HISTORICAL PERSPECTIVES INC.

8/12/10

CROTONA PARK EAST / WEST FARMS REZONING & RELATED ACTIONS

ARCHAEOLOGICAL TESTING PROTOCOL

INTRODUCTION

Industco Holdings LLC (Industco) is applying to the New York City Planning Commission (CPC) for a proposed rezoning of eleven (11) blocks in the Crotona Park East / West Farms neighborhoods of the Bronx, immediately west of the Bronx River (the Crotona Park East / West Farms Rezoning). The proposed rezoning area is generally bounded by Freeman Street to the south, the mid-block between Longfellow and Boone Avenues to the west, Boston Road to the north and West Farms Road to the east. The proposed rezoning and related land use actions by the CPC would facilitate the construction of six (6) primarily residential buildings on Industco-controlled parcels in the rezoning area.

The New York City Environmental Quality Review (CEQR) Technical Manual and the New York City Landmarks Preservation Commission (LPC) Guidelines for Archaeological Work in New York City (LPC Guidelines) identify a four-stage review process for identifying and mitigating potential construction impacts on archaeologically sensitive resources. First, LPC undertakes an initial review to determine whether archaeological resources could be present in the project area. Second, if the initial LPC review determines that archaeological concerns exist, an archaeological consultant prepares an Archaeological Documentary Study (ADS) to determine whether intact archaeological resources are likely to exist in the project area and the information such resources could provide about the past. The third step, archaeological field testing, is required where the ADS concludes that potentially significant archaeological resources may be present and that the proposed construction may impact these resources. The purpose of field testing is to determine whether the site actually contains such resources. Prior to beginning any on-site work that could impact potentially significant resources, the archaeological consultant must submit a scope of work (or testing protocol) to LPC which describes the explicit methodology that will be used to determine whether archaeologically significant resources are present, intact and significant. The scope of work (or testing protocol) is formalized in a Memorandum of Agreement (MOA) that outlines the specific rights and obligations of each party in regard to stopping excavation, completing field testing in a timely manner, making changes in the construction work, maintaining workplace safety and developing notification procedures. The fourth step, mitigation, is required where significant archaeological resources would be impacted by proposed construction.

The initial review by LPC concluded that portions of the rezoning area may be potentially sensitive for 19th century cemetery and residential remains (LPC Environmental Review,

February 9, 2009) and defined the Area of Potential Effect (APE) for the ADS. In response to LPC's initial review, the archaeological consultant, Historical Perspectives, Inc. (HPI), prepared and submitted for LPC review an ADS analyzing the specific city tax lots identified by LPC in 2009 as potentially sensitive for cemetery and residential remains :

- Block 3016: Lots 60 and 66 ;
- Block 3015: Lot 87;
- Block 3014: Lots 9 and 15;
- Block 3013: Lots 31, 35, and 37; and,
- Block 3009: Lots 38 and 44.

In March 2010 an additional lot,

- Block 3016, Lot 71,

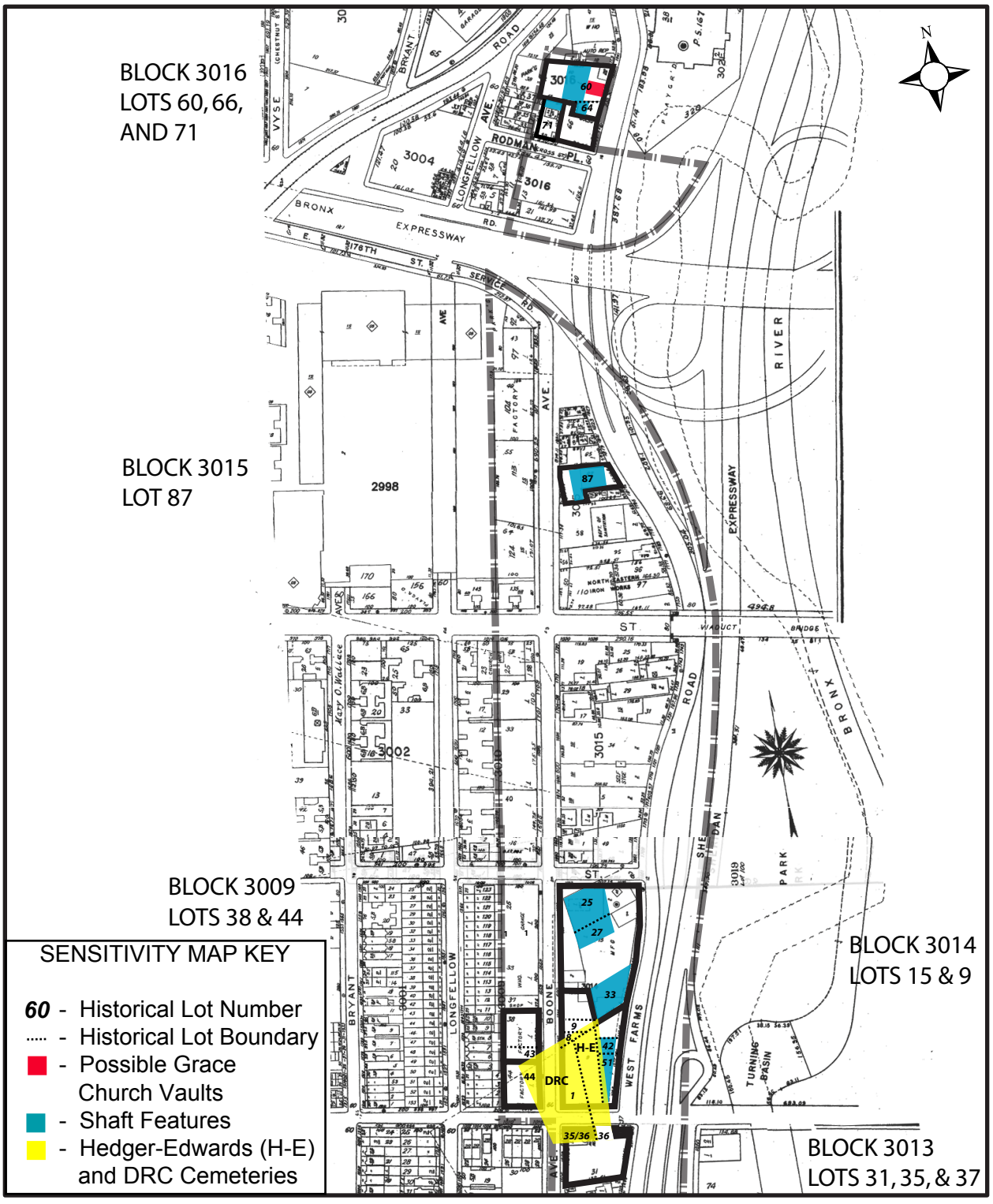
was identified by LPC as potentially sensitive for 19th century cemetery and residential remains, and was added to the original APE. A supplemental ADS was completed by HPI to address this one lot. Figure 1 illustrates the locations of these lots.

On the basis of extensive documentary and related research, the ADS identified the lots in the table below as areas of archaeological potential within the APE that were recommended for archaeological field testing. HPI also prepared and submitted for LPC review a draft Testing Protocol describing the field testing methodology proposed to be used to determine whether archaeologically significant resources are present, intact and significant on those portions of the APE under Industco's control.

Archaeologically Sensitive Lots Recommended for Archaeological Field Testing, Crotona Park East / West Farms Rezoning APE

MODERN BLOCK/LOT #	HISTORIC LOT #[1]	SENSITIVITY	DATE RANGE	LOCATION ON HISTORIC LOT
B 3016, L 60	60	Church: Possible Undocumented burial vaults; Shaft features	1847- ca.1896	Vaults – center of lot; Shafts – west end of lot.
	64	Parish House/School shaft features	1851-1893	West end of lot.
B 3015, L 87	87	Residential shaft features	c.1851-1893	Center of lot.
B 3014, L 9	1	Hedger-Edwards Cemetery DRC Cemetery[2]	1769-? 1845-1891	East half of lot. West half of lot.
	8, 9	DRC Cemetery	1845-1891	Southeastern portion of each lot.
	42, 51	Residential shaft features Possible burials outside of mapped DRC Cemetery bounds	c.1850-1983 1845-1891	Western ¾ of each lot. Western edge of each lot.
B 3014, L 15	25, 27	Residential shaft features	c.1845-1905	Western ¾ of each lot.

[1] To more precisely locate resources, modern block and lot numbers are broken down into historical block and lot numbers.
[2] First Protestant Dutch Reformed Church (DRC) Cemetery.



BASE MAP: *Insurance Maps of New York.* **Sanborn Map Company, New York. Provided by Stantec.**

ARCHAEOLOGICAL DOCUMENTARY STUDY
CROTONA PARK EAST PROPOSED REZONING
BRONX, NEW YORK

100 0 100 200 300 400 500 FEET

FIGURE 1: CROTONA PARK EAST PROPOSED REZONING SITE, APPROXIMATE LOCATIONS OF POTENTIAL ARCHAEOLOGICAL SENSITIVITY.

