

HISTORICAL **PERSPECTIVES** INC.



Phase IA Archaeological Documentary Study

**Reconstruction and Construction of a Bicycle Pedestrian Path
Within A Portion of the Bronx River Greenway, Located Between
Unionport Road and Allerton Avenue, in Bronx Park**

**Parts of Block 4333, Lot 1; Block 4336, Lot 1; and crossings at
Boston Road, Pelham Parkway North, Pelham Parkway South,
Bronx River Parkway and Allerton Avenue**

Bronx County, New York

**NYCDPR CONTRACT # X002-211M
NYSDOT PIN: X550.70
LPC # NYSDOT / 106-X**

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EXECUTIVE SUMMARY

The City of New York Parks and Recreation (NYCDPR) initiated a Capital Project for the Reconstruction and Construction of a Bicycle Pedestrian Path within a portion of the Bronx River Greenway in Bronx Park. The project is a multi-agency effort by the City of New York Parks and Recreation, The Bronx River Alliance, New York State Department of Transportation and New York City Department of Transportation. The Bronx River Greenway is a 23-mile long ribbon of green with a multi-use path that will extend along the full length of the river in Westchester County and the Bronx. Approximately 15 miles of the Greenway are now in place. NYCDPR is working in conjunction with the Bronx River Alliance and other community groups to ensure that a fully realized Greenway is a reality within a decade. Allowing both bicycle and pedestrian traffic, the Greenway will develop new open space in neighborhoods where it is severely lacking and will restore existing parks. The Bronx River Greenway will reclaim underutilized pathways, provide access to the Bronx River and improve the quality of life for both residents of the Bronx and the region.

The overall Bronx River Greenway consists of a number of different segments, which are being addressed under separate contracts over a period of years. The present project, known as NYCDPR Contract # X002-211M, includes 1.28 miles within Bronx Park, beginning at the line of Unionport Road on the south and continuing north to Allerton Avenue (Figures 1 and 2). The project site generally lies between Bronx Park East and Boston Road on the east and interior sections of Bronx Park and the Bronx River Parkway on the west. The project site includes parts of Block 4333, Lot 1; Block 4336, Lot 1; and crossings at Boston Road, Pelham Parkway North, Pelham Parkway South, Bronx River Parkway and Allerton Avenue

The proposed goal within this 1.28 mile segment of the project is to reconstruct the existing pedestrian and bicycle paths in Bronx Park and to construct new paths and improve the safety of street crossings where they are needed. Specific improvements to achieve these objectives include:

- Cleaning of Storm Lines and Drainage Structures
- Reduction of impervious coverage by consolidation of portions of path system
- Re-Grading of path segments to improve storm drainage
- Creation of Bio-Swales and Bio-Retention Areas
- Re-Alignment of mapped greenway to ensure safety of users
- Enhanced street crossings for safety of path users
- New Concrete and Asphalt Pavements
- Addition of Pavement markings / striping to denote pedestrian only & bicycle only lanes
- Greenway signage
- Connections to existing bicycle pathways
- New Guiderail and Concrete Jersey Barriers
- Bicycle racks
- Benches
- Native Plantings

Within the overall project site boundaries, there is a smaller Area of Potential Effect (APE) where ground impacts are slated to occur. The APE is bounded by the Contract Limit Line (or CLL on project maps), and generally includes all pathways and roadbeds to be reconstructed as well as buffer zones around these areas where additional improvements, listed above, are planned (Figures 3a-f, 4a-f). Many of the proposed project components will require no subsurface action. Appendix A is an illustrated guide showing present project impacts overlaid on a series of late 1930s maps of this section of Bronx Park as it was being constructed.

The majority of excavation will be necessary for foundations of bollards, benches, signage and pavements. Some re-grading of the site will be required in order to even slopes and improve or control stormwater runoff. New plant material will be selected to enhance and preserve native habitats along the corridor. The greatest foundation depth for any proposed site features including signage would be limited in width and down to a depth of 4 feet maximum. Other locations will be excavated ca. 3 feet, ca. 1 foot, or not at all. The majority of the proposed greenway path is located over the existing path, where the existing pavement would be removed to a depth of 4.5 inches for the new asphalt path to be placed. In a few instances, the proposed greenway path is located in areas where there is currently

no existing path, whereas the existing earth would be excavated down to a depth of 4.5 inches for the new asphalt path to be placed.

The NYSDOT has determined that there are no archaeological concerns under Section 106 of the National Historic Preservation Act (NHPA) because review of the New York State Historic Preservation Office (NYSHPO) GIS maps indicates that the project site does not fall within an area of archaeological sensitivity. However, as part of the environmental review process, materials were submitted to the New York City Landmarks Preservation Commission (LPC) in 2012. The LPC responded:

LPC review of archaeological sensitivity models and historic maps indicates that there is potential for the recovery of remains from colonial, 19th Century and Native American occupation on the project site. The preliminary description of the project should be revised to disclose the potential for impacts to archeological resources within or adjacent to the project site. The applicant should provide LPC with schematic drawings in plan and section of existing and proposed conditions for all locations of inground construction to clarify these initial findings and provide the threshold for the next level of review, if such review is necessary (see CEQR Technical Manual 2010). Upon review of these documents an archeological documentary study may be required before LPC can comment regarding potential impacts / effects to potential archeological properties (Santucci 1/30/12).

After contract drawings for the project were submitted in 2014, LPC further responded:

The LPC is in receipt of the contract drawings for the reconstruction and construction of a bicycle pedestrian path and notes that the project includes excavation in multiple areas with archaeological sensitivity. Accordingly, the Commission recommends that an archaeological documentary study be performed for the sites to clarify these initial findings and provide the threshold for the next level of review, if such review is necessary (see CEQR Technical Manual 2012) (Sutphin 1/22/14).

Following LPC's recommendation that an archaeological documentary study be performed for this site, DPR retained Historical Perspectives, Inc. (HPI) to conduct the work, which is summarized in this report. This Phase IA Archaeological Documentary Study has been prepared to satisfy the requirements of the City Environmental Quality Review (CEQR), and to comply with the standards of the LPC (LPC 2002; CEQR 2012).

Results of the Phase IA Archaeological Documentary Study indicated moderate precontact sensitivity in portions of Areas 1 and 5, and high historic period archaeological sensitivity in portions of Area 2. Based on these conclusions, HPI makes the following recommendations. If project plans allow it, subsurface impacts to these sensitive Areas should be avoided. If impacts cannot be avoided, then HPI recommends that these sensitive Areas be addressed through archaeological investigations, known as Phase IB archaeological testing. The Phase IB testing plan might consist of a combination of hand excavated shovel tests and mechanical backhoe trenching, depending on location. Because project impacts vary so widely in location and depth across the APE and to allow for any changes during construction, the Phase IB testing plan would be developed in order to sample conditions in each of the sensitive areas and to determine whether any intact archaeological resources could be affected by the deepest vertical extent of the proposed project components. An archaeological Scope of Work should be developed by the archaeological consultant in consultation with the LPC and DPR. All archaeological testing should be conducted according to OSHA regulations and applicable archaeological standards (LPC 2002; CEQR 2012). Professional archaeologists, with an understanding of and experience in urban archaeological excavation techniques, would be required to be part of the archaeological team.

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I. INTRODUCTION

The City of New York Parks and Recreation (NYCDPR) initiated a Capital Project for the Reconstruction and Construction of a Bicycle Pedestrian Path within a portion of the Bronx River Greenway in Bronx Park. The project is a multi-agency effort by the City of New York Parks and Recreation, The Bronx River Alliance, New York State Department of Transportation and New York City Department of Transportation. The Bronx River Greenway is a 23-mile long ribbon of green with a multi-use path that will extend along the full length of the river in Westchester County and the Bronx. Approximately 15 miles of the Greenway are now in place. NYCDPR is working in conjunction with the Bronx River Alliance and other community groups to ensure that a fully realized Greenway is a reality within a decade. Allowing both bicycle and pedestrian traffic, the Greenway will develop new open space in neighborhoods where it is severely lacking and will restore existing parks. The Bronx River Greenway will reclaim underutilized pathways, provide access to the Bronx River and improve the quality of life for both residents of the Bronx and the region.

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The majority of excavation will be necessary for foundations of bollards, benches, signage and pavements. Some re-grading of the site will be required in order to even slopes and improve or control stormwater runoff. New plant material will be selected to enhance and preserve native habitats along the corridor. The greatest foundation depth for any proposed site features including signage would be limited in width and down to a depth of 4 feet maximum. Other locations will be excavated ca. 3 feet, ca. 1 foot, or not at all. The majority of the proposed greenway path is located over the existing path, where the existing pavement would be removed to a depth of 4.5 inches for the new asphalt path to be placed. In a few instances, the proposed greenway path is located in areas where there is currently

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Following LPC's recommendation that an archaeological documentary study be performed for this site, DPR retained Historical Perspectives, Inc. (HPI) to conduct the work, which is summarized in this report. This Phase IA Archaeological Documentary Study has been prepared to satisfy the requirements of the City Environmental Quality Review (CEQR), and to comply with the standards of the LPC (LPC 2002; CEQR 2012). The HPI project team consisted of Julie Abell Horn, M.A., R.P.A., who conducted the site visit, research and wrote the report; Sara Mascia, Ph.D., R.P.A., who also conducted the site visit; and Cece Saunders, M.A., R.P.A. who managed the project and provided editorial and interpretive assistance.

II. METHODOLOGY

The present study entailed review of various resources.

- Primary and secondary sources concerning the general precontact period and history of the Bronx River area and specific events associated with the project site and vicinity were reviewed using materials available at the New York Public Library, the Bronx Historical Society, the library of HPI, and using online resources.
- Historic maps and photographs were searched using materials available at the New York Public Library, the DPR Olmsted Center Archives, the Bronx Historical Society, the Westchester County Clerk's office, the Bronx Borough President's Topographical Bureau, the Museum of the City of New York, the New York City Municipal Archives, the library of HPI, and using various online websites. These maps provided an overview of the topography and a chronology of land usage for the project site. A selection of these maps has been reproduced for this report. Few photographs specifically of the project site were found; most images reviewed on file at local repositories were of other sections of Bronx Park and not relevant to this study.
- Limited deed research to ascertain general land ownership patterns during the nineteenth century was undertaken using materials from the Westchester County Clerk's office.
- Selected Federal census records were reviewed to document residency during the nineteenth century.

- Because the project site only contains several small park structures, Department of Building records are not relevant for this study.
- Information about previously recorded archaeological sites and surveys in the area was compiled from data available at the New York State Office of Parks, Recreation and Historic Preservation (NYSOPRHP), the LPC, and the library of HPI.
- Last, a site visit was conducted by Julie Abell Horn and Sara Mascia on July 9, 2014 to assess any obvious or unrecorded subsurface disturbance (Photographs 1-29; Figures 3a-f).

III. CURRENT CONDITIONS AND ENVIRONMENTAL SETTING

A. Current Conditions

The project team adopted the convention of creating smaller “Areas” within the overall length of the project alignment, due to the 1.28 mile length of the project site (Figure 2). These Areas are numbered 1-6 and begin at the southern end of the project site and move sequentially toward the northern end of the project site. For ease of discussion, this report utilizes the same Area designations. Current conditions for each Area, and the specific APEs within these Areas, are presented below and are shown on Figures 3a-f.

Area 1 (Figure 3a, Photographs 1-4)

Area 1 is the southernmost section of the project site. It is bounded by Unionport Road on the south, Bronx Park East on the east, interior sections of Bronx Park on the west, and a line just north of Maran Place on the north.

The APE in Area 1 is limited to the area containing the existing asphalt paved pathway and a buffer zone on either side, beginning at the pathway intersection just northwest of Brady Playground. The Bronx Greenway pathways south of this intersection are being addressed under a different contract. The APE ranges in width from about 30 feet at its narrowest point (which includes the approximately 10-foot wide pathway) and 70 feet in width at its greatest extent, where staging areas are proposed.

Topography in the Area 1 APE is generally level, at approximately 40 feet above sea level (asl), with steeper slopes and exposed bedrock outcrops to the east, between the APE and Bronx Park East. This portion of the APE was once at the edge of and/or within a marshy area and streambed that emptied into the Bronx River (discussed below), which was filled in when Bronx Park was created. The APE still experiences drainage problems, which were evident during the site inspection after a rainstorm.

There are numerous subsurface utility lines within the Area 1 APE, including gas, water, and storm sewers. Some of these lines run alongside the existing pathways and others cross them at various points.

Park features in Area 1 include (from south to north): Brady Playground at Unionport Road and just southeast of the APE, a handball court immediately east of the APE, baseball fields (known as Trojan Fields and reconstructed in 2009) immediately west of the APE, and Oscar Comras Mall also immediately west of the APE, which includes a band shell.

Area 2 (Figure 3b, Photographs 5-13)

Area 2 is immediately north of Area 1 and immediately south of Area 3. The southern border is the line just north of Maran Place and the northern border is Pelham Parkway South. The eastern edge is Bronx Park East and Boston Road, which also bisects the Area. Interior sections of Bronx Park mark the western side of the Area.

The APE in Area 2 includes the pathways surrounding the circular shaped Ben Abrams Playground (although not the interior playground itself), a section of manicured, grass-covered parkland north of Boston Road where there presently are no paths, and portions of the sidewalks and roadbeds of Boston Road and Bronx Park East.

Elevations in the southern section of Area 2 begin at about 40 feet asl at the southern end and rise moving northeast toward Bronx Park East, ending at about 57 feet asl at the edge of the roadway. A large bedrock outcrop is situated

within the APE near the brick comfort station building. Crossing Boston Road, the northern section of Area 2 contains a relatively level area that rises gently from 50-60 feet asl.

This part of the APE has numerous subsurface utilities running through it. There was once a perennial drainage (discussed below) that ran through this area, which has been channeled into an 8.5x10 foot size combined storm sewer. Additional storm sewer, water, and electrical lines cross through this area as well, particularly in the location of the playground.

Park features in Area 2 include the Ben Abrams Playground, its associated comfort station, a small one-story masonry electrical building, and the one-story masonry District 11 Park headquarters building.

Area 3 (Figure 3c, Photographs 14-18)

Area 3, which is an angled rather than linear section, is immediately north of Area 2 and immediately east of Area 4. Area 3 includes portions of the roadbeds of Boston Road, Bronx Park East, and Pelham Parkway North, as well as areas between Bronx Park East and Pelham Parkway North.

The APE in Area 3 includes portions of the sidewalks and road crossings of Boston Road, a section of existing asphalt paved pathway and a staging area immediately south of Pelham Parkway North, the roadbed at the bend of Bronx Park East and Pelham Parkway North, and a new connecting pathway west of Bronx Park East.

Topography for the Area 3 is artificial due to the creation of the roadways, which dominate the landscape. Elevations along Boston Road are ca. 70-75 feet asl. The existing pathway and manicured lawn on the south side of Pelham Parkway North slope gently from 75-60 feet asl moving west to the bend of Bronx Park East. This section was once part of the older Pelham Parkway ramp configuration prior to construction of the Bronx River Parkway extension in the 1930s. The area west of this bend has been heavily modified by adjacent road construction and is artificially undulating. There is an overgrown “rain garden” in this area, bordered by a low concrete wall.

Multiple subsurface utilities are located under all the roadways and sidewalks within the Area 3 APE. Further, there are no park features along this stretch of the project site.

Area 4 (Figure 3d, Photographs 19-21)

Area 4 is immediately north and west of Area 3 and immediately south of Area 5. It is bounded by Bronx Park East on the east, the Bronx River Parkway on the west, and a line midway between Thwaites Place and Waring Avenue on the north.

The Area 4 APE is limited to an existing asphalt paved pathway and a small buffer zone on either side. The APE ranges in width from about 30 feet at its narrowest point (which includes the approximately 10-foot wide pathway) and 120 feet at its greatest extent, where a staging area is proposed.

The topography in the Area 4 APE is heavily influenced by the former location of Reiss Pond, which was a manmade pond created by damming the existing perennial drainage that ran through this area (discussed below). Nearly all of the Area 4 APE is on land created by filling in the former pond or along the steep shores of the pond. Today, elevations in the Area 4 APE range from ca. 60 feet asl at the southern end to about 90 feet asl at the northern end.

Numerous subsurface utilities cross the APE at various locations, including storm sewer, electrical, telephone, and water lines. Park features in this Area include Reiss Field, which contains a baseball diamond and bleachers.

Area 5 (Figure 3e, Photographs 22-26)

Area 5 is immediately north of Area 4 and immediately south of Area 6. It is bounded by the line midway between Thwaites Place and Waring Avenue on the south, the line of Mace Avenue on the north, Bronx Park East on the east, and the Bronx River Parkway on the west.

The Area 5 APE is limited to an existing asphalt paved pathway and a small buffer zone on either side. The APE ranges in width from about 30 feet at its narrowest point (which includes the approximately 10-foot wide pathway) and 80 feet at its greatest extent, where the pathway is about twice as wide and includes side-by-side pedestrian and bicycle paths, separated by an iron pipe rail fence. At the northern end of the Area, the two pathways diverge, with one side running closer to Bronx Park East and the other side running closer to the Bronx River Parkway. The pathway includes the entrance to Bronx Park at Waring Avenue.

Topography within the Area 5 APE is variable. On the south, the pathway rises in elevation from about 90 feet asl to just over 100 feet asl at Waring Avenue. From Waring Avenue, the path rises again, to about 120 feet asl at the northern end.

Unlike other parts of the project site, there are few utilities along this stretch of the APE, excepting the electric lamp posts and boxes bordering the pathways. Waring Playground is located adjacent to the Area 5 APE on the southern end.

Area 6 (Figure 3f, Photographs 27-29)

Area 6, the northernmost section of the project site, is immediately north of Area 5. It is bounded by the line of Mace Avenue on the south, Allerton Avenue on the north, Bronx Park East on the east, the Bronx River Parkway on the west.

The Area 6 APE is limited to an existing asphalt paved pathway and a small buffer zone on either side. The APE ranges in width from about 50 feet at its narrowest point (which includes the approximately 10-foot wide pathway) and 100 feet at its northern end, where the pathway (which had been running along the Bronx River Parkway) rejoins the second pathway that runs closer to Bronx Park East.

Topography of the Area 6 APE slopes down to the north. The southern end is at about 120 feet asl and the northern terminus is at about 105 feet asl. There are underground electrical and storm sewers along the northern extent of the Area 6 APE. No park features are located in this section.

B. Topography and Hydrology

The project site is situated on the eastern edge of the Bronx River valley. The Bronx River is located from ca. 1000-2000 feet to the west of the project site, depending on the location within the project site and the meandering channel of the river. Prior to being filled in and channeled underground, there also was a perennial drainage with several branches that ran through the project site in several locations and emptied into the Bronx River near the present Bronx Zoological Gardens parking lot. Along this branched drainage there were areas of low lying marshland within the project site. The former Reiss Pond was created from damming one branch of the drainage, located in Area 4, just north of Pelham Parkway. After 1937 it was filled in and is now the site of Reiss Field.

Prior to grading and filling associated with park and roadway construction, elevations in the project site ranged from about 40 feet asl on the southern end to about 100 feet asl on the northern end (Bien and Vermeule 1891, Figure 8). The southern section of the APE was relatively level, while the northern section had rolling topography. More detailed topographical maps from 1905 (Figures 11a-b) and 1937 (Appendix A) show that in addition there were numerous bedrock outcrops throughout the project site. Many of these outcrops still survive today, although others likely were removed. There has been very substantial disturbance to the original landform of the project site in order to create the existing public park and the network of urban roadways. Many areas have been graded and/or filled, and roads have been built and reconfigured, especially along Pelham Parkway.

C. Geology

The borough of the Bronx lies within the Hudson Valley Region and is considered to be part of the New England Upland Physiographic Province, which is a northern extension of the Great Appalachian Valley (Schubert 1968:10, 74). Situated on the northern end of the Crotona Park Ridge, a wide area of moderately high land, which extends northward from the South Bronx, the project site is underlain by volcanic rock called the Manhattan Formation, composed mostly of quartz, mica, feldspar, and hornblende. The exposed bedrock on the site is composed of this

coarse-grained schist. During the most recent period of glacial activity, the Wisconsin episode, the Bronx was covered by ice. Following deglaciation, postglacial Lake Hudson covered much of the Hudson Valley below the Highlands including the project site. When it receded, smaller water-courses were left scouring the landscape into what it is today. The Bronx River, which bisects the project site, was one of these.

D. Soils

According to the soil survey for New York City, the project site falls within soil mapping unit 223, or Chatfield-Greenbelt-Pavement & buildings complex, 15 to 50 percent slopes.

Chatfield-Greenbelt-Pavement & buildings complex is described as:

Moderately steep to very steep areas of bedrock controlled hills and ridges modified by glacial action that have been partially cut and filled, mostly for parks and low density residential use; a mixture of moderately deep gneissic till soils and anthropogenic soils, with more than 15 percent impervious pavement and buildings covering the surface; located in Manhattan and the Bronx. (USDA 2005:14).

The Chatfield and Greenbelt soil series are further described in the table, below.

Name	Soil Horizon Depth	Color	Texture, Inclusions	Slope %	Drainage	Landform
Chatfield series	A: 0-2 in AB: 2-8 in Bw: 8-25 in 2R: 25 in	10YR 3/2 10YR 3/3 7.5YR 4/4	Lo Lo GrlSiLo Bedrock	15-50	Well	Bedrock controlled hills and ridges
Greenbelt series	A: 0-3 in Bw: 3-13 in C: 13-57 in Ab: 57-58 in BwB: 58-65 in	7.5YR 4/4 5YR 4/6 2.5YR 4/4 7.5YR 3/2 5YR 4/6	Lo Lo GrlLo Lo Lo	15-50	Well	Anthropogenic urban fill plains

Key: Soils: Si-Silt, Lo-Loam, Sa-Sand

Other: Str-Stratified, V-Very, Grl-Gravelly, Co-Coarse

No soil borings have been made in conjunction with the present project and no prior soil borings were located.

IV. BACKGROUND RESEARCH/HISTORICAL OVERVIEW

A. Precontact Summary

The precontact era in the coastal New York region can be divided into three time periods, based on human precontact adaptation to changing environmental conditions. These are generally known as the Paleo-Indian (c.12,000 to 10,000 years ago), the Archaic (c.10,000 to 2,700 years ago) and the Woodland (c.2,700 to 300 years ago). In order to be able to assess the project site's potential for precontact exploitation, it is first necessary to review these time periods and their associated settlement patterns.

Paleo-Indian Period (c.12,000 y.a. - 10,000 y.a.)

Toward the end of the Wisconsin Glaciation, during the Late Pleistocene Epoch, humans wandered across the exposed land bridge, which connected Siberia and Alaska. These small groups of hunters were probably following the roaming herds of megafauna which were their chief prey. The distinctive weapon in their chipped stone tool kit was the fluted point, which has been found in association with mammoth, mastodon, bison and horse remains at various sites in the southwestern United States. Although none of these "kill sites" is located east of the Mississippi, the discovery of campsites such as that at Port Mobil, Staten Island, suggest a scattered, highly mobile population in bands of approximately 20 individuals, who ranged across a vast area necessary to support lifeways organized around the hunting of migratory game (Ritchie 1980:1-3, 13).

The fluted, lanceolate points, two to five inches in length with concave bases and channelled or fluted faces, presumably to facilitate hafting, exhibit a considerable range in shape and size. They were usually made from a high-grade silicious stone, often exotic to the region in which they are recovered, a function of their makers' seasonal migrations. Other artifacts in the Paleo-Indian tool kit include scrapers, knives, borers and gravers, tools that indicate extensive handiwork in wood, bone and leather (Ritchie 1980:3,6).

From the locations of recorded sites in the Northeast, Paleo-Indians exhibited a marked preference for well-elevated situations. However, 30% of sites were found on or near the margins of swampy ground. Environmental characteristics, which appear to have been attractive to Paleo-Indians include the proximity of major waterways, large fertile valleys and the coastal plain, where the densest population of desired food animals was supported (Ritchie 1980:7). However since 10,000 years ago, the rise in sea level estimated to be from 75 to 80 feet, has submerged large numbers of these sites.

The retreat of ice from the project area vicinity approximately 18,000 years ago and a global warming trend circa 14,000 years before present encouraged Paleo-Indian settlement in the Northeast. The post-glacial environment of spruce and pine underwent a gradual modification in favor of deciduous hardwoods such as oak and hickory, which have greater importance in terms of nutritional value to both animals and humans than do conifers. By 8,000 B.C., these deciduous species dominated forests along the eastern seaboard. In addition, the megafauna on which Paleo-Indian diet was based "were rapidly becoming extinct, and were being replaced by the temperate-climate fauna that are indigenous today" (Gwynne 1982:190-191).

Archaic Period (c.10,000 y.a. - 2,700 y.a.)

The warming trend at the end of the last glaciation completely transformed the northeastern coastal environment from tundra and conifer-dominated forests, to the present deciduous woodlands with generally modern distributions of fauna. Due to the dwindling contribution of meltwater from disappearing glaciers, the reduced flow of streams and rivers promoted the formation of swamps and mudflats. These wetlands created a congenial environment for migratory waterfowl, and a host of edible plant species and shellfish. The new mixed hardwood forests of oak, hickory, chestnut, beech and elm attracted such mast-eating fauna as white-tailed deer, wild turkey, moose and beaver.

Although the Archaic diet was still based on hunting and gathering, due to the greater variety of plants available and exploited, excavated Archaic sites yield a wide array of plant processing tools, including grinding stones, mortars and pestles. The diagnostic tool was the grooved axe. In the coastal areas of New York, have been found numerous, small "nearly always multi-component sites variously situated on tidal inlets, coves and bays, particularly at the heads of the latter, and on fresh-water ponds" (Ritchie 1980:143). By the Late Archaic, these areas provided shellfish, small game, fish, salt hay and tuberous grasses, making larger more permanent settlements possible. Semi-nomadic life is still indicated, but wandering occurred within well-defined territorial limits, with seasonal movements between camps near exploitable resources. A dietary shift to shellfish in coastal New York near the end of the Archaic suggests a scarcity of large game, and a change from the early Archaic inland adaptation of forest hunting. Coastal sites show a principal reliance upon shellfish, especially oysters, hard and soft shell clams and bay scallops, which were readily available in the waters of the East River and Long Island Sound. Characteristic of the Late Archaic were "fish-tailed" projectile points and soapstone bowls (Ritchie 1980:142,166, 167, 171). In contrast to conditions during the Paleo-Indian, Early and Middle Archaic, "by Late Archaic times sea level was so close to present levels that its subsequent small rise has failed to obliterate much of what remains on Long Island from that period" (Gwynne 1982:192). Hence the Late Archaic Wading River complex, four sites on the north shore of Suffolk County, was found at the edge of a salt marsh, on dry ground ranging only two to seven feet above mean high water (Wyatt 1982:71).

Woodland Period (c.2,700 y.a. - 300 y.a.)

From approximately 3,000 years ago until the arrival of the first Europeans, Native Americans of southern New York shared common attributes of the Woodland Stage: the advent of horticulture, extensive trade networks, large permanent or semi-permanent villages, pipe smoking, the bow and arrow and the production of clay vessels. The habitation sites of the Woodland Indians increased in size and permanence as they became ever more efficient in

extracting food from their environment. The archaeological evidence from Woodland Period sites indicates a strong preference for large-scale habitation sites to be in close proximity to a major fresh water source, e.g., a river, a lake or an extensive wetland; and smaller scale sites for extractive operations, e.g., butchering stations, shell gathering loci and quarrying sites, to be situated at other resource locales. Late Woodland Stage sites of the East River Tradition in southern New York have been noted on the “second rise of ground above high water level on tidal inlets,” and situated on “tidal streams or coves” and “well-drained sites” (Ritchie 1980:16). Carlyle S. Smith, who studied and analyzed the distribution of precontact ceramics in coastal New York, stated that “village sites” are found on the margins of bays and tidal streams” (Smith 1950:130).

Woodland Period tool kits show some minor variations as well as some major additions from previous Archaic tool kits. Plant processing tools became increasingly common and their presence seems to indicate an intensive harvesting of wild plant foods that may have approached the efficiency of horticulture, which itself appeared during the second half of the Woodland Period. The advent of horticulture is tied in with the introduction of ceramic containers that allowed for more efficient cooking of certain types of food and may also have functioned as storage for surplus food resources. Despite the advent of agriculture, shellfish and small game remained an important component of the Woodland diet. Shellfish refuse heaps, termed “middens,” reached immense proportions, covering from one to over three acres. Deer, turkey, raccoon, muskrat, ducks and other game were stalked with bow and arrows, replacing the spear and javelin, while dug-out boats, bone hooks, harpoons and nets with pebble sinkers were employed in fishing (Ritchie 1980:179-180,267).

Historical narratives written by European travelers and settlers provide us with our only first-hand descriptions of Native American daily life and customs during 17th century. Johannes de Laet, in his *New World, or Description of West India*, published in Holland in 1625, wrote that the Native Americans:

are divided into many nations and languages, but differ little in manners. They dress in the skins of animals. Their food is maize, crushed fine and baked in cakes, with fish, birds and wild game. Their weapons are bows and arrows, their boats are made from the trunks of trees hollowed out by fire.

Some lead a wandering life, others live in bark houses, their furniture mainly mats and wooden dishes, stone hatchets, and stone pipes for smoking tobacco (Bolton 1972:16).

Anthropologists and linguists agree that when Europeans arrived in the project area vicinity, the Native Americans were Munsee-speaking Upper Delaware Indians, a group known as the Wiechquaesgeck. At the time of European contact, c.1600, an estimated 900 Wiechquaesgeck occupied the Bronx, northern Manhattan Island and Westchester County. Henry Hudson's first meetings in 1609 with the Indians along the Hudson River shores of Westchester and the Bronx were not propitious. A mate rashly killed an Indian caught burgling one of the ship's cabins, and hostilities broke out which ended with the crew firing muskets on canoes crowded with hostile warriors, killing nine Indians (Brodhead 1853:33; Grumet 1981:25-26,60).

