



**QUEENS PLAZA RESIDENTIAL DEVELOPMENT (QPRD) PROJECT
ARCHEOLOGICAL MONITORING AT THE
SITE OF THE VAN ALST FAMILY CEMETERY
LONG ISLAND CITY (QUEENS COUNTY), NEW YORK**

prepared for
Tishman Speyer
New York, New York

prepared by
Commonwealth Heritage Group, Inc.
(formerly John Milner Associates, Inc.)
West Chester, Pennsylvania

April 2016
FINAL DRAFT TECHNICAL REPORT

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ABSTRACT

Commonwealth Heritage Group, Inc. (formerly John Milner Associates; hereafter Commonwealth) conducted several phases of archaeological investigation and monitoring prior to the development of the Queens Plaza Residential Development (QPRD) property. This parcel, also known as Lot 26: Block 264, is located in Long Island City, Queens County, New York. This archaeological investigation was required by the New York City Landmarks Preservation Committee (LPC) and conducted in order to verify the presence or absence of extant burials within the former Van Alst Family Cemetery boundary, as delineated on historic maps within the parcel. The methodology of this investigation followed the requirements of the December 2014 *Protocol for Archeological and Forensic Anthropological Investigations at the Site of the Van Alst Family Cemetery, Long Island City (Queens County), New York* hereafter “the Protocol”; see Appendix I) which was approved by the LPC.

Following the issuance of the final Protocol in December 2014, Commonwealth conducted an archaeological investigation within the QPRD parcel between January 2015 and January 2016. In anticipation of potentially finding intact burials related to the Van Alst Family Cemetery, Commonwealth prepared a team of field archaeologists and support staff for the excavation and reinternment of any human remains encountered during the field investigation. Through the monitoring of soil borings, exploratory trenching, and ultimately the monitoring of sediment removal within the Van Alst parcel, as mapped in the nineteenth century, Commonwealth has concluded that the burials that once lay in the area were removed by prior construction activities related to the West Disinfecting Company (WDC) building and/or moved and reinterred by Henry Van Alst in 1925.

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1.0 INTRODUCTION

Commonwealth Heritage Group, Inc. (formerly John Milner Associates; hereafter Commonwealth) conducted several phases of archaeological investigation and monitoring prior to the development of the Queens Plaza Residential Development (QPRD) property. This parcel, also known as Lot 26: Block 264, is located in Long Island City, Queens County, New York (Figure 1). The property is bounded on the north by Jackson Avenue, on the east by Queens Boulevard, on the south by the Long Island Railroad (LIRR) property, and on the west by Orchard Street. This archaeological investigation was required by the New York City Landmarks Preservation Committee (LPC) and conducted in order to verify the presence or absence of extant burials within the former Van Alst Family Cemetery boundary, as delineated on historic maps within the parcel. The methodology of this investigation followed the requirements of the December 2014 *Protocol for Archeological and Forensic Anthropological Investigations at the Site of the Van Alst Family Cemetery, Long Island City (Queens County), New York* (henceforth referred to as “the Protocol”; see Appendix I), which was approved by the LPC.

1.1 CURRENT PROJECT BACKGROUND

In connection with a proposed rezoning action in downtown Long Island City (Queens County), New York, the New York City Department of City Planning (DCP) was required to prepare a Draft Environmental Impact Statement (DEIS) to satisfy the requirements of the City Environmental Quality Review (CEQR) process. As part of the DEIS process, Historical Perspectives, Inc. (HPI) prepared a preliminary archeological assessment of the area affected by the proposed rezoning (HPI 2000). That assessment notes that the “Van Alst Burying Ground” was described by Seyfried (1984) as being located on the west side of Barn Street [now West Street] at the Long Island Railroad property line. A subsequent Phase 1A archeological survey (HPI 2001) developed cultural and topographic chronologies for Lot 26, Block 264 where the cemetery was presumed to have been located.

HPI reviewed available topographic mapping and boring log data from the 1990s but was unable to reach any definitive conclusions about current subsurface conditions within the limits of the former cemetery or the extent of filling and/or other changes resulting from historic development of the site. HPI did conclude that the basement of the extant structure may extend only three feet below the pre-development surface. HPI was also able to determine that the area occupied by the rail siding on the southern side of the existing structure may be 1.7 feet above the grade that existed in 1875. The extent of disturbance associated with construction of the rail siding, below this presumed 1.7-foot fill layer, was unknown.