MODERN BLOCK/LOT #	HISTORIC LOT #[1]	SENSITIVITY	DATE RANGE	LOCATION ON HISTORIC LOT
B 3013, L 35*	36	DRC Cemetery	1845-1891	Entire lot.
B 3009, L 38	43	Possible burials outside of mapped DRC Cemetery bounds	1845-1891	Southeastern edge of lot.
B 3009, L 44	44	DRC Cemetery	1845-1891	Eastern half of lot.

***** Monitoring recommended at time of demolition only.

LPC provided comments on the ADS and draft Testing Protocol on October 14, 2009. LPC concurred that field testing would be necessary on the sites specified in the ADS and recommended that further efforts to identify descendant communities be undertaken prior to implementation of field testing. HPI has completed this additional research and incorporated the results into an amended ADS, dated May 5, 2010, as well as this amended Testing Protocol. The above table reflects the refined delineation of the boundaries between the DRC Cemetery and Hedger-Edwards Cemetery discussed in the amended ADS.

The ADS and the draft Testing Protocol also were submitted to the New York State Office of Parks, Recreation, and Historic Preservation (OPRHP). OPRHP concurred with the recommendations and testing protocol for the potential cemeteries. However, OPRHP did not concur that those areas designated as archaeologically sensitive for residential shaft features but which could not be tied to specific residents should not be tested. The OPRHP review letter stated that avoiding "consideration of those deposits associated with more transient populations serves to ignore that such populations existed and were an important part of the city's history" (6/22/10). Further, the review suggested that testing at least one substantive transient-population residential lot could function as an adequate representative example.[3]

After a review of the residential lots researched in the IA process that are under Industco control, HPI has identified Block 3014, Historic Lot 33 as an appropriate representative example of transient-occupation. In summary, Block 3014, Historic Lot 33 was passed from Daniel Edwards to Lott Hunt in 1848 and by 1857 Joseph Horridge had a house and shop on the lot just east of the APE. Horridge is listed as the owner of the house in 1868 but the dwelling appears to have been occupied by renters. By 1900, there were multiple families living in the house on the lot. The dwelling stood through at least 1951 but by 1972 the lot was vacant and has remained vacant. A substantive bedrock outcrop runs along the eastern edge of this lot, leaving the western portion of historic Lot 33 that falls within the APE as potentially sensitive for homelot shaft features.

FIELD TESTING TASKS

Industco controls those lots identified as potentially sensitive on Blocks 3013, 3014, and 3016 except for Block 3016, Lot 71. This testing protocol only addresses proposed impacts to the Industco-controlled lots, which constitute the APE for this protocol. Although portions of Block 3009, 3015, and Lot 71 on 3016 are also potentially sensitive for burials and/or shaft features, testing is not recommended at this time since Industco does not control these parcels.[4]

[3] The OPRHP letter of 6/22/10 specifically recommended the selection of Block 3016, Lot 71 as a well-documented representative residential lot of the transient population. However, Industco does not own Lot 71 and cannot guarantee access for testing at any time in the future.

[4] If Industco acquires control of other potentially sensitive lots, testing as per this protocol would be recommended.

The purpose of the proposed rezoning is to facilitate the redevelopment of an underutilized manufacturing district with vibrant, new residential neighborhoods that will provide much needed housing, retail services, and open space for the Crotona Park East / West Farms neighborhoods. Redevelopment of Blocks 3013, 3014, and 3016, which form a substantial portion of the manufacturing district, is critical to the successful transition of these neighborhoods. Accordingly, these urban planning and economic imperatives render total site avoidance infeasible.

After reviewing the ADS, Industco significantly redesigned the proposed construction project to minimize disturbance to land areas previously mapped as cemeteries to the maximum extent possible. The following design changes were made in order to accomplish this objective:

1) Underground parking was relocated to other areas of the project sites in order to reduce subsurface disturbance;
2) Building cores were relocated in order to reduce subsurface disturbance;
3) One wing of the proposed buildings on Block 3014 was relocated to the north in order to reduce subsurface disturbance;
4) The entire building over the southern portion of Block 3014 was raised more than three feet above the elevation at the corner of Boone and 172nd Street in order to reduce subsurface disturbance;
5) Residential services, such as electric meter rooms, were relocated from below grade to grade level in order to reduce subsurface disturbance; and,
6) A central landscaped courtyard open to the street was designed to cover as much of the identified sensitive areas as possible.

As a result of this redesign, the amount of subsurface disturbance of potentially sensitive areas has been reduced dramatically**.**

This field testing protocol focuses on Industco-controlled lots on Blocks 3013, 3014, and 3016 and the plans developed in concert with the Department of City Planning (Figure 2). This protocol is being established prior to the completion of final designs for the proposed construction projects. HPI and Industco will consult with LPC as design plans are finalized and the impact footprints of the proposed construction projects are refined, and this protocol will be revised as necessary.

The protocol approach and tasks are presented in three sections; the first focuses on pre-testing consultations with descendant communities and detailed mapping of the APE; the second focuses on testing protocols for locations identified as potentially sensitive for human remains; the third focuses on testing protocols for locations identified as potentially sensitive for historic archaeological resources.

ESTABLISH CONSULTATIONS WITH POSSIBLE DESCENDANT COMMUNITIES, PRIOR TO TESTING

LPC and OPRHP concurred with the findings in the ADS regarding potential sensitivity and LPC requested consultations between the archaeological team and the relevant church communities and descendants of the Hedger-Edwards families before the initiation of field testing. If descendants can be located, such consultations would be expected to result in an agreement on a

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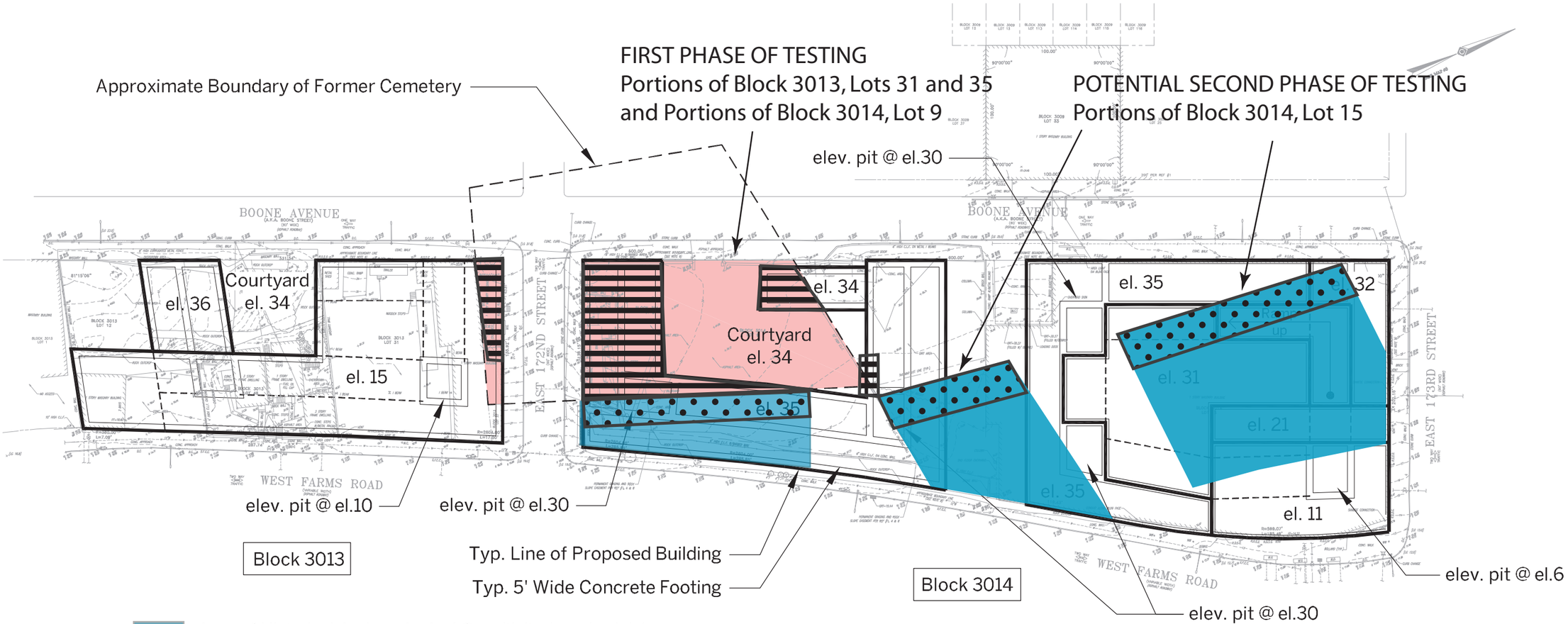

Area of Historical Archaeological Sensitivity (non-burials)

Area of Site Overlapping Former Cemetery

Area of Proposed Archaeological Test Trench - Historical Resources (non burials)

Area of Proposed Archaeological Testing - Potential Burials

Elevations Indicate Lowest Slab Elevation
Bottom of Footing - Approximately 4'-6" Below Indicated Elevation
Bottom of Excavation @ Courtyards - Approximately 2'-0" Below Indicated Elevations
Column Footings Not Shown

West Farms, Bronx
Proposed Rezoning

Preliminary Foundation Plan

September 14, 2009

0' 40' 80' 160' N

FIGURE 2: Proposed Archaeological Testing, Blocks 3013 and 3014.