With the advent of Dutch settlement during the 17th century, the constant contact between peoples of two alien cultures, along with their competition for land and other natural resources was a source of frequent friction. Since the Wiechquaesgeck had few furs to trade with the Dutch, there was little motivation on either side for good relations. Several brutal wars with the Dutch and hostilities with other Indian groups during the 1640s and 1650s, coupled with the introduction of European diseases against which Native American populations had no natural protection, decimated Indian populations in the New York City area. Many groups were forced to migrate and merge in order to maintain viable communities. By the end of the 17th century, the Wiechquaesgeck had abandoned Manhattan. Some moved to New Jersey, where they joined the Raritan, while many others settled in northern Westchester County, among the Wappingers in Dutchess County and also in the vicinity of Stamford, Connecticut. They and other small groups were referred to as “River Indians” during the 18th century, when they provided the English with laborers and warriors, but these Indians were driven off or moved in with other groups outside the Lower Hudson Valley (Grumet 1981:60-62).

The presence of Native Americans in the Bronx for the Early Archaic through Late Woodland Periods has been documented, although some periods are more abundantly represented than others (Boesch 1996). At the time of European contact, Native American groups known as the Siwanoy occupied the northern coastline of Long Island Sound from Norwalk, Connecticut to what is now known as the south Bronx. However, the Bronx River is

theorized to be the dividing line between the Siwanoy and another Upper Delaware Munsee speaking cultural group, the Wiechquaesqueak (Grumet 1981:1, 59-60). The Contact Period aboriginal name for the Bronx River including the adjoining Hunts Point shoreline at its mouth was reportedly "Aquahong" which roughly translates as "high bank" in reference to the area's topography (McNamara 1991:362).

B. Previously Recorded Archaeological Sites and Surveys

Research conducted at the NYSOPRHP, the LPC, and the library of HPI revealed no archaeological resources specifically mapped within the project site. However, Boesch (1996) notes a number of precontact sites within one mile of the project site, many within the New York Botanical Garden and the Fordham University campus. These sites are detailed in the table, below.

Site Number/Name	Site Description	Location	Time Period
Boesch 43 Bear Swamp	Large Siwanoy village	Vicinity of Lydig and Brady Avenues, east of Bronx Park East	Contact Period
Boesch 45 Fordham Road	Habitation site	Near junction of Fordham Road and the Bronx River, within what is now the New York Botanical Garden	Late Woodland?
Boesch 46 Bronx River I	Camp site	Immediately south of the New York Botanical Garden along the banks of the Bronx River	Late Woodland?/Historic
Boesch 47 Bronx River II	Shell heaps	South of Delancey's Mills, on the east bank of the Bronx River, within or immediately south of the Bronx Zoo	Late Woodland?
Boesch 49 Unnamed camp	Small camp site	Banks of the Bronx River at the wading place (near line of Burke Avenue) known during the Contact Period as "Acqueegenom"	Late Woodland?
Boesch 50	Small camp site	Banks of Bronx River at Gun Hill Road	Late Woodland?
Boesch 119 New York Botanical Garden I	Camp site	New York Botanical Garden, formerly part of Fordham University campus	Unknown precontact
Boesch 120 New York Botanical Garden II	Cave or rockshelter	New York Botanical Garden on the west side of the Bronx River near the Magnolia Road Bridge	Unknown precontact
Boesch 121 New York Botanical Garden III	Petroglyph	Formerly located on a rock about 386 feet north of the Bronx River waterfall in the middle of a trail 36 feet east of the river, now removed and precontact origins disputed	Unknown precontact
Boesch 122 New York Botanical Garden IV	Campsite	New York Botanical Garden	Unknown precontact
Boesch 123 Fordham University	Isolated point	Fill deposits surrounding Rose Hill Mansion on Fordham University	Late Archaic

Despite these nearby resources, the NYSOPRHP GIS database does not identify the project site as within an area of archaeological sensitivity, most likely because these precontact sites have not been formally recorded with this agency. The archaeological sensitivity study of the Bronx prepared for the LPC (Boesch 1996) indicates that the entire area east of the Bronx River and including the entire project site and APE is within an area of high precontact archaeological sensitivity, based on its proximity to the Bronx River and the known precontact sites in this vicinity. Grumet (1981:69) indicates that there were several precontact period trails in the project site vicinity, including the former Bear Swamp Road (the approximate line of Bronxdale Avenue), the approximate location of Unionport Road, and a path crossing the Bronx River in the approximate location of today's Fordham Road and Pelham Parkway.

There have been a number of archaeological studies conducted in proximity to the project site. In 1991, LPC completed an archaeological assessment of fifteen city-owned cultural institutions, including the Bronx Zoological Park and the Bronx Botanical Gardens, both located on the west side of the Bronx River Parkway and abutting the project site (LPC 1991). The study identified a number of locations of both precontact and historic period archaeological sensitivity. In 1993, an additional archaeological study was completed for the Bronx Botanical Gardens (HPI 1993), which resulted in the identification of additional areas of archaeological sensitivity. More recently, a portion of the Bronx Zoological Park was subjected to a Phase IA and Phase IB archaeological study (AKRF 2013a, 2013b). No significant cultural resources were found during the Phase IB survey of Boston/Jungle World Road.

The Bronx River Ecosystem, encompassing land within both Bronx and Westchester Counties, was the subject of a Cultural Resources Baseline Survey by the Army Corps of Engineers in 2007 (USACE 2007). A number of previously recorded archaeological sites were identified along the Bronx River, including areas near the project site. These include the sites detailed in the table, above.

Last, two sections of the Bronx River Greenway south of the present project site have been studied previously. These have included the portion between Westchester and East Tremont Avenues (HPI 2004, 2008) and the portion from East Tremont Avenue to East 180th Street (Langan 2007). No archaeological sites were found as a result of these studies.

C. Historic Period Summary

The project site falls within the original patent and Town of Westchester within Westchester County, in what later became known as the hamlet of Bronxdale. Westchester County was formed in 1683, and in 1788 Westchester County, along with all counties in New York, was divided further into townships. The Town of West Farms was designated west of the Bronx River and the Town of Westchester was located east of the Bronx River, including the project site. However, until 1846 West Farms was considered part of the Town of Westchester, and its history is intertwined with that of the areas east of the river. The Town of West Farms was annexed by New York City in 1874 and became part of the 24th Ward, but the Town of Westchester was not annexed until 1890. Both areas became part of the Borough of the Bronx in 1898 (Jenkins 1912:1, 7; McNamara 1989:511).

The Bronx River is named for Jonas Bronck, who established the first mills on the river downstream and well south of the project site. Later, the site of the Bronck mills became known as DeLancey's Mills during the colonial period (Jenkins 1912:389). The mills were located along an east-west roadway linking the eastern and western sides of lower Westchester County and were the site of Revolutionary War activity in 1777 and 1778. There is no specific documentation for use of the project site during this period, although this portion of the Bronx River valley would have been visible to troops marching along what is now White Plains Road, several blocks to the east.

The impetus for the first development in the project site area likely came just after the Revolutionary War, when the thoroughfare, now known as Boston Road, was constructed through the project site. The original colonial era Boston Post Road, which ran from lower Manhattan to Boston, crossed what is now the Bronx to the north of the project site, veering east from Kingsbridge and crossing the Bronx River along Gun Hill Road. In the 1790s, Colonel Lewis Morris, owner of Morrisania on the west side of the Bronx River, was able to have a new post road built through his manorlands, creating both a financial advantage for himself and a short cut for travelers. In 1794 John B. Coles built a new bridge crossing the Harlem River to link with this road, and thenceforth the road was

known as Coles' Boston Road, to distinguish it from the older road, which it rejoined in Eastchester and Pelham (McNamara 1991:34).

With the construction of Coles' Boston Road, the project site was now accessible from both the east and west. The Bronx River already had mills established at various locations, but with the presence of the road, the river in the project site vicinity became more attractive to millers. The earliest of these nearby mill sites to be purchased, in the 1790s by Peter and George Lorillard, was in an area west of the northern extent of the project site in what is now the Bronx Botanical Gardens (Liber L, 1792:344). DeLancey's Mills downstream from the project site in West Farms had been purchased by David Lydig, who also bought considerable land further north along the Bronx River, including the area now within the Bronx Zoological Gardens west of the southern portion of the project site (Scharf 1886, Vol. I:817). Regulating the flow of water over mill dams on the Bronx River was an issue for the different mill owners. A suit was lodged between the Lorillards and Lydig in 1811, arguing over Lydig's raising the height of his mill dam downstream, which affected the Lorillard mill upstream (Liber 76, 1811:378). In 1826, the Peter Schenck, James and Samuel Pilling formally purchased land from Lydig for a bleaching mill on the east side of the Bronx River just north of Boston Road (Liber 28, 1826:64). In 1827, the three men formally established the Bronx Bleaching and Manufacturing Company; at that time the company already had considerable holdings including multiple buildings, mill races, milling equipment, and other miscellaneous items worth approximately \$30,000, suggesting that the bleachery had been in operation for at least several years by that time (Liber 29, 1827:215).

The presence of the two large mills west of the project site, as well as the location of the Boston Road through the project site, created conditions suitable to more sustained development. The hamlet of Bronxdale grew up around these resources during the decades following the 1820s and 1830s. Workers at the mills lived in nearby houses, and amenities such as stores, hotels, schools, saloons, and a church were built to cater to these residents. Bolton (1881 Vol. II:431) writes:

Immediately north of the village of West Farms lies "Bronx Dale," the wooded sides of which present a most romantic appearance. In this neighborhood is a small scattered hamlet containing two public houses, two stores, and about twenty dwellings; also the extensive bleach factory of the late Mr. James Bolton.

The first U.S. federal census (1850) that details household members, illustrates that by this time there was a sizeable population in Bronxdale, consisting of a mixture of mill owners and workers, laborers, farmers, storekeepers, and the like, along with their families. The 1851 Sidney and Neff map (Figure 5) as well as the 1868 Beers map of Bronxdale (Figure 6) show the extent of the development around Boston Road.

The APE within Area 2 of the project site crosses a former triangular parcel that formed the crossroads of Bronxdale. Boston Road formed one side of the triangle, Bear Swamp Road formed the second side, and a short stretch of road linking the two larger roads connected on the south. There were a number of buildings within this parcel of land, including Thwaites Hotel, which was present by the 1840s and endured until being razed in 1911. Joseph Thwaite purchased this gore shaped piece of land, as well as another parcel of land (between Boston Road and White Plains Road to the northeast) that is now under the roadway of Pelham Parkway within the project site, in 1842 (Liber 101, 1842:105). Thwaites and his family are listed in census records as hotel keepers and farmers through the nineteenth century, and although they were not always listed as residing at the hotel, the eponymous name endured (Findlay 1871). The hotel building, along with several other houses in this triangular block, are shown on the Sidney and Neff 1851 map (Figure 5), the Beers 1868 (Figure 6) and 1872 maps, the Bien 1893 map (Figure 9), the Sanborn 1898 map (Figure 10), and the Bronx Topographical Bureau 1905 map (Figure 11a). The northern portion of the Thwaites property within the project site is shown on the Bromley 1881 map (Figure 7). Additional buildings in Bronxdale were located north of Boston Road within the Area 2 APE, attributed to members of the Smith family in the 1860s and 1870s (Beers 1868 [Figure 6], 1872).

The sections of the project site at the far southern extent (Area 1) and the sections north of Pelham Parkway (Areas 3, 4, and 5) are in locations that were not developed during the nineteenth century. This likely is because topographical conditions were less favorable for settlement. The southern portion was low lying and marshy, surrounding the main channel of the drainage that once flowed west into the Bronx River. The northern portion also had low lying and swampy areas surrounding the northern branch of the same drainage, interspersed with areas of steeper slopes and numerous bedrock outcrops. Historic maps do not illustrate much, if any development in these

sections of the project site during the nineteenth century. The southern section was part of a large tract owned by the Neal family in the mid-nineteenth century and the northern section was part of the extensive Lorillard family holdings (Bromley 1881, Figure 7).

By the 1890s, change was rapidly occurring in the project site and vicinity. The Bien 1893 map (Figure 9) shows that by this time, areas on the east side of the Bronx River were now designated Bronx Park. This included the entire northern section of the project site, north of Pelham Parkway. The central and southern sections were still privately owned. Around the turn of the twentieth century, the Bronx Zoological Gardens and the Bronx Botanical Gardens opened, carved out of land within Bronx Park (Jenkins 1912:308). The northern portion of the project site was also formerly within the Bronx Botanical Gardens before being transferred back to Bronx Park (*NY Herald Tribune* 7/29/1940). Greenhouses associated with the Botanical Gardens were located within the Area 5 APE and a stable in the Area 6 APE (Appendix A).

Highways in the project site vicinity were under construction as well. The Bronx River Parkway was initiated north of Bronx Park and Burke Avenue in 1906 and was fully opened in 1926. Pelham Parkway was completed in 1911, and the buildings in the central section of the project site (Areas 2 and 3 in the old hamlet of Bronxdale) were demolished at about that time (Jenkins 1913:127). A 1924 aerial photograph including the project site shows conditions after Pelham Parkway had been completed (Figure 12).

In 1937, the Bronx Botanical Gardens and Bronx Zoological Gardens released additional land just west of the project site for construction of the southern extension of the Bronx River Parkway, which opened in the early 1940s (*NY Herald Tribune* 7/29/1940). Construction of the Bronx River Parkway extension also necessitated creating a new clover-leaf traffic interchange connecting with Pelham Parkway. The original alignment of the Pelham Parkway ramps was shifted somewhat to the south, creating the green space south of Pelham Parkway North in Area 3 where there were once roadways. The late 1930s was the period when most of the current improvements were made within the project site, including the construction of playgrounds, pathways, and comfort stations (Appendix A). The southern section of the project site was the first to be transformed into parkland, while the northern section north of Pelham Parkway was completed second.

Maps on file with DPR from the late 1930s (Appendix A) show the massive transformation that occurred within the project site during this period. Significant grading, filling, subsurface utility installation, and channeling natural drainages through storm sewers occurred to create usable park features from what previously was natural topography that included low lying marshy areas and streams, extensive bedrock outcrops, and rolling hills. Appendix A shows an overlay of the present APE and planned construction on these 1930s maps.

The project site has remained part of Bronx Park since the 1930s. There have been various upgrades to park facilities over this time. In the 1990s, local and federal groups created the Bronx River Working Group, now called the Bronx River Alliance, whose goal was to restore the Bronx River and create the present Bronx River Greenway. The Bronx River Action Plan was drafted in 1999 and the Bronx River Greenway Plan was published in 2005. As a result of these efforts, areas within Bronx Park are being upgraded and restored. The present project is part of this overall plan.

V. CONCLUSIONS

A. Precontact Archaeological Sensitivity

Overwhelming evidence exists that Native Americans exploited the natural resources surrounding the Bronx River and its tributaries for thousands of years before the arrival of Europeans. There have been a number of precontact sites noted within a one-mile radius of the project site, although none have been formally filed with the SHPO. The LPC indicates that the entire area east of the Bronx River and including the entire project site and APE is within an area of high precontact archaeological sensitivity, based on its proximity to the Bronx River and the known precontact sites in this vicinity (Boesch 1996). Several precontact period trails crossed, or were adjacent to, the project site (Grumet 1981:69). However, this high precontact period sensitivity is lessened or eliminated in areas where natural topography was heavily sloped, covered with bedrock, or the natural landform has been disturbed by historic and modern development. The precontact sensitivity, based on this disturbance history, is discussed below, by Area.

B. Historic Period Archaeological Sensitivity

The project site is within the historic Bronxdale hamlet, which by the early nineteenth century was located on the north and south sides of Boston Road on the east side of the Bronx River. Bronxdale grew up around the milling industry along this section of the river, but was also affected by construction of Coles' Boston Road in the 1790s, which linked lower Manhattan with Boston. Travelers along Boston Road could stop in Bronxdale at Thwaites' Hotel, located within the Area 2 APE, or at various stores or other shops along the road nearby. Historic period sensitivity is highest along Boston Road within the project site. The sections further south and north were mostly undeveloped during the historic era, either because they were part of large landholdings with development elsewhere, or because topographically they were less well suited to building, being either marshy, hilly, or rocky. Historic period archaeological sensitivity within the project site also is dependent on the degree of later disturbance, and is discussed below, by Area.

C. Disturbance Record

Area 1 APE

The portion of the Area 1 APE where the majority of the project impacts will occur is at the lowest lying section of the pathway, north of the triangular intersection of other paths. Comparison of the 1905 (Figure 11a) and 1937 topographical maps (Appendix A) with the modern topographical maps (Figure 3a) indicates that this area has been graded and filled and an earlier surface pathway replaced. Current elevations are approximately two feet higher than the pre-park period. There are also electrical, sewer and water lines buried along this section of pathway.

In its natural condition, in close proximity to a stream and marshland, this Area would have had a high precontact period sensitivity. However, there clearly has been significant disturbance to this location. Precontact period sites are sometimes capped by later soils, particularly in areas near streams or marshes where sediments may have accrued over time. HPI therefore, identifies this Area as having moderate precontact period sensitivity at this time, as shown on Figure 13a.

Historic period sensitivity in the Area 1 APE is low, as this location does not appear to have had any historic era development, likely due to its low lying and wet conditions.

Area 2 APE

Area 2 falls within the historic Bronxdale crossroads, located on both sides of Boston Road. As such, this location has been affected by development for about 200 years and possibly longer. Both sides of Boston Road had homes and businesses along them, including a hotel known as Thwaites Hotel during the nineteenth century, which was located directly within the APE northeast of Ben Abrams Playground.

The construction of these former historic buildings, as well as the significant degree to which the area, particularly on the southern and western sides of the playground, was graded, filled, and had utilities laid, likely has eliminated any possible precontact period sensitivity, despite the Area's location along the same drainage and marshlands as Area 1 (the drainage is now channeled underground in a 8.5x10 foot size combined storm sewer).

Although precontact sensitivity in Area 2 appears low, HPI assigns portions of this Area a high historic period sensitivity, as shown on Figure 13b. Historic period archaeological resources are less likely than precontact resources to be destroyed by subsequent earthmoving, and it is possible that remains from former buildings (including the Thwaites Hotel and residences on the north side of Boston Road) as well as associated trash deposits and/or shaft features such as wells, privies, or cisterns, could still be found here. Comparison of the 1905 (Figure 11a) and 1937 topographical maps (Appendix A) with the modern topographical maps (Figure 3b) shows that elevations today are about the same or perhaps a few feet higher in places than they were in the nineteenth century, further suggesting that historic period archaeological resources may be capped under added fill. Locations of historic period archaeological sensitivity (Figure 13b) include the northeastern end of the Ben Abrams Playground, and the section north of Boston Road to about the District 11 Park headquarters building. North of the park building

was a section formerly under Pelham Parkway prior to construction of the Bronx River Parkway, which is not sensitive due to former road construction.

Area 3 APE

Much of the Area 3 APE is within present and/or former urban road networks. Although there were structures along Boston Road and Old White Plains Road, which once traversed this area, the multiple construction and demolition roadway episodes, along with substantial subsurface utility installation has almost certainly destroyed any possible archaeological resources that may have been here during the nineteenth century. HPI concludes that there is no precontact or historic period archaeological sensitivity in this Area, as shown on Figure 13c.

Area 4 APE

The Area 4 APE has been very heavily modified from its original landform. There was once a perennial stream running through this area, which was dammed to form an oblong shaped pond known as Reiss Pond, shown clearly on the 1924 aerial photograph (Figure 12). The 1937 topographical maps including this Area (Appendix A) show that the area bore little resemblance to the modern landscape (Figure 3d). The pond (noted on these maps as swamps) was filled in and the surrounding topography was heavily reshaped in conjunction with construction of the Bronx River Parkway and the Bronx Park features. The northern end, while less altered, is steeply sloped. There was no nineteenth century development within the Area 4 APE, likely due to these topographical conditions.

HPI concludes that there is no precontact or historic period archaeological sensitivity in the Area 4 APE, as shown on Figure 13d.

Area 5 APE

The Area 5 APE has rolling topography that was undeveloped during the nineteenth century but contained greenhouses and paths associated with the Botanical Gardens during the early twentieth century. There are a large number of bedrock outcrops throughout this area. The existing path in the northern section of this area was built to curve around the bedrock outcrops. The crest of the hill at the northern end has an area of more level topography that has been preserved. This is also the area where the former greenhouses were located. There are only minimal subsurface utilities in these sections of Area 5, suggesting potential resource preservation.

HPI assigns the more level sections of the Area 5 APE, near the Waring Street entrance and the crest of the hill near the former greenhouses, a moderate precontact sensitivity, as shown on Figure 13e. HPI assigns this area a low historic period archaeological sensitivity.

Area 6 APE

The Area 6 APE also has rolling topography on the southern end tapering to a level landform at the northern end. It had earlier paths associated with the Botanical Gardens, as well as a stable at the line of Allerton Avenue. The combination of the steep slopes and the prior disturbance from the pathways and stable argues that precontact sensitivity is low here. Additionally, historic maps show no development during the nineteenth century in this Area.

HPI concludes that there is no precontact or historic period archaeological sensitivity in the Area 6 APE, as shown on Figure 13f.

VI. RECOMMENDATIONS

Based on the conclusions outlined above, which indicated moderate precontact sensitivity in portions of Areas 1 and 5, and high historic period archaeological sensitivity in portions of Area 2, HPI makes the following recommendations. If project plans allow it, subsurface impacts to these sensitive Areas should be avoided. If impacts cannot be avoided, then HPI recommends that these sensitive Areas be addressed through archaeological investigations, known as Phase IB archaeological testing. The Phase IB testing plan might consist of a combination of hand excavated shovel tests and mechanical backhoe trenching, depending on location. Because project impacts vary so widely in location and depth across the APE and to allow for any changes during construction, the Phase IB

testing plan would be developed in order to sample conditions in each of the sensitive areas and to determine whether any intact archaeological resources could be affected by the deepest vertical extent of the proposed project components. An archaeological Scope of Work should be developed by the archaeological consultant in consultation with the LPC and DPR. All archaeological testing should be conducted according to OSHA regulations and applicable archaeological standards (LPC 2002; CEQR 2012). Professional archaeologists, with an understanding of and experience in urban archaeological excavation techniques, would be required to be part of the archaeological team.

VII. REFERENCES

AKRF, Inc.

2013a *Phase 1A Archaeological Documentary Study: Bronx Zoo Transportation Facility; Bronx River Parkway, Bronx, New York*. Prepared for the Wildlife Conservation Society, Bronx, NY.

2013b *Phase 1B Archaeological Survey for the Bronx Zoo Parking Lot and Roadway Improvements: Jungle World Road, Bronx, New York*.

Beers, Elias Soule

1868 *Atlas of New York and Vicinity*. E. Beers and Company, New York.

Beers, J.B.

1872 *County Atlas of Westchester, New York*. J.B. Beers and Company, New York.

Bien, Julius and C.C. Vermeule

1891 *Atlas of the Metropolitan District and Adjacent Country*. Plate VIII. J. Bien and Co., New York.

Bien, Julius

1893 *Atlas of Westchester County, New York*. J. Bien and Co., New York.

Boesch, Eugene J.

1996 *Archaeological Evaluation and Sensitivity Assessment of the Bronx, New York*. Prepared for the New York City Landmarks Preservation Commission.

Bolton, Reginald Pelham

1972 *Indian Life of Long Ago in the City of New York*, enlarged ed. Harmony Books, New York.

Bolton, Robert

1881 *The History of the Several Towns, Manors, and patents of the County of Westchester, from Its First Settlement to the Present Time*. Two Volumes. Charles F. Roper, New York.

Brodhead, John Romeyn

1853 *History of the State of New York*. Harper and Brothers, New York.

Bromley, G. W.

1881 *Atlas of Westchester County*. G. W. & W. S. Bromley, Philadelphia.

City Environmental Quality Review (CEQR)

2012 *City Environmental Quality Review Technical Manual*. City of New York, Mayor's Office of Environmental Coordination..

Findlay, Andrew

1871 *Map of Property Belonging to the Estate of James Bolton, Deceased, Situated in the Town of Westchester, County of Westchester, N.Y.*

Grumet, Robert S.

1981 *Native American Place Names in New York City*. Museum of the City of New York, New York.

Gwynne, Gretchen Anderson

1982 "Prehistoric Archaeology at Mount Sinai Harbor, Suffolk County, New York." In *The Second Coastal Archaeology Reader*, Volume V. James E. Truex, editor. SCAA, Stony Brook, New York.

Historical Perspectives, Inc. (HPI)

1993 *Stage 1A Archaeological Assessment The New York Botanical Garden, Bronx, New York*. For: Vollmer Associates, City of New York and Department of Cultural Affairs.

- 2004 *Archaeological Documentary Study: Bronx River Pedestrian Greenway DOT PIN X027.*
- 2008 *Phase 1B Field Investigation Bronx River Pedestrian Greenway Bronx, New York; NYSDOT X027.05; NYSOPRHP 05PR01491.*
- Jenkins, Stephen
- 1912 *The Story of The Bronx.* New York: G.P. Putnam's Sons, New York.
- 1913 *The Old Boston Post Road.* G.P. Putnam's Sons, New York.
- Landmarks Preservation Commission (LPC)
- 2002 *Landmarks Preservation Commission Guidelines for Archaeological Work in New York City.*
- Langan Engineering and Environmental Services
- 2007 *Phase 1 Archaeological Investigation Bronx River Park, West Farms, Bronx, NY.* For City of NY Parks and Recreation.
- McNamara, John
- 1967 "Bronx Street Names of Long Ago," *Bronx County Historical Society Journal.* IV(1):3-9.
- 1989 *McNamara's Old Bronx.* The Bronx County Historical Society, New York.
- 1991 *History in Asphalt.* The Bronx County Historical Society, New York.
- New York City Bureau of Engineering
- 1924 *Sectional aerial maps of the City of New York.* On file at the New York Public Library.
- New York City Department of Parks
- 1937 *Topographical Map, Portion of Bronx Park, Boro of the Bronx.* Multiple sheets.
- New York Herald Tribune*
- 1940 North End of Bronx Park to be Recreation Center. July 29, 1940.
- Ritchie, William A.
- 1980 *The Archaeology of New York State.* Revised Edition. Harbor Hill Books, NY.
- Sanborn Map Company
- 1898 *Insurance Maps of the City of New York.*
- Santucci, Gina
- 2012 Archaeological Review Findings, Landmarks Preservation Commission. January 30, 2012.
- Scharf, J. Thomas
- 1886 *History of Westchester County, New York.* Two volumes. Picton Press, Maine. L.E. Preston and Company, Philadelphia.
- Schuberth, Christopher J.
- 1968 *The Geology of New York City and Environs.* Natural History Press, Garden City, New York.
- Sidney & Neff
- 1851 *Map of Westchester County, New York.* Newell S. Brown, White Plains, New York.
- Smith, Carlyle Shreeve
- 1950 *The Archaeology of Coastal New York, Anthropological Papers of the American Museum of Natural History,* 43(2), New York.

Sutphin, Amanda

2014 Archaeological Review Findings, Landmarks Preservation Commission. January 22, 2014.

Topographical Bureau

1905 *Topographical Survey of the Borough of the Bronx, Easterly of the Bronx River.* On file at the Bronx Topographic Bureau.

United States Department of Agriculture (USDA)

2005 *New York City Reconnaissance Soil Survey.* United States Department of Agriculture, Natural Resources Conservation Service, Staten Island, NY.

U.S. Army Corps Of Engineers New England District

2007 *Cultural Resources Baseline Study, Bronx River Ecosystem Restoration Study, Westchester and Bronx Co, NY.*

U.S. Federal Census

1850 *U.S. Federal Census, Westchester County.*

1860 *U.S. Federal Census, Westchester County.*

1870 *U.S. Federal Census, Westchester County.*

1880 *U.S. Federal Census, Westchester County.*

U.S.G.S.

