augusta Normaetus	Servant	20	N.J.		
Margery Lynch	"	70	Ireland		
Kingsbridge Road, New York City	Catherine Lydig	Keeping House	77	N.Y.	
David Lydig	Broker Stock (sic)	30	"		
Hannah Lydig	At Home	25	"		
Patrick Feeley	Coachman	60	Ireland		
Mary Levy	Housekeeper	28	N.Y.		
Sarah Gannon	House Maid	29	Ireland		
Catherine Lee	Servant	16	N.Y.		
Mary Leonard	Waitress	8	N.Y.		
Mary Conlon	Cook	31	Ireland		

Notes: Text written with strike-through lettering denotes corrections in original census ledgers
Sources: United States Federal Census data accessed online at <http://www.ancestry.com>.

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Year	Location	Name	Occupation	Listed Age	Place of Birth
1870 (1st enumeration, cont'd)	Westchester, NY	Henry B. Bolton	Manufacturer	39	N.Y.
		Sarah Bolton	Keeping House	37	"
		Mary Downs	Domestic Servant	25	Ireland
		John Scowcroft	Dyer	50	England
		Mary Scowcroft	Keeping House	43	N.Y.
		Mary Scowcroft	"	18	"
		John S. Scowcroft	"	5	"
		Phoebe Scowcroft	"	3	"
		Philip Lydig	Retired Merchant	75	N.Y.
		Kate Lydig	Keeping House	68	"
		Rose Lydig	At Home	23	"
		Florence Lydig	At Home	21	"
		Kate Dixon	Cook	35	Ireland
		Hannah Washin	Laundry	50	"
		Kate Brady	Servant	28	"
		Rachel Connor	Servant	25	"
		Pat Malone	Coachman	40	"
		George Black	Groom	20	Maryland
		1870 (2nd enumeration)	34 Laight Street, New York, NY	Philip Lydig	Merchant
Kate Lydig	House keeper			65	"
Rose Lydig	House keeper			25	"
Florence Lydig	House keeper			20	"
Dana Wood	Servant			25	Ireland
Winifred Carroll	Servant			30	"
Hannah Henley	Servant			40	N.Y.
Kate Tiernay	Servant			23	Ireland
Patrick Feely	Coachman			50	"
George Williams	Coachman			25	N.Y.
1880	Village of Bronxdale Bronxville	Joseph Turner	"Has been dead about 4 years"		
		Annie Turner		32	N.Y.
		Josephine Turner	Keeping House	12	"
		Sarah Turner	Attends School	7	"
		George Rex	"	34	England
		George Livingston	Watchman	21	N.Y.
		Theresa Livingston	Tape Weaver	24	"
		Joseph Bolton	Painter	33	N.Y.
		Eliza Bolton	Keeping House	37	England
		Charlie Bolton	"	4	N.Y.
		Martha Thompson	At Home	16	"
		Nicholas Hickman	Gardener	50	Hanover
		John Hickman	Carpenter	24	N.Y.
		Kate Hickman	Works in Bleachery	20	"
		Annie Hickman	Keeping House	16	"
		Ella Hickman	Attends School	14	"
		Nicholas Hickman	"	11	"
		James Hickman	"	10	"
		Hannah Chadwick	Keeping House	52	N.Y.
		Thomas Chadwick	Tape Weaver	19	"
		George Hudson	"	25	"
		Adaline Hudson	Keeping House	24	"
		Henry Hudson	"	11/12	"
		Richard Ward	Cotton Dyer	33	England
		Catherine Ward	Keeping House	33	"
		John Ward	Cotton Dyer	30	"
		John Bolton	Painter	35	N.Y.
Virginia Bolton	Keeping House	32	"		
Virginia Bolton	Attends School	10	"		
Herbert Bolton	"	8	"		
Norman Bolton	"	4	"		
Oliver Byrne	Lawyer	33	N.Y.		
Ann Byrne	Keeping House	33	"		