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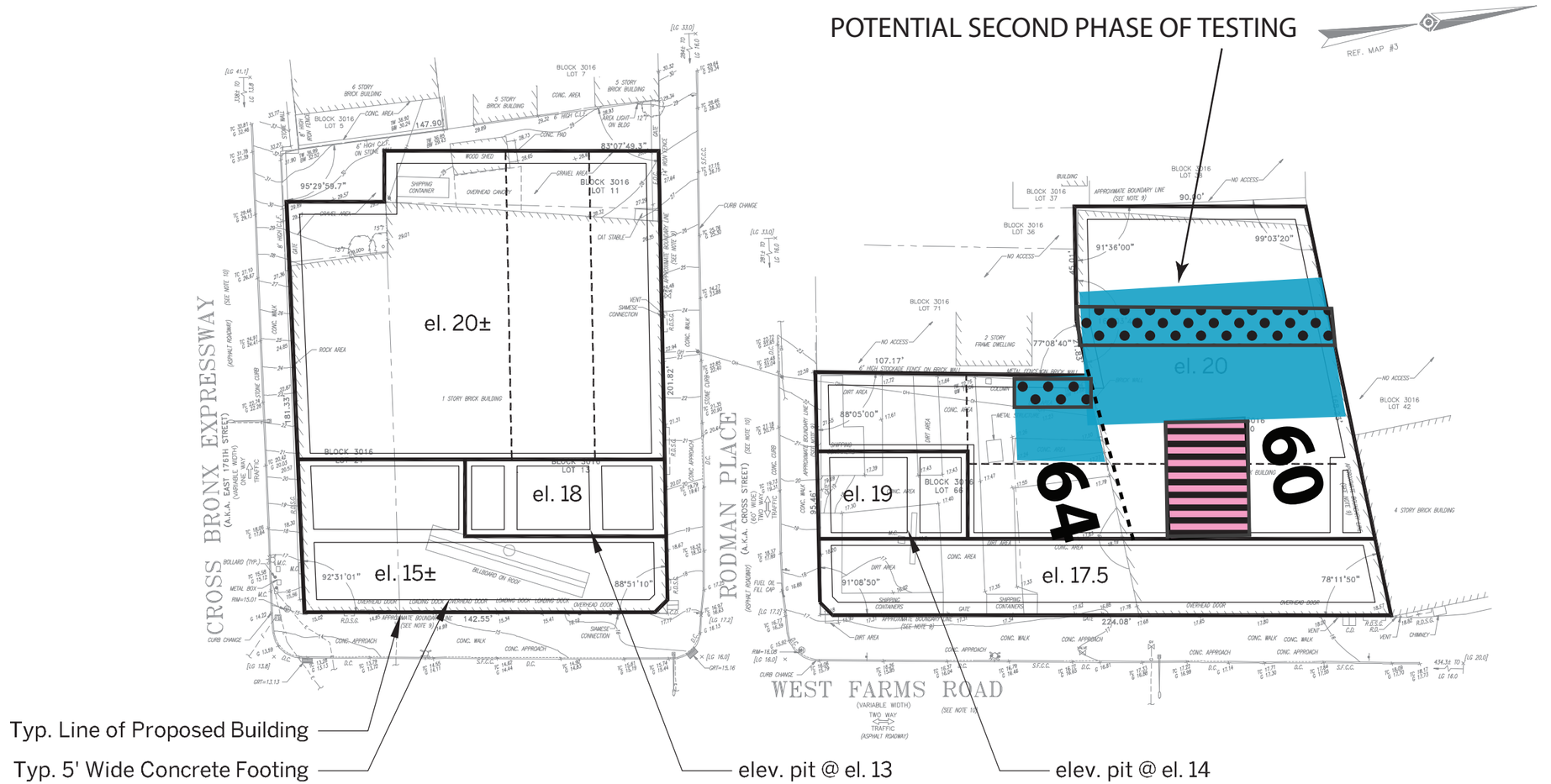


Elevations Indicate Lowest Slab Elevation
Bottom of Footing - Approximately 4'-6" Below Indicated Elevation
Column Footings Not Shown

Area of Historical Archaeological Sensitivity (non-burials)
Area of Potential Sensitivity for Burial Vaults
Area of Proposed Archaeological Test Trench - Historical Resources (non burials)
Area of Proposed Archaeological Testing - Potential Burials

West Farms, Bronx
Proposed Rezoning

Preliminary Foundation Plan -
Block 3016

September 14, 2009

0' 25' 50' 100' N

FIGURE 3: Proposed Archaeological Testing, Block 3016.

sensitive and appropriate treatment of any human remains that may be uncovered during field testing. The agreement would identify measures to be taken to ensure the sensitive treatment of any uncovered human remains, including screening excavations from public view, providing for jointly prepared public statements regarding found remains, reaching agreement regarding appropriate methods of forensic studies, establishing time frames for recovery and analysis of remains before re-interment, and preparing Industco's re-interment plans to be shared with any identified descendant churches/family.

Potential consultations will vary according to the individual cemetery history.

- Grace Episcopal Church, although no longer located on Block 3016 Lot 60 [historical Lot 60], is still an active church in the community. HPI contacted the Vicar and the Diocese archivist regarding possible burials on the Church's former property. Although neither the Vicar nor the archivist believe any burials occurred on the former Church property, sufficient documentary evidence does not exist to corroborate this belief. Accordingly, prior to the initiation of archaeological testing on this site, HPI will notify the Vicar and the Diocese archivist that in the event human remains are recovered from the former Church property they will be consulted regarding treatment and re-interment.

  LPC will be copied on the initiation of this consultation.

  It is highly unlikely that any recovery of human remains would provide sufficient information to establish identity, unless associated name-plates are recovered.

- The First Reformed Protestant Dutch Church, often referred to as the Dutch Reformed Church of West Farms (DRC), was disbanded many years ago and there is no identifiable descendant church community. There are no headstones on the former cemetery site, which extends onto portions of Blocks 3009, 3013, and 3014, as well as the adjoining Boone Avenue and East 172nd Street corridors. Likewise, no burial plot map exists. Through its research, HPI was able to locate the names of some individuals buried in their cemetery. These names (exclusive of the names of individuals known to have been re-interred at Woodlawn Cemetery) are included in Appendix D of the ADS.

  Since the DRC cemetery has been abandoned and no known descendant community exists, legal notices, complying with LPC guidelines and all applicable laws, will be placed in area newspapers approximately six (6) month prior to the commencement of field testing to attempt to locate any unknown descendants. Copies of the notices will be provided to LPC.

  If descendants are located, consultations will be taken regarding the treatment and re-interment of any uncovered human remains. If no descendants are located for consultation, any uncovered human remains will be re-interred in compliance with LPC guidelines and all applicable laws and as otherwise set forth in this protocol.

  It is highly unlikely that any recovery of human remains would provide sufficient information to establish identity, unless associated name-plates are encountered.



Photograph 11: Block 3013, Lot 35, facing southwest from East 172nd Street.

The older Hedger-Edwards family burial plot abutted the DRC Cemetery on Blocks 3013 and 3014, as well as a portion of the 172nd Street roadbed between the two blocks. There are no headstones on the former cemetery site. Likewise, there is no burial plot map. Through its research, HPI was able to establish the names of Hedger-Edwards descendants as of 1951. See Appendix D of the ADS. Postings on Ancestry.com for the Hedger-Edwards descendants have identified one direct descendant.

Legal notices, complying with LPC guidelines and all applicable laws, will be placed in area newspapers approximately six (6) month prior to the commencement of field testing to attempt to locate further Hedger-Edwards descendants. Copies of the notices will be provided to LPC.

Consultations will be taken with the identified descendant(s) regarding the treatment and re-interment of any uncovered human remains. If descendant(s) decline participation, any uncovered human remains will be re-interred in compliance with LPC guidelines and all applicable laws and as otherwise set forth in this protocol.

It is highly unlikely that any recovery of human remains would provide sufficient information to establish identity unless associated name-plates are encountered.

CONDUCT DETAILED MAPPING OF THE AREA OF POTENTIAL EFFECT ON BLOCKS 3013, 3014, AND 3016, PRIOR TO TESTING

Due to the possibility that human remains from the Hedger-Edwards Cemetery and the DRC Cemetery might be extant within Blocks 3013 and 3014 (as well as beneath adjoining sidewalks and street beds), this area is considered highly sensitive for human remains. As the development process moves forward, efforts to determine the location of any historic burials in relation to today's landscape and proposed construction areas will be undertaken by developing detailed maps that georeference historical maps of the project APE with existing utility maps and proposed development plans. The resulting combined maps will provide the archaeological field team with data that will assist with the placement of excavation trenches within the APE. The final detailed maps with proposed test trench locations will be forwarded to LPC for consultation prior to the commencement of archaeological field testing.