A Voluntary Cleanup Site Assessment Report (AKRF 1996) prepared for Blocks 263 and 264 concluded that there is a miscellaneous fill from 5 to 14 feet thick over the entire site. The fill is described as “containing some silt and gravel, with occasional brick, cinders, concrete, cobbles, and wood” (1996:1). However, it was not presumed that this reflected the actual conditions within the limits of the former cemetery.

The Phase 1A archeological survey concluded that “the subsurface disturbance record suggests that there is still the possibility that undisturbed burials exist within the potential development site, on Block 264 and along West Street and beneath the railroad siding [that served the West Disinfecting Company (WDC) and runs along the south side of the building] and right-of-way” (HPI 2001:13). HPI was unable to discover the number of original interments in the cemetery, any confirmation of any removals prior to 1925, or a record of how many individuals were re-interred in 1925. At the time of the HPI report, Lot 26 was slated for future development, and the demolition of the former WDC building. HPI recommended archeological testing of the former cemetery location if it could not be avoided by future development

activities and that prior to such testing a protocol be developed to define levels of testing, procedures for handling skeletal material, and research issues to be addressed.

Commonwealth (John Milner Associates, Inc. at the time) produced the first *Protocol for Archeological and Forensic Anthropological Investigations at the Site of the Van Alst Family Cemetery, Long Island City (Queens County), New York* (henceforth referred to as “the Protocol”) which was originally submitted to New York City Landmarks Preservation Commission in November 2003 and approved by the LPC 8 December 2003. The final version (December 2014; see Appendix I) was revised in order to ensure consistency with current regulatory requirements, scientific methods, notification procedures for descendant community(s), and treatment of human remains. The Protocol included procedural information regarding the following: Section 2.0: Field Investigations, Section 3.0: Descendant Identification and Involvement, Section 4.0: Post-Discovery Procedures, Section 5.0: The Disposition of Recovered Remains, Section 6.0: Reporting, and Section 7.0: Personnel Qualifications.

1.2 BRIEF HISTORIC BACKGROUND OF THE VAN ALST FAMILY CEMETERY

The ancestor of the Van Alsts, Joris Stevensen or Joris de Caper (i.e. George the sailor) or “de Caper van Alst” (the sailor from Aalst), came from Bruges in Belgium which is in the vicinity of the district of Aalst. He arrived in New Amsterdam in 1652 and bought two plantations in the area of Dutch Kills in 1670. His son Johannes was born in 1667 and inherited the estate where he lived until 1749. His son, also named Johannes, bought the estate at Dutch Kills, within the QPRD project area, on which he erected a new house in 1766 which was occupied by his grandson Isaac in 1852. A house which existed prior to the construction of the new house in 1766 is described as standing a little southeast of this new house, close on the meadow edge (Riker 1852: 380-382). Connor’s 1852 map (Figure 2) shows the Van Alst property within the QPRD project area, but no cemetery is delineated; the area of Long Island City was clearly a rural area 160 years ago. This region was known as Dutch Kills, named for the creek that once ran just southwest of the project area, with its source near where the Queensboro Bridge now stands. The Native American name for the swampy region that became known as Dutch Kills was Mespaetches, which resembles the words for “at the bad water place” or “overflowed” (Tooker 1911). The creek known as Dutch Kills was called Canapaukah by the Native Americans, most likely an abbreviation of the word meaning “at the fenced water-place.” This likely refers to the mill-dam that was part of Burger’s mill (outside of the project area) along this tributary (Tooker 1911).

Beers’ 1873 *Atlas Map of Dutch Kills* (Figure 3) is the first clear documentation of the cemetery location and shows it extending into Barn Street. This map, created only twenty years after Connor’s map, shows how quickly the addition of the railroad through the area began the urbanization process. Also, despite the mapped location of the house on the 1852 map, no house is located on this parcel on the more accurate 1873 map. According to Seyfried’s *History of Long Island City* (1984: 945), the 1766 house built by Johannes is described as standing between Jackson Ave and the railroad yards, a few feet east of the Queens Boulevard viaduct, extant until 1910. This house is likely the one depicted on Beers’ map three parcels east of the QPRD project area. An 1870 survey (HPI 2001: Figure 2) also shows the outline of the cemetery in the same location as that shown on the 1873 atlas map, but does not label it as such. No earlier maps have been found that document the cemeteries location. HPI (2000) cites Seyfried (1984) as stating that “In 1887 six stones of Van Alst’s, Hunters and Parsells could still be read” within the Van Alst cemetery.