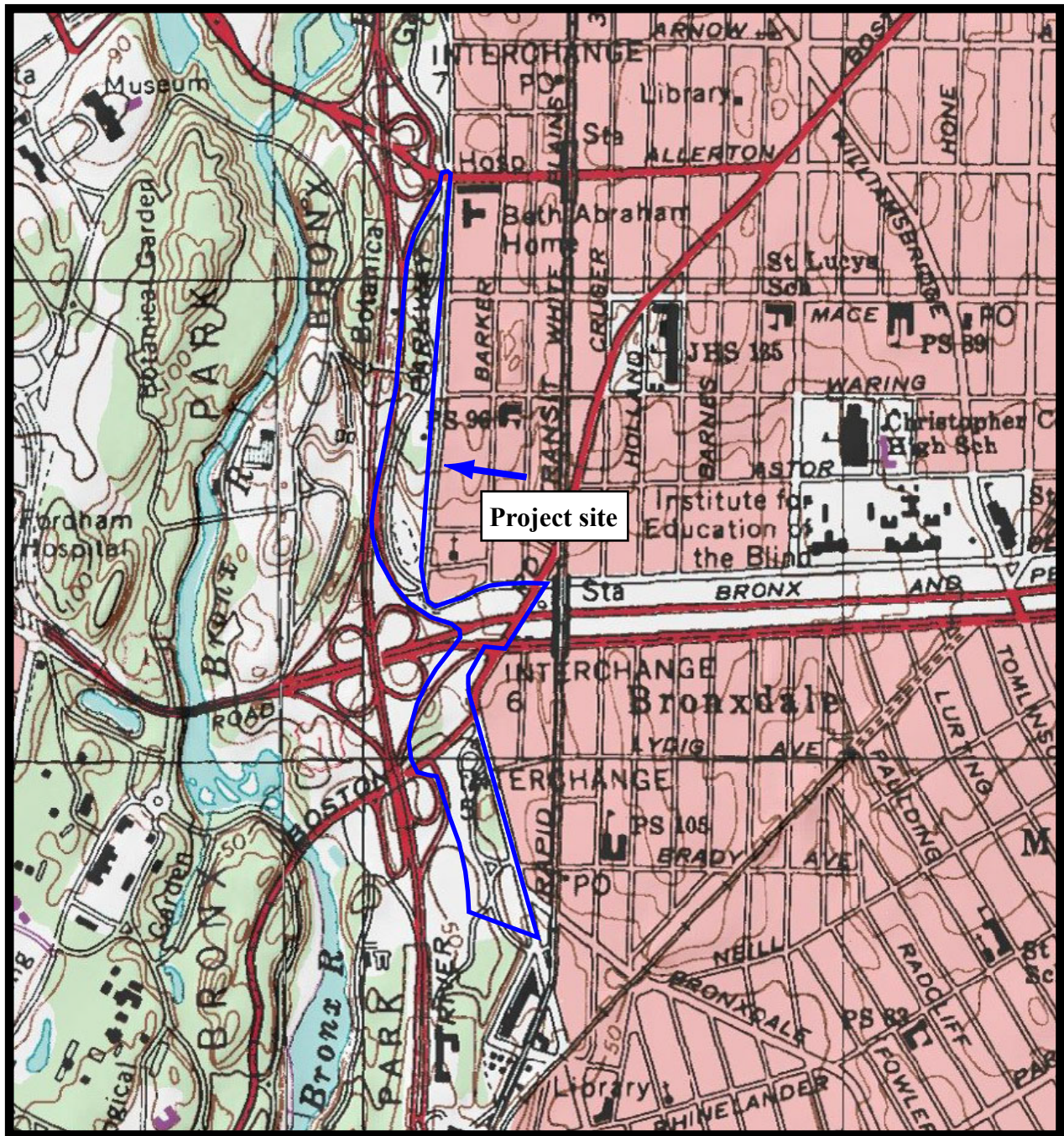
1979 *Central Park, N.Y.-N.J. and Flushing, N.Y. Quadrangles.* United States Geological Survey.

Westchester County Land Records

Libers and pages as cited in the text.

Wyatt, Ronald J.

1982 "The Archaic on Long Island." In *The Second Coastal Archaeology Reader*, Volume V. James Truex, editor. SCAA, Stony Brook, New York.



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Bronx River Greenway Bicycle and Pedestrian Path Between
Unionport Road and Allerton Avenue
Bronx, Bronx County, New York

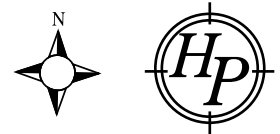
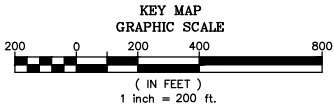
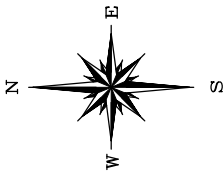
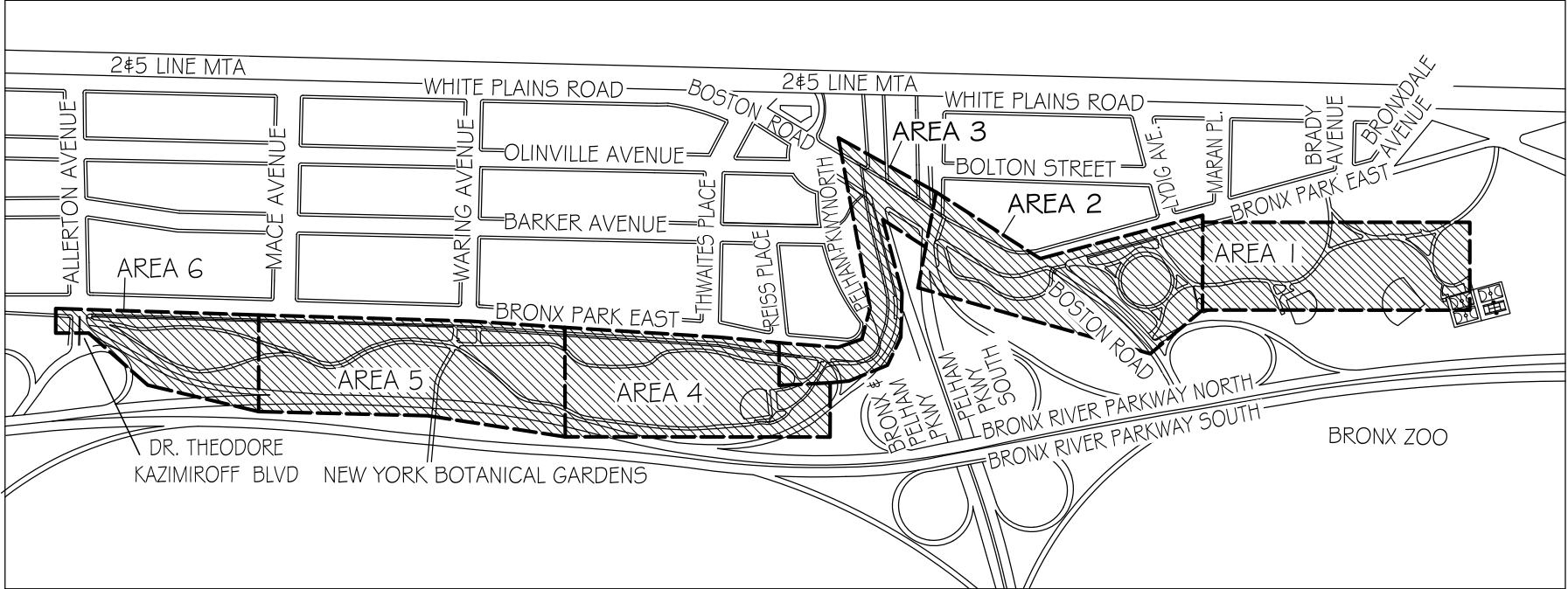




Figure 1: Project site on *Central Park, New York* and *Flushing, New York*
7.5 Minute Quadrangles (U.S.G.S. 1979a and 1979b).

0 500 1000 1500 2000 2500 FEET



REV. #	DATE	DESCRIPTION
5	6/9/14	100% REVIEW SUBMISSION #3 (NYS DOT)
4	12/16/13	100% REVIEW SUBMISSION #2 (NYS DOT)
3	10/31/13	100% REVIEW SUBMISSION #1
2	6/13/13	90% REVIEW SUBMISSION
1	2/20/13	50% REVIEW SUBMISSION

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	City of New York Parks & Recreation Olmsted Center Flushing Meadows Corona Park Flushing, New York 11368

PROJECT TITLE		
THE RECONSTRUCTION AND CONSTRUCTION OF A BICYCLE PEDESTRIAN PATH WITHIN A PORTION OF THE BRONX RIVER GREENWAY, LOCATED BETWEEN UNIONPORT ROAD AND ALLERTON AVENUE, IN BRONX PARK, BOROUGH OF THE BRONX		
DRAWING TITLE		
KEY PLAN		
DESIGNED BY	DRAWN BY	CHECKED BY
D. SULLIVAN	D. SULLIVAN	L. HOPPER
REVIEWED-TEAM LEADER	FORESTRY:	APPROVED-DIRECTOR
ANDREW PENZL, RLA	JAMES LEMIRE	
APPROVED-DEP CHIEF OF DESIGN	APPROVED-CHIEF ENGINEER	CONTRACT NO.
NANCY PRINCE, RLA	JOHN J. NATOLI, PE	
B-SCAN	SCALE: 1"=200'-0"	DRAWING NO.
	DATE: 6/9/14	G-104
		X002-211M NYS DOT PIN NO. X550.70 SHEET NO. 5 OF 62 SHEETS

Figure 2: Project site showing locations of Areas 1-6 (DPR 2014).

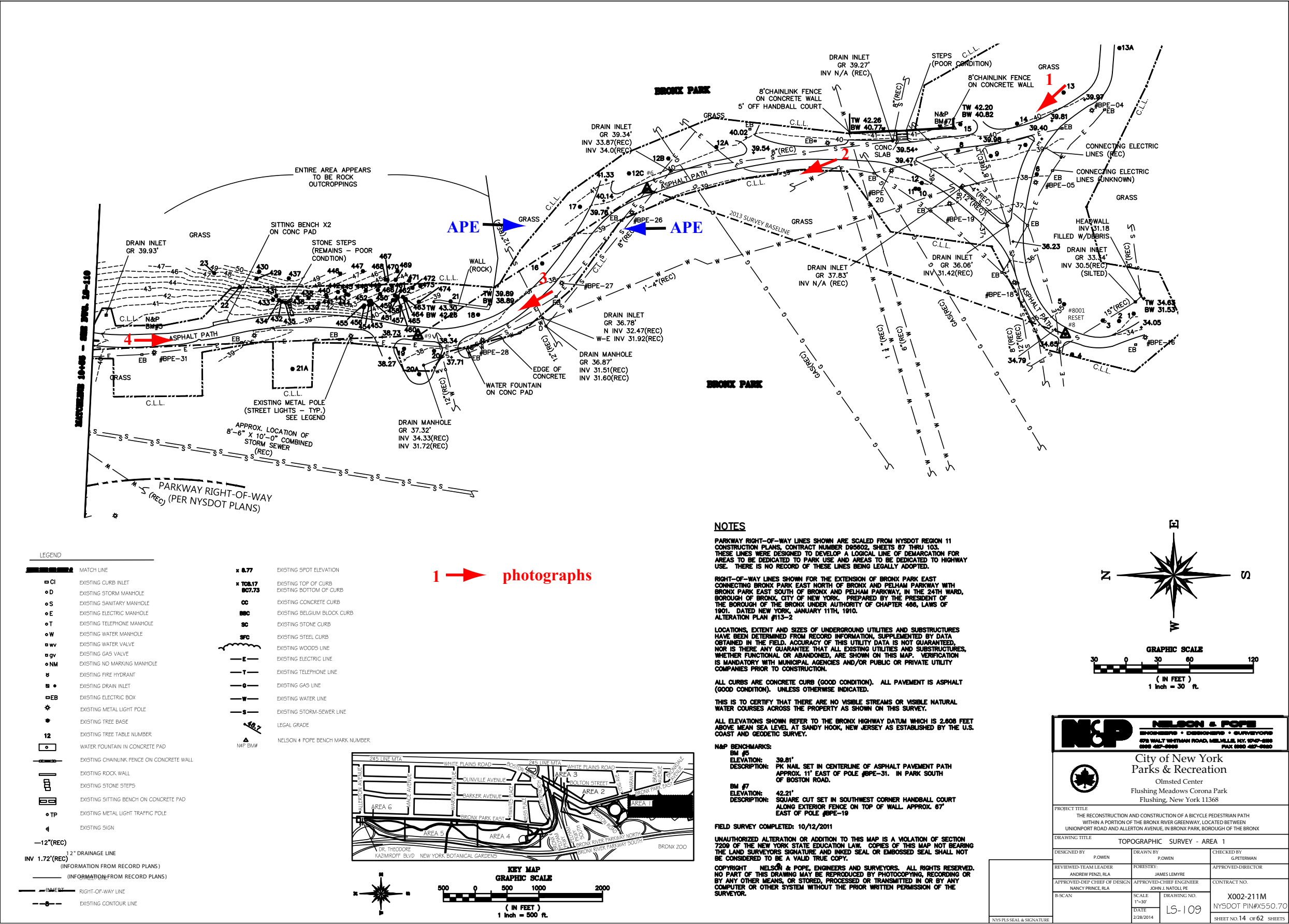


Figure 3a: Area 1 APE existing conditions, topography, and photograph locations (DPR 2014).

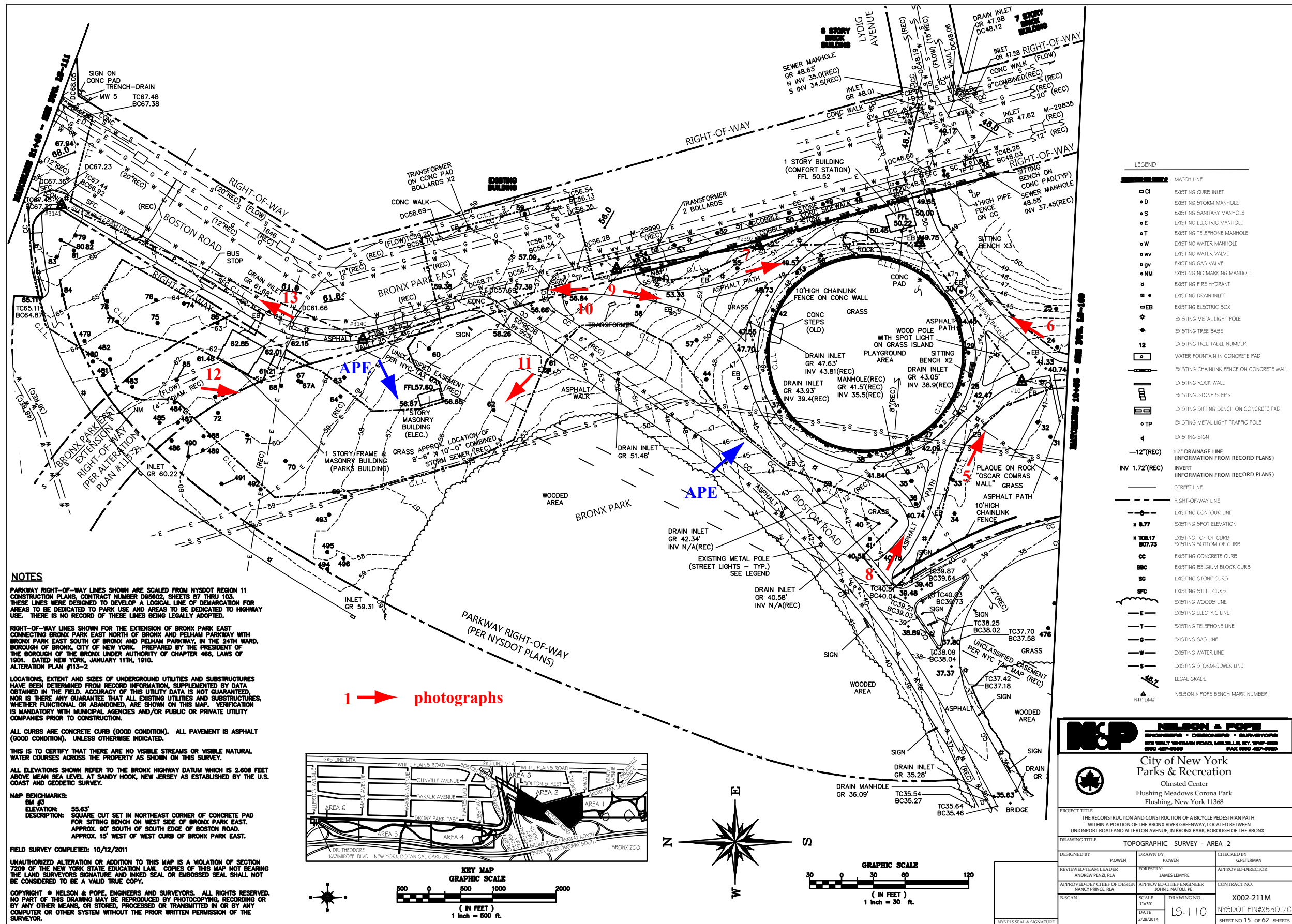


Figure 3b: Area 2 APE existing conditions, topography, and photograph locations (DPR 2014).

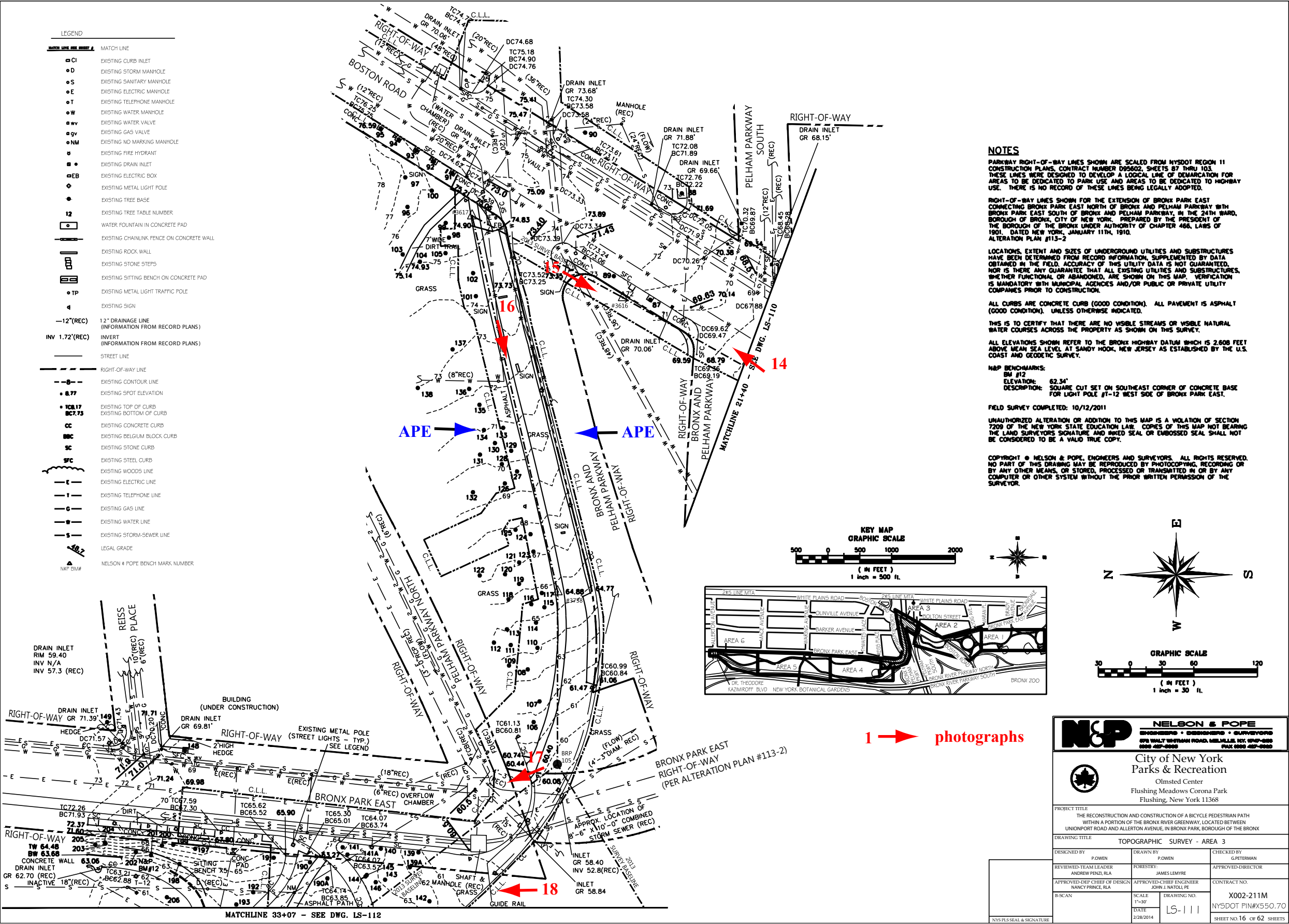


Figure 3c: Area 3 APE existing conditions, topography, and photograph locations (DPR 2014).

NOTES

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RIGHT-OF-WAY LINES SHOWN FOR THE EXTENSION OF BRONX PARK EAST CONNECTING BRONX PARK EAST NORTH OF BRONX AND PELHAM PARKWAY WITH BRONX PARK EAST SOUTH OF BRONX AND PELHAM PARKWAY, IN THE 24TH WARD, BOROUGH OF BRONX, CITY OF NEW YORK. PREPARED BY THE PRESIDENT OF THE BOROUGH OF THE BRONX UNDER AUTHORITY OF CHAPTER 466, LAWS OF 1901, DATED NEW YORK, JANUARY 11TH, 1910. ALTERATION PLAN #113-2

LOCATIONS, EXTENT AND SIZES OF UNDERGROUND UTILITIES AND SUBSTRUCTURES HAVE BEEN DETERMINED FROM RECORD INFORMATION, SUPPLEMENTED BY DATA OBTAINED IN THE FIELD. ACCURACY OF THIS UTILITY DATA IS NOT GUARANTEED. NOR IS THERE ANY GUARANTEE THAT ALL EXISTING UTILITIES AND SUBSTRUCTURES, WHETHER FUNCTIONAL OR ABANDONED, ARE SHOWN ON THIS MAP. VERIFICATION IS MANDATORY WITH MUNICIPAL AGENCIES AND/OR PUBLIC OR PRIVATE UTILITY COMPANIES PRIOR TO CONSTRUCTION.

ALL CURBS ARE CONCRETE CURB (GOOD CONDITION). ALL PAVEMENT IS ASPHALT (GOOD CONDITION). UNLESS OTHERWISE INDICATED.

THIS IS TO CERTIFY THAT THERE ARE NO VISIBLE STREAMS OR VISIBLE NATURAL WATER COURSES ACROSS THE PROPERTY AS SHOWN ON THIS SURVEY.

ALL ELEVATIONS SHOWN REFER TO THE BRONX HIGHWAY DATUM WHICH IS 2.608 FEET ABOVE MEAN SEA LEVEL AT SANDY HOOK, NEW JERSEY AS ESTABLISHED BY THE U.S. COAST AND GEODETIC SURVEY.

N&P BENCHMARKS:
BM #80
ELEVATION: 65.91'
DESCRIPTION: PK NAIL SET IN CENTERLINE ASPHALT PAVEMENT PATH, APPROX. 118' NORTH OF NORTHWEST CORNER OF FENCE OF BEISBALL FIELD.

FIELD SURVEY COMPLETED: 10/12/2011

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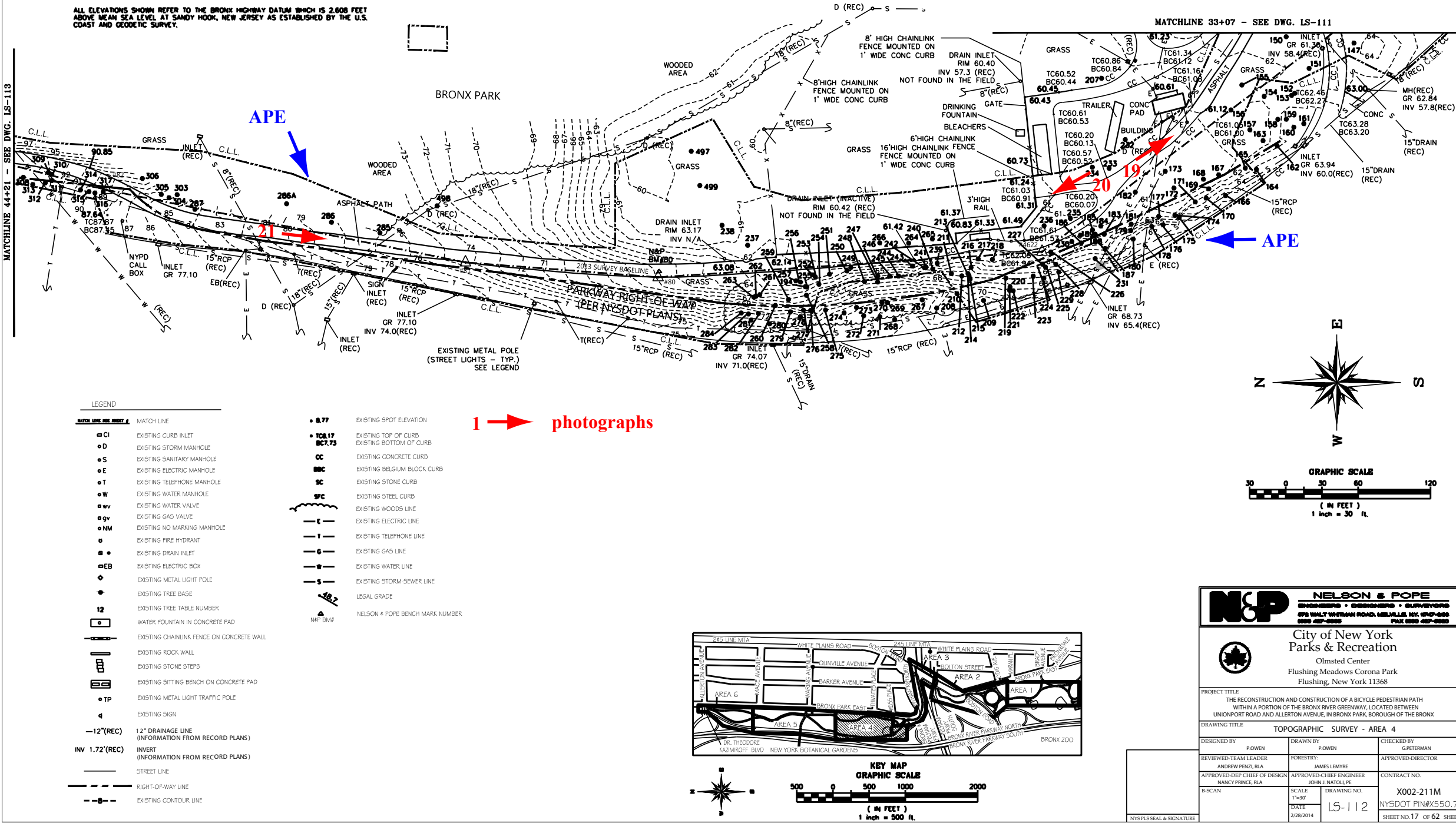


Figure 3d: Area 4 APE existing conditions, topography, and photograph locations (DPR 2014).

NOTES

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RIGHT-OF-WAY LINES SHOWN FOR THE EXTENSION OF BRONX PARK EAST CONNECTING BRONX PARK EAST NORTH OF BRONX AND PELHAM PARKWAY WITH BRONX PARK EAST SOUTH OF BRONX AND PELHAM PARKWAY, IN THE 24TH WARD, BOROUGH OF BRONX, CITY OF NEW YORK. PREPARED BY THE PRESIDENT OF THE BOROUGH OF THE BRONX UNDER AUTHORITY OF CHAPTER 466, LAWS OF 1901, DATED NEW YORK, JANUARY 11TH, 1910. ALTERATION PLAN #113-2

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ALL ELEVATIONS SHOWN REFER TO THE BRONX HIGHWAY DATUM WHICH IS 2.608 FEET ABOVE MEAN SEA LEVEL AT SANDY HOOK, NEW JERSEY AS ESTABLISHED BY THE U.S. COAST AND GEODETIC SURVEY.

N&P BENCHMARKS:
BM #85
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DESCRIPTION: SQUARE CUT SET ON SOUTHEAST CORNER OF CONCRETE BASE OF SECOND SITTING BENCH NORTH OF EAST ENTRANCE OF PARK, OPPOSITE CENTERLINE OF WARING AVENUE EXTENDED.

FIELD SURVEY COMPLETED: 10/12/2011

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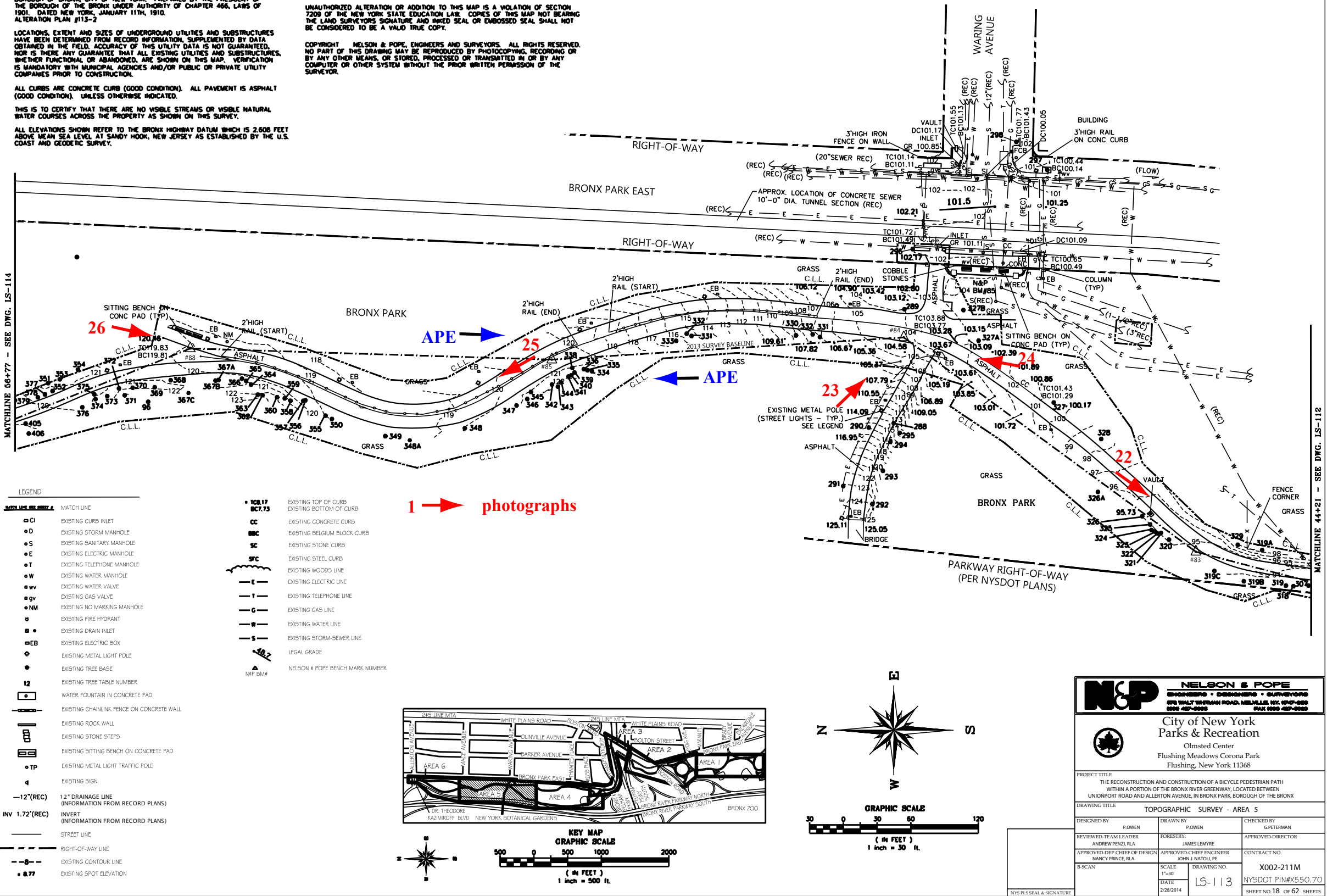


Figure 3e: Area 5 APE existing conditions, topography, and photograph locations (DPR 2014).