According to the proposed development scenario, which anticipates that construction will be phased over eight years, archaeological testing may not begin for 48 months or longer for some portions of the APE.

TESTING FOR LOCATIONS SENSITIVE FOR HUMAN REMAINS

The ADS identified the following Industco-controlled sites as potentially sensitive for human remains:

Block 3013, Lot 35 (Historic Block 3014, Lot 1);
Block 3014, Lot 9 (Historic Lots 1, 8 and 9); and
Block 3016, Lot 60 (Historic Lot 60).

Because the potential for burials on Blocks 3013 and 3014, where cemeteries are known to have existed, varies considerably from the potential for burials on Block 3016, where a church once stood where there is minimal potential for burial vaults that may have been under the now-demolished sanctuary once stood, the proposed protocol for each location differs slightly.

- BLOCK 3013, LOT 35, AND BLOCK 3014, LOT 9: HEDGER-EDWARDS CEMETERY/DRC CEMETERY LOCATION

For lots that were identified as potentially sensitive for the Hedger-Edwards Cemetery and DRC Cemetery, HPI recommends archaeological testing in the locations of proposed impacts. Although an APE is defined by the actual footprint of disturbance, in situations of potential burials, construction impacts often unavoidably reach beyond the finished footprint. Accordingly, a slim linear buffer zone of "cleared" area, to run parallel to the foundation design, is recommended.

On Block 3013, the former Hedger-Edwards Cemetery was located on the portion of modern Lot 31 that fronts onto East 172nd Street. This lot was known historically as Lot 36. The remainder of modern Lot 31 was not part of the cemetery. Today, modern Lot 31 contains an amalgam of concrete block building sections, some of which have a basement level. The section of modern Lot 31 that included the Hedger-Edwards Cemetery footprint is in an open area of the lot, adjacent to a vehicular ramp accessed from West Farms Road. This yard area has been excavated to create an artificially level surface at the same grade as the adjacent West Farms Road sidewalk. There is a large subgrade retaining wall along the northern lot boundary on the East 172nd Street side of the lot, which clearly shows that the original landform here has been significantly removed through excavation. It appears that any cemetery-related resources that may have existed have been destroyed by previous owners.

The former DRC Cemetery on Block 3013 was located on modern Lot 35. This lot was vacant until the mid-twentieth century. In 1954, a new building application was filed with the DOB for the current one-story concrete structure on the corner of East 172nd Street and Boone Avenue. The building measures approximately 42 feet along the East 172nd Street side of the lot. It has a first floor that is at the level of the Boone Avenue sidewalk, and which can be accessed on both Boone Avenue and East 172nd Street. Because East 172nd Street slopes downward towards West Farms Road (see Photograph 11), the entrance on East 172nd Street has several steps leading up to the first floor via a narrow doorway. The first floor level is approximately 3.5 feet above the East 172nd Street sidewalk at this doorway entrance. There is a partial basement level just west of the doorway area, which contains a boiler room and storage. The basement level is one half story below grade, with the top of the concrete floor of the basement level at approximately 3 feet below the East 172nd Street sidewalk grade. There is a drain just inside the door, indicating at least some excavations beneath the basement level. According to DOB records, the basement room measures 8x18 feet in plan and is 6 feet high. The remainder of the building on the lot does not have a basement; the long term occupant of the corner building states that bedrock is just beneath the slab flooring.

The remainder of historical Lot 35 contains a one story brick garage with no basement that was completed in 1972, according to DOB records. The level of the garage floor is at the approximate level of the East 172nd Street sidewalk. It is lower in elevation than the first floor of

the corner lot building, but not as deep as the basement level of that corner building. The long term occupant of the building states that bedrock is just beneath the slab flooring of the garage.

While it is most likely that most of the original soils have been removed from former cemetery locations, it is not absolutely clear that all of the former cemetery soils have been removed from the site or that the bedrock covers the entire footprint of the area immediately underneath the building floors of modern Lot 35. Monitoring this lot during demolition and clearing of the existing buildings is recommended to ensure that no cemetery resources are overlooked. If intact soils are found under the existing buildings, additional archaeological testing would be warranted.

On Block 3014, Lot 9 (the site of the cemeteries, as mapped in 1921) is currently paved and used as an impound lot, and is elevated above 172nd Street. From Boone Avenue, the terrain slopes slightly uphill towards West Farms, despite the fact that 172nd Street is graded to slope in the opposite direction. This lot was reportedly unkempt and undeveloped from the early 20th century through the 1940s, and in 1949 it was paved over. The lot has continued its commercial use since that time, but was not developed with any structures that would have caused subsurface disturbance, with the exception of a large highway billboard foundation at the southern end of the lot.

Before any actual archaeological field investigations can begin at locations flagged as potentially sensitive for human remains, LPC and OPRHP require the developer and the archaeologists to prepare a formal Memorandum of Agreement (MOA). This document will outline the rights and obligations of each party in regard to stopping the excavation, completing the fieldwork in a timely manner, making changes in the construction work, maintaining workplace safety, and developing notification procedures.[5]

Proposed Archaeological Field Testing Plan

As stated in the ADS, historical cemeteries were located within portions of Blocks 3013 and 3014, and there is the potential that not all of the burials have been officially disinterred. Even if there were full records of disinterment, there would still be the possibility that human remains had been left behind inadvertently. Therefore, the site is sensitive for both primary burials, which are burials that may have not experienced extensive disturbance since interment, and fragmentary remains, which include disarticulated bones and fragments of bones.

The three typical phases of archaeological field investigations include excavation to determine the presence/absence of cultural resources (Phase IB), leading to a more intensive examination to determine the integrity and significance (research potential) of the identified resources (Phase II), followed by large-scale data recovery, if indicated (Phase III) (New York Archaeological Council [NYAC] Standards for Cultural Resource Investigations [*Standards*] 1994). The locations of cemetery sites are extremely delicate, however, and often require a unique site-specific approach for the field investigation that collapses the phases noted above into a single comprehensive study. In the case of Block 3014, however, the possibility that human remains

[5] The LPC guidelines adopted in 2002 explicitly outline steps that must be undertaken when archaeological investigations involve the location of a potential burial site that may contain either primary burials or fragmentary remains.

still exist within the project site makes it both time and cost effective to combine the three phases of archaeological research, which would obviate the need to bring heavy machinery on site repetitively and to prepare multiple reports for each individual phase. This combined approach would require effective communication between Industco, HPI, and the designated contact at LPC.

On Block 3013, Lot 35, it is unclear whether twentieth-century building and grading episodes have completely destroyed the original landform or whether any natural soils are present, where potential cemetery resources could still exist. Due to this uncertainty coupled with the presence of buildings on the entire footprint of the lot, a preliminary task here would be archaeological monitoring of demolition and clearing of the existing buildings to ensure that no cemetery resources are overlooked. Archaeological monitoring is the supervision by archaeologists of a construction project's excavation in order to identify, recover, protect and/or document archaeological information or materials. Monitoring is used in cases where there is a possibility that the excavation might uncover archaeological resources but there is no satisfactory way to sample the site, and consequently, no valid way to determine the exact location or extent of the potential resource(s). If intact soils are found under the existing buildings, archaeological testing as described in the preceding paragraph would be warranted.

Geophysical Analysis

In many cases, prior to subsurface excavation, geophysical studies - including ground penetrating radar (GPR) - have been employed in the location of historic cemeteries to determine if intact burial shafts and/or coffins are present prior to the field excavation. Although GPR has proven successful on some sites, specifically helping to pinpoint the exact locations to place exploratory trenches, there are many environmental factors that can adversely affect a GPR survey in urban situations. The success of GPR surveys is dependent on soil and sediment mineralogy, ground moisture, clay content, the surface topography and vegetation, the depth of the potential resource, and finally the degree of subsurface intrusions. While GPR can be adapted to a great variety of site conditions, in many urban situations the presence of utilities and metal fragments in the soil can skew the results. In the case of Blocks 3014 and 3013, GPR is not recommended as the survey will not likely provide the absolute results that would aid with identifying the locations for trench placement or definitively determine the exact presence/absence of burials. Therefore, subsurface excavation has been determined to be the most appropriate method of study for the rezoning project APE within Blocks 3014 and 3013.

Subsurface Field Excavation: On-site Testing Sequence

The archaeological field director will notify LPC at the onset of field operations to provide the LPC archaeologist the opportunity to conduct a site visit. Testing would only be undertaken in the footprint of proposed subsurface disturbance and will be conducted using heavy machinery and hand-excavations under the direction of HPI's professional archaeologists (Figure 2). The sequencing of the testing will be dictated, in large part, by the field director who will adhere to OSHA regulations with regard to the excavation of trenches. Mechanical excavation will halt immediately if *in situ* burial shafts are encountered.