Appendix B: Summary of Census Research

Year	Location	Name	Occupation	Listed Age	Place of Birth
1870 (1st enumeration)	Westchester, NY	Thomas Bolton	Printer of Cotton/Manuf.	61	England
		Ann Bolton	Keeping House	63	"
		James Bolton	Printer of Cotton	41	N.Y.
		Emily Bolton	"	28	"
		Catharine Bolton	Bookkeeper	21	"
		William Burchill	Domestic Servant	23	Penn.
		Catharine Kirby	"	30	Ireland
		George Anderson	Methodist Clergyman	26	N.Y.
		Mary E. Anderson	Keeping House	20	"
		Mary E. Anderson	"	1/12	"
		Thomas Bolton	Printer of Cotton Goods	31	N.Y.
		Mary Bolton	Keeping House	31	"
		Alice Bolton	"	2	"
		Bridget Farrell	Domestic Servant	30	Ireland
		Ann Farrell	Domestic Servant	25	"
		Moses Greenhalgh	Works in Print Works	41	England
		Alice Greenhalgh	Keeping House	12	"
		Mary Greenhalgh	Attends School	10	"
		Anna Greenhalgh	"	3	N.Y.
		John Scholes	"	2	"
		Peter Ramsden	Works in Dye Works	51	England
		Sarah Ramsden	Keeping House	18	N.Y.
		James Ramsden	Works in Dye Works	17	"
		Susannah Ramsden	"	21	"
		Eliza Thompson	Keeping House	30	England
		Martha Thompson	Attending School	6	N.Y.
		Joseph Bolton	Painter	23	"
		John Wrigley	Carpenter	25	England
		Jane Turner	"	40	N.Y.
		Mott Beardsley	Milling House	45	N.Y.
		Eliza Beardsley	Keeping House	35	England
		William Beardsley	Dry Goods Clerk	18	N.Y.
		Jennie Beardsley	Attends School	12	"
		Henry Turner	Carpenter	36	N.Y.
		Mary Turner	Keeping House	33	England
		Fannie Turner	Attends School	8	N.Y.
		Nellie Turner	"	6	"
		Lattie Turner	"	4	"
		Jane Thompson	Keeping House	58	England
		William Thompson	Works in Dye Works	19	N.Y.
		Robert B. Bolton	Works in Dye Works	31	N.Y.
		Lavina Bolton	Keeping House	32	Penn
		Harry Bolton	"	8/12	N.Y.
		Ellen Sharon	Domestic Servant	34	Ireland
		James Williams	Store Keeper	27	N.Y.
Mary Williams	Keeping house	23	"		
Edith Williams	"	1	"		
Hattie Waller	"	15	"		
Thomas Chadwick	Dyer	62	England		
Hannah Chadwick	Keeping House	53	N.Y.		
William Chadwick	Dyer	27	"		
Adelaide Chadwick	Works in Tape Mills	14	"		
Thomas Chadwick	Attends School	10	"		
Abel Holt	Printer	48	England		
Nancy Holt	Keeping House	49	N.Y.		
Sarah Holt	"	24	"		
Sillie Holt	"	22	"		
Kate A. Holt	Attends School	12	"		
Nicholas Williams	Retired Manuf.	58	England		
Sarah Williams	Keeping House	54	"		
Ann Williams	"	23	N.Y.		
Charles Hitchcock	Store Keeper	23	"		
Mary A. Hitchcock	Keeping House	21	"		