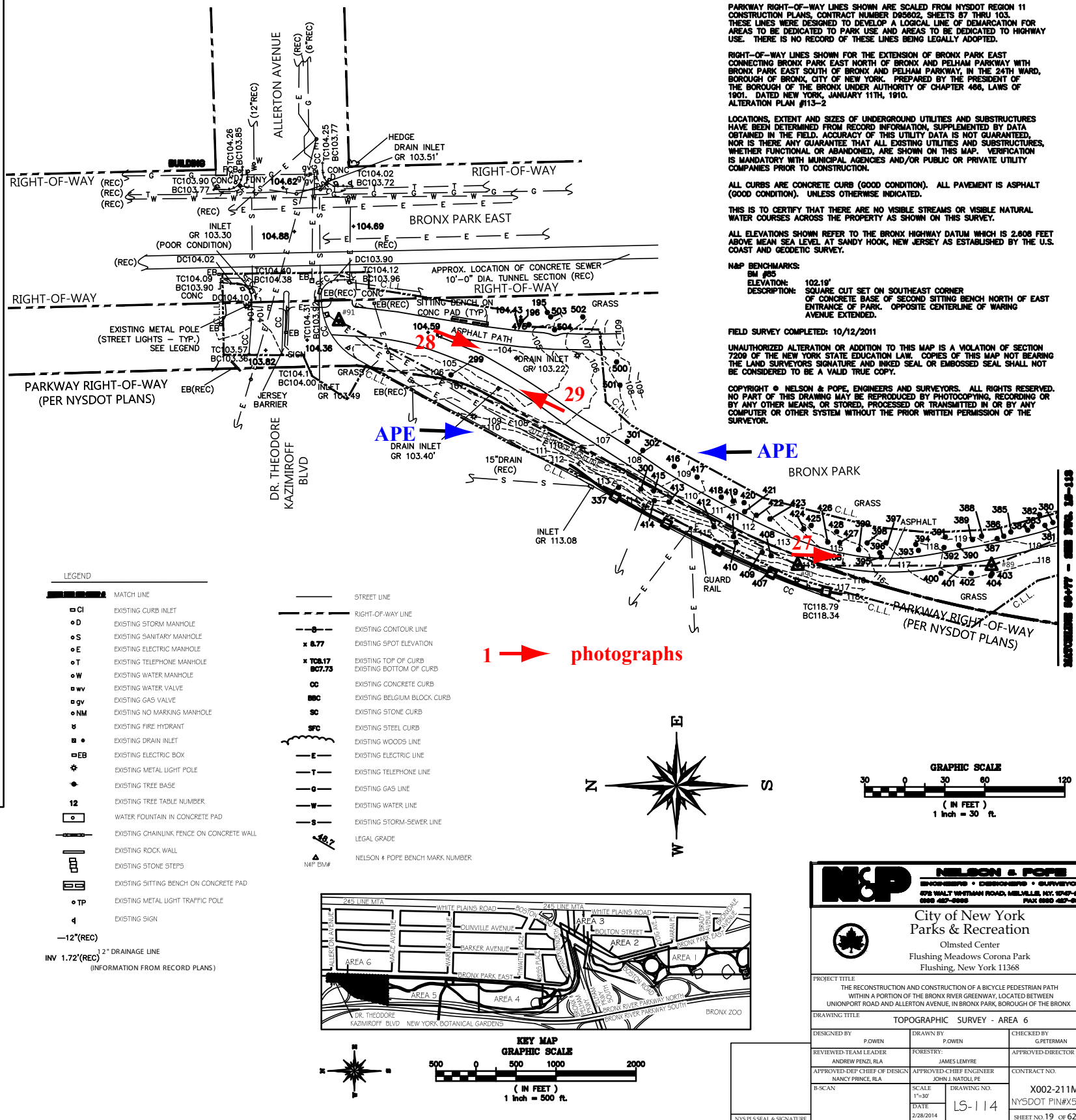
LEGEND

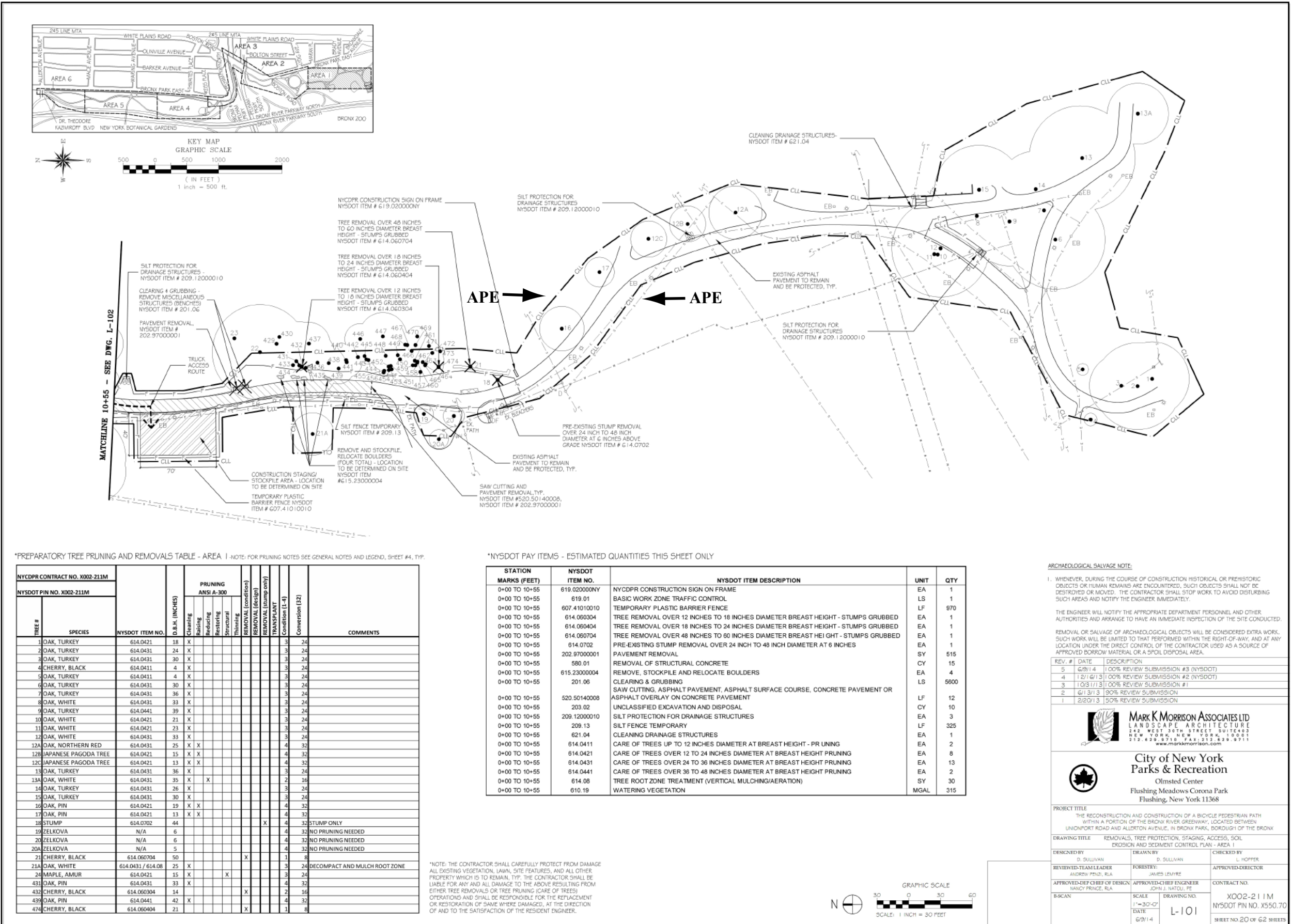
	MATCH LINE		STREET LINE
	EXISTING CURB INLET		RIGHT-OF-WAY LINE
	EXISTING STORM MANHOLE		EXISTING CONTOUR LINE
	EXISTING SANITARY MANHOLE		EXISTING SPOT ELEVATION
	EXISTING ELECTRIC MANHOLE		EXISTING TOP OF CURB
	EXISTING TELEPHONE MANHOLE		EXISTING BOTTOM OF CURB
	EXISTING WATER MANHOLE		EXISTING CONCRETE CURB
	EXISTING WATER VALVE		EXISTING BELGIUM BLOCK CURB
	EXISTING GAS VALVE		EXISTING STONE CURB
	EXISTING NO MARKING MANHOLE		EXISTING STEEL CURB
	EXISTING FIRE HYDRANT		EXISTING WOODS LINE
	EXISTING DRAIN INLET		EXISTING ELECTRIC LINE
	EXISTING ELECTRIC BOX		EXISTING TELEPHONE LINE
	EXISTING METAL LIGHT POLE		EXISTING GAS LINE
	EXISTING TREE BASE		EXISTING WATER LINE
	EXISTING TREE TABLE NUMBER		EXISTING STORM-SEWER LINE
	WATER FOUNTAIN IN CONCRETE PAD		LEGAL GRADE
	EXISTING CHAINLINK FENCE ON CONCRETE WALL		NELSON & POPE BENCH MARK NUMBER
	EXISTING ROCK WALL		
	EXISTING STONE STEPS		
	EXISTING SITTING BENCH ON CONCRETE PAD		
	EXISTING METAL LIGHT TRAFFIC POLE		
	EXISTING SIGN		

—12"(REC)
INV 1.72"(REC)
(INFORMATION FROM RECORD PLANS)

KEY MAP
GRAPHIC SCALE
(IN FEET)
1 inch = 500 ft.

APE





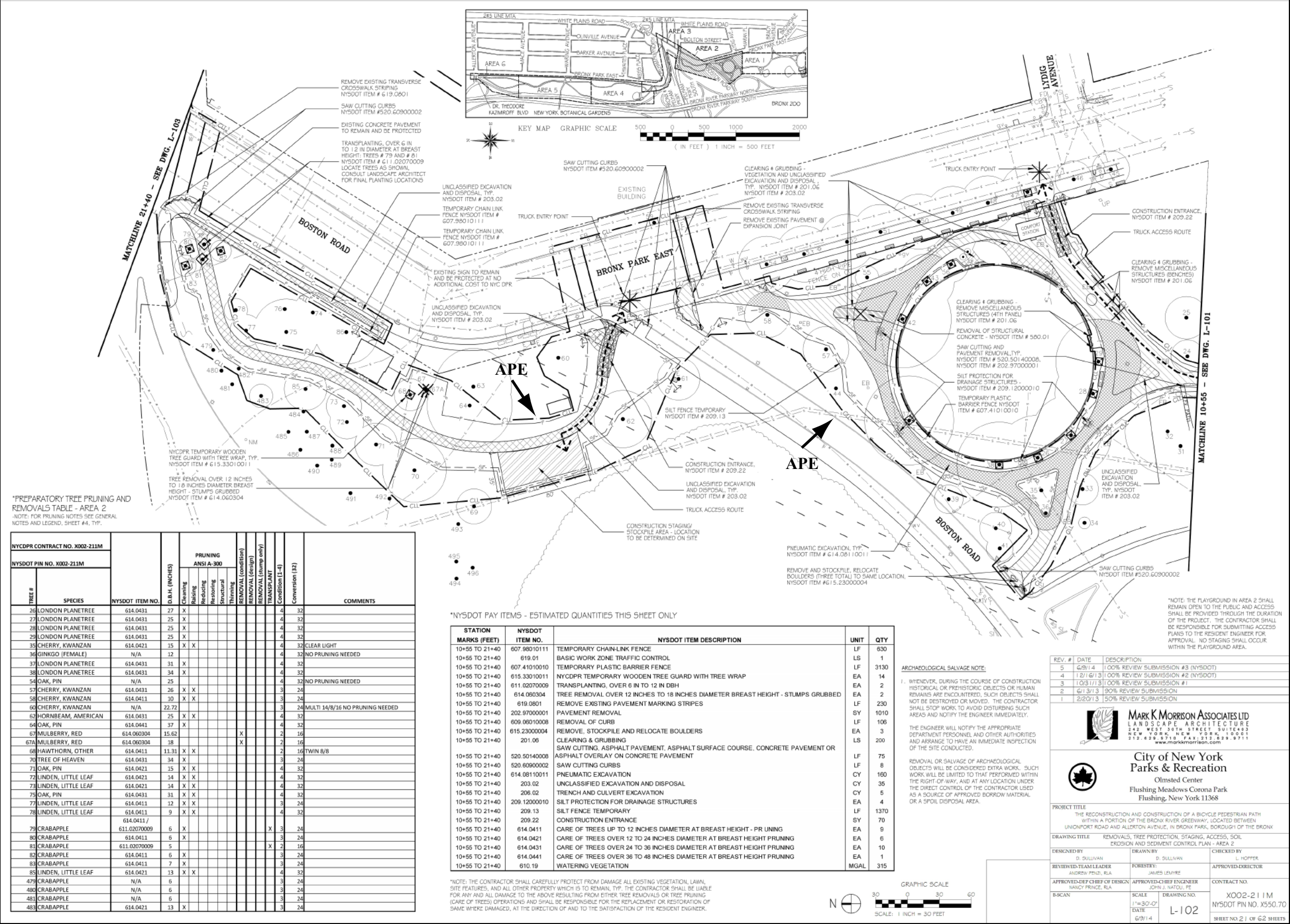


Figure 4b: Area 2 proposed project plans within Contract Limit Line (CLL) or Area of Potential Effect (APE) (DPR 2014).

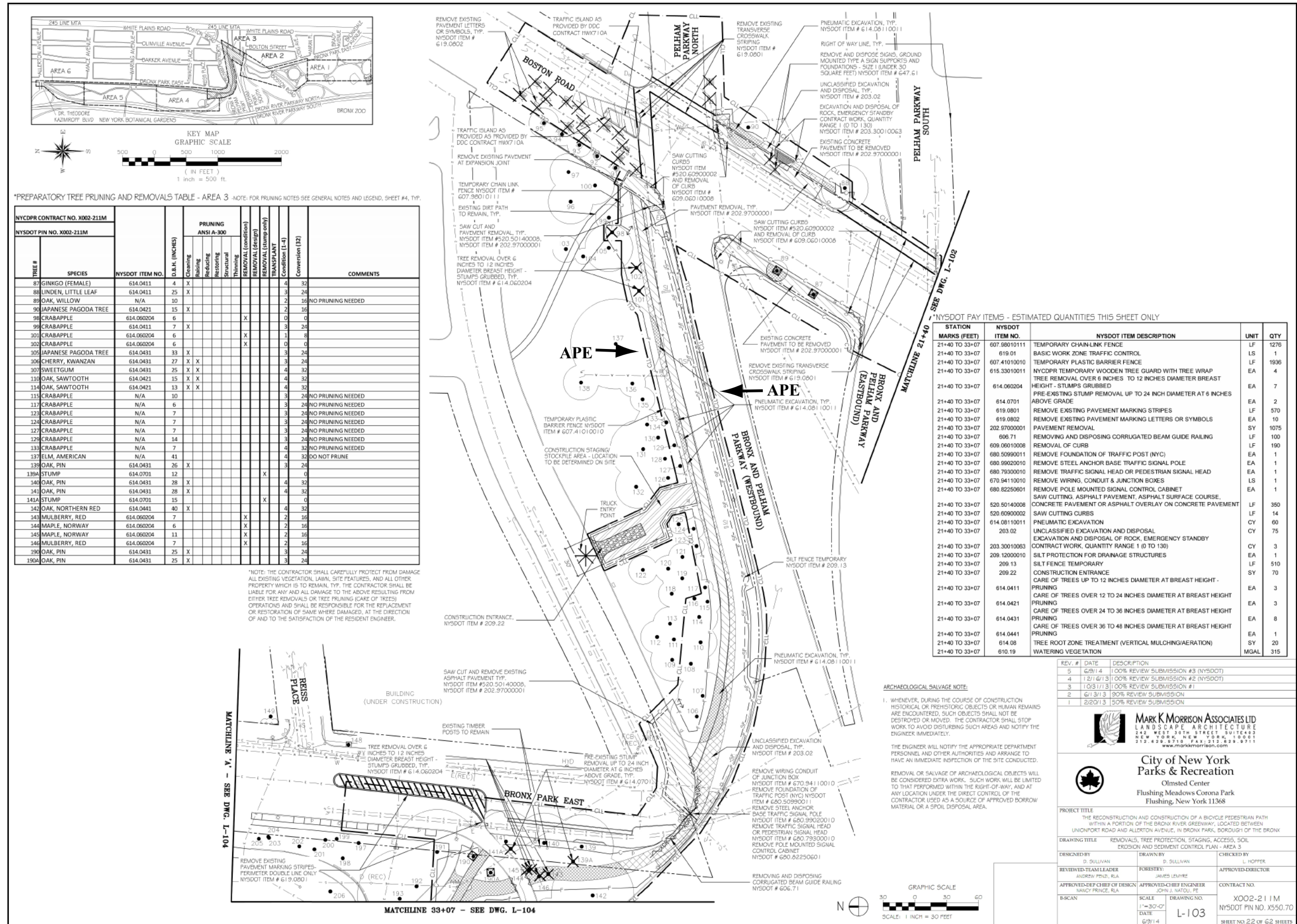


Figure 4c: Area 3 proposed project plans within Contract Limit Line (CLL) or Area of Potential Effect (APE) (DPR 2014).

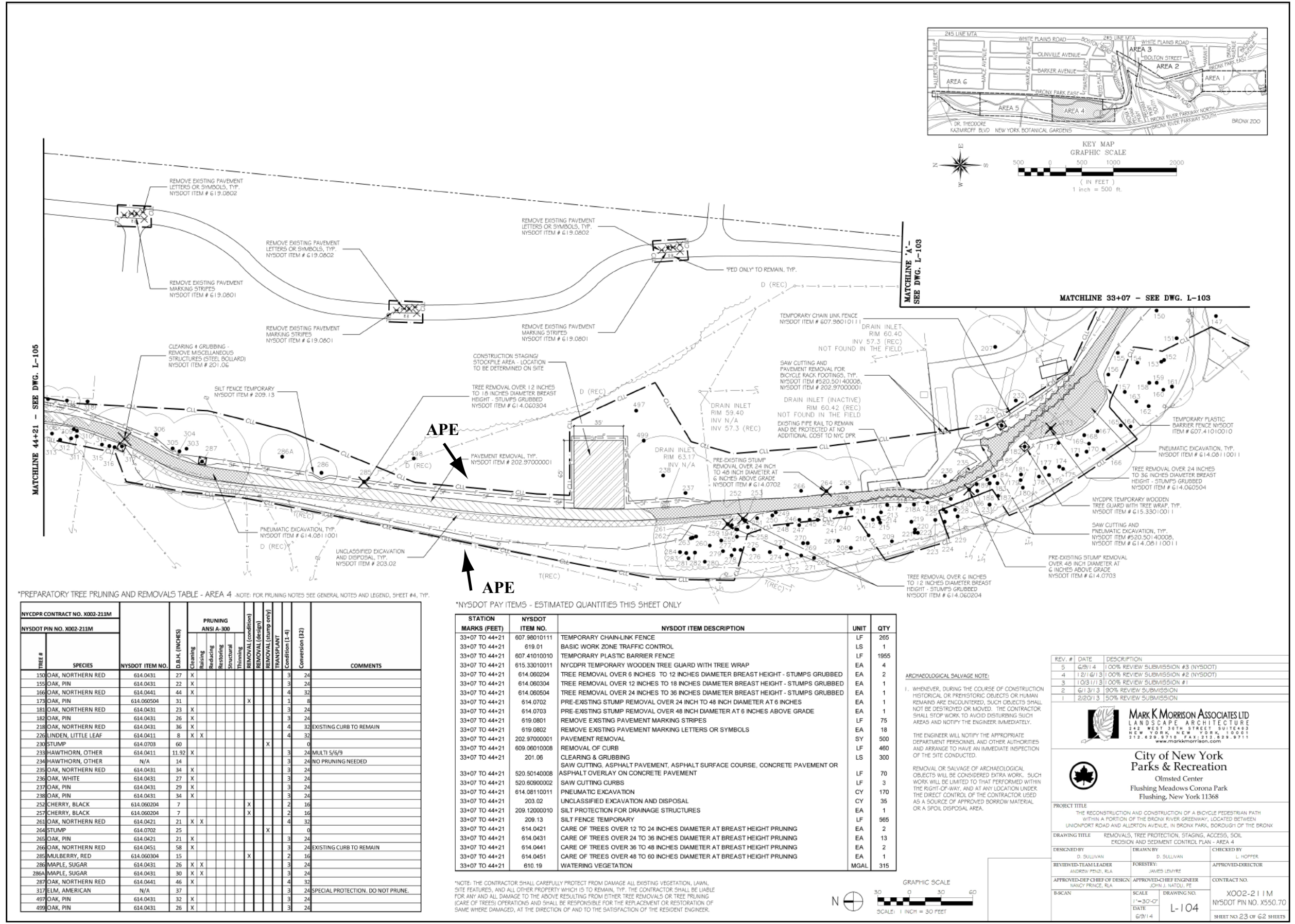
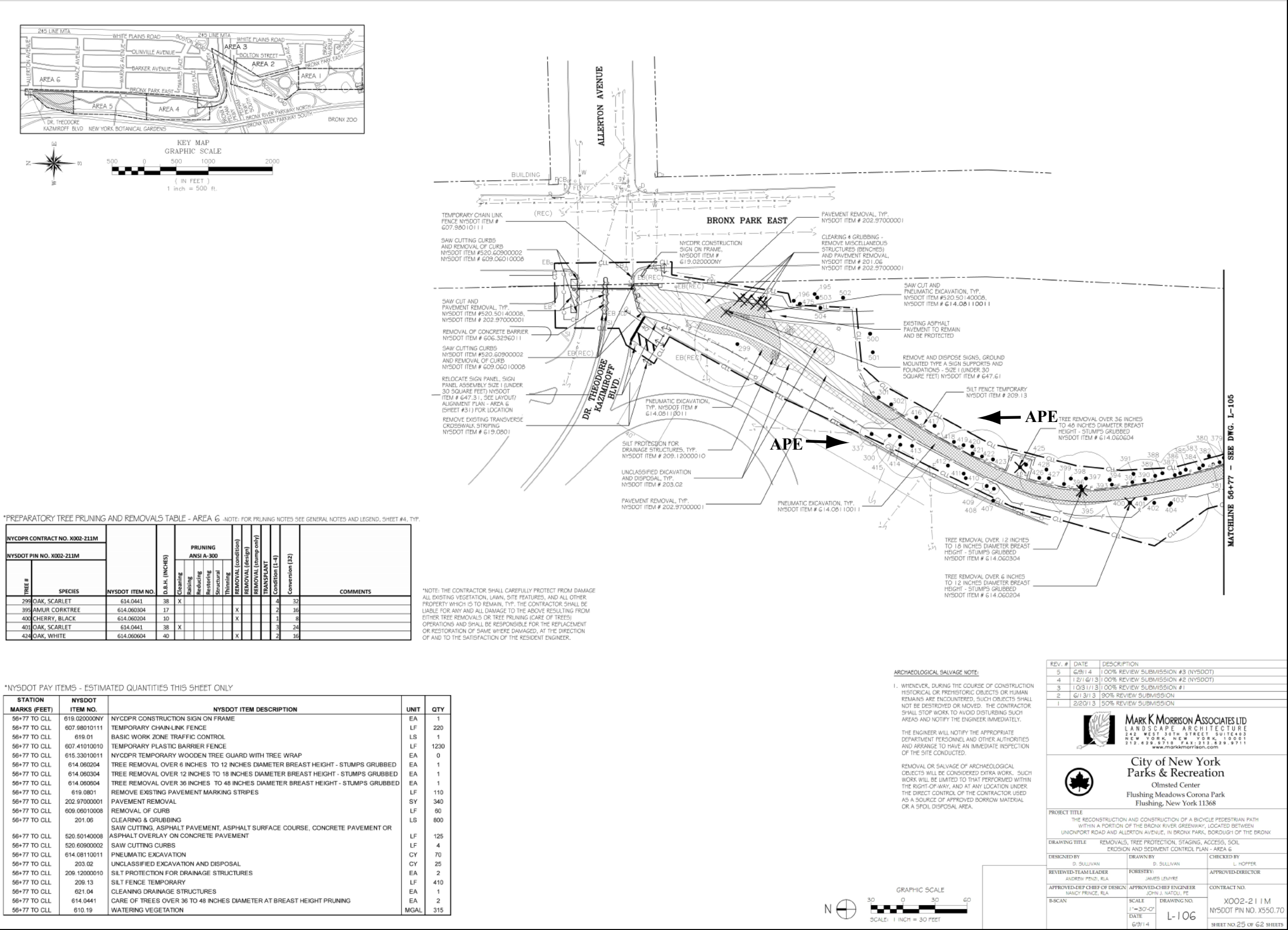


Figure 4d: Area 4 proposed project plans within Contract Limit Line (CLL) or Area of Potential Effect (APE) (DPR 2014).



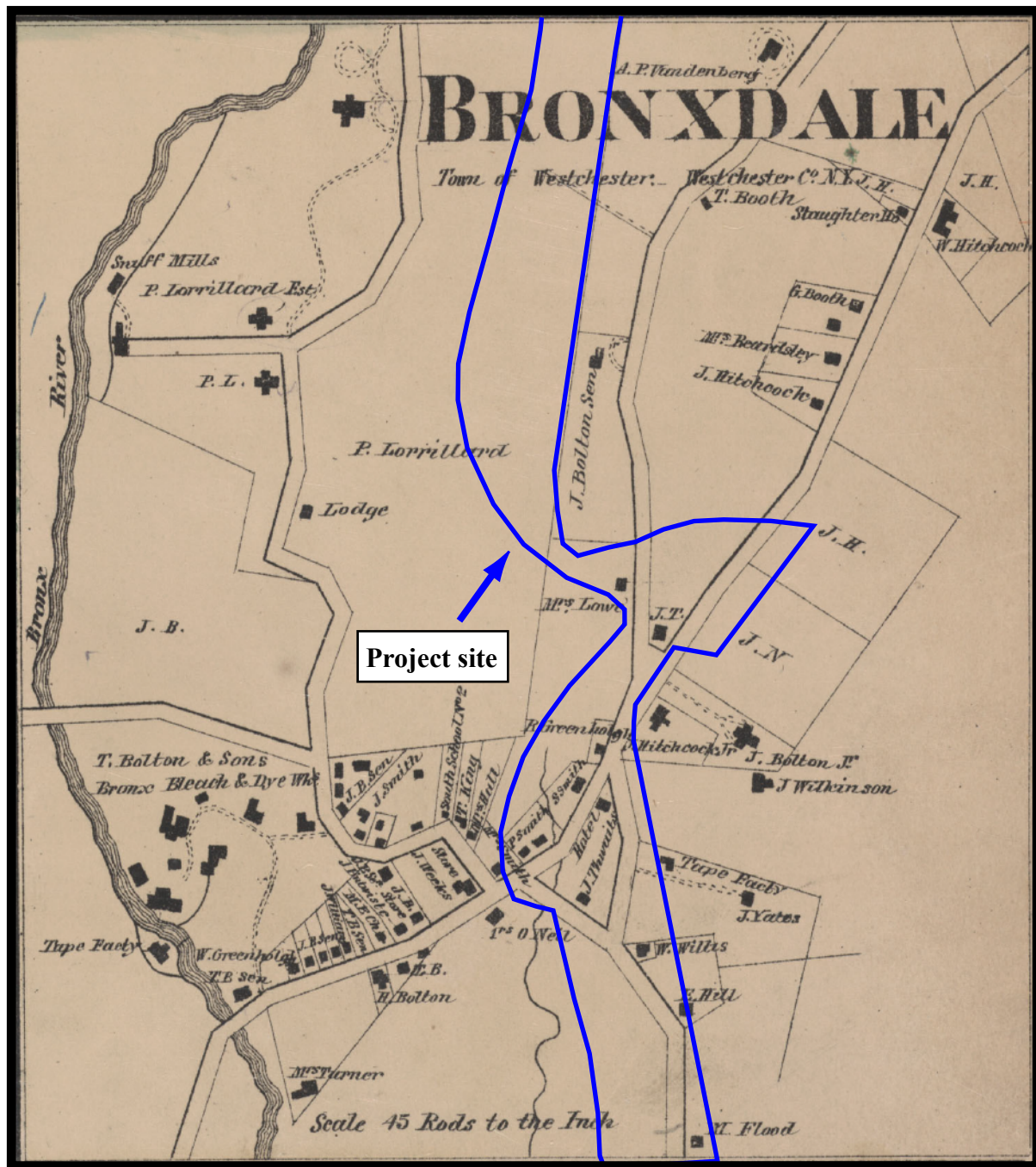


Phase IA Archaeological Documentary Study
 Bronx River Greenway Bicycle and Pedestrian Path Between
 Unionport Road and Allerton Avenue
 Bronx, Bronx County, New York



Figure 5: Project site on *Map of Westchester County, New York* (Sidney and Neff 1851).