Removal of Overburden*:* The HPI archaeologists would begin this examination with the careful mechanical removal of the surface strata and any asphalt or overburden present, in order to

determine if the subtle changes in soil that may indicate the presence of burial shafts. For this process a flat-bladed backhoe or Gradall is recommended. The upper strata of obvious modern overburden will be mechanically removed in shallow increments, under the direction of the archaeologists. Once these levels have been removed, several test units will be excavated to help determine site stratigraphy. Based on the findings of these hand excavated units, a determination will be made about the appropriateness and depths for machine-aided excavation.

After the surface layers have been carefully removed, it may be possible to discern discrete burial shafts (usually by soil color) within the former cemetery grounds. If the outlines of burial shafts are discernible, the procedures outlined in the next section will be followed. Even if no outlines of burial shafts are discernible, additional gradual shaving and excavation to the level of the potential impact may be recommended since 20th century grading and/or other forms of land manipulation may have compromised the top layers of remaining burial shafts.

Identification of Burial Shafts*:* In the event that the outline of a burial shaft is discerned, the identified location will be mapped and assigned a recovery number. The on-call forensic anthropologist would be called to the site.

Implementation of Notification Procedures

In the event that the outline of a burial shaft is discerned, or if disarticulated human remains are discovered, during the field investigation, the following notification procedures would be implemented.[6]

1. The field project archaeologist will record the specific location of the discovery within the project site, the nature of the discovery and the date of the discovery on the project plans. The field project archaeologist will contact the forensic anthropologist for an immediate inspection.
2. The archaeologist will then promptly notify Industco as the on-call forensic anthropologist completes the initial evaluation.
3. Upon completion of the evaluation by the forensic anthropologist, the archaeologist will immediately notify LPC regarding the preliminary significance of the find (e.g., human bone, articulated burial, disturbed context).
4. Consultation agreements with the descendant church and/or individuals will be followed.

Burial Shaft Investigation

Following notification of the presence of burial shafts, hand excavation (testing with shovels, trowels and brushes) would proceed slowly to prevent inadvertent damage should any articulated human remains be present. As the hand excavation proceeds, frequent visual inspections would reveal if a coffin lid, often collapsed, or sideboards were present within the burial trench.

[6] On archaeological sites where the recovery of human remains triggers the implementation of an Unanticipated Discovery Plan (UDP), both the New York City Police Department (NYPD) and the New York City Office of the Chief Medical Examiner (OCME) must be notified. However, in cases where known historical burials may be present, such as those associated with the former cemeteries within Blocks 3013 and 3014, these agencies do not need to be immediately notified.

If these careful archaeological excavations extend as deep as the proposed disturbance – plus a buffer of one additional foot - without any human remains being found, then consultations will be undertaken among HPI, Industco, and LPC to determine whether any further action will be required. Such action may include installation of a physical barrier and/or a span over the shaft to avoid disturbance and/or compaction to deeper levels, followed by the continuation of project construction. If required by LPC and/or OPRHP, further subsurface investigations would continue.

Cemetery Subsurface Investigation

Hand excavation would continue to proceed slowly to prevent inadvertent damage should any articulated human remains be present. As the hand excavation proceeds, frequent visual inspections would reveal if a wooden coffin lid, often collapsed, or sideboards were present within the burial trench. If coffin materials or skeletal materials are detected, the archaeologists would carefully remove any remaining soil with trowels, wooden picks, and brushes to prevent any damage to human remains and burial artifacts.

Once exposed, the archaeologists and forensic anthropologist will work closely to follow standard bioarchaeological practices to excavate and document the skeletal material on a burial form. The form will note location, orientation and position of body if it is articulated, associated artifacts, including coffin materials and hardware, and will include drawings, maps, and photographs. Once a recovery is assigned a unique identification number and is recorded, it will be removed from the excavation unit to an on-site laboratory for a preliminary osteological examination by the forensic anthropologist. Each burial and any recovered artifacts will be associated with the original assigned recovery number in order to maintain context. Soils from around the burial will be screened through 1/4-inch mesh. The skeletal elements will be appropriately packed for removal to the off-site laboratory. The archival packing boxes will be sealed and the exterior marked with the burial/recovery identification number for transport to the off-site laboratory under the direction of the forensic anthropologist.

The Project Field Director, working closely with the forensic anthropologist, will be the point of contact with the designated contacts from Industco, LPC, and OPRHP to inform them if articulated human remains are uncovered and confirm the appropriate course of action in each instance.

The need to modify or deviate from the proposed excavation protocol will be determined by the Project Field Director as the field investigation progresses and site conditions warrant. In the event that such changes are required, the Project Field Director will immediately notify Industco and the designated contact at LPC to discuss the rationale for the modification to the protocol.

If the proposed construction impacts must be altered or expanded significantly, the HPI archaeologist(s) and the HPI office must receive confirmed notification of this action by at least three full business days in order to contact LPC for concurrence on an amended protocol.

Testing at Project-Related Off-Site Impact Locations

If off-site impacts, i.e., outside of the city tax lot boundaries, cannot feasibly be avoided, HPI will assess the locations by determining if modern disturbance and/or utilities are present. Of particular concern are associated development installations that may be necessary within the

adjacent sidewalk and street beds (e.g., the installation of utilities). For this type of disturbance, the archaeologists would monitor excavations at the time of construction. If human remains are encountered, then the same procedures described above would be followed. As with the field investigation conducted within the APE, the developer and designated contact at LPC will be apprised of the off-site excavations and any potential burials that are discovered. If mapping and testing reveal that disturbance can be sufficiently documented, no further archaeological consideration would be warranted.

Health and Safety Plan

Archaeologists and other members of HPI's team involved in subsurface investigations will comply with the Health and Safety Plan (HASP) established by the construction manager (or general contractor) for the site. The HASP will comply fully with all applicable OSHA regulations.

The construction manager will be responsible for providing the archaeologists with a safe excavation site. The construction manager will install sheeting in accordance with OSHA standards, as necessary, and will maintain any necessary shoring, sheeting, plating and fencing. If shoring or sheeting is required, it will be installed in a manner that allows the archaeologist(s) an opportunity to inspect the open excavation and that avoids damage to potential human remains.

Professional Handling of Historical Burials (Human Remains)

Following the initial identification in the field by the forensic anthropologist (sex, age at death, and obvious pathology), any recoveries will be removed to an off-site laboratory where the on-site field examination will be confirmed and additional data gathered before re-interment.

Standard laboratory procedures will be followed, beginning with an inventory of all of the recovered bones and bone fragments from each assigned recovery. It might be found that more than one individual is present in each burial. Further, the inventory will provide data on the amount of material present for re-interment. Associated with the inventory, the laboratory study will provide details on the cemetery demographics (e.g., age, sex, biological ancestry), epidemiological data (traumatic, degenerative, mechanical, and disease-related reactions to environmental stresses), and osteometry (measuring and quantifying the form of the human body and examining nutrition and health status). Individual characteristics of each burial will also be noted (e.g., stature, injury, medical intervention). The recording of the above data is standard in bioarchaeology and will follow the procedures outlined by Buikstra and Ubelaker (1994) and University of Tennessee Forensic Data Bank (Moore-Jansen et al. 1994).

If incomplete or disturbed burials are recovered, the same laboratory procedures will be followed where possible. Although the analysis of partial remains will be limited, the data collected will add to the overall information about the cemetery population. No destructive laboratory techniques will be conducted on the remains.

Laboratory analysis will also be conducted on any artifacts and coffin remains that are recovered during the field investigation. Artifacts will be cleaned, cataloged, and studied by the archaeologists. The coffin remains might also be sent to an outside laboratory for further

analysis (e.g. species determination). Once the analysis is complete the materials will be boxed in appropriate containers.

Coffin name plates, if recovered as in the 1911 accidental intrusion into the DRC cemetery, might provide individual identities. The DRC and the Hedger/Edwards descendents – to the extent located - would be included in the various phases of the investigation if articulated remains are recovered as per the established consultation agreements.

Collection Management/Reburial

HPI archaeologist(s) will identify and arrange an appropriate long-term repository for any associated artifact collection that is recovered during the field investigation for burial locations. Repository arrangements will be made after consultation with Lloyd Ultan, Bronx Borough Historian, and the Bronx County Historical Society. It is understood that many repositories now require a small endowment with each accessioned collection.

Once the laboratory analysis of the burials is complete, the recovered remains will be placed in appropriate containers for temporary storage (respectful curation) until such time as they can be transported for re-interment off site. The re-interment process will be outlined in the consultation agreement with members of the descendent families, if identified.

Public Relations

As outlined above, due to the sensitivity of the public to the possible disturbance of human remains, HPI will consult with the descendant churches/families prior to the initiation of any field testing where possible and establish a consultation agreement. The consultation agreement will include an appropriate comprehensive public relations policy governing responses to public inquiries. Once the archaeologists are on site, a designated member of the Industco team, working closely with the HPI field director, will be the point of contact with the general public to disseminate information.[7]

HPI will also conduct educational and sensitivity awareness training for the on-site construction management prior to the initiation of field testing.