Industrial development continued on the QPRD parcel through the next century. Wolverton’s 1891 map (Figure 4) shows the cemetery area still clear of structural development and a “Canned Goods Dept” at the intersection of Barn (West) and Jackson replacing the Romain & Co structures on the 1873 map.

Hyde's 1903 map (Figure 5) shows that the WDC had erected a complex of structures on the western portion of the lot adjacent to Orchard Street, but the eastern portion where the cemetery was located is shown as vacant. A long, narrow, concrete/stucco structure appears for the first time within the boundaries of the cemetery on a 1913 atlas map (Hyde 1913) (Figure 6). A 1913 City History Club of New York publication describes the Van Alst burial ground "now almost blotted out...at the intersection of Barn Street on the north side of the L.I.R.R.," near the Canapaukah Creek. Sanborn's fire insurance map from 1917 (Figure 7) still shows only a few areas of disturbance within the cemetery boundary. There is a sprinkler tank and building where the 1913 stucco building was located, and an oil tank is located in the southwest corner of the Van Alst plot. By 1943, West Disinfecting had extended the railroad along the southern portion of the cemetery and erected a building covering the rest of the location of the of the Van Alst Cemetery plot (Figure 8). The bulk of the disturbance to the Van Alst Cemetery occurred in 1925, during the construction of this five-story, reinforced concrete and steel building by the West Disinfecting Company.

On February 23, 1925, the *Daily Star* newspaper carried an article under the headline "May Halt Digging at Old Cemetery Site in Long Island City: Harry Van Alst Says Ancestors Were Buried in Barn Street." The digging referred to was presumably associated with the construction of a new building for the West Disinfecting Company. (The extant five story structure appears for the first time on a 1928 atlas map). The newspaper account indicates that Mr. Van Alst, a Queens attorney, received an anonymous telephone call informing him that "excavators had dug up bones and pieces of caskets and that presumably the bones were those of his ancestors. . . Mr. Van Alst had always understood that the remains of the bodies interred in the former cemetery had been removed some time ago and transferred to Cypress Hills Cemetery. . ." (*Daily Star* 1925, cited in HPI 2001:5). Cypress Hills Cemetery records indicate that "unknown bones of the Van Alst family" were buried on March 16, 1925, in a plot purchased by Harry Van Alst.

2.0 PROTOCOL COMPLIANCE

2.1 DESCENDANT IDENTIFICATION AND INVOLVEMENT (SECTION 3.0 OF THE PROTOCOL)

Following the guidance of the approved Protocol, Section 3.0: Descendant Identification and Involvement, public notices were posted in the *New York Times*, *New York Daily News*, *New York Post*, *Newsday*, and local Queens newspapers requesting Van Alst descendants to contact the project sponsor. The first of these notices began running on September 25, 2014 and the final was published on October 24, 2014.

As a result of these posts, we were put in contact with Rachel van Alst, widow of John van Alst, who lives in Greensboro, North Carolina. We spoke with her regarding the history of the van Alst family on October 24, 2014. A summary of the information is below:

- Rachel's son is John Van Alst (she said he is 9th generation) and residing in Boston.
- Rachel's deceased husband was also John. She understands him to be one of four consecutive John Van Alsts. She said before that, she believes there were a couple of George Van Alsts, and that the original Van Alst in the area was Joris (dating back to the seventeenth century).
- Rachel said she has a photo of family in the area (and a family tree), which she sent to us. The family tree assisted in determining that Henry van Alst (father of Harry) is not in a direct line of descentance to Rachel and John.
- Based on the information shared by Rachel to date, Rachel van Alst's family is a distant relative of Harry van Alst.
- Rachel said that the family has two empty plots in the Mount Olivet Cemetery. Should human remains be discovered during the excavation process, Rachel indicated that she would be happy to move them there and install a small plaque.
- The Protocol was sent to her son John in Boston and to Rachel in North Carolina for review. Revisions to the Protocol based on discussions with John van Alst were made and incorporated into the final approved version (Appendix I).