0 500 1000 1500 2000 2500 FEET



Phase IA Archaeological Documentary Study
 Bronx River Greenway Bicycle and Pedestrian Path Between
 Unionport Road and Allerton Avenue
 Bronx, Bronx County, New York

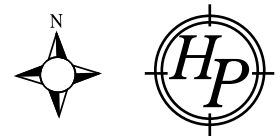
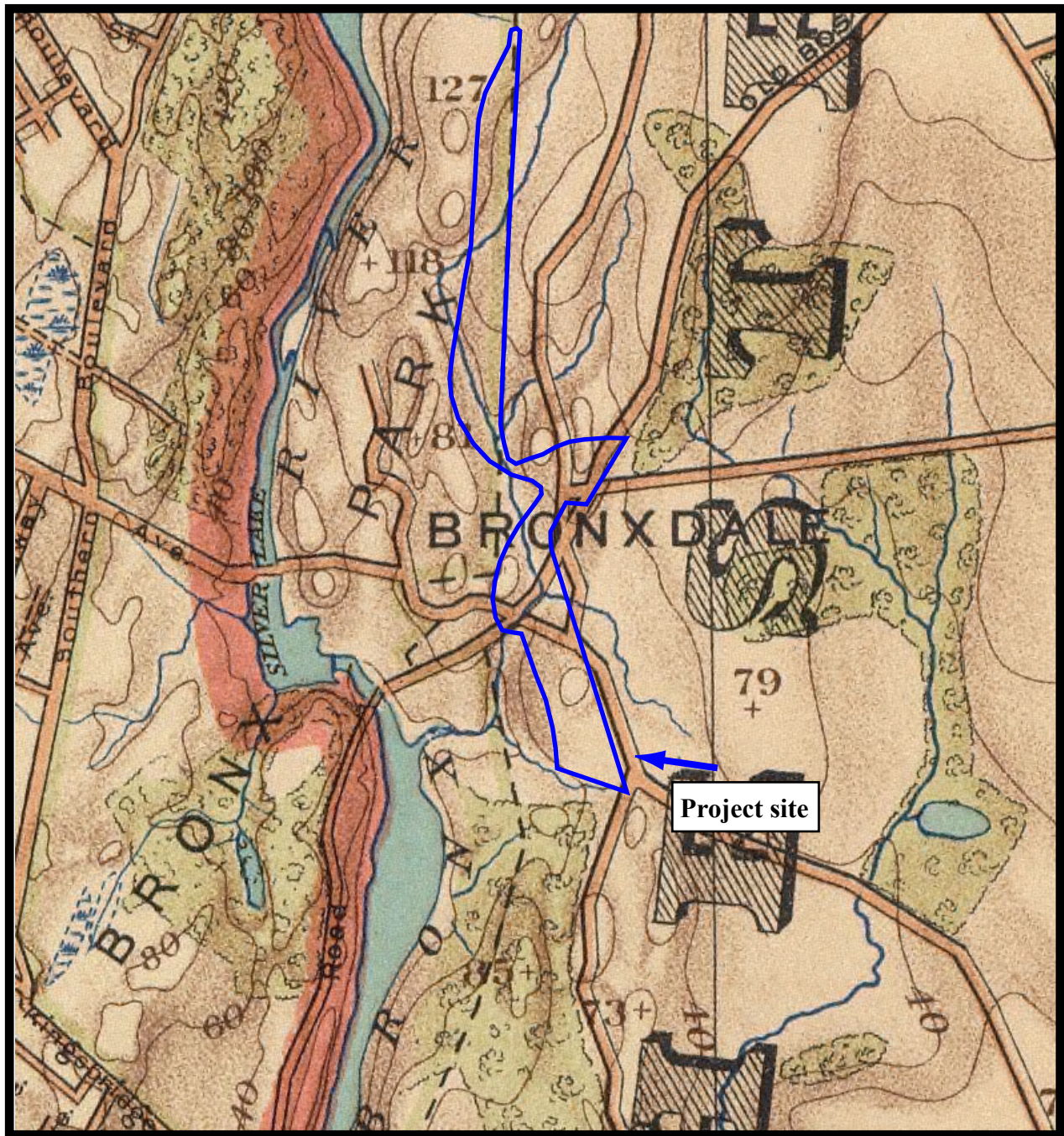


Figure 6: Project site on *Atlas of New York and Vicinity* (Beers 1868).





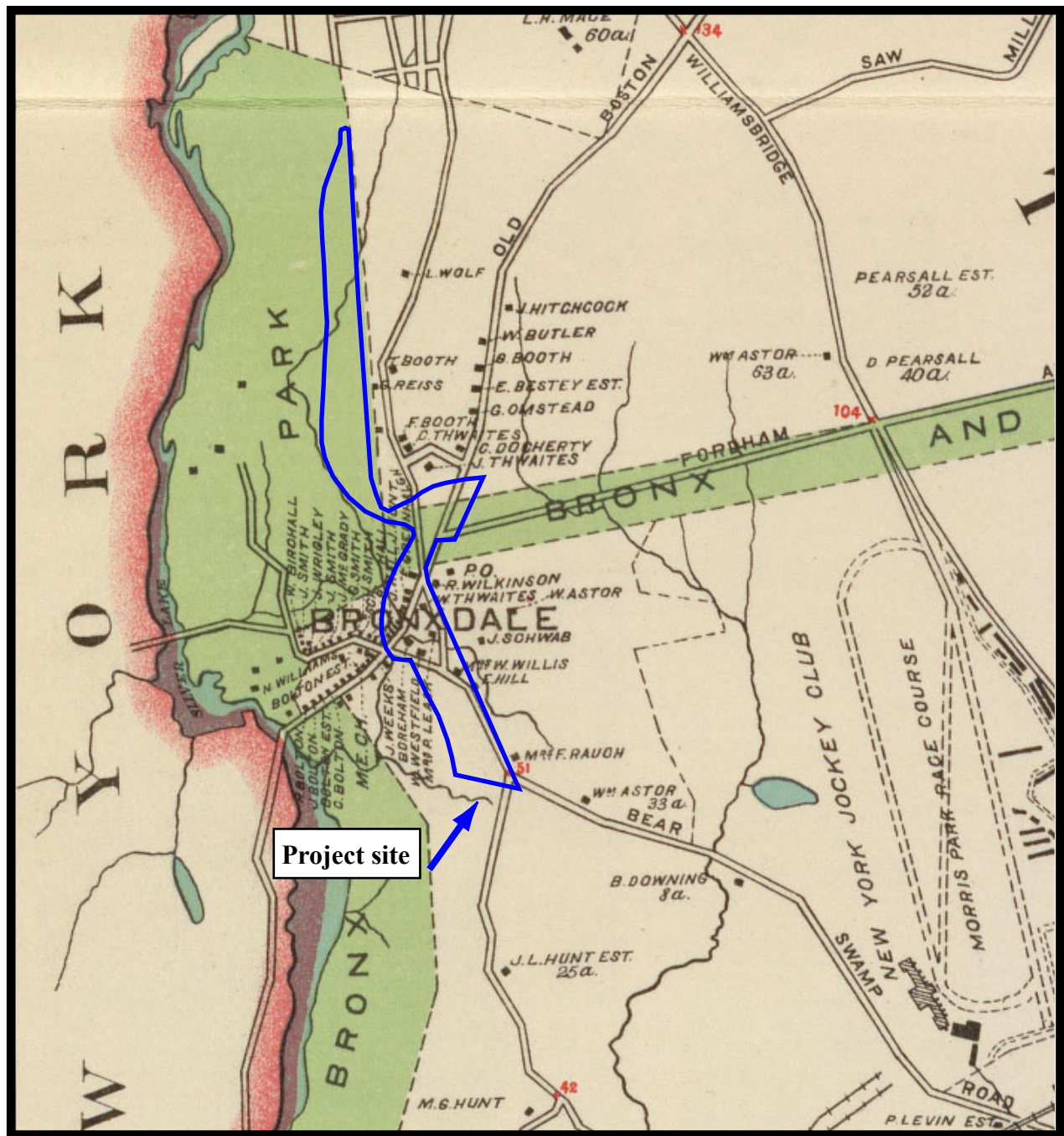
Phase IA Archaeological Documentary Study
 Bronx River Greenway Bicycle and Pedestrian Path Between
 Unionport Road and Allerton Avenue
 Bronx, Bronx County, New York



Figure 8: Project site on *Atlas of the Metropolitan District and Adjacent Country* (Bien and Vermeule 1891).

0 500 1000 1500 2000 2500 FEET





Phase IA Archaeological Documentary Study
Bronx River Greenway Bicycle and Pedestrian Path Between
Unionport Road and Allerton Avenue
Bronx, Bronx County, New York

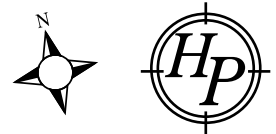
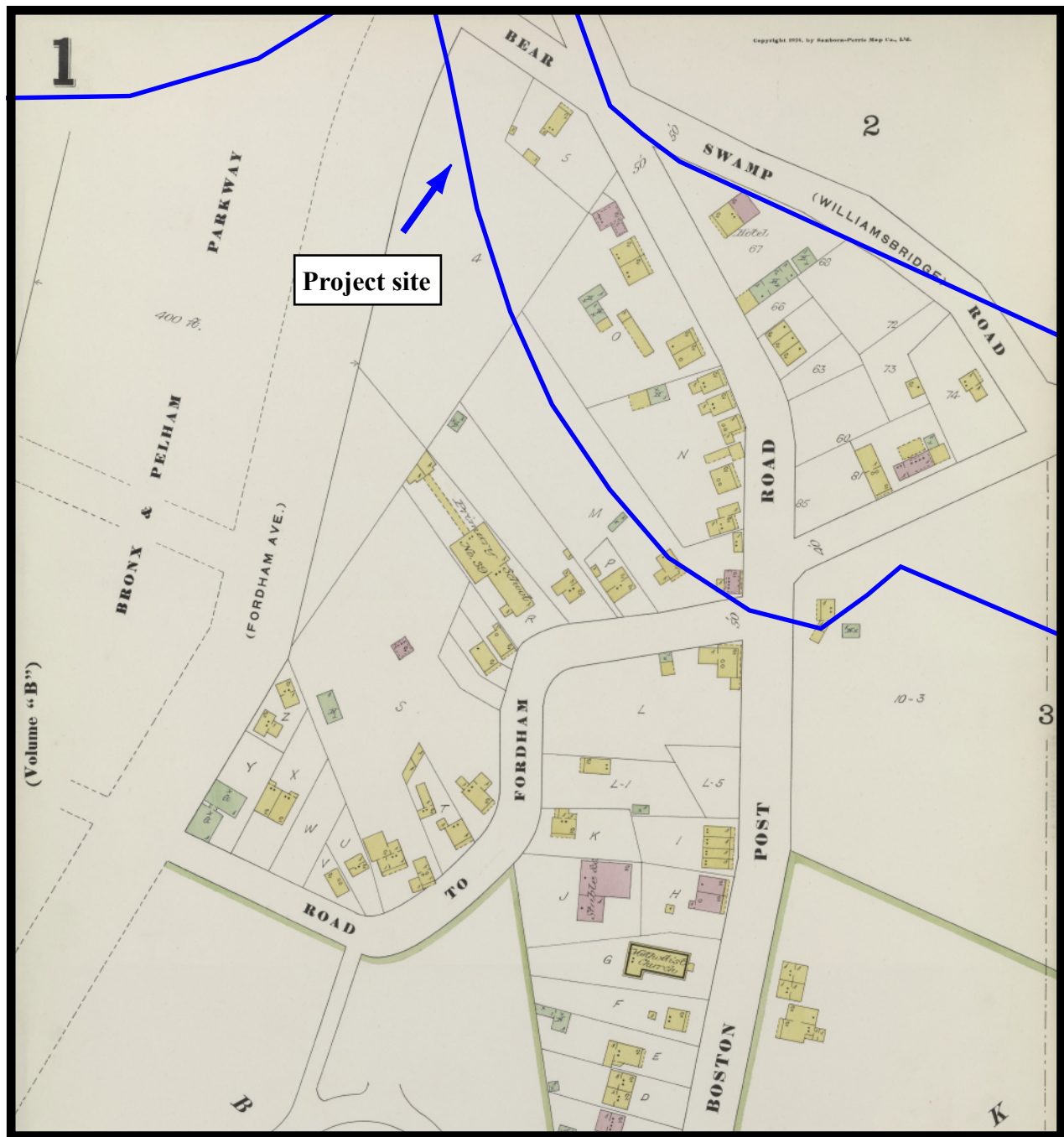


Figure 9: Project site on *Towns of Westchester and Pelham...* (Bien 1893).

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Bronx River Greenway Bicycle and Pedestrian Path Between
Unionport Road and Allerton Avenue
Bronx, Bronx County, New York

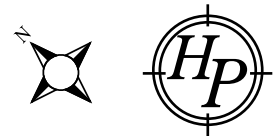
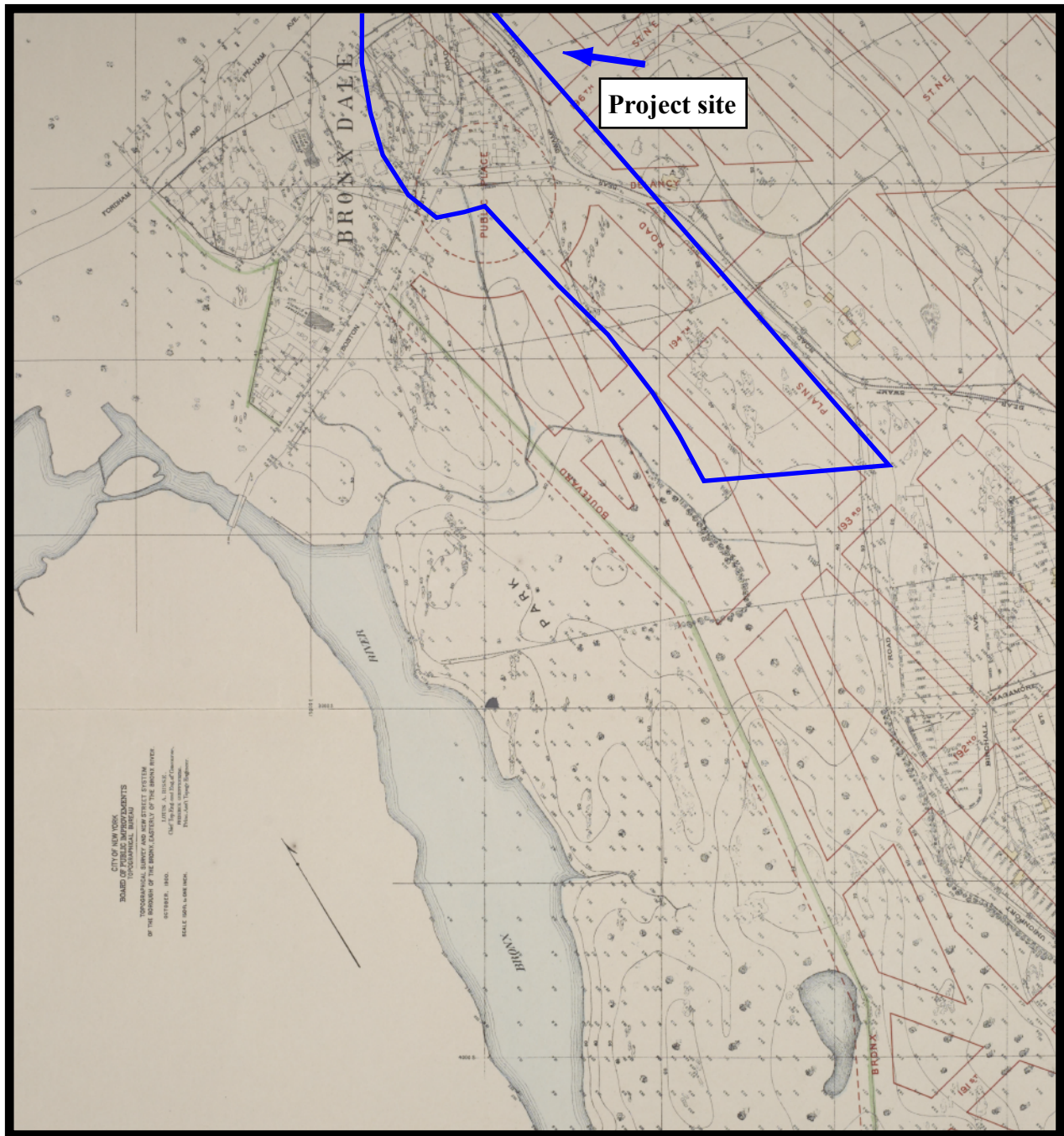


Figure 10: Project site on *Insurance Maps of the Borough of the Bronx* (Sanborn 1898).

0 100 200 300 400 500 FEET



**Phase IA Archaeological Documentary Study
Bronx River Greenway Bicycle and Pedestrian Path Between
Unionport Road and Allerton Avenue
Bronx, Bronx County, New York**

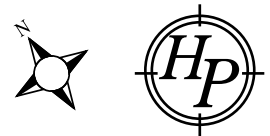
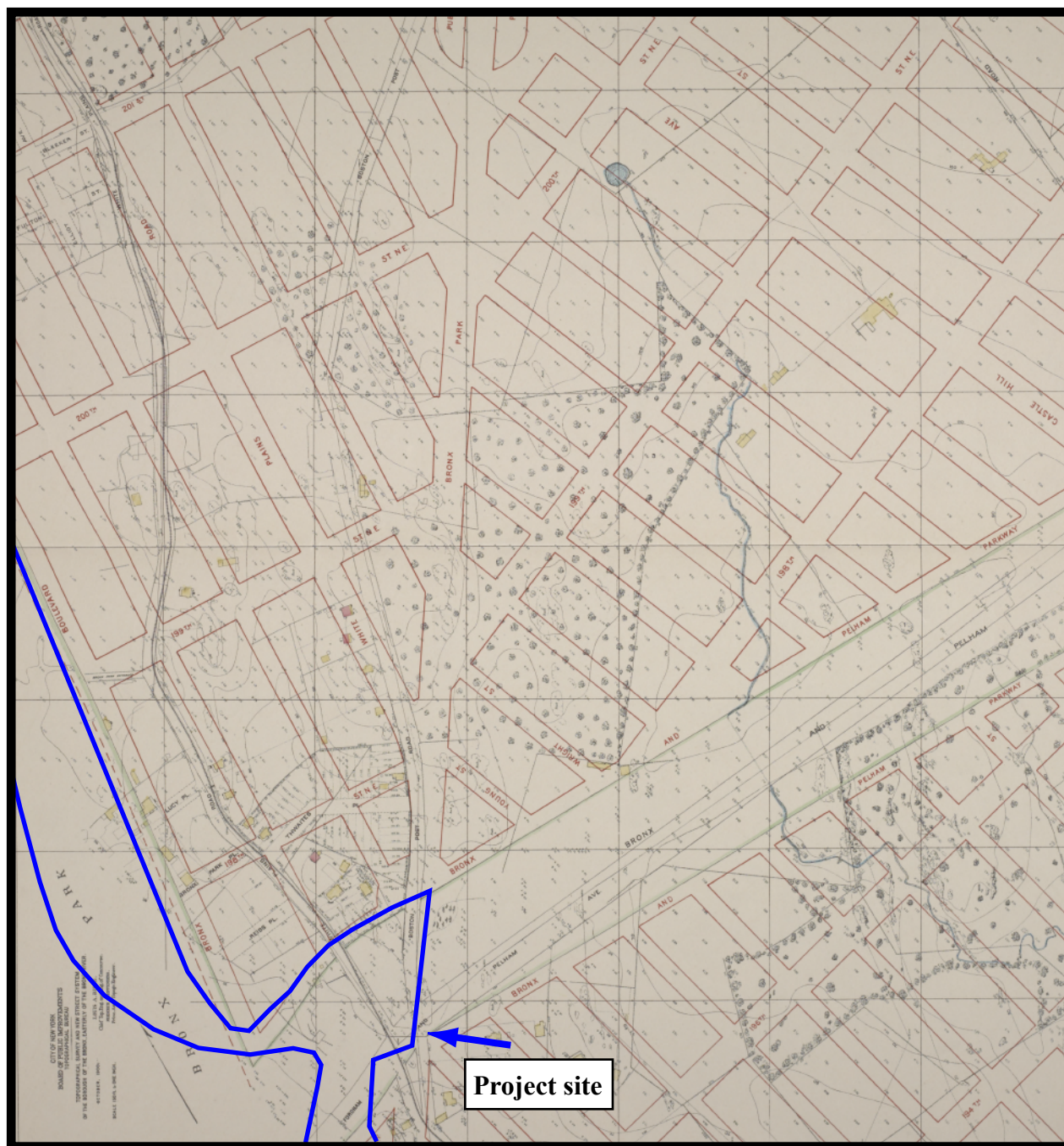


Figure 11a: Southern portion of project site on *Topographical Survey and New Street System of the Borough of the Bronx, Easterly of the Bronx River* (Topographical Bureau 1905).

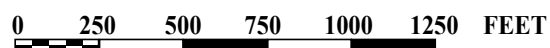
0 250 500 750 1000 1250 FEET

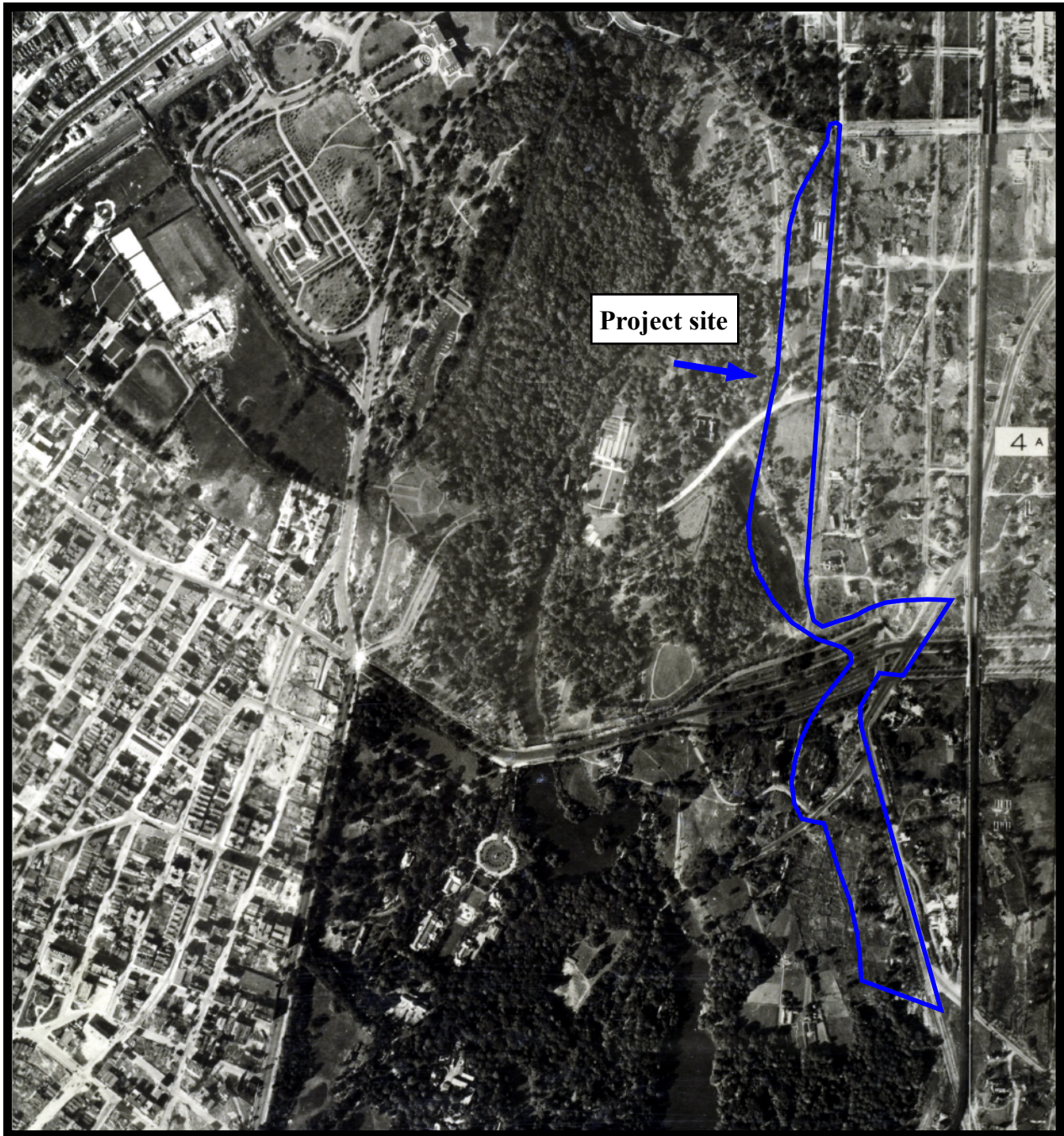


**Phase IA Archaeological Documentary Study
Bronx River Greenway Bicycle and Pedestrian Path Between
Unionport Road and Allerton Avenue
Bronx, Bronx County, New York**



Figure 11b: Central portion of project site on *Topographical Survey and New Street System of the Borough of the Bronx, Easterly of the Bronx River* (Topographical Bureau 1905).





Phase IA Archaeological Documentary Study
Bronx River Greenway Bicycle and Pedestrian Path Between
Unionport Road and Allerton Avenue
Bronx, Bronx County, New York



Figure 12: Project site on *Sectional Aerial Maps of the City of New York*
(Bureau of Engineering 1924).