Site Security and Facilities

A corollary to the public relations policy is the need for site security and clear identification of the two separate sectors of Block 3014, as well as Block 3013, from the onset of field testing, the APE and non-APE areas. The portion of the Blocks that will be redeveloped as part of the development plan must be protected during the proposed field investigation. Opaque fencing, to limit public visibility, is recommended if sensitive material is identified. Since archaeological sites routinely attract vandals and relic hunters, a night security guard will be brought onto the site if indicated.

Plans for temporary trench covers/tents must be initiated to protect any possible recovered feature(s) from exposure to the sun and/or inclement weather. These shelters would hopefully

[7] It is anticipated that LPC and OPRHP will participate in the public outreach process before and during testing.

also preclude the possibility of rainwater filling the open trenches. HPI archaeologists and consulting specialists will require on site parking for equipment vans.

Facilities for an on-site laboratory must be in place prior to the field testing; a secure construction trailer (10 ft x 30 ft, minimum) with electricity would be adequate. This lab space will be necessary so that appropriate conservation measures can be initiated if indicated. A water supply on site would also be required. Unless specified differently by LPC, the archaeologists will not wet clean, but dry brush any recovered skeletal material prior to removing this material to the off-site laboratory for analysis.

Project Archaeologists

The on-site Project Field Director will be Sara F. Mascia, Ph.D. Dr. Mascia is a professional archaeologist who meets the standards of the New York Archaeological Council and is a member of the Register of Professional Archaeologists. She has extensive expertise in identifying historical shaft features and, more specifically, grave shafts and has completed OSHA HAZMAT training. Further, the entire archaeological team has extensive expertise in working in diverse urban environments with the assistance of heavy machinery. Dr. Mascia's curriculum vitae is attached.

The HPI project team will also include an on-call forensic anthropologist. The on-call Forensic Anthropologist will be identified prior to the initiation of the field testing, which is estimated to be another 48 months, and a curriculum vitae submitted to LPC for review at that time.

Technical Report

An "end of fieldwork" memorandum on the field investigation will be prepared by HPI and submitted to the developer upon completion of fieldwork. A full and complete technical report, which will incorporate all the appropriate maps, illustrations, photographs, and lab analyses, will also be prepared in accordance with current city standards. The full report will be forwarded to the developer for submission to LPC.

- BLOCK 3016, LOT 60: GRACE EPISCOPAL CHURCH

The Grace Episcopal Church stood on Block 3016, Lot 60, from ca. 1847 through the end of the 19th century. Inquiries to the descendant church and diocese archives did not indicate that there were any burials on the property. The churchyard surrounding this specific structure was limited by an alleyway and outbuildings. The western end of the lot reportedly had sheds where parishioners' horses and carts were parked during services. However, it is possible that vaults were utilized for select burials beneath the church itself.

Currently, the site of the Grace Episcopal Church only has a basement at its extreme northeastern corner, and there are two buried tanks located beneath the front of the building. The western end of the lot was reportedly the site of storage sheds used by the church, and it is highly unlikely that they were constructed over an active burial yard. Therefore, the area identified as potentially sensitive for burial vaults is relatively limited in size.

As previously stated, before any archaeological field investigations can begin at locations flagged as potentially sensitive for human remains, LPC requires the developer and the archaeologists to prepare a formal Memorandum of Agreement (MOA). The MOA essentially formalizes the procedures outlined in this protocol.

Proposed Archaeological Field Testing Plan

The proposed archaeological field testing plan would be confined to the limits of proposed subsurface impact, and would follow the various field tasks outlined above for Blocks 3013 and 3014.

TESTING FOR LOCATIONS SENSITIVE FOR HISTORIC, NON-BURIAL RESOURCES

Through the ADS research, and a request by OPRHP, the following blocks and lots have been identified as potentially sensitive for non-burial resources:

Block 3014, Historic Lots 25, 27, 33, 42 and 51; and
Block 3016, Historic Lots 60, 64, and 71[8].

For lots identified as potentially sensitive for non-burial resources, HPI recommended consideration of archaeological testing where proposed development would cause subsurface disturbance deeper than the extant modern overburden. Such testing could proceed in two phases that correspond with the testing program to determine presence/absence of burial remains. Generally, the testing would consist of backhoe trenching to identify the locations of any potential shaft features (e.g., privies and wells). The locations of the trenches would be determined by the archaeological field director based on the location of proposed disturbance and current field conditions.

Due to the proximity of the sensitivity for non-burial resources in the southern part of Block 3014, the initial testing for human remains, described above, would include a thorough examination of all resource types at one time. The second phase of testing, if necessary, will examine the residential resource sensitivity in the remaining APE.

Residential Shaft Resources (ca. 1850-1893)

If undisturbed deposits of cultural material from the historic settlement period still exist within the proposed footprint of development on the lots identified as potentially sensitive for this resource type, they may have the potential to provide meaningful information regarding the historical use of the site and the lives of the people who lived there. When recovered from their original context and in association with a specific historical occupation, historical deposits can provide a wealth of information about consumption patterns, consumer choice, economic status and other important issues.

Typically, the back lots of dwellings have the potential to contain a myriad of buried cultural resources, particularly shaft features (wells, cisterns, privies) used by the residents prior to the advent of public utilities. These resources are easily identified and often the receptacle of household refuse, especially when they were no longer needed. The shafts were usually filled

[8] As noted earlier, Block 3016, Lot 71 is not owned or controlled by Industco and archaeological testing cannot be guaranteed as the rezoning action moves forward.

and capped providing stratified deposits within the feature. Because of the unique depth of these resources, the lowest levels are rarely disturbed even if the feature becomes truncated by subsequent historical activity. The deepest layers often act as a time capsule, preserving historical artifacts within the enclosed environment.

Portions of Block 3014 and 3016 are potentially sensitive for cisterns and shaft features (privies and wells) dating to the period of residential occupation, ca. 1850 to 1893. (Refer to the ADS Figures 8, 10, 12, and 15, attached.) Once public utility lines were installed in residential neighborhoods, many of these abandoned domestic shaft features were filled with household refuse. As such, both the recovered artifacts from features, and the features themselves that are documented within the former home lots, could provide a valuable overview of the changing demographics of the neighborhood during much of the 19th century.

Field Testing: Residential Resources

The field investigation will be restricted to the finalized construction APE, including any temporary, subsurface service locations. The testing will include the excavation of several large test trenches only in these areas of proposed disturbance (Figures 2 and 3). Visual and physical barriers must be employed to separate testing from non-testing areas.

Block 3014 will experience considerable testing in the prior phase of determining presence/ absence of human remains. In fact, the sensitive location for shaft features on the south half of Block 3014 abuts the mapped limits of the 19th century cemetery. It is assumed that it will be possible to test for the rear yard shaft features in this location at the same time that the archaeologists are examining the outside limits of the proposed foundation walls. Therefore, testing on domestic sphere sites will have been completed in this section of the rezoning project. LPC will be consulted on the testing results from the south half of Block 3014 prior to undertaking further investigations for shaft features on the north half of Block 3014 and Block 3016. It is possible that further testing for shaft features would be considered redundant.

If further testing is requested on residential shaft features for the north half of Block 3014 and Block 3016 (exclusive of Lot 71, which is not under Industco's control), the archaeological field director will be on site to monitor the removal, by heavy machinery, of the modern overburden and/or surface layers that are present on the site. Reasonable precautions will be taken during the demolition of buildings on lots identified as potentially sensitive for residential shaft features in order to minimize subsurface disturbance. The presence of the archaeological field director during the removal of overburden will help to ensure that only extraneous materials are removed by the backhoe.

Once the overburden is mechanically removed, the field archaeology director will direct the machine operator to remove soils in thin layers in order to expose any historical features that are still present. Any features discovered would be sufficiently sampled so as to indicate if further testing or recovery is necessary.

Should any discrete shaft features be encountered, the excavation and evaluation of such features is a relatively standard and confined process. Consultation with LPC may be indicated during the testing phase if unexpected and/or multiple intact archaeological features are encountered.

This additional LPC consultation, if indicated, will address amended excavation plans, allowing the field investigation to continue without delay.

It is possible that the locations identified as potentially sensitive for 19th century shaft resources on Block 3014 will bear evidence of shallow bedrock in some locations. If the natural contours of the bedrock prohibit mechanical excavations, the archaeological field director will shift the test trenches eastward, as feasible. Subsurface field conditions will ultimately dictate the size and location of the trenches.