The last known Van Alst who can be presumed to have had a direct connection with the cemetery is a man described as a Queens attorney named Harry Van Alst (HPI 2001). In 1925 Harry Van Alst was anonymously notified when during construction of the West Disinfecting Company (WDC) building on the site of the cemetery bones and caskets were discovered. HPI (2001) unsuccessfully attempted to locate additional Van Alst descendants who may be alive. They reviewed land conveyances, cemetery records, death certificates, church records, family genealogies, transcriptions from a Van Alst family bible, and 1930s oral histories. HPI was able to confirm that Cypress Hills Cemetery (CHC) records show that "unknown bones of Van Alst family" were buried in a plot purchased by Harry Van Alst in 1925 (CHC file card for Grave No. 14720, cited in HPI [2001:6]). Additional descendant outreach and research regarding Harry Van Alst included the following:

1. Contacted Queens County Bar Association re: Harry van Alst (10/21). Response was that the Bar Association does not keep these sorts of records, and referred us to the Queens County District Attorney's office.
2. Contacted Queens County District Attorney's office re: Harry van Alst (10/21). We were put in touch with Personnel Department which was unable to provide any additional information regarding Harry van Alst.

3. Contacted Queens County Historical Society (10/21) but received no additional information.
4. Contacted Newtown Historical Society (10/20) but received no additional information.
5. Contacted Green-Wood Cemetery (10/21), which has a vault for Harry van Alst (died 1960). This individual is not the Harry van Alst associated with the project.
6. The project team's funeral director contacted the Cypress Hills Cemetery to determine who maintains the plot containing the reinterred remains from 1925. The Cemetery responded that there is no name associated with this plot, only the name of the historian who did the research in 2001 for HPI.
7. Genealogical Research: Team has reviewed the following:
 - a. Census records from 1915, 1920, 1930.
 - b. *City Directory* for 1912.
 - c. Newspapers, 1919-1924, looking for a Harry van Alst obituary. It appears from the records that Harry van Alst has no descendants. He was married late in life, for a very short time. His brother appears to have also not married.

Based on the research described above, the historical record of Harry van Alst is as follows:

- Harry van Alst, born circa 1884 in Long Island City. No death date confirmed.
- Harry was the son of Henry van Alst and Barbara (no maiden name). Henry was at one time the Deputy City Clerk in Long Island government (according to the *History of Queens County*, 1882, and *Brooklyn Daily Star* 1919).
- Younger brother, George U P Van Alst, born circa 1886. Shows up in the 1915 census document, and the 1912 *City Directory*. Death record for George shows he died in 1945, age 59.
- Harry was appointed an Assistant District Attorney for Queens County in 1919. Graduate of NY Law School 1911, started law practice 1912 (*Brooklyn Daily Star* December 31, 1919).
- Family farm was located (until circa 1899) at the Bridge Plaza. The family also retained a home in Long Island City (*Brooklyn Daily Star* December 31, 1919).
- Harry was a bachelor in 1920 (census)
- Harry van Alst married Elizabeth Dundas on 22 September 1921, in Queens, NY. (Certificate #1994). She was born circa 1888.
- Elizabeth ("Eli") van Alst killed in car accident, and Harry injured, in spring 1924 (*The Daily Star, Queens Borough* 1924).
- 1930 census, shows Harry, age 46, widowed, and a lawyer in private practice, residing with his mother, Barbara, age 76, also widowed. George is not at home by this time.

2.2 FIELD INVESTIGATION (SECTION 2.0 OF THE PROTOCOL)

Three alternative approaches were presented in the Protocol as options for discovering whether or not human remains were extant within Lot 26: a Pre-demolition Approach, a Post-demolition Approach, and Ground-penetrating radar (GPR). The Post-demolition Approach was chosen, due to the difficulties involving archaeological investigations prior to demolition and the likelihood that GPR data analysis would be complicated by the urban nature of the site (neighboring structures, buried utilities, and unknown fill content). Any identified GPR anomalies would have to be ground-truthed to verify the interpretation of the anomalies, so GPR would not eliminate the need for subsequent archaeological investigation.