0 500 1000 1500 2000 2500 FEET



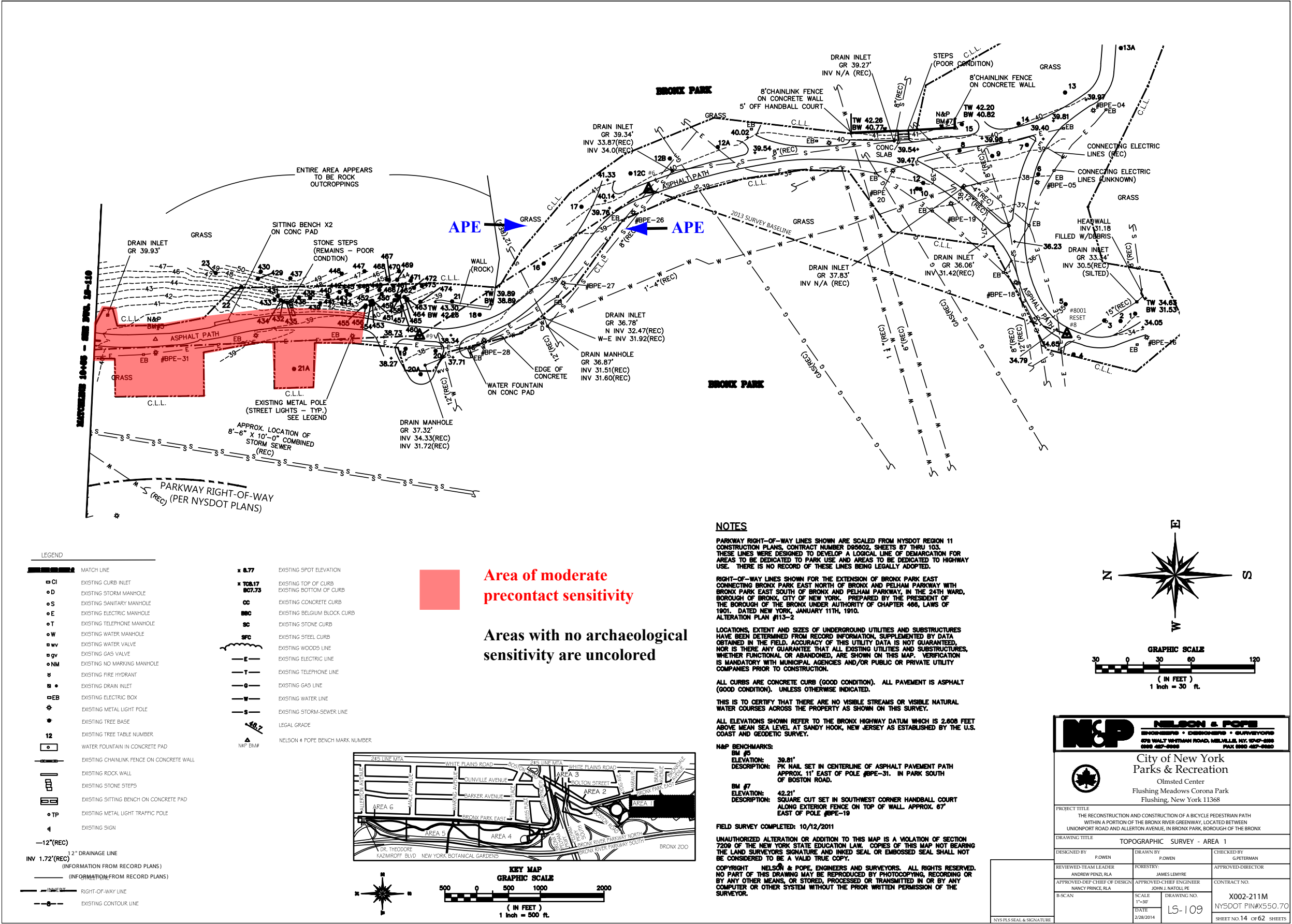
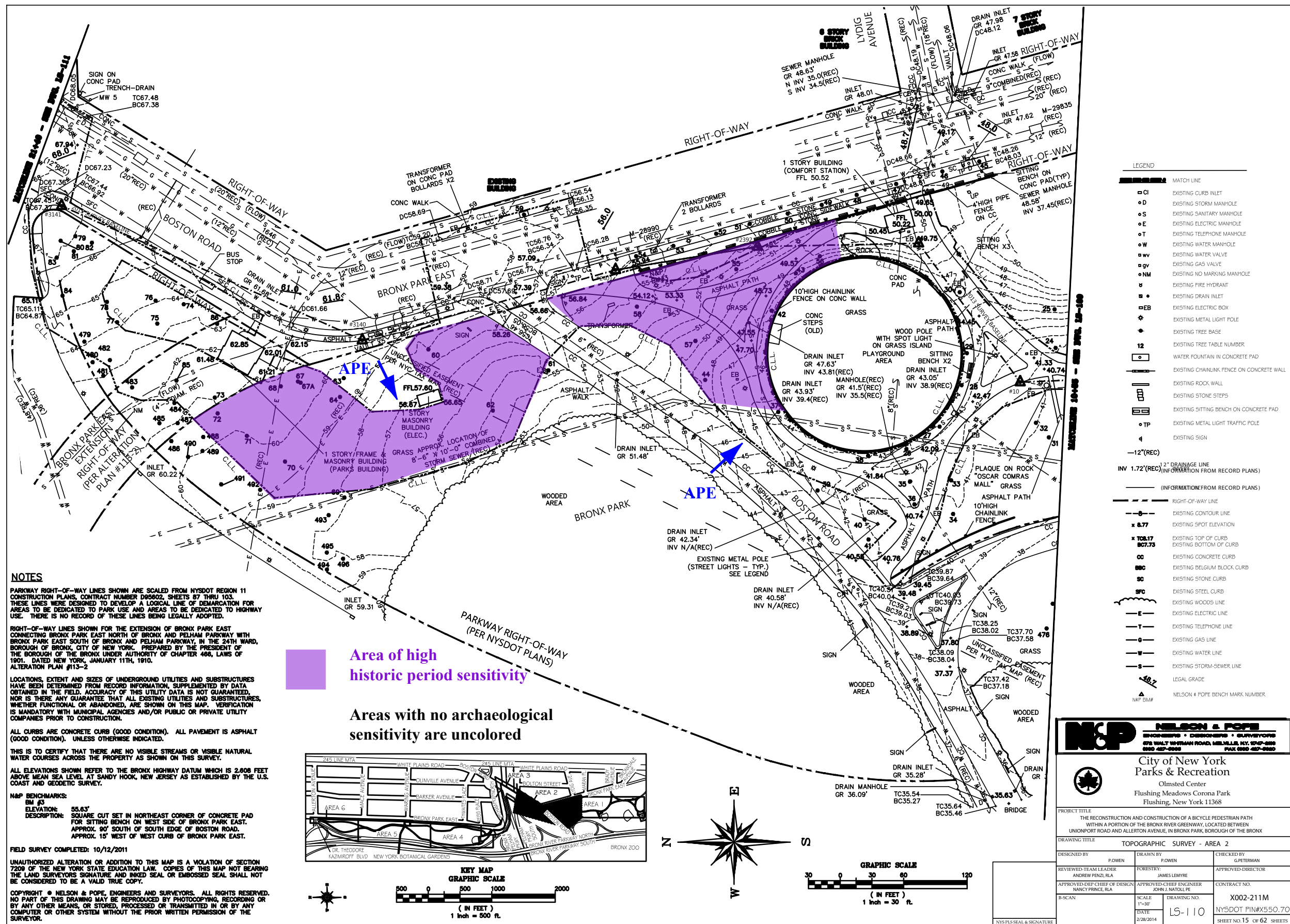
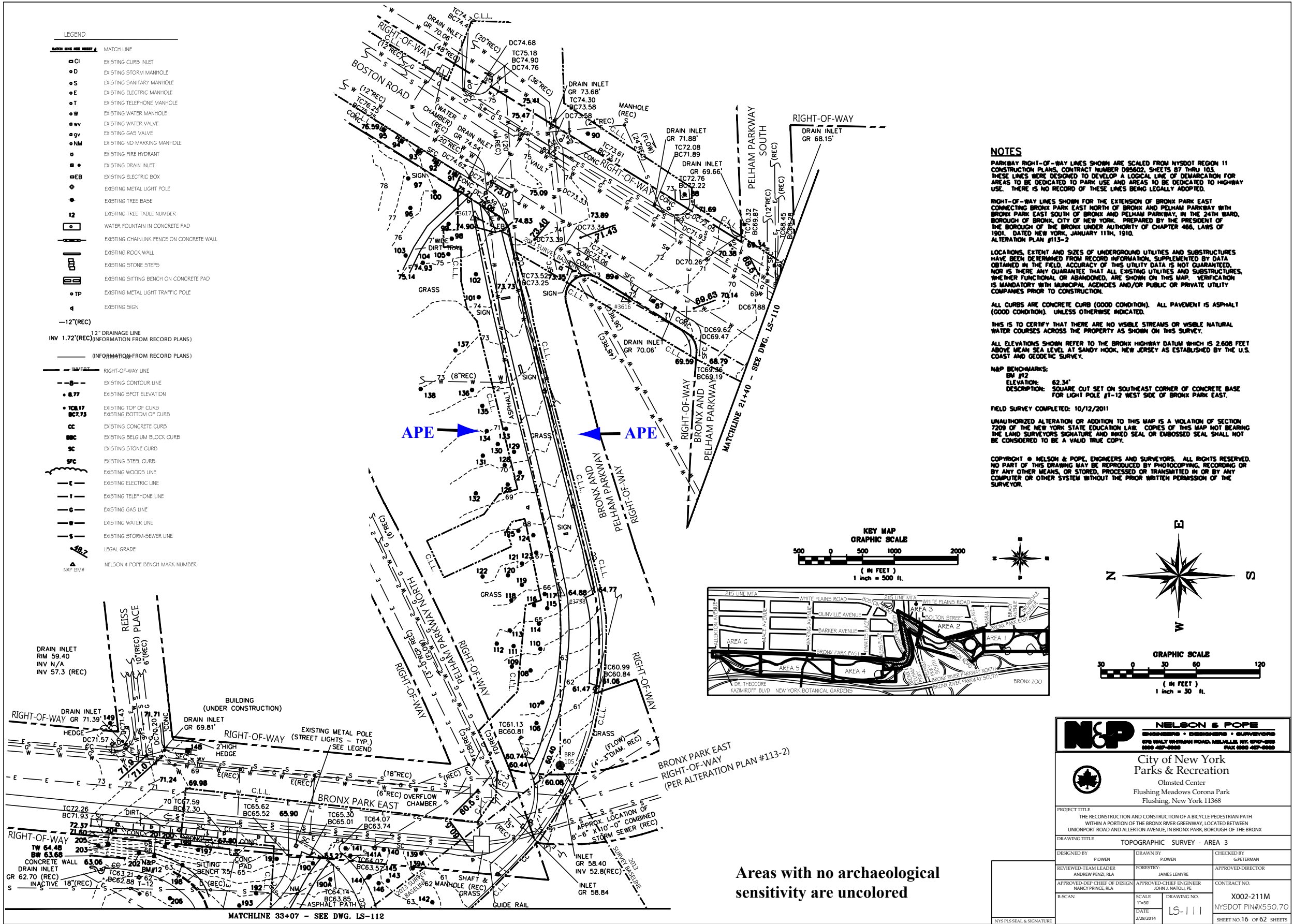


Figure 13a: Area 1 APE archaeological sensitivity (DPR 2014).





NOTES

PARKWAY RIGHT-OF-WAY LINES SHOWN ARE SCALED FROM NYSDOT REGION 11 CONSTRUCTION PLANS, CONTRACT NUMBER D9602, SHEETS 87 THRU 103. THESE LINES WERE DESIGNED TO DEVELOP A LOGICAL LINE OF DEMARCATION FOR AREAS TO BE DEDICATED TO PARK USE AND AREAS TO BE DEDICATED TO HIGHWAY USE. THERE IS NO RECORD OF THESE LINES BEING LEGALLY ADOPTED.

RIGHT-OF-WAY LINES SHOWN FOR THE EXTENSION OF BRONX PARK EAST CONNECTING BRONX PARK EAST NORTH OF BRONX AND PELHAM PARKWAY WITH BRONX PARK EAST SOUTH OF BRONX AND PELHAM PARKWAY, IN THE 24TH WARD, BOROUGH OF BRONX, CITY OF NEW YORK. PREPARED BY THE PRESIDENT OF THE BOROUGH OF THE BRONX UNDER AUTHORITY OF CHAPTER 466, LAWS OF 1901, DATED NEW YORK, JANUARY 11TH, 1910. ALTERATION PLAN #113-2

LOCATIONS, EXTENT AND SIZES OF UNDERGROUND UTILITIES AND SUBSTRUCTURES HAVE BEEN DETERMINED FROM RECORD INFORMATION, SUPPLEMENTED BY DATA OBTAINED IN THE FIELD. ACCURACY OF THIS UTILITY DATA IS NOT GUARANTEED. NOR IS THERE ANY GUARANTEE THAT ALL EXISTING UTILITIES AND SUBSTRUCTURES, WHETHER FUNCTIONAL OR ABANDONED, ARE SHOWN ON THIS MAP. VERIFICATION IS MANDATORY WITH MUNICIPAL AGENCIES AND/OR PUBLIC OR PRIVATE UTILITY COMPANIES PRIOR TO CONSTRUCTION.

ALL CURBS ARE CONCRETE CURB (GOOD CONDITION). ALL PAVEMENT IS ASPHALT (GOOD CONDITION). UNLESS OTHERWISE INDICATED.

THIS IS TO CERTIFY THAT THERE ARE NO VISIBLE STREAMS OR VISIBLE NATURAL WATER COURSES ACROSS THE PROPERTY AS SHOWN ON THIS SURVEY.

ALL ELEVATIONS SHOWN REFER TO THE BRONX HIGHWAY DATUM WHICH IS 2.608 FEET ABOVE MEAN SEA LEVEL AT SANDY HOOK, NEW JERSEY AS ESTABLISHED BY THE U.S. COAST AND GEODETIC SURVEY.

N&P BENCHMARK:
BM #80
ELEVATION: 65.91'
DESCRIPTION: PK NAIL SET IN CENTERLINE ASPHALT PAVEMENT PATH, APPROX. 118' NORTH OF NORTHWEST CORNER OF FENCE OF BEISBALL FIELD.

FIELD SURVEY COMPLETED: 10/12/2011

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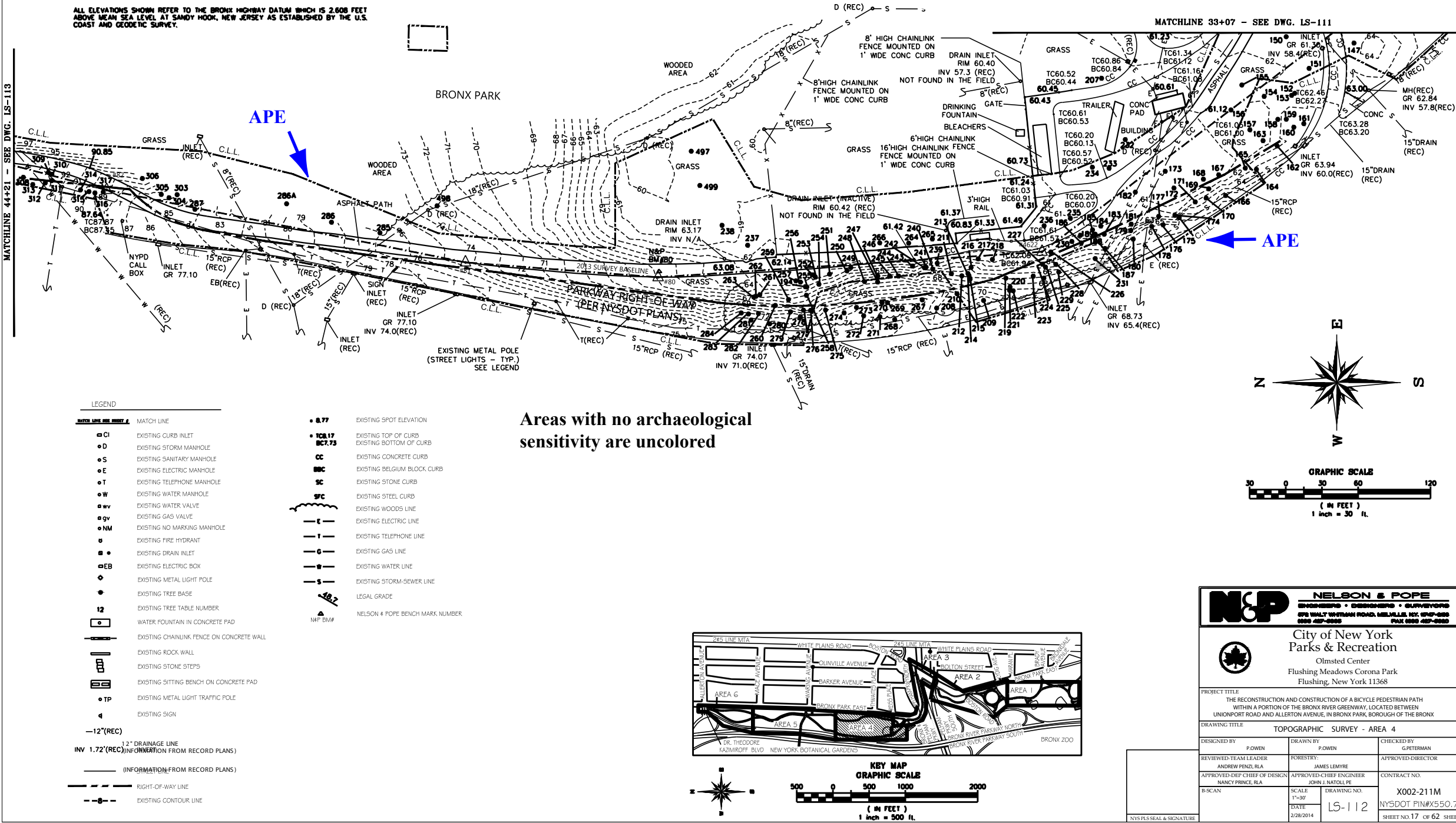


Figure 13d: Area 4 APE archaeological sensitivity (DPR 2014).

PARKWAY RIGHT-OF-WAY LINES SHOWN ARE SCALED FROM NYSDOT REGION 11 CONSTRUCTION PLANS, CONTRACT NUMBER D95602, SHEETS 87 THRU 103. THESE LINES WERE DESIGNED TO DEVELOP A LOGICAL LINE OF DEMARCATION FOR AREAS TO BE DEDICATED TO PARK USE AND AREAS TO BE DEDICATED TO HIGHWAY USE. THERE IS NO RECORD OF THESE LINES BEING LEGALLY ADOPTED.

LOCATIONS, EXTENT AND SIZES OF UNDERGROUND UTILITIES AND SUBSTRUCTURES, HAVE BEEN DETERMINED FROM RECORD INFORMATION, SUPPLEMENTED BY DATA OBTAINED IN THE FIELD. ACCURACY OF THIS UTILITY DATA IS NOT GUARANTEED. NOR IS THERE ANY GUARANTEE THAT ALL EXISTING UTILITIES AND SUBSTRUCTURES, WHETHER FUNCTIONAL OR ABANDONED, ARE SHOWN ON THIS MAP. VERIFICATION IS MANDATORY WITH MUNICIPAL AGENCIES AND/OR PUBLIC OR PRIVATE UTILITY COMPANIES PRIOR TO CONSTRUCTION.

THIS IS TO CERTIFY THAT THERE ARE NO VISIBLE STREAMS OR VISIBLE NATURAL WATER COURSES ACROSS THE PROPERTY AS SHOWN ON THIS SURVEY.

ALL ELEVATIONS SHOWN REFER TO THE BRONX HIGHWAY DATUM WHICH IS 2.608 FEET ABOVE MEAN SEA LEVEL AT SANDY HOOK, NEW JERSEY AS ESTABLISHED BY THE U.S. COAST AND GEODETIC SURVEY.

FIELD SURVEY COMPLETED: 10/12/2011

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COMPUTER OR OTHER SYSTEM WITHOUT THE PRIOR WRITTEN PERMISSION OF THE
SURVEYOR.



		TREE TABLE		TREE TABLE		TREE TABLE		TREE TABLE					
		#	SIZE (")	TYPE	ELEV. (')	#	SIZE (")	TYPE	ELEV. (')	#	SIZE (")	TYPE	ELEV. (')
1	24	6			71.73	272	8	OAK	74.45	404	12	BIRCH	118.38
2	30	137	4	CRAB APPLE		273	6	OAK	73.91	411	11		
3	4	138	12	RAB APPLE	73.01	274	10	OAK	73.91	406	24		
4	4	139	2	RAB APPLE	61.61	279	3	OAK	73.91	408	4		
5	33	139	2	RAB APPLE	61.61	280	20	OAK	73.71	409	6		
6	33	140	28	OAK	63.46	281	24	OAK	73.45	410	12	OAK	119.07
7	33	141	28	OAK	64.61	282	10	OAK	71.72	411	12	OAK	119.07
8	33	141	15	STUMP	--	283	10	OAK	71.72	412	18	LOCUST	114.02
9	39	143	40	OAK	68.56	284	10	OAK	71.72	413	18	LOCUST	114.02
10	23	143	40	OAK	68.56	285	10	OAK	71.72	414	18	LOCUST	114.02
11	23	143	40	OAK	68.56	286	26			415	18	LOCUST	114.02
12	13	146	7	MAPLE, NOR.	63.11	287	26			416	18	LOCUST	114.02
13	36	147	8	MAPLE	63.46	288	24	MAPLE, SUGAR	70.5	417	18	LOCUST	114.02
14	26	148	10	DECIDUOUS	69.44	289	38	OAK	73.91	418	4		
15	30	149	6	DECIDUOUS	73.07	290	12	MAPLE	116.01	419	6		
16	13	150	27	DECIDUOUS	62.83	291	2	OAK, RED	123.16	420	12	OAK	119.07
17	13	151	36	DECIDUOUS	62.75	292	12	MAPLE	123.16	421	4	OAK	119.07
18	44	152	3	OAK	62.66	293	12	MAPLE	123.16	422	24	LOCUST	114.02
19	6	153	22			294	12		104.01	423	6	LOCUST	114.02
20	4	154	4	BIRCH	61.30	295	6			424	6	LOCUST	114.02
21	20	155	4	BIRCH	61.30	296	38			425	6	LOCUST	114.02
22	25	156	38			297	3	OAK	119.27	426	6	LOCUST	114.02
23	12	157	4	OAK	61.87	298	3	OAK	114.94	427	6	LOCUST	114.02
24	15	158	12	OAK	61.84	299	38	OAK	114.94	428	20	OAK	50.55
25	24	159	12	OAK	61.84	300	18	OAK	112.53	429	13	OAK	50.55
26	24	160	12	OAK	61.84	301	14	OAK, SCARLET	107.66	430	13	OAK	50.55
27	24	161	10	OAK	61.84	302	18	OAK	111.37	431	13	OAK	50.55
28	25	162	6	BIRCH	61.25	303	3	OAK	111.37	432	6	LOCUST	114.02
29	25	163	6	OAK	64.36	304	12	MAPLE	116.01	433	13	OAK	50.55
30	25	164	6	OAK	62.11	305	6			434	12	CHERRY, BLACK	43.74
31	25	165	4	OAK	62.11	306	12	MAPLE	90.31	435	10	OAK	44.63
32	25	166	4	OAK	62.11	307	8	BIRCH	93.46	436	10	OAK	50.77
33	25	167	4	OAK	62.11	308	8	BIRCH	93.46	437	16	OAK	45.17
34	25	168	4	OAK	62.11	309	8	BIRCH	93.46	438	6	OAK	45.17
35	25	169	4	OAK	62.11	310	8	BIRCH	93.46	439	6	OAK	45.17
36	25	170	4	OAK	62.11	311	8	BIRCH	93.46	440	6	OAK	45.17
37	25	171	4	OAK	62.11	312	12	DECIDUOUS	92.93	441	8	OAK	45.17
38	25	172	4	OAK	62.11	313	12	DECIDUOUS	92.93	442	4	OAK, PIN	44.88
39	25	173	4	OAK	62.11	314	10	BIRCH	90.61	443	4	BIRCH	44.88
40	25	174	24	OAK	60.17	315	3	DECIDUOUS	90.61	444	4	BIRCH	44.88
41	25	175	6	OAK	65.65	316	2		92.88	445	4	BIRCH	44.88
42	25	176	6	OAK	65.65	317	2		92.88	446	4	BIRCH	44.88
43	25	177	6	OAK	65.65	318	2		92.88	447	4	BIRCH	44.88
44	25	178	6	OAK	65.65	319	2		92.88	448	4	BIRCH	44.88
45	25	179	6	OAK	65.65	320	2		92.88	449	4	BIRCH	44.88
46	25	180	6	OAK	65.65	321	2		92.88	450	4	BIRCH	44.88
47	25	181	6	OAK	65.65	322	2		92.88	451	4	BIRCH	44.88
48	25	182	6	OAK	65.65	323	2		92.88	452	4	BIRCH	44.88
49	25	183	6	OAK	65.65	324	2		92.88	453	4	BIRCH	44.88
50	25	184	6	OAK	65.65	325	2		92.88	454	4	BIRCH	44.88
51	25	185	6	OAK	65.65	326	2		92.88	455	4	BIRCH	44.88
52	25	186	6	OAK	65.65	327	2		92.88	456	4	BIRCH	44.88
53	25	187	6	OAK	65.65	328	2		92.88	457	4	BIRCH	44.88
54	25	188	6	OAK	65.65	329	2		92.88	458	4	BIRCH	44.88
55	25	189	6	OAK	65.65	330	2		92.88	459	4	BIRCH	44.88
56	25	190	6	OAK	65.65	331	2		92.88	460	4	BIRCH	44.88
57	25	191	6	OAK	65.65	332	2		92.88	461	4	BIRCH	44.88
58	25	192	6	OAK	65.65	333	2		92.88	462	4	BIRCH	44.88
59	25	193	6	OAK	65.65	334	2		92.88	463	4	BIRCH	44.88
60	25	194	6	OAK	65.65	335	2		92.88	464	4	BIRCH	44.88
61	25	195	6	OAK	65.65	336	2		92.88	465	4	BIRCH	44.88
62	25	196	6	OAK	65.65	337	2		92.88	466	4	BIRCH	44.88
63	25	197	6	OAK	65.65	338	2		92.88	467	4	BIRCH	44.88
64	25	198	6	OAK	65.65	339	2		92.88	468	4	BIRCH	44.88
65	25	199	6	OAK	65.65	340	2		92.88	469	4	BIRCH	44.88
66	25	200	6	OAK	65.65	341	2		92.88	470	4	BIRCH	44.88
67	25	201	6	OAK	65.65	342	2		92.88	471	4	BIRCH	44.88
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69	25	203	6	OAK	65.65	344	2		92.88	473	4	BIRCH	44.88
70	25	204	6	OAK	65.65	345	2		92.88	474	4	BIRCH	44.88
71	25	205	6	OAK	65.65	346	2		92.88	475	4	BIRCH	44.88
72	25	206	6	OAK	65.65	347	2		92.88	476	4	BIRCH	44.88
73	25	207	6	OAK	65.65	348	2		92.88	477	4	BIRCH	44.88
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76	25	210	6	OAK	65.65	351	2		92.88	480	4	BIRCH	44.88
77	25	211	6	OAK	65.65	352	2		92.88	481	4	BIRCH	44.88
78	25	212	6	OAK	65.65	353	2		92.88	482	4	BIRCH	44.88
79	25	213	6	OAK	65.65	354	2		92.88	483	4	BIRCH	44.88
80	25	214	6	OAK	65.65	355	2		92.88	484	4	BIRCH	44.88
81	25	215	6	OAK	65.65	356	2		92.88	485	4	BIRCH	44.88
82	25	216	6	OAK	65.65	357	2		92.88	486	4	BIRCH	44.88
83	25	217	6	OAK	65.65	358	2		92.88	487	4	BIRCH	44.88
84	25	218	6	OAK	65.65	359	2		92.88	488	4	BIRCH	44.88
85	25	219	6	OAK	65.65	360	2		92.88	489	4	BIRCH	44.88
86	25	220	6	OAK	65.65	361	2		92.88	490	4	BIRCH	44.88
87	25	221	6	OAK	65.65	362	2		92.88	491	4	BIRCH	44.88
88	25	222	6	OAK	65.65	363	2		92.88	492	4	BIRCH	44.88
89	25	223	6	OAK	65.65	364	2		92.88	493	4	BIRCH	44.88
90	25	224	6	OAK	65.65	365	2		92.88	494	4	BIRCH	44.88
91	25	225	6	OAK	65.65	366	2		92.88	495	4	BIRCH	44.88
92	25	226	6	OAK	65.65	367	2		92.88	496	4	BIRCH	44.88
93	25	227	6	OAK	65.65	368	2		92.88	497	4	BIRCH	44.88
94	25	228	6	OAK	65.65	369	2		92.88	498	4	BIRCH	44.88
95	25	229	6	OAK	65.65	370	2		92.88	499	4	BIRCH	44.88
96	25	230	6	OAK	65.65	371	2		92.88	500	4	BIRCH	44.88
97	25	231	6	OAK	65.65	372	2		92.88	501	4	BIRCH	44.88
98	25	232	6	OAK	65.65	373	2		92.88	502	4	BIRCH	44.88
99	25	233	6	OAK	65.65	374	2		92.88	503	4	BIRCH	44.88
100	25	234	6	OAK	65.65	375	2		92.88	504	4	BIRCH	44.88
101	25	235	6	OAK	65.65	376	2		92.88				
102	25	236	6	OAK	65.65	377	2		92.88				
103	25	237	6	OAK	65.65	378	2		92.88				
104	25	238	6	OAK	65.65	379	2		92.88				
105	25	239	6	OAK	65.65	380	2		92.88				
106	25	240	6	OAK	65.65	381	2		92.88				
107	25	241	6	OAK	65.65	382	2		92.88				
108	25	242	6	OAK	65.65	383	2		92.88				
109	25	243	6	OAK	65.65	384	2		92.88				
110	25	244	6	OAK	65.65	385	2		92.88				
111	25	245	6	OAK	65.65	386	2		92.88				
112	25	246	6	OAK	65.65	387	2		92.88				
113	25	247	6	OAK	65.65	388	2		92.88				</



Photograph 1: Area 1 APE showing triangular section where paths meet. View looking north.



Photograph 2: Area 1 APE showing pathway and baseball fields to west. Cars in far background are on Bronx River Parkway. View looking northwest.



Photograph 3 Area 1 APE showing pathway and poor drainage. View looking northwest.



Photograph 4: Area 1 APE showing existing pathway. View looking south.



Photograph 5: Area 2 APE showing pathways south of and surrounding Ben Abrams Playground. View looking southeast with Bronx Park East in left background.



Photograph 6: Area 2 APE showing pathways surrounding Ben Abrams Playground on left, with comfort station in background. View looking northeast.



Photograph 7: Area 2 APE showing pathways surrounding Ben Abrams Playground on right, with comfort station and large bedrock outcrop. View looking southeast.



Photograph 8: Area 2 APE showing pathways surrounding Ben Abrams Playground in left background. View looking southeast.



Photograph 9: Area 2 APE showing site of former nineteenth-century Thwaites Hotel on northeast end of Ben Abrams Playground. View looking southeast.



Photograph 10: Area 2 APE showing Boston Road crossing at Bronx Park East. APE continues in left background. View looking northwest.



Photograph 11: Area 2 APE showing area on north side of Boston Road, site of former Bronxdale hamlet buildings. View looking northwest.



Photograph 12: Area 2 APE showing area on north side of Boston Road, site of former Bronxdale hamlet buildings. View looking southwest.



Photograph 13: Area 2 APE showing sidewalk along Boston Road. View looking northeast with Pelham Parkway in background.



Photograph 14: Area 3 APE showing intersection of Pelham Parkway and Boston Road. View looking northeast.



Photograph 15: Area 3 APE showing sidewalks along Boston Road. View looking southwest.



Photograph 16: Area 3 APE showing existing path paralleling Pelham Parkway. This area was formerly under ramps for Pelham Parkway before the Bronx River Parkway interchange was built. View looking west.



Photograph 17: Area 3 APE showing intersection of Pelham Parkway North and Bronx Park East. View looking northwest.



Photograph 18: Area 3 APE showing informal path leading to Bronx River Parkway ramp in background. View looking north.



Photograph 19: Area 4 APE showing existing path. View looking southeast, with Bronx Park East in background.



Photograph 20: Area 4 APE showing Reiss Field. Parts of this location were formerly under waters of Reiss Pond. View looking north.



Photograph 21: Area 4 APE with Reiss Field in left background and Bronx River Parkway adjacent on right. This location was formerly under waters of Reiss Pond. View looking south.



Photograph 22: Area 5 APE showing sloped path rising past Waring Playground in left background. View looking south.



Photograph 23: Area 5 APE at entrance to Waring Avenue near stone pillars. View looking east.



Photograph 24: Area 5 APE just north of Waring Avenue showing paths coming together. View looking northeast with Bronx Park East in background.



Photograph 25: Area 5 APE showing side-by-side paths separated by pipe fencing. This is the location of the former greenhouses of the Bronx Botanical Gardens. View looking northwest.



Photograph 26: Area 5 APE showing separation of two paths. View looking south.



Photograph 27: Area 6 APE showing rolling topography adjacent to Bronx River Parkway on right. View looking southwest.



Photograph 28: Area 6 APE showing disturbance from storm drain. This was also the location of an early twentieth century Bronx Botanical Gardens stable. View looking southwest with Bronx River Parkway in right background.