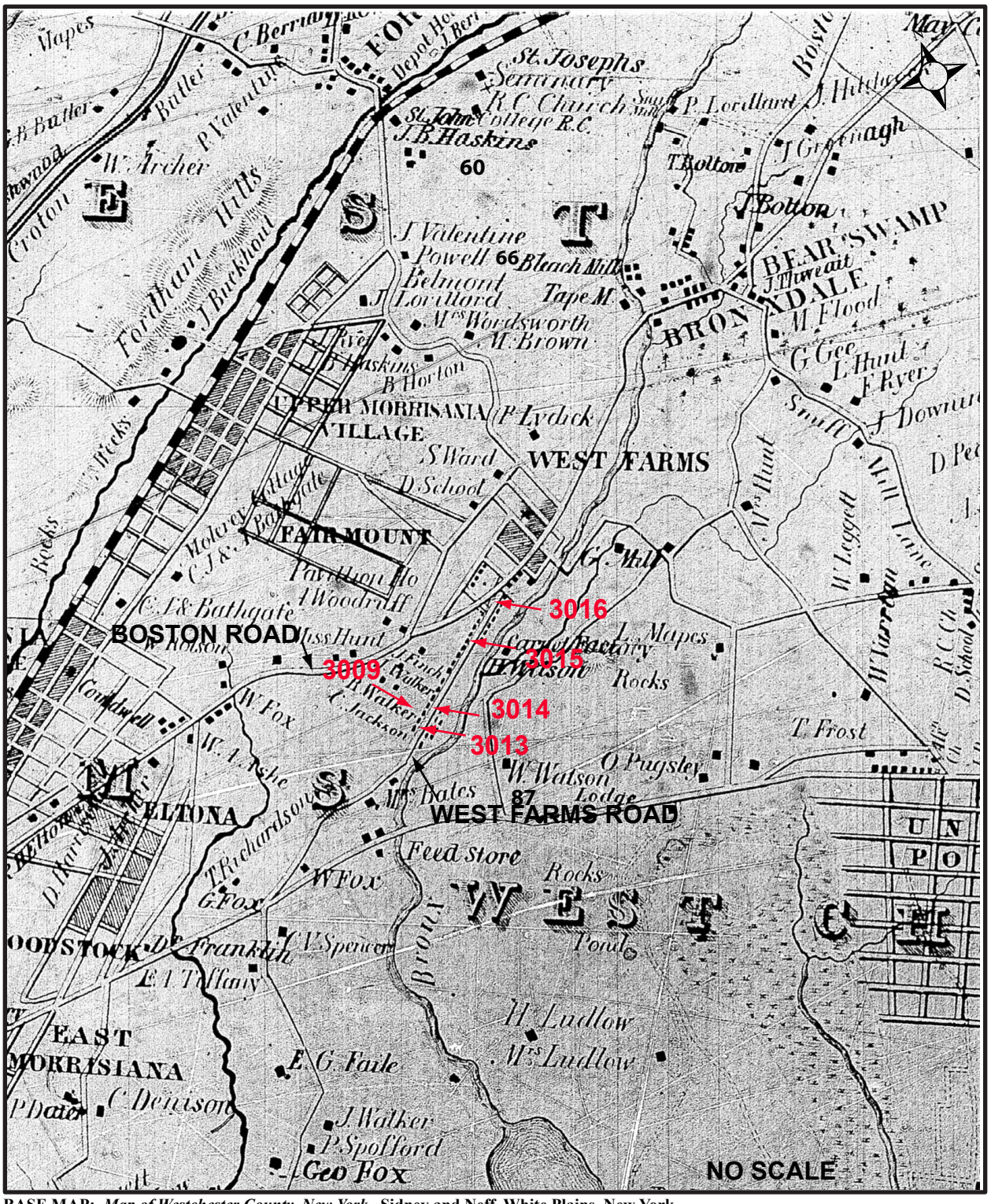
In order to maximize the understanding of any recovered shaft features, the interior/exterior on one side would likely be exposed in order to examine the stratigraphic layers within the feature. This method is designed to allow for the potential recovery of information, such as date of construction, the date the feature was discontinued or filled, and to collect a sample of the variety of materials within the feature. The precise nature of these tasks is dependent upon the exact nature of the shaft feature encountered.

Professional standards for excavation, screening, recording of features and stratigraphy, labeling, mapping, photographing, and cataloging will be applied.

Lab Analysis

Archaeologists will clean, stabilize, and inventory cultural material removed from the field in an on-site, temporary lab facility. Laboratory processing will involve artifact dating based on comparative literature and collections. Specialized lab analyses (e.g., flotation, soil analysis, faunal analysis) are not routinely included in this level of study. An artifact catalog, recording the depth and location of each recovered artifact, will be created.

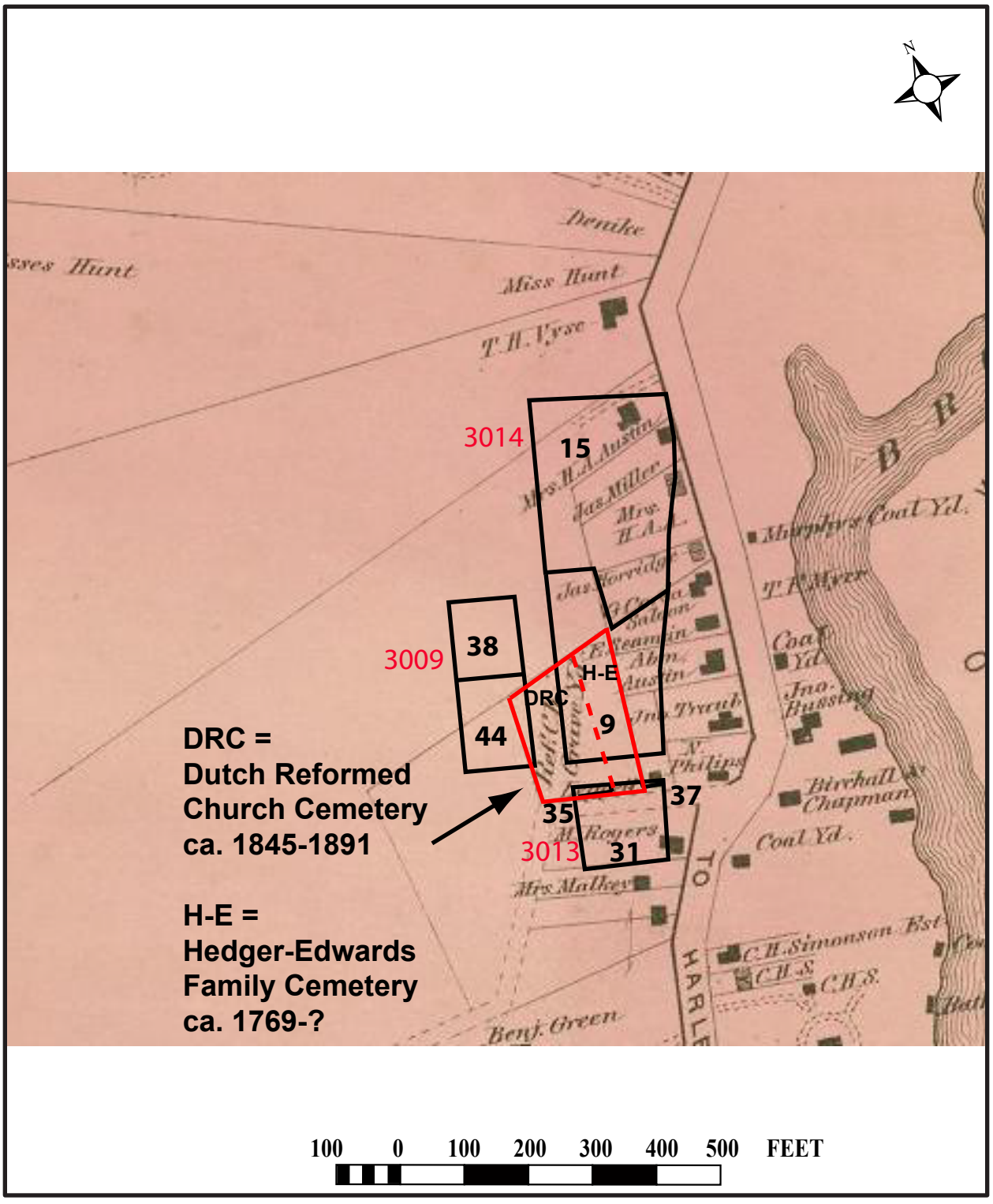
It is anticipated that the research conducted for the ADS (census data, directories, atlases, tax assessments, etc.) will be sufficient to address any site-specific lab analysis issues raised by the archaeological field testing of *in situ* shaft features. However, additional primary documentation may be necessary in order to associate recovered deposits with inhabitants and their residential activities and to interpret the findings. HPI archaeologist(s) will identify and arrange an appropriate long-term repository for any artifact collection that is recovered during the field investigation. Repository arrangements will be made after consultation with Lloyd Ultan, Bronx Borough Historian, and the Bronx County Historical Society. It is understood that many repositories now require a small endowment with each accessioned collection.