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Year	Location	Name	Occupation	Listed Age	Place of Birth
1860 (cont'd)	Westchester, NY	Abraham Hall	Weaver	62	England
		Hannah Hall		49	"
		Samuel Hall		13	N.Y.
		Ellen Hall		11	"
		Hannah Hall		6	"
		Thomas King	M. Teacher	45	England
		Mary King		35	R.I.
		George H. King	Sailor	16	N.Y.
		Mary A. King		13	"
		Edward King		8	"
		Martha J. King		6	"
		William G. King		2	"
		Thomas Chaddock	Watchman	42	England
		Ann E. Chaddock		40	N.Y.
		William E. Chaddock	Dyer	19	"
		Mary E. Chaddock		17	"
		Jon Chaddock	Bleacher	15	"
		Charlotte A. Chaddock		8	"
		Sarah A. Chaddock		5	"
		William Thompson	Shoemaker	60	England
		James Thompson		49	"
		Jonathan Thompson	Calendar	34	"
		Nancy Ridley		23	"
		Eliza Ridley		20	"
		Squire Ridley	Carpenter	18	N.Y.
		Jonathan Ridley		13	"
		William Thompson		9	"
		William Greenhalgh	Carpenter	35	EnglandN.Y.
		Martha Greenhalgh		28	"
		Margaret Greenhalgh		9	"
		William Greenhalgh		7	"
		Albert Greenhalgh		3	"
		Susan Greenhalgh		1	England
		Job Smith	Bleacher	50	N.Y.
		Ephraim Smith		16	"
		Hannah Turner		50	England
		Mary Turner		32	N.Y.
		Jane Turner		30	"
		Henry Turner	Carpenter	26	"
		James Turner	Painter	25	"
		Joseph Turner	Carpenter	23	"
		Mary Turner		22	"
		William Turner		13	"
	Ellen Turner		11	"	
	Cristophe Yorgison	Engineer	25	"	
	William Knowles	Blacksmith	63	Ireland	
	James L. Bolton	Tape Man.	25	Penn.	
Mary Bolton		24	N.Y.		
Anna Bolton		1	"		
Bridget Murphy		25	Ireland		
Thomas Bolton	Manufacturer	50	England		
Ann Bolton		53	"		
James M. Bolton	Clerk	31	N.Y.		
Thomas Bolton		22	"		
James Bolton	Tape Man.	80	England		
Catharine Bolton		60	"		
Eliza Rae	Domestic	26	Ireland		
Samuel Hill		14	N.Y.		
Ward 5, District 1, New York City	Philip Lydig	Lawyer	22	NY	
	Rachel Dunbar	Housekeeper	55	Conn.	
	Emma Harrington	Servant	40	SC	
	William Harrington		14	NY	
	Jenette Harrington		12	"	
	Amelia Harrington		6	"	

Appendix B: Summary of Census Research

Year	Location	Name	Occupation	Listed Age	Place of Birth
1850 (cont'd)	Westchester, NY	Nicholas Williams	Tape Manuf.	38	England
		Sarah Williams		33	"
		James B. Williams		7	N.Y.
		Ann E. Williams		4	"
		Mary A. Williams		11/12	"
		Ann Connelly		24	Ireland
		Thomas Bolton	Store Keeper	46	England
		Ann Bolton		44	England
		James Bolton	Clerk	20	N.Y.
		Henry Bolton	Clerk	19	"
		John Bolton	Student	17	"
		Mary Ann Bolton		14	"
		Thomas Bolton		11	"
		Emily Bolton		10	"
		Sarah Bolton		7	"
		Catharine Bolton		2	"
	William Birchele		6	Penn.	
	Ann Bolton		29	England	
	Ward 5, New York City	Phillip M. Varick (sic)	Farmer	54	N.Y.
	Catharine M. Varick		43	"	
Maria Varick		25	"		
Margaret Varick		22	"		
Philip M. Varick, Junior		12	"		
David Varick		8	"		
Catharine W. Varick		14	"		
Rosalie Varick		7	"		
Florence Varick		3	"		
Rachel Sullivan		60	Conn.		
1860	Westchester, NY	Isaac Endusill	Bleacher	52	England
		Rachael Endusill		48	"
		Sarah A. Endusill		23	"
		Robert Endusill	Bleacher	20	"
		Anna Endusill	Bleacher	20	"
		Isaac Endusill	Bleacher	17	N.Y.
		Charles Endusill	Bleacher	16	"
		Hester Endusill			"
		Rachael Endusill			"
		Robert Greenhalch	Mill Wright	37	England
		Elizabeth Greenhalch		26	"
		Maria Greenhalch		5	N.Y.
		Jno Greenhalch		2	"
		John Hitchcock	Grocer	44	N.Y.
		Hannah E. Hitchcock		37	"
		Jonathan H. Hitchcock	Clerk	16	"
		Charles A. Hitchcock		12	"
		Lewis Hitchcock		7	"
		Alice Skane	Domestic	17	"
		Patrick Caulfield	Laborer	28	Ireland
		Peter Ramsden	Bleach	35	England
		Margaret Ramsden		34	"
		Mary J. Ramsden		14	N.J.
		Susannah Ramsden		12	N.Y.
		Sarah Ramsden		10	"
		James Ramsden		7	"
		Margaret A. Ramsden		2/12	"
		Ann Greenbank		43	England
		William Greenbank	Sailor	21	N.Y.
		Jonathan Greenbank	Bleach	18	"
Sarah Greenbank		14	"		
Jonathan Scowcroft	Dyer	40	England		
Sarah Scowcroft		49	"		
Mary A. Scowcroft		9	N.J.		
James King	Bleacher	40	England		
Mary King		44	"		
Ellen Jordan	Domestic	24	Ireland		
Nicholas Williams	Tape Manufacturer	48	England		
Sarah Williams		43	"		
James B. Williams		17	N.Y.		
Ann E. Williams	Weaver	13	"		
Adeline Williams		11	"		
Jane E. Hugan	Domestic	21	Ireland		