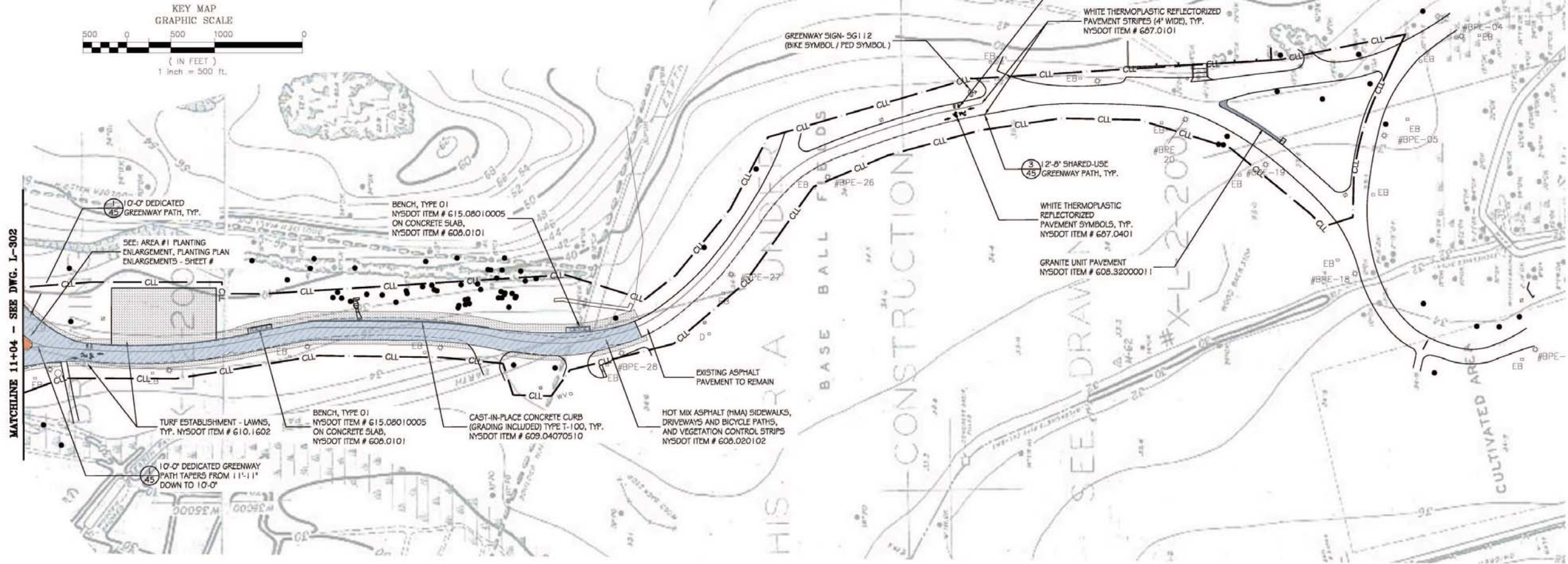
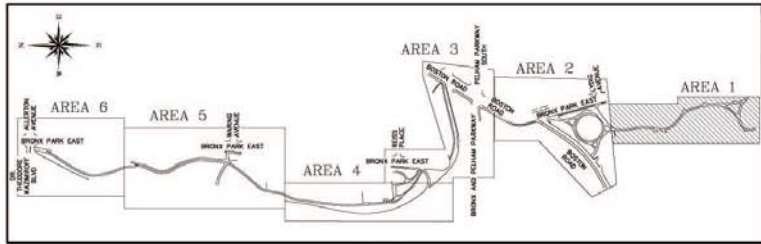
Photograph 29: Area 6 APE showing terminus at Allerton Avenue in background. View looking northeast with entrance to Bronx River Parkway in left background.

APPENDIX A: OVERLAY OF PROJECT IMPACTS ON 1937 SERIES PARK MAPS

Notes:

1. Disturbance referenced in map legends refers to any prior disturbance as shown on the 1937 series maps, and as interpreted by DPR. This disturbance does not reflect HPI's assessment of archaeological sensitivity.
2. The most recent Contract Limit Line (CLL), which corresponds to the Area of Potential Effect (APE), is shown only for Areas 2 and 3. The CLL shown on these maps for Areas 1, 4, 5, and 6 is an earlier version that has since been updated. See Figures 3a-f, 4a-f, and 13a-f for most current CLL/APE.
3. Although the CLL is broad, the purpose of these sheets is to illustrate the much more limited locations within the CLL/ APE where deeper and more extensive excavations are planned.

a. PROPOSED EXCAVATION EXTENTS



LEGEND

- CLL - CONTRACT LIMIT LINE
- DETAIL NUMBER
DETAIL SHEET
- HOT MIX ASPHALT (HMA) SIDEWALKS,
DRIVEWAYS AND BICYCLE PATHS, AND
VEGETATION CONTROL STRIPS
NYSOT ITEM # 608.020102
- CONCRETE SIDEWALKS - UNREINFORCED
NYSOT ITEM # 608.0100010
- WILDFLOWER SEEDING
NYSOT ITEM # 610.17
- TURF ESTABLISHMENT - LAWNS
NYSOT ITEM # 610.1602
- TURF ESTABLISHMENT - LAWNS
NYSOT ITEM # 610.1602
- BENCH, TYPE 01
NYSOT ITEM # 615.08010005
- GREENWAY SIGN
- 24 INCH DIAMETER PVC DRAIN
BASIN WITH 24 X 24 INCH GRATE
NYSOT ITEM # 604.24010010
- SMOOTH INTERIOR CORRUGATED
POLYETHYLENE CULVERT AND STORM DRAIN
PIPE, 12" DIA, EMSTBY, QUANTITY RANGE
1 (0 TO 20) NYSOT ITEM # 603.98120163

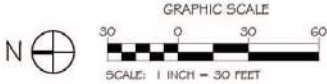
*NYSOT PAY ITEMS - ESTIMATED QUANTITIES THIS SHEET ONLY

STATION MARKS (FEET)	NYSOT ITEM NO.	NYSOT ITEM DESCRIPTION	UNIT	QTY
C.L.L. TO 11+04	208.01030022	BIORETENTION AND DRY SWALE SOIL	CUBIC YARD	30
C.L.L. TO 11+04	603.98120163	SMOOTH INTERIOR CORRUGATED POLYETHYLENE CULVERT AND STORM DRAIN PIPE, 12" DIA, EMSTBY, QUANTITY RANGE 1 (0 TO 20)	LINEAR FOOT	43
C.L.L. TO 11+04	604.24010010	24 INCH DIAMETER PVC DRAIN BASIN WITH 24 X 24 INCH GRATE	EACH	1
C.L.L. TO 11+04	608.0101	CONCRETE SIDEWALKS AND DRIVEWAYS	CUBIC YARD	3
C.L.L. TO 11+04	608.020102	HOT MIX ASPHALT (HMA) SIDEWALKS, DRIVEWAYS AND BICYCLE PATHS, AND VEGETATION CONTROL STRIPS	TON	150 (5,509 SF)
C.L.L. TO 11+04	609.41000011	TIMBER CURB	LINEAR FOOT	630
C.L.L. TO 11+04	610.1403	TOPSOIL - LAWNS	CUBIC YARD	30
C.L.L. TO 11+04	610.1602	TURF ESTABLISHMENT - LAWNS	SQUARE YARD	510
C.L.L. TO 11+04	610.17	WILDFLOWER SEEDING	SQUARE YARD	245
C.L.L. TO 11+04	615.08010005	BENCH, TYPE 01	EACH	2
C.L.L. TO 11+04	623.15000005	CRUSHED GRAVEL, CRUSHED STONE OR CRUSHED SLAG (IN-PLACE MEASURE)	CUBIC YARD	165
C.L.L. TO 11+04	687.0101	WHITE THERMOPLASTIC REFLECTORIZED PAVEMENT STRIPES	LINEAR FOOT	1400
C.L.L. TO 11+04	687.0301	WHITE THERMOPLASTIC REFLECTORIZED PAVEMENT LETTERS	EACH	14
C.L.L. TO 11+04	687.0401	WHITE THERMOPLASTIC REFLECTORIZED PAVEMENT SYMBOLS	EACH	8
C.L.L. TO 11+04	X0000X	SIGN	EACH	8

LEGEND

- AREA PREVIOUSLY PAVED AND/OR DISTURBED - MAXIMUM 4'-5" OF EXISTING PAVEMENT OR SOIL TO BE REMOVED. NO ADDITIONAL EXCAVATION ANTICIPATED, TYP.
- AREA PREVIOUSLY PAVED AND/OR DISTURBED - MAXIMUM 1'-2" OF EXISTING PAVEMENT TO BE REMOVED. NO ADDITIONAL EXCAVATION ANTICIPATED, TYP.
- AREA PREVIOUSLY DISTURBED MAX 36" EXCAVATION
- AREA PREVIOUSLY UNDISTURBED - MAXIMUM 36" EXCAVATION. SOIL TO BE SPREAD IN IMMEDIATE VICINITY, TYP.
- AREA PREVIOUSLY DISTURBED - NO PROPOSED EXCAVATION
- AREA PREVIOUSLY UNDISTURBED - NO PROPOSED EXCAVATION

*NOTE:
1. SCREENED BACKGROUND IS 1937 CITY OF NY DEPT. OF PARKS TOPOGRAPHICAL MAP UTILIZED TO DEMONSTRATE HISTORIC DISTURBANCE OF SITE.



*THIS DRAWING ILLUSTRATES 1937 EXISTING CONDITIONS SURVEY AS SUPPLIED BY NYC PARKS DEPT. MAP FILE UNIT WITH PROPOSED GREENWAY SYSTEM ALIGNMENT OVERLAY.

REV. #	DATE	DESCRIPTION
2	4/26/13	90% REVIEW SUBMISSION
1	2/20/13	50% REVIEW SUBMISSION

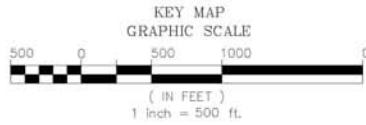
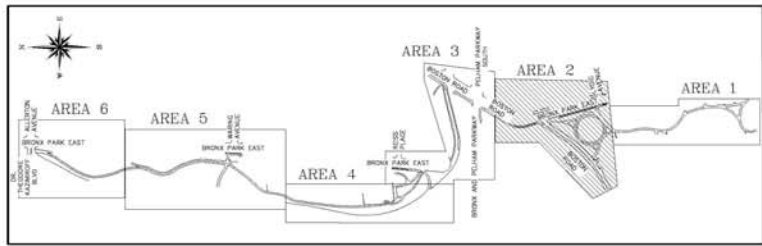
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**City of New York
Parks & Recreation**
Olmsted Center
Flushing Meadows Corona Park
Flushing, New York 11368

PROJECT TITLE
THE RECONSTRUCTION AND CONSTRUCTION OF A BICYCLE/PEDESTRIAN PATH
WITHIN A PORTION OF THE BRONX RIVER GREENWAY, LOCATED BETWEEN
UNIONPORT ROAD AND ALLERTON AVE. IN BRONX PARK, BOROUGH OF THE BRONX

DRAWING TITLE
MATERIALS AND PLANTING PLAN - AREA 1

DESIGNED BY J. NITZKY	DRAWN BY D. SULLIVAN	CHECKED BY L. HOPPER
REVIEWED-TEAM LEADER ANDREW FENZL, RLA	FORESTRY: JAMES LEMKE	APPROVED-DIRECTOR
APPROVED-DEP CHIEF OF DESIGN NANCY PRINCE, RLA	APPROVED-CHIEF ENGINEER JOHN J. NATOLI, PE	CONTRACT NO.
B-SCAN	SCALE 1"=30'-0"	DRAWING NO. X002-211M
	DATE 04/26/13	NYSOT PIN#X550.70
		SHEET NO. 24 OF 58 SHEETS



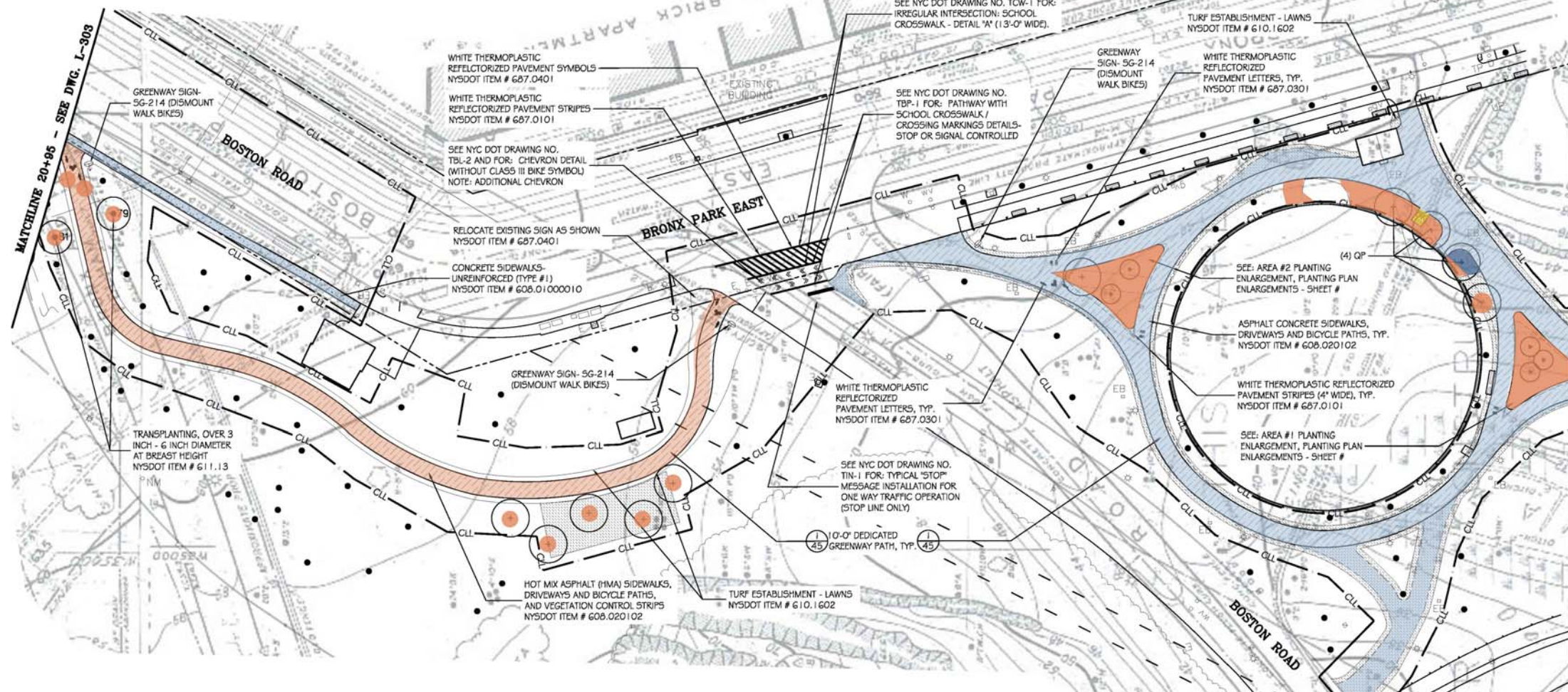
LEGEND

- CL CONTRACT LIMIT LINE
- DETAIL NUMBER
DETAIL SHEET
- HOT MIX ASPHALT (HMA) SIDEWALKS,
DRIVEWAYS AND BICYCLE PATHS, AND
VEGETATION CONTROL STRIPS
NYS DOT ITEM # 608.020102
- CONCRETE SIDEWALKS - UNREINFORCED
NYS DOT ITEM # 608.01000010
- WILDFLOWER SEEDING
NYS DOT ITEM # 610.17
- TURF ESTABLISHMENT - LAWNS
NYS DOT ITEM # 610.1602
- GREENWAY SIGN
- BICYCLE RACK (DESIGN CAPACITY 6
BICYCLES) NYS DOT ITEM # 615.27020010

LEGEND

- AREA PREVIOUSLY PAVED AND/OR DISTURBED -
MAXIMUM 4.5" OF EXISTING PAVEMENT OR SOIL
TO BE REMOVED. NO ADDITIONAL EXCAVATION
ANTICIPATED, TYP.
- AREA PREVIOUSLY PAVED AND/OR DISTURBED -
MAXIMUM 12" OF EXISTING PAVEMENT TO BE
REMOVED. NO ADDITIONAL EXCAVATION
ANTICIPATED, TYP.
- AREA PREVIOUSLY DISTURBED MAX 36"
EXCAVATION
- AREA PREVIOUSLY UNDISTURBED - MAXIMUM
36" EXCAVATION. SOIL TO BE SPREAD IN
IMMEDIATE VICINITY, TYP.
- AREA PREVIOUSLY DISTURBED - NO PROPOSED
EXCAVATION
- AREA PREVIOUSLY UNDISTURBED - NO
PROPOSED EXCAVATION
- AREA PREVIOUSLY UNDISTURBED -
MAXIMUM 4.5" EXCAVATION

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HISTORIC DISTURBANCE OF SITE.



PLANTING SCHEDULE							
KEY	QTY	BOTANICAL NAME	COMMON NAME	CALIPER	SPREAD	HEIGHT	REMARKS
TREES							
QP	4	Quercus phellos	Willow Oak	3'-3-1/2"	--		LIMBED TO 7' ABOVE FINISHED GRADE

*NYS DOT PAY ITEMS - ESTIMATED QUANTITIES THIS SHEET ONLY

STATION MARKS (FEET)	NYS DOT ITEM NO.	NYS DOT ITEM DESCRIPTION	UNIT	QTY
11+04 + 20+95	608.01000010	CONCRETE SIDEWALKS - UNREINFORCED	CUBIC YARD	3
11+04 + 20+95	608.020102	HOT MIX ASPHALT (HMA) SIDEWALKS, DRIVEWAYS AND BICYCLE PATHS, AND VEGETATION CONTROL STRIPS	TON	360 (18,820 SF)
11+04 + 20+95	609.41000011	TIMBER CURB	LINEAR FOOT	3,140
11+04 + 20+95	610.1403	TOPSOIL- LAWNS	CUBIC YARD	40
11+04 + 20+95	610.1602	TURF ESTABLISHMENT - LAWNS	SQUARE YARD	1,750
11+04 + 20+95	611.0111	PLANTING - MAJOR DECIDUOUS TREES - SIZE AS SPECIFIED BALL & BURLAP, FIELD POTTED OR FIELD BOXED	EACH	4
11+04 + 20+95	611.13	TRANSPLANTING, OVER 3 INCH - 6 INCH DIAMETER AT BREAST HEIGHT	EACH	2
11+04 + 20+95	615.08010005	BENCH, TYPE 01	LINEAR FOOT	0
11+04 + 20+95	615.27020010	BICYCLE RACK (DESIGN CAPACITY 6 BICYCLES)	EACH	1
11+04 + 20+95	687.0101	WHITE THERMOPLASTIC REFLECTORIZED PAVEMENT STRIPES	LINEAR FOOT	60
11+04 + 20+95	687.0301	WHITE THERMOPLASTIC REFLECTORIZED PAVEMENT LETTERS	EACH	14
11+04 + 20+95	687.0401	WHITE THERMOPLASTIC REFLECTORIZED PAVEMENT SYMBOLS	EACH	21
11+04 + 20+95	XXXXXX	SIGN	EACH	8

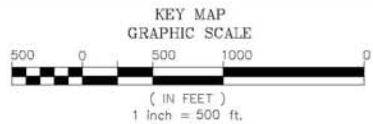
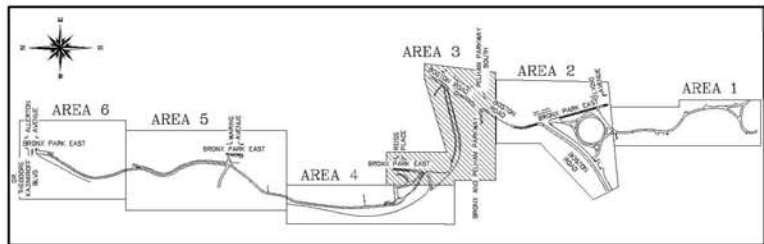


REV. #	DATE	DESCRIPTION
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1	2/20/13	50% REVIEW SUBMISSION

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**City of New York
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PROJECT TITLE THE RECONSTRUCTION AND CONSTRUCTION OF A BICYCLE/PEDESTRIAN PATH WITHIN A PORTION OF THE BRONX RIVER GREENWAY, LOCATED BETWEEN UNIONPORT ROAD AND ALLERTON AVE., IN BRONX PARK, BOROUGH OF THE BRONX		
DRAWING TITLE MATERIALS AND PLANTING PLAN - AREA 2		
DESIGNED BY J. NITZKY	DRAWN BY D. SULLIVAN	CHECKED BY L. HOPPER
REVIEWED-TEAM LEADER ANDREW PENZ, RLA	FORESTRY: JAMES LEMIRE	APPROVED-DIRECTOR
APPROVED-DEP CHIEF OF DESIGN NANCY PRINCE, RLA	APPROVED-CHIEF ENGINEER JOHN J. NATOLI, PE	CONTRACT NO. X002-211M NYS DOT PIN#X550.70
B-SCAN	SCALE 1"= 30'-0" DATE 04/26/13	DRAWING NO. L-302 SHEET NO. 25 OF 58 SHEETS



*NYSOT PAY ITEMS - ESTIMATED QUANTITIES THIS SHEET ONLY

STATION MARKS (FEET)	NYSOT ITEM NO.	NYSOT ITEM DESCRIPTION	UNIT	QTY
20+95 TO 33+07	208.01030022	BIORETENTION AND DRY SWALE SOIL	CUBIC YARD	15
20+95 TO 33+07	568.81	PEDESTRIAN AND BICYCLE RAILING (TWO RAIL)	LINEAR FOOT	110
20+95 TO 33+07	569.02	PERMANENT CONCRETE BARRIER FOR STRUCTURES (HALF SECTION)	LINEAR FOOT	110
20+95 TO 33+07	608.01000010	CONCRETE SIDEWALKS - UNREINFORCED	CUBIC YARD	50
20+95 TO 33+07	608.020102	HOT MIX ASPHALT (HMA) SIDEWALKS, DRIVEWAYS AND BICYCLE PATHS, AND VEGETATION CONTROL STRIPS	TON	285 (10,501 SF)
20+95 TO 33+07	609.41000011	TIMBER CURB	LINEAR FOOT	1,780
20+95 TO 33+07	610.1403	TOPSOIL- LAWNS	CUBIC YARD	60
20+95 TO 33+07	610.1602	TURF ESTABLISHMENT - LAWNS	SQUARE YARD	1,260
20+95 TO 33+07	610.17	WILDFLOWER SEEDING	SQUARE YARD	80
20+95 TO 33+07	623.15000005	CRUSHED GRAVEL, CRUSHED STONE OR CRUSHED SLAG (IN-PLACE MEASURE)	CUBIC YARD	55
20+95 TO 33+07	687.0101	WHITE THERMOPLASTIC REFLECTORIZED PAVEMENT STRIPES	LINEAR FOOT	1,630
20+95 TO 33+07	687.0301	WHITE THERMOPLASTIC REFLECTORIZED PAVEMENT LETTERS	EACH	42
20+95 TO 33+07	687.0401	WHITE THERMOPLASTIC REFLECTORIZED PAVEMENT SYMBOLS	EACH	24
20+95 TO 33+07	XXXXXX	SIGN	EACH	9

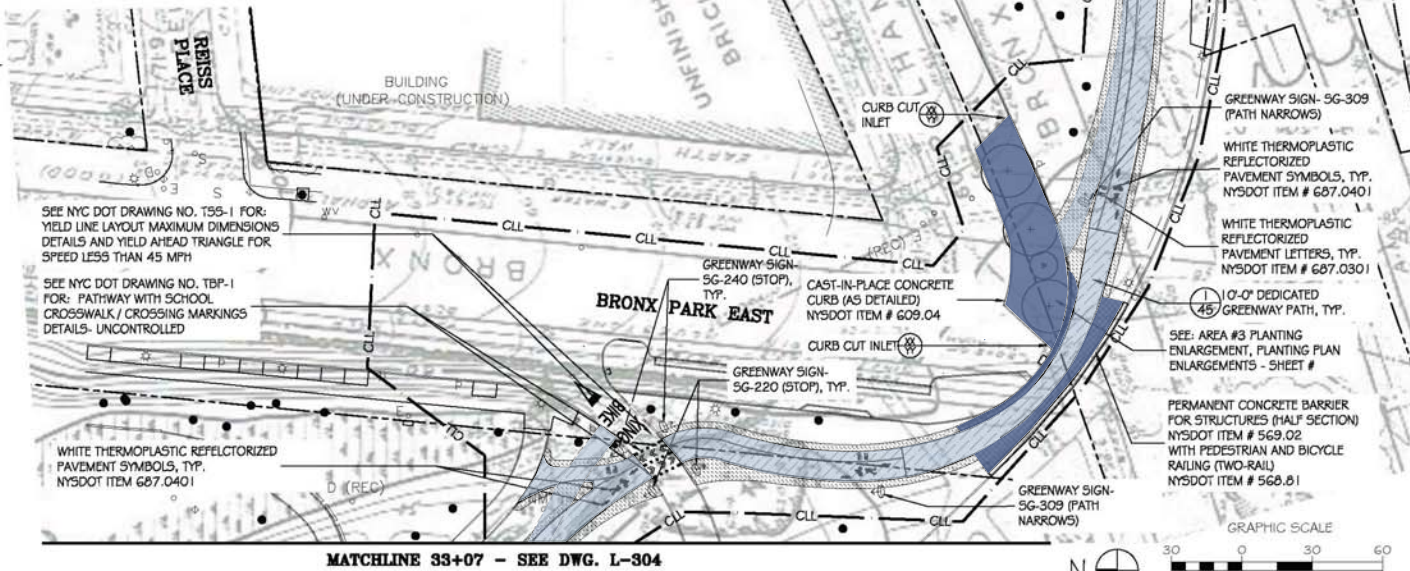
LEGEND

- CLL - CONTRACT LIMIT LINE
- DETAIL NUMBER
- DETAIL SHEET
- HOT MIX ASPHALT (HMA) SIDEWALKS, DRIVEWAYS AND BICYCLE PATHS, AND VEGETATION CONTROL STRIPS. NYSOT ITEM # 608.020102
- CONCRETE SIDEWALKS - UNREINFORCED. NYSOT ITEM # 608.01000010
- WILDFLOWER SEEDING. NYSOT ITEM # 610.17
- TURF ESTABLISHMENT - LAWNS. NYSOT ITEM # 610.1602
- GREENWAY SIGN
- 24 INCH DIAMETER PVC DRAIN BASIN WITH 24 X 24 INCH GRATE. NYSOT ITEM # 604.24010016
- SMOOTH INTERIOR CORRUGATED POLYETHYLENE CULVERT AND STORM DRAIN PIPE, 12" DIA, EM51BT, QUANTITY RANGE 1 (0 TO 20) NYSOT ITEM # 603.98120163

LEGEND

- AREA PREVIOUSLY PAVED AND/OR DISTURBED- MAXIMUM 4.5' OF EXISTING PAVEMENT OR SOIL TO BE REMOVED. NO ADDITIONAL EXCAVATION ANTICIPATED, TYP.
- AREA PREVIOUSLY PAVED AND/OR DISTURBED- MAXIMUM 12' OF EXISTING PAVEMENT TO BE REMOVED. NO ADDITIONAL EXCAVATION ANTICIPATED, TYP.
- AREA PREVIOUSLY DISTURBED MAX 36" EXCAVATION
- AREA PREVIOUSLY UNDISTURBED- MAXIMUM 36" EXCAVATION. SOIL TO BE SPREAD IN IMMEDIATE VICINITY, TYP.
- AREA PREVIOUSLY DISTURBED- NO PROPOSED EXCAVATION
- AREA PREVIOUSLY UNDISTURBED- NO PROPOSED EXCAVATION

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MATCHLINE 33+07 - SEE DWG. L-304

SEE NYC DOT DRAWING NO. TOW-1 FOR: IRREGULAR INTERSECTION: SCHOOL CROSSWALK - DETAIL 'A' (14'-0" WIDE).

SEE NYC DOT DRAWING NO. TWM-1 FOR: WORD MESSAGE 'ONLY' DETAILS, TYP.

SEE NYC DOT DRAWING NO. TBP-1 FOR: PATHWAY WITH SCHOOL CROSSWALK / CROSSING MARKINGS DETAILS- STOP OR SIGNAL CONTROLLED

SEE NYC DOT DRAWING NO. TAR-1 FOR: 'RIGHT ONLY' AND 'STRAIGHT' AND 'RIGHT ONLY' DETAILS, TYP.

SEE NYC DOT DRAWING NO. TRF-2 FOR: ISLAND PLAN WITHOUT TREE PITS (SEE LAYOUT PLAN - AREA 3 FOR DIMENSIONS)

WHITE THERMOPLASTIC REFLECTORIZED PAVEMENT LETTERS, TYP. NYSOT ITEM # 687.0301

WHITE THERMOPLASTIC REFLECTORIZED PAVEMENT SYMBOLS, TYP. NYSOT ITEM # 687.0401

SEE NYC DOT DRAWING NO. TBL-2 AND FOR: CHEVRON DETAIL (WITHOUT CLASS III BIKE SYMBOL) NOTE: ADDITIONAL CHEVRON

HOT MIX ASPHALT (HMA) SIDEWALKS, DRIVEWAYS AND BICYCLE PATHS, AND VEGETATION CONTROL STRIPS. NYSOT ITEM # 608.020102

WHITE THERMOPLASTIC REFLECTORIZED PAVEMENT STRIPES (4" WIDE), TYP. NYSOT ITEM # 687.0101

WHITE THERMOPLASTIC REFLECTORIZED PAVEMENT LETTERS, TYP. NYSOT ITEM # 687.0301

WHITE THERMOPLASTIC REFLECTORIZED PAVEMENT SYMBOLS, TYP. NYSOT ITEM # 687.0401

SEE NYC DOT DRAWING NO. TIN-1 FOR: TYPICAL 'STOP' MESSAGE INSTALLATION FOR ONE WAY TRAFFIC OPERATION (STOP LINE ONLY)

CONCRETE SIDEWALKS - UNREINFORCED (TYPE #1) NYSOT ITEM # 608.01000010

GREENWAY SIGN - SG-214 (DISMOUNT WALK BIKES)

TURF ESTABLISHMENT - LAWNS, TYP. NYSOT ITEM # 610.1602

WHITE THERMOPLASTIC REFLECTORIZED PAVEMENT STRIPES, TYP. NYSOT ITEM # 687.0101

SEE NYC DOT DRAWING NO. TOW-1 FOR: IRREGULAR INTERSECTION: SCHOOL CROSSWALK - DETAIL 'A' (14'-0" WIDE).