BASE MAP: ***Map of Westchester County, New York.*** **Sidney and Neff, White Plains, New York.**

ARCHAEOLOGICAL DOCUMENTARY STUDY
CROTONA PARK EAST PROPOSED REZONING
BRONX, NEW YORK

FIGURE 8: PROJECT SITE LOCATION ALL BLOCKS IN 1851.



BASE MAP: *Atlas of Westchester County.* **F. W. Beers and Company, New York.**

ARCHAEOLOGICAL DOCUMENTARY STUDY
CROTONA PARK EAST PROPOSED REZONING
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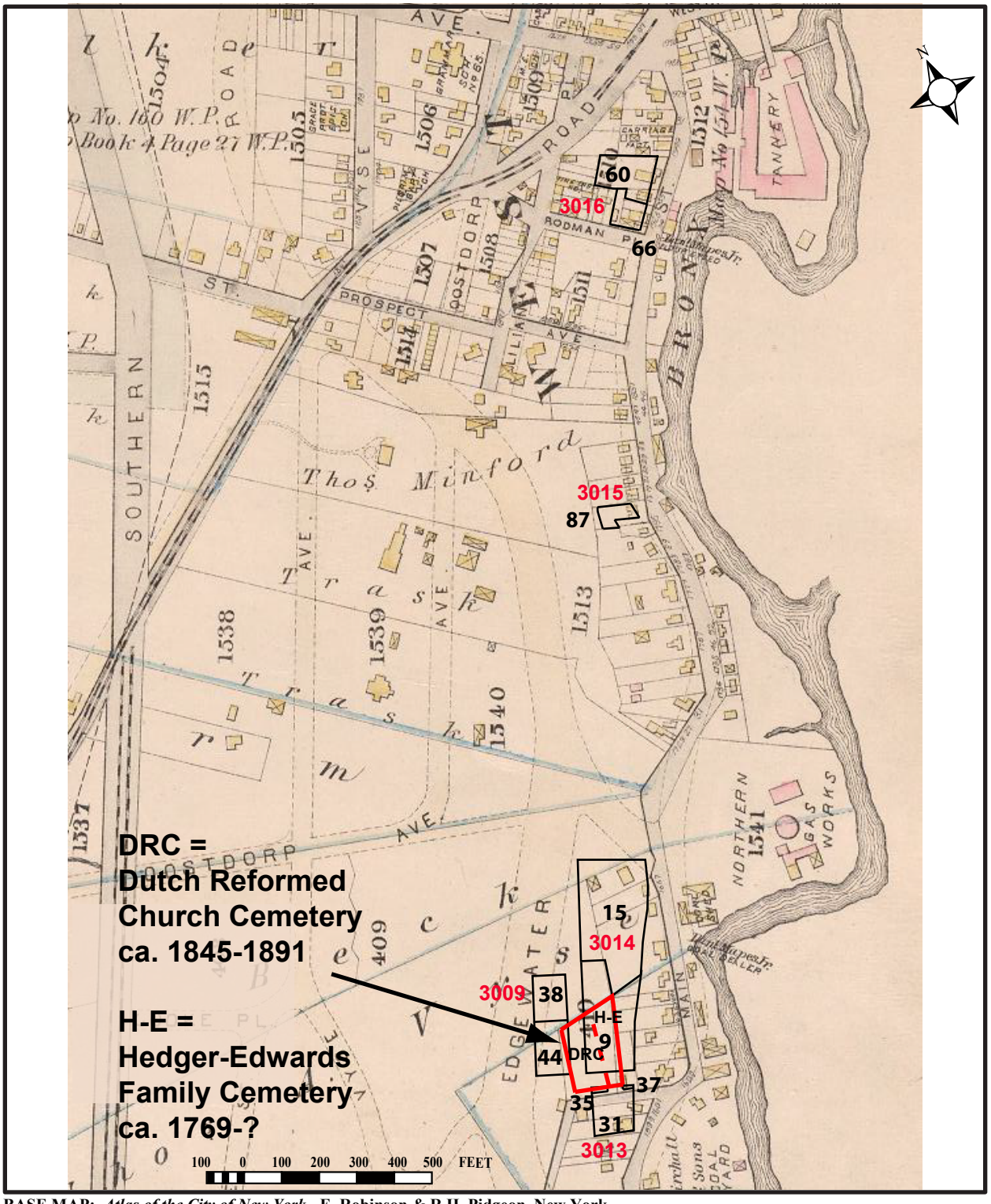
FIGURE 10: PROJECT SITE LOCATION BLOCKS 3009, 3013, AND 3014 IN 1868.



BASE MAP: *Atlas of the City of New York.* **E. Robinson & R.H. Pidgeon, New York.**

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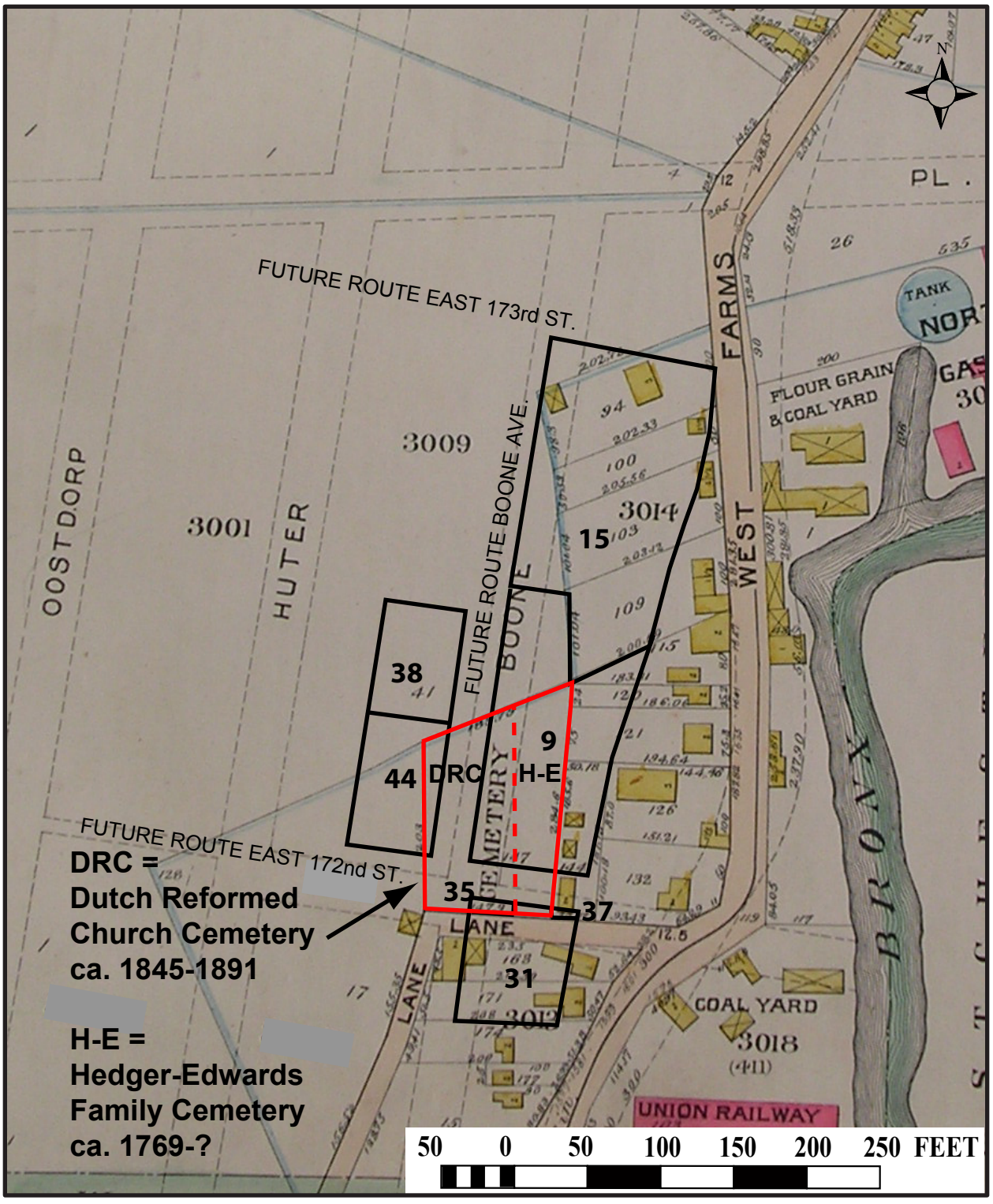
FIGURE 12: PROJECT SITE LOCATION, ALL APE BLOCKS IN 1885.
Note: Red lines demarcate mapped boundaries of cemeteries.



BASE MAP: ***Atlas of the City of New York, 23rd and 24th Wards.*** **G. W. Bromley and Company, Philadelphia.**

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BRONX, NEW YORK

FIGURE 15: PROJECT SITE LOCATION BLOCKS 3009, 3013, AND 3014 IN 1893.
Note: Red lines demarcate mapped boundaries of cemeteries.
The illustrated blocks/streets placements are "as proposed" in 1893; when they were laid out in subsequent years, the actual placement did vary.