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Year	Location	Name	Occupation	Listed Age	Place of Birth
1840	Westchester, NY	Home of James Bolton: 1 Free White Male 1 Free White Male 1 Free White Female 1 Free White Female 1 Free White Female 1 Free White Female	One member of household engaged in manufacture	0<5 60<70 10<15 20<30 30<40 60<70	<i>Not provided</i>
		Home of James Bolton: 2 Free White Males 1 Free White Male 1 Free White Male 1 Free White Female 1 Free White Female 1 Free White Female	One member of household engaged in agriculture	0<5 15<20 30<40 5<10 10<15 30<40	<i>Not provided</i>
		Home of Thomas Bolton: 1 Free White Male 2 Free White Males 1 Free White Male 1 Free White Male 1 Free White Male 1 Free White Female 1 Free White Female 1 Free White Female	Two members of household engaged in manufacture	0<5 5<10 10<15 20<30 30<40 5<10 10<15 30<40	<i>Not provided</i>
		Home of Lavina Bolton: 1 Free White Male 1 Free White Female 1 Free White Female	<i>Not provided</i>	0<5 0<5 20<30	<i>Not provided</i>
		Home of Jonathan Bolton: 2 Free White Males 1 Free White Male 1 Free White Female 1 Free White Female	One member of household engaged in manufacture	0<5 20<30 0<5 30<40	<i>Not provided</i>
		Home of Mary Bolton: 1 Free White Male 2 Free White Females	Two members of household engaged in manufacture	5<10 40<50	<i>Not provided</i>
		Home of P.M. Lydig: 1 Free White Male 1 Free White Male 1 Free White Female 1 Free White Female 1 Free White Female 1 Free White Female 2 Free White Females 1 Free White Female 1 Free Colored Male 2 Free Colored Males	One member of household engaged in agriculture	0<5 40<50 0<5 10<15 15<20 20<30 30<40 60<70 10<24 24<35	<i>Not provided</i>
		1850	Westchester, NY	Henry Turner	Carpenter
Hannah Turner				40	"
Mary T. Turner				23	"
Jane Turner				18	N.Y.
Henry Turner	Carp. Apprentice			16	"
James Turner				14	"
Joseph Turner				12	"
William Turner				3	"
Ellen Turner				1	"
Sarah Turner				17	"
Peter Ramsden	Dyer			34	England
Margaret Ramsden				32	"
Mary F. Ramsden				4	N.Y.
Susan Ramsden				1	"

Appendix B:

Summary of Census Research

Year	Location	Name	Occupation	Listed Age	Place of Birth
1790	Westchester, NY	Home of Oliver DeLancey: 4 Free White Males 1 Free White Male 2 Free White Females 1 Other Free Person 2 Slaves	<i>Not provided</i>	16+ 0<16 <i>Not provided</i> <i>Not provided</i> <i>Not provided</i>	<i>Not provided</i>
1800	Westchester, NY	Home of Oliver DeLancey: 3 Free White Males 1 Free White Male 1 Free White Female 1 Free White Female 1 Free Person 7 Slaves	<i>Not provided</i>	0<10 10<15 45+ 26<44 <i>Not provided</i> <i>Not provided</i>	<i>Not provided</i>
	Ward 3, New York, NY	Home of David Lydig: 1 Free White Male 1 Free White Male 1 Free White Female 3 Slaves	<i>Not provided</i>	0<10 26<44 16<25 <i>Not provided</i>	<i>Not provided</i>
1810	Westchester, NY	Home of Oliver DeLancey: 1 Free White Male 1 Free White Male 1 Free White Male 1 Free White Female 1 Free White Female 4 Slaves	<i>Not provided</i>	0<10 16<25 45+ 16<25 26<44 <i>Not provided</i>	<i>Not provided</i>
	Ward 2, New York, NY	Home of David Lydig: 1 Free White Male 1 Free White Male 1 Free White Female 2 Free White Females 2 Other Free Persons 2 Slaves	<i>Not provided</i>	16<25 26<44 16<25 26<44 <i>Not provided</i> <i>Not provided</i>	<i>Not provided</i>
1820	Westchester, NY	Home of Oliver DeLancey: 1 Free White Male 1 Free White Male 1 Free White Male 1 Free White Female 1 Free Colored Female	One member of household engaged in agriculture	16<26 26<45 45+ 45+ <i>Not provided</i>	<i>Not provided</i>
	Ward 3, New York, NY	Home of David Lydig: 1 Free White Male 1 Free White Male 1 Free White Female 1 Free White Female 1 Free Colored Male 1 Free Colored Male 1 Free Colored Female 1 Free Colored Female	One member of household engaged in commerce	16<26 45+ 16<26 26<45 0<14 14<26 14<26 26<45	<i>Not provided</i>
1830	Westchester, NY	Home of Thomas Bolton: 1 Free White Male 1 Free White Male 1 Free White Male 1 Free White Female 1 Free White Female	<i>Not provided</i>	0<5 20<30 30<40 5<10 20<30	<i>Not provided</i>

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Date	Grantor	Grantee	Liber	Page	Remarks
3/22/1899	James Bolton	Joseph E. Macready	18	186	Rel. of Mtg. L 956, Mp10, West. Co.
3/22/1899	Joseph E. Macready	Philip A. Moore	18	188	Rel. of Mtg. L 964, Mp33, West. Co.
4/4/1900	William H. and Hannah B. Birchall	William H. Bolton	20	176	
4/4/1900	William H. Bolton	Mary F. Bolton	20	178	
2/25/1901	Alfred and Jennie Bateson	William H. Birchall and Thomas Bolton, Junior	21	326	
2/25/1901	Otto E. and Augusta Ellendt	William H. Birchall and Thomas Bolton, Junior	23	265	
2/25/1901	Otto E. and Augusta Ellendt	William H. Birchall	23	267	
2/25/1901	William H. and Hannah B. Birchall	Thomas Bolton, Junior	23	268	Pt. 1
5/12/1902	Edward M. O'Neill and Coles Morris, exrs. Jane J. Neill, dec'd	Ralph J. Treat	28	122	Pt. 1
5/15/1902	Ralph J. Treat	Alexander R. Peacock	28	137	
3/7/1903	George Scheppenhauser	City of New York	29	199	Rel. of Mtg. L 24, Mp272, A.D.
8/20/1903	Sigmund Grabenheimer	City of New York	29	498	Rel. of Mtg. L 775, Mp10, West Co.
8/26/1903	James B. and Mary A. Williams	William H. Birchall and Thomas Bolton, Junior	31	428	
9/3/1903	Sarah and Nicholas Williams	James B.W. Logan	32	129	
9/14/1903	John Senior and Amanda Bussing	City of New York	32	12	Rel. of Mtg. L 25, Mp158, A.D.
9/25/1903	Alice B. James (formerly Bolton), William and Fanny A. Cook (formerly Bolton), and Emily L., Florence M., Arthur T., Thomas, Ella, John W., and Catherine E. Bolton, exrs. Henry B. Bolton, dec'd.	William H. Birchall and Thomas Bolton, Junior	32	174	
1/18/1905	Charles F. Ramsdell, admtr. (CTA) of Benjamin Disbrow, dec'd.	William H. Birchall	39	164	
1/18/1905	David Cromwell, trust. of Benjamin Disbrow, dec'd	William H. Birchall	39	165	
3/6/1905	William, Amelia, Jane, and Eliza Wendell, heirs at law of William Wendell	William H. Birchall	39	388	
7/6/1905	Alexander R. and Irene M. Peacock	Carrie Oppenheimer	44	391	
1/12/1906	Hannah B. Birchall	[illeg.] Samuels	53	97	
1/12/1906	William H. and Hannah B. Birchall and Thomas and M. Frances Bolton	Leon A. Rains	53	98	
4/1/1907	Maria W., Minnie L. and Joseph Greenhalgh, Rachel Butler, wife of Calvin Butler	Elizabeth Greenhalgh	68	252	
7/20/1954	Treasurer of the City of New York	City of New York	2080	244	Additional Lot 10
<p>Notes: All properties were referred to as "unlotted" and no lot numbers were given. The above deeds include land transactions for Block 4333 and may include transactions that did not apply specifically to the project site. Additional unlotted entries for this block have been omitted based on additional research which suggests those properties were outside the project site.</p> <p>Sources: Liber books dating between 1680 and 1898 on file at the office of the Westchester County Clerk; those dating between 1898 and the present are on file at the Bronx Office of the New York City Register.</p>					