The Post-demolition approach as approved in the protocol included the examination of the area once the basement floor was lifted and the excavation of no more than six trenches within the limits of the

cemetery. These were excavated in order to identify the depth at which burials could be located underneath the fill, if they were still extant. Then, if the burials were within an intact ground surface, the surface could be methodologically exposed and the burials removed. Each trench was to be excavated to the depth of sterile soils or until water was encountered. Excavation spoil and trench profiles were also to be examined for the presence of disarticulated remains. The total area excavated was to total not less than 50% of the total area believed to be within the limits of the former cemetery boundary. The following sections summarize the different tasks that were ultimately undertaken to ensure that no human remains were located anymore within the Van Alst Cemetery boundary, as depicted during the nineteenth century.

2.2.1 Site Visit

On January 5, 2015, Commonwealth archaeologists joined the QPRD project management team for the on-site visit at the QPRD parcel. The WDC building had been demolished by this point, and the bulk of the debris had been removed. Plate 1 shows the view from the southwest corner of the cemetery boundary, across the former basement (full of water), up towards the base of West Street. Plate 2 shows the view down onto the former LIRR tracks, also full of water. During the meeting, details such as the Protocol, HAZWOPER and Health and Safety Protocols, the anticipated archaeological trench methods and locations, and overall anticipated schedules were discussed.

2.2.2 Monitoring Soil Borings

On January 15, 2015 JMA monitored five soil borings that were extracted for analysis by Flemming Lee Shue personnel within the Van Alst plot (Figure 9). Each boring consisted of five-foot sections of sediment; at times a portion or up to the whole five feet of sediment was not recovered due to conditions such as saturation and type of matrix. Each portion of recovered sediment was extracted within a plastic tube-like bag, cut open, sampled by the environmental scientists, and then processed by the archaeologists (Plate 3). Processing included taking an approximate measurement of the sediment recovery, recording color and texture, and identifying any cultural material (artifacts or burial remains) within the separate layers. Each layer was either screened through a quarter-inch mesh or, in the case of a high level of contamination inferred from appearance and odor, was examined visually using a trowel to examine all the sediment.

Boring 1 (B24B) was located in the northeastern portion of the Van Alst plot, southwest of West Street. The 0-5ft. portion recovered approximately 2ft. of sediment. The layers consisted of rubble fill over a dark grayish brown (10YR 4/2) gravelly, debris-filled layer over a yellowish brown (10YR 5/8) re-deposited sandy silt subsoil. This mixed subsoil continued into the 5-10ft. portion (to approximately 6ft.) Below this was about 1ft. of gravelly brown (10YR 3/4) sand above approximately 2ft. of dark gray (2.5Y 4/1) coarse sand with organic layers. Several brick fragments and flat glass were recovered from this layer (approximately 7-10ft. below ground surface (hereafter bgs)). This layer continued into portion 10-15ft.; the layer became finer with depth, becoming a clayey silt with organic layers. At approximately 12ft. bgs the clayey silt transitioned to a thin layer of dark brown (7.5YR 3/3) sand with organic layers. Below this was a gray (2.5Y 5/1) silty fine micaceous sand. This layer continued into portion 15-20ft. for approximately 1ft. Below this was approximately 1.5ft. of gray (2.5Y 5/1) fine sandy clay. The remaining 2.5ft. (17.5-20ft.) was not recovered (due to conditions such as saturation and type of matrix). No artifacts were recovered below 10ft. bgs.

Boring 2 (B24A) was located 8ft. southwest of Boring 1. The 0-5ft. portion had very little recovery; only about 1ft. of concrete rubble was recovered. Portion 5-10ft. consisted of an organic dark brown (10YR 3/3) coarse sandy fill over a grayish brown (2.5Y 5/2) medium sandy fill. Both fill layers contained brick fragments. Below this was a mixed fill containing bricks, brown bottle glass, and metal fragments. Portion 10-15ft. contained about an additional 0.5ft. of the mixed fill from the previous portion. Below this was about 1.5ft. of wet, gray (2.5Y 5/1) medium-coarse micaceous sand with a strong odor. This also contained brick fragments. From approximately 13-15ft. bgs was a yellowish brown (10YR 5/6) fine-medium sand with no brick fragments. Portion 15-20ft. consisted of approximately 2.5ft. of wet, gray (2.5Y 5/1) clayey sand which transitioned to a gray (2.5Y 5/1) clay with grayish brown laminations. No artifacts were recovered below 13ft. bgs.