12'-6" SHARED-USE GREENWAY PATH, TYP.

10'-0" DEDICATED GREENWAY PATH, TYP.

GREENWAY SIGN - SG-309 (PATH NARROWS)

WHITE THERMOPLASTIC REFLECTORIZED PAVEMENT SYMBOLS, TYP. NYSOT ITEM # 687.0401

WHITE THERMOPLASTIC REFLECTORIZED PAVEMENT LETTERS, TYP. NYSOT ITEM # 687.0301

10'-0" DEDICATED GREENWAY PATH, TYP.

SEE: AREA #3 PLANTING ENLARGEMENT, PLANTING PLAN ENLARGEMENTS - SHEET

PERMANENT CONCRETE BARRIER FOR STRUCTURES (HALF SECTION) NYSOT ITEM # 569.02 WITH PEDESTRIAN AND BICYCLE RAILING (TWO-RAIL) NYSOT ITEM # 568.81

GREENWAY SIGN - SG-309 (PATH NARROWS)

GRAPHIC SCALE
SCALE: 1 INCH = 30 FEET

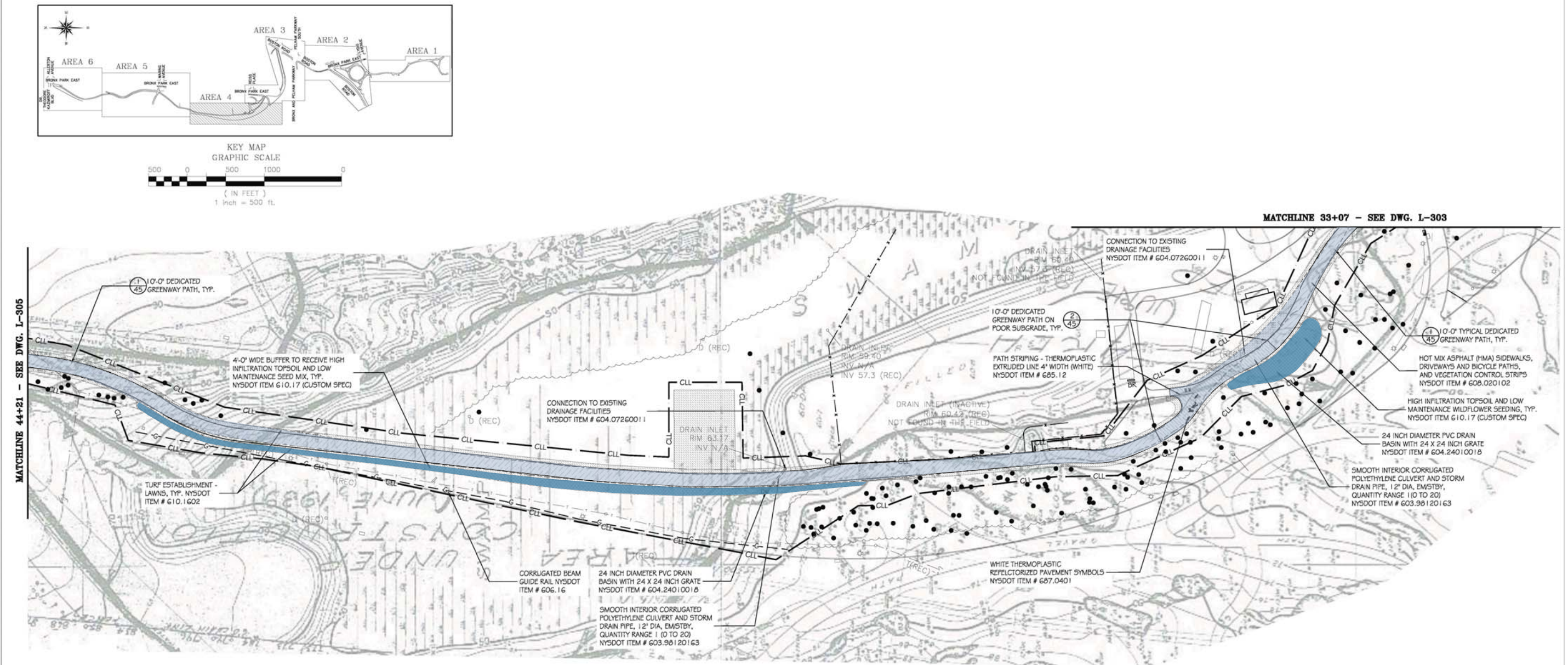
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DRAWING TITLE MATERIALS PLAN - AREA 3		
DESIGNED BY J. NITZY	DRAWN BY D. SULLIVAN	CHECKED BY L. HOPPER
REVIEWED-TEAM LEADER ANDREW PENZ, RLA	FORESTRY: JAMES LEMIRE	APPROVED-DIRECTOR
APPROVED-DEP CHIEF OF DESIGN NANCY PRINCE, RLA	APPROVED-CHIEF ENGINEER JOHN J. NATOLI, PE	CONTRACT NO. X002-211M
B-SCAN	SCALE 1"=30'-0" DATE 04/26/13	DRAWING NO. L-303 NYSOT PIN#X550.70
SHEET NO. 2 OF 58 SHEETS		

a. PROPOSED EXCAVATION EXTENTS









LEGEND

— CL —	CONTRACT LIMIT LINE
	DETAIL NUMBER DETAIL SHEET
	HOT MIX ASPHALT (HMA) SIDEWALKS, DRIVEWAYS AND BICYCLE PATHS, AND VEGETATION CONTROL STRIPS NYSOOT ITEM # 608.020102
	10'-0" DEDICATED GREENWAY PATH ON POOR SUBGRADE, TYP. NYSOOT ITEM # 608.020102
	WILDFLOWER SEEDING NYSOOT ITEM # 610.17
	TURF ESTABLISHMENT - LAWNS NYSOOT ITEM # 610.1602
— G —	CORRUGATED BEAM GUIDE RAIL NYSOOT ITEM # 606.16

*NYS DOT PAY ITEMS - ESTIMATED QUANTITIES THIS SHEET ONLY

STATION MARKS (FEET)	NYSDOT ITEM NO.	NYSDOT ITEM DESCRIPTION	UNIT	QTY
33+07.20 TO 44+2.1	208.01030022	BIORETENTION AND DRY SWALE SOIL	CUBIC YARD	75
33+07.20 TO 44+2.1	568.81	PEDESTRIAN AND BICYCLE RAILING (TWO RAIL)	LINEAR FOOT	110
33+07.20 TO 44+2.1	603.98120163	SMOOTH INTERIOR CORRUGATED POLYETHYLENE CULVERT AND STORM DRAIN PIPE, 12" DIA. EM518 BY, QUANTITY RANGE 1 (0 TO 20)	LINEAR FOOT	30
33+07.20 TO 44+2.1	604.24010018	24 INCH DIAMETER PVC DRAIN BASIN WITH 24 X 24 INCH GRATE	EACH	1
33+07.20 TO 44+2.1	569.02	PERMANENT CONCRETE BARRIER FOR STRUCTURES (HALF SECTION)	LINEAR FOOT	110
33+07.20 TO 44+2.1	606.16	CORRUGATED BEAM GUIDE RAIL	LINEAR FOOT	515
33+07.20 TO 44+2.1	608.020102	HOT MIX ASPHALT (HMA) SIDEWALKS, DRIVEWAYS AND BICYCLE PATHS, AND VEGETATION CONTROL STRIPS	TON	300 (11,420 SF)
33+07.20 TO 44+2.1	609.41000011	TIMBER CURB	LINEAR FOOT	2,260
33+07.20 TO 44+2.1	610.1403	TOPSOIL- LAWNS	CUBIC YARD	40
33+07.20 TO 44+2.1	610.1602	TURF ESTABLISHMENT - LAWNS	SQUARE YARD	1,005
33+07.20 TO 44+2.1	610.17	WILDFLOWER SEEDING	SQUARE YARD	460
33+07.20 TO 44+2.1	623.15000005	CRUSHED GRAVEL, CRUSHED STONE OR CRUSHED SLAG (IN-PLACE MEASURE)	CUBIC YARD	325
33+07.20 TO 44+2.1	687.0101	WHITE THERMOPLASTIC REFLECTORIZED PAVEMENT STRIPES	LINEAR FOOT	40
33+07.20 TO 44+2.1	687.0301	WHITE THERMOPLASTIC REFLECTORIZED PAVEMENT LETTERS	EACH	7
33+07.20 TO 44+2.1	687.0401	WHITE THERMOPLASTIC REFLECTORIZED PAVEMENT SYMBOLS	EACH	4
33+07.20 TO 44+2.1	X0000X	SIGN	EACH	24

LEGEND

	AREA PREVIOUSLY PAVED AND/OR DISTURBED- MAXIMUM 4.5" OF EXISTING PAVEMENT/OR SOIL TO BE REMOVED. NO ADDITIONAL EXCAVATION ANTICIPATED, TYP.
	AREA PREVIOUSLY PAVED AND/OR DISTURBED- MAXIMUM 12" OF EXISTING PAVEMENT TO BE REMOVED. NO ADDITIONAL EXCAVATION ANTICIPATED, TYP.
	AREA PREVIOUSLY DISTURBED MAX 36" EXCAVATION
	AREA PREVIOUSLY UNDISTURBED- MAXIMUM 36" EXCAVATION. SOIL TO BE SPREAD IN IMMEDIATE VICINITY, TYP.
	AREA PREVIOUSLY DISTURBED- NO PROPOSED EXCAVATION
	AREA PREVIOUSLY UNDISTURBED- NO PROPOSED EXCAVATION

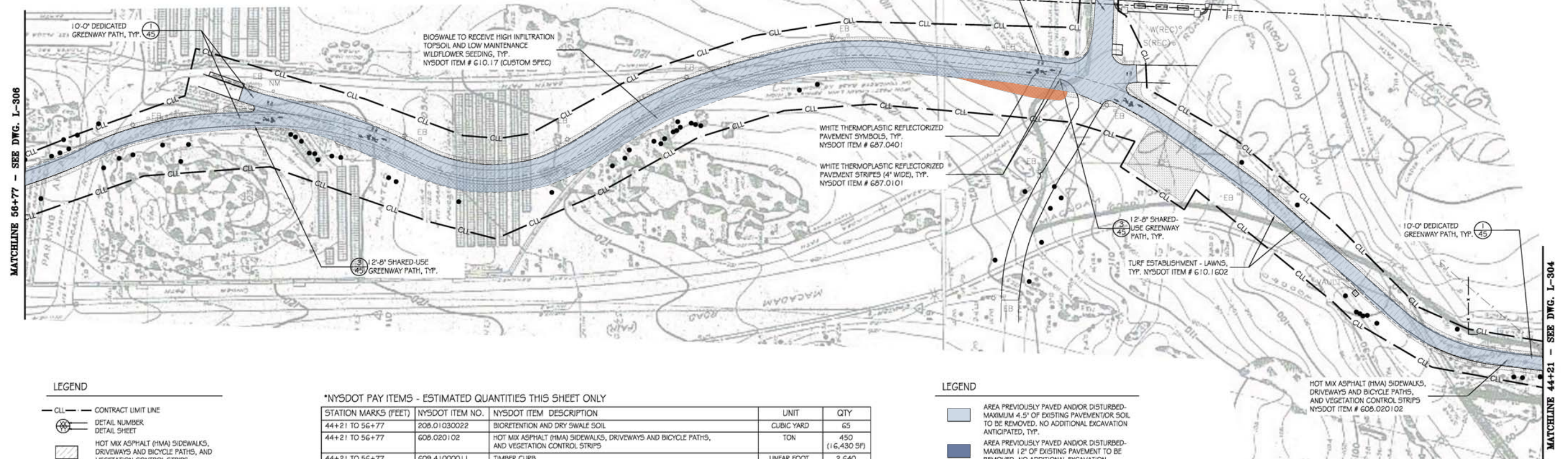
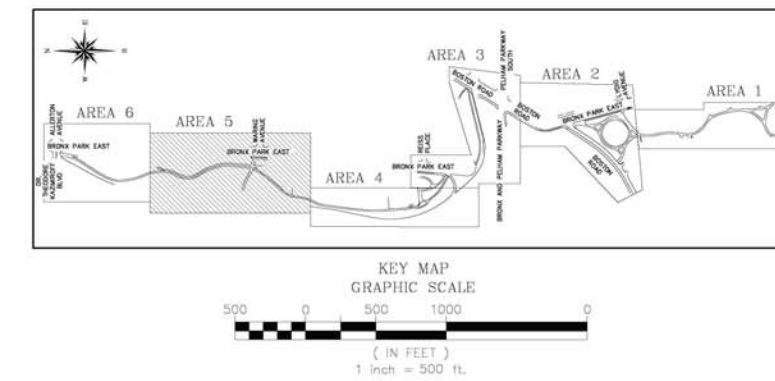
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GREENWAY SYSTEM ALIGNMENT OVERLAY.







REV. #	DATE	DESCRIPTION
2	4/26/13	90% REVIEW SUBMISSION
1	2/20/13	50% REVIEW SUBMISSION
 <div> MARK K MORRISON ASSOCIATES LTD LANDSCAPE ARCHITECTURE 242 WEST 30TH STREET SUITE 403 NEW YORK, NEW YORK 10001 212.629.9710 FAX: 212.629.9711 www.markkmorrison.com </div>		
<div> <h2>City of New York Parks & Recreation</h2> <p>Olmsted Center</p> <p>Flushing Meadows Corona Park Flushing, New York 11368</p> </div>		
		
PROJECT TITLE THE RECONSTRUCTION AND CONSTRUCTION OF A BICYCLE/PEDESTRIAN PATH WITHIN A PORTION OF THE BROOKLYN GREENWAY, LOCATED BETWEEN UNIONTOWN ROAD AND ALLERTON AVE. IN BROOKLYN PARK, BOROUGH OF THE BRONX		
DRAWING TITLE MATERIALS AND PLANTING PLAN - AREA 4		
DESIGNED BY J. NATOLY	DRAWN BY D. SULLIVAN	CHECKED BY L. HOPPER
REVIEWED-TEAM LEADER ANDREW PENZI, RLA	FORESTRY: JAMES LEVINSKY	APPROVED-DIRECTOR
APPROVED-DEP CHIEF OF DESIGN NANCY PRINCE, RLA	APPROVED-CHIEF ENGINEER JOHN J. NATOLI, PE	CONTRACT NO.
B-SCAN	SCALE 1"= 30'-0" DATE 04/26/13	NO. OF SHEETS X002-211M NYSDDT PIN#X550.70 SHEET NO. 27 OF 58 SHEETS
L-304		

a. PROPOSED EXCAVATION EXTENTS



*NYSDOT PAY ITEMS - ESTIMATED QUANTITIES THIS SHEET ONLY				
STATION MARKS (FEET)	NYSDOT ITEM NO.	NYSDOT ITEM DESCRIPTION	UNIT	QTY
44+21 TO 56+77	208.01030022	BIORETENTION AND DRY SWALE SOIL	CUBIC YARD	65
44+21 TO 56+77	608.020102	HOT MIX ASPHALT (HMA) SIDEWALKS, DRIVEWAYS AND BICYCLE PATHS, AND VEGETATION CONTROL STRIPS	TON	450 (16,430 SH)
44+21 TO 56+77	609.41000011	TIMBER CURB	LINEAR FOOT	2,640
44+21 TO 56+77	G10.1403	TOPSOIL- LAWNS	CUBIC YARD	40
44+21 TO 56+77	G10.1602	TURF ESTABLISHMENT- LAWNS	SQUARE YARD	1,005
44+21 TO 56+77	G10.17	WILDFLOWER SEEDING	SQUARE YARD	390
44+21 TO 56+77	623.15000005	CRUSHED GRAVEL, CRUSHED STONE OR CRUSHED SLAG (IN-PLACE MEASURE)	CUBIC YARD	270
44+21 TO 56+77	687.0101	WHITE THERMOPLASTIC REFLECTORIZED PAVEMENT STRIPES	LINEAR FOOT	700
44+21 TO 56+77	687.0301	WHITE THERMOPLASTIC REFLECTORIZED PAVEMENT LETTERS	EACH	28
44+21 TO 56+77	687.0401	WHITE THERMOPLASTIC REFLECTORIZED PAVEMENT SYMBOLS	EACH	16
44+21 TO 56+77	X0000X	SIGN	EACH	0

LEGEND

	AREA PREVIOUSLY PAVED AND/OR DISTURBED- MAXIMUM 4" OF EXISTING PAVEMENT/ OR SOIL TO BE REMOVED. NO ADDITIONAL EXCAVATION ANTICIPATED, TYP.
	AREA PREVIOUSLY PAVED AND/OR DISTURBED- MAXIMUM 12" OF EXISTING PAVEMENT TO BE REMOVED. NO ADDITIONAL EXCAVATION ANTICIPATED, TYP.
	AREA PREVIOUSLY DISTURBED MAX 36" EXCAVATION
	AREA PREVIOUSLY UNDISTURBED- MAXIMUM 36" EXCAVATION. SOIL TO BE SPREAD IN IMMEDIATE VICINITY, TYP.
	AREA PREVIOUSLY DISTURBED- NO PROPOSED EXCAVATION
	AREA PREVIOUSLY UNDISTURBED- NO PROPOSED EXCAVATION

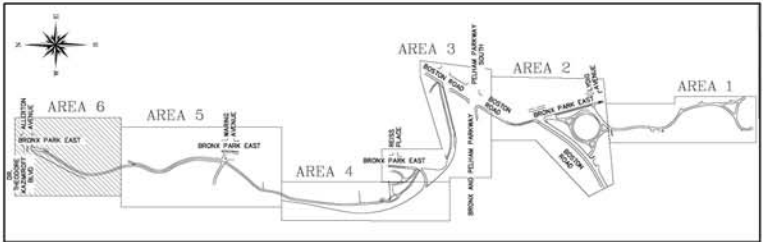
*NOTE:
1. SCREENED BACKGROUND IS 1937 CITY OF NY DEPT. OF
PARKS TOPOGRAPHICAL MAP UTILIZED TO DEMONSTRATE
HISTORIC DISTURBANCE OF SITE.



REV. #	DATE	DESCRIPTION
2	4/26/13	90% REVIEW SUBMISSION
1	2/20/13	50% REVIEW SUBMISSION
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<p>PROJECT TITLE</p> <p>THE RECONSTRUCTION AND CONSTRUCTION OF A BICYCLE/PEDESTRIAN PATH WITHIN A PORTION OF THE BRONX RIVER GREENWAY, LOCATED BETWEEN UNIONPORT ROAD AND ALLERTON AVE, IN BRONX PARK, BOROUGH OF THE BRONX</p>		
<p>DRAWING TITLE</p> <p>MATERIALS AND PLANTING PLAN - AREA 5</p>		
DESIGNED BY	DRAWN BY	CHECKED BY
J. NITZKY	D. SULLIVAN	L. HOPPER
REVIEWED-TEAM LEADER	FORESTRY:	APPROVED-DIRECTOR
ANDREW JAMES, RLA	JAMES LEVITZ	
APPROVED-DEP CHIEF OF DESIGN	APPROVED-CHIEF ENGINEER	CONTRACT NO.
NANCY PRINCE, RLA	JOHN J. NATIGU, PE	
B-SCAN	SCALE	DRAWING NO.
	1" = 30' - 0"	X002-211M
	DATE	NYSDOT PIN#X550.70
	04/26/13	SHEET NO. 28 OF 58 SHEETS
	L-305	

*THIS DRAWING ILLUSTRATES 1937 EXISTING CONDITIONS SURVEY AS SUPPLIED BY NYC PARKS DEPT. MAP FILE UNIT WITH PROPOSED GREENWAY SYSTEM ALIGNMENT OVERLAY.

a. PROPOSED EXCAVATION EXTENTS



LEGEND

- CLL - CONTRACT LIMIT LINE
- DETAIL NUMBER
- DETAIL SHEET
- HOT MIX ASPHALT (HMA) SIDEWALKS, DRIVEWAYS AND BICYCLE PATHS, AND VEGETATION CONTROL STRIPS NYSDOT ITEM # 608.020102
- CONCRETE SIDEWALKS - UNREINFORCED NYSDOT ITEM # 608.01000010
- WILDFLOWER SEEDING NYSDOT ITEM # 610.17
- TURF ESTABLISHMENT - LAWNS NYSDOT ITEM # 610.1602
- BENCH, TYPE 01 NYSDOT ITEM # 615.08010005
- GREENWAY SIGN
- CORRUGATED BEAM GUIDE RAIL NYSDOT ITEM # 606.16
- PLANTING - MAJOR DECIDUOUS TREES - SIZE AS SPECIFIED BALL & BURLAP, FIELD POTTED OR FIELD BOXED - NYSDOT ITEM # 611.0111
- PLANTING - MINOR DECIDUOUS TREES - SIZE AS SPECIFIED BALL & BURLAP, FIELD POTTED OR FIELD BOXED - NYSDOT ITEM # 611.0211

LEGEND

- AREA PREVIOUSLY PAVED AND/OR DISTURBED- MAXIMUM 4.5' OF EXISTING PAVEMENT OR SOIL TO BE REMOVED. NO ADDITIONAL EXCAVATION ANTICIPATED, TYP.
- AREA PREVIOUSLY PAVED AND/OR DISTURBED- MAXIMUM 12" OF EXISTING PAVEMENT TO BE REMOVED. NO ADDITIONAL EXCAVATION ANTICIPATED, TYP.
- AREA PREVIOUSLY DISTURBED MAX 36" EXCAVATION
- AREA PREVIOUSLY UNDISTURBED- MAXIMUM 36" EXCAVATION. SOIL TO BE SPREAD IN IMMEDIATE VICINITY, TYP.
- AREA PREVIOUSLY DISTURBED- NO PROPOSED EXCAVATION
- AREA PREVIOUSLY UNDISTURBED- NO PROPOSED EXCAVATION

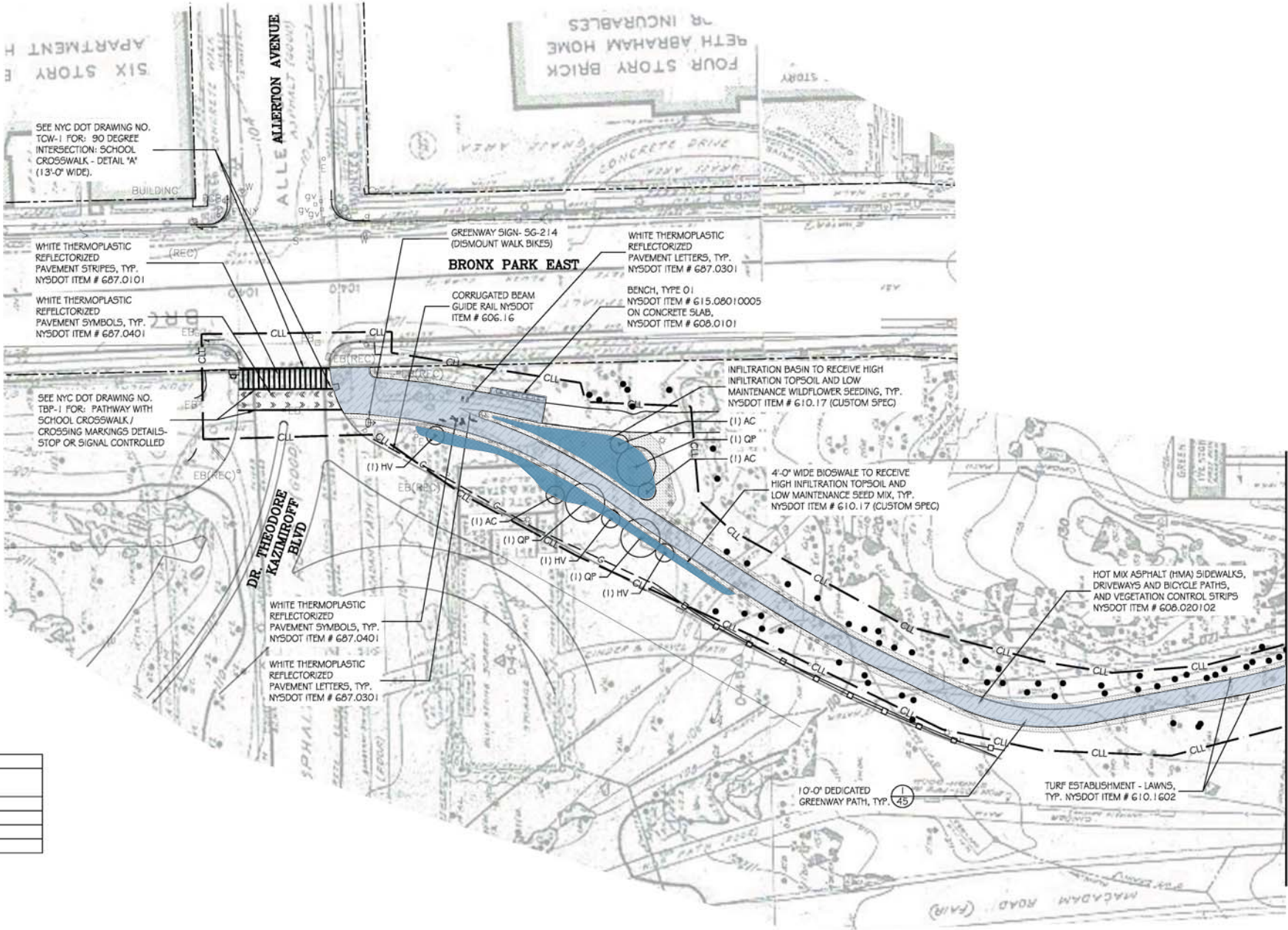
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PLANTING SCHEDULE

KEY	QTY	BOTANICAL NAME	COMMON NAME	CALIPER	SPREAD	HEIGHT	ROOT CONDITION	REMARKS
TREES								
AC	3	<i>Amelanchier canadensis</i>	Serviceberry	--	--	8-10' H.	B&B	MULTI-STEMMED, 5 STEM MIN.
HV	3	<i>Hamelis virginiana</i>	American Witch Hazel	--	--	8-10' H.	B&B	MULTI-STEMMED, 5 STEM MIN.
QP	3	<i>Quercus phellos</i>	Willow Oak	3"-3-1/2"	--		B&B	LIMBED TO 7' ABOVE FINISHED GRADE

*NYSDOT PAY ITEMS - ESTIMATED QUANTITIES THIS SHEET ONLY

STATION MARKS (FEET)	NYSDOT ITEM NO.	NYSDOT ITEM DESCRIPTION	UNIT	QTY
56+77 TO C.L.L.	208.01030022	BIORETENTION AND DRY SWALE SOIL	CUBIC YARD	45
56+77 TO C.L.L.	606.16	CORRUGATED BEAM GUIDE RAIL	LINEAR FOOT	180
56+77 TO C.L.L.	608.0101	CONCRETE SIDEWALKS AND DRIVEWAYS	CUBIC YARD	6
56+77 TO C.L.L.	608.020102	HOT MIX ASPHALT (HMA) SIDEWALKS, DRIVEWAYS AND BICYCLE PATHS, AND VEGETATION CONTROL STRIPS	TON	205 (7,530 SF)
56+77 TO C.L.L.	609.41000011	TIMBER CURB	LINEAR FOOT	1,260
56+77 TO C.L.L.	610.1403	TOPSOIL- LAWNS	CUBIC YARD	20
56+77 TO C.L.L.	610.1602	TURF ESTABLISHMENT - LAWNS	SQUARE YARD	465
56+77 TO C.L.L.	610.17	WILDFLOWER SEEDING	SQUARE YARD	275
56+77 TO C.L.L.	611.0111	PLANTING - MAJOR DECIDUOUS TREES - SIZE AS SPECIFIED BALL & BURLAP, FIELD POTTED OR FIELD BOXED	EACH	3
56+77 TO C.L.L.	611.0211	PLANTING - MINOR DECIDUOUS TREES - SIZE AS SPECIFIED BALL & BURLAP, FIELD POTTED OR FIELD BOXED	EACH	5
56+77 TO C.L.L.	615.08010005	BENCH, TYPE 01	EACH	4
56+77 TO C.L.L.	623.15000005	CRUSHED GRAVEL, CRUSHED STONE OR CRUSHED SLAG (IN-PLACE MEASURE)	CUBIC YARD	180
56+77 TO C.L.L.	687.0101	WHITE THERMOPLASTIC REFLECTORIZED PAVEMENT STRIPES	LINEAR FOOT	30
56+77 TO C.L.L.	687.0301	WHITE THERMOPLASTIC REFLECTORIZED PAVEMENT LETTERS	EACH	7
56+77 TO C.L.L.	687.0401	WHITE THERMOPLASTIC REFLECTORIZED PAVEMENT SYMBOLS	EACH	4
56+77 TO C.L.L.	XXXXX	SIGN	EACH	0



MATCHLINE 56+77 - SEE DWG. L-305

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**City of New York
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DRAWING TITLE MATERIALS AND PLANTING PLAN - AREA 6		
DESIGNED BY J. NITZKY	DRAWN BY D. SULLIVAN	CHECKED BY L. HOFFER
REVIEWED-TEAM LEADER ANDREW PENZ, RLA	FORESTRY: JAMES LEVINSKY	APPROVED-DIRECTOR
APPROVED-DEP CHIEF OF DESIGN NANCY PRINCE, RLA	APPROVED-CHIEF ENGINEER JOHN J. NATOLI, PE	CONTRACT NO. X002-211M
B-SCAN	SCALE 1"=30'-0" DATE 04/26/13	DRAWING NO. L-306 NYSDOT PIN#X550.70
		SHEET NO. 29 OF 58 SHEETS