Appendix A:

Selected Deeds for the Project Site

Date	Grantor	Grantee	Liber	Page	Remarks
8/10/1695	William Richardson exrs.	Evert Byvanck and Johannes Hoghland	B	249	
7/20/1697	Johannes Hoghland	Evert Byvanck	185	24	
1711	William Provost and wife	Nicholas Brouwer	E	11	
3/1/1719	Nicholas and Jannetie Brouwer	Daniel Tournier	185	13	
10/26/1727	Daniel Tournier	Nicholas Brouwer	F	179	Release
7/9/1774	Trustees and Freeholders of the Town of Westchester	James and Oliver DeLancey	N	164	recorded 5/25/1803
5/1/1803	Oliver DeLancey	David Lydig	I	129	Mortgage; referenced in Carlson (1955)
8/3/1826	David and Maria Lydig	Peter Schenck, James Bolton, and Samuel Pilling	28	64	
2/1/1827	Peter and Harriet Schenck, James and Catherine Bolton, and Samuel and Elizabeth Pilling	The Bronx Bleaching and Manufacturing Company	29	215	
1/14/1842	Trustees of the Methodist Parsonage at Bronxdale (Thomas Bolton, Edward Olin, Thomas Griffin, Edward Shonnard, and Thomas Birch)	Thomas Bolton	95	255	
9/11/1846	James and Catherine Bolton	Thomas Bolton	116	392	
5/12/1851	James Bolton	Sarah Williams	166	77	
5/24/1856	The Bronx Bleaching and Manufacturing Company and James and Catherine Bolton	Thomas Bolton	331	439	
5/3/1864	James Bolton	Isaac Entwistle and Robert Greenhalgh	530	22	
5/2/1866	James Bolton	The M.E. Church of Bronxdale trustees (Thomas Bolton, Senior, Nicholas Williams, John Scowcroft, Morrison Beardsley, Robert Bolton, James B. Williams, and Thomas Bolton Junior)	614	1	
2/19/1868	James Bolton	James B. Williams	682	301	
7/7/1868	James Bolton, Senior	John Hitchcock, Junior	719	169	recorded 6/24/1869
1/3/1871	James Bolton	Ann Bolton	925	120	Refers to Historic Lots C and D
1/3/1872	James Bolton	Ann Bolton	925	116	Refers to Historic Lots H and J
1/13/1893	Exrs. Of Ann Bolton	William H. Birchall and others	1301	3	Refers to Historic Lots C and D
5/12/1893	Henry B., Thomas, John W., and Catherine Bolton, exrs of est. of Ann Bolton	William H. Birchall	1311	198	Refers to Historic Lots C, D, H, and J
6/26/1891	Lavinia M. Bolton	William H. Birchall, Thomas and Henry B. Bolton	1371	446	

Appendices