Boring 3 (B25B) was located approximately 37ft. southwest of Boring 2, south of the basement hole from the five-story concrete and brick building. Much of the sediment from this core was not recovered, due to conditions such as saturation and type of matrix. Only about 1ft. of sediment was recovered from portion 0-5ft. This consisted of concrete rubble over a dark brown (10YR 3/3) sandy fill containing glass and brick fragments. Portion 5-10ft. contained approximately 1ft. of the same dark brown sandy fill over about 1.5ft. of black (2.5Y 2.5/1), creosote/oil-stained fill. This was not screened, but twisted metal and bottle glass were observed when troweled through. The remaining 2.5ft. of this portion was not recovered. Portion 10-15ft. recovered only about 2ft. of saturated, contaminated olive gray (5Y 4/2) medium sand. This was also troweled, but no artifacts were recovered. The remaining 3ft. of this portion was not recovered. Portion 15-20ft. contained 0.5ft. of the same contaminated sand, and the remaining 4.5ft. was not recovered. No artifacts were recovered below 7.5ft. Contamination continued to a depth of 15.5ft. (with no recovery below), but contamination may have seeped into natural, sterile subsoil through water movement.

Boring 4 (B25C) was located approximately 20ft. south of Boring 3, just north of the Long Island Railroad portion of the Van Alst plot. Much of the sediment from this core was not recovered, due to conditions such as saturation and type of matrix. Very little sediment was recovered from portion 0-5ft. This consisted of about 0.5ft. of concrete rubble. Portion 5-10ft. contained approximately 0.5ft. of rubble fill over 1.5ft. of black (2.5Y 2.5/1), contaminated sand. The remaining 3ft. of this portion was not recovered. Portion 10-15ft. contained approximately 0.5ft. of the same black, contaminated sand on top of 1ft. of very wet, olive gray (5Y 4/2), contaminated sand. Below this was 1ft. of drier gray (2.5Y 5/1) clayey sand. The remaining 2.5ft. of this portion was not recovered. Portion 15-20ft. recovered approximately 4ft. of grayish brown (2.5Y 5/2) fine sandy clay, becoming clayier with depth. No artifacts were recovered below 5.5ft. bgs, though contamination continued to 11.5ft. bgs.

Boring 5 (B25A) was located approximately 30 feet west of Boring 3. Very little sediment was recovered from portion 0-5ft (due to conditions such as saturation and type of matrix). This included approximately 0.5ft. of strong brown (7.5YR 5/6) fill containing bottle glass, redware, shell, and unidentified metal. This was over 0.5ft. of mixed, rubble fill containing glass and rubber. Portion 5-10ft. contained approximately 0.5ft. of the same mixed fill, over 1ft. of contaminated black (2.5Y 2.5/1) sand. Portion 10-15ft. contained 0.5ft. of the same contaminated sand over approximately 3ft. of light olive brown (2.5Y 5/3) silty sand. Portion 15-20ft. contained 1ft. of dark brown (10YR 3/3) sand in which a piece of metal and a brick fragment were recovered. Below this was 4ft. of grayish brown clay (2.5Y 5/2). No artifacts were recovered below 16ft. bgs.

No evidence of burials or human remains was encountered in any of the monitored soil borings.

2.2.3 Exploration Trenches

Guided by the terms of the approved Protocol (Appendix I), Commonwealth archeologists completed the 50 percent sampling of the Van Alst Cemetery site through the monitoring of machine-excavated trenches within the historical Van Alst Cemetery boundary. The purposed of this investigation was to identify burial locations and determine the depth at which the area should be stripped in order to effectively remove any extant burials. The required permits for excavation within this boundary were received on January 26, and trench excavation commenced from January 26 through February 4, 2015. A series of seven (7) trenches were excavated by machine, under archeological supervision (Figure 10). Due to the nature of the site as a brownfield site and the levels of soil contamination, Commonwealth followed OSHA Hazardous Waste Operations and Emergency Response (HAZWOPER) Standard, 29 CFR 1910.120. Archeologists were HAZWOPER trained and wore Level D protection at all times on the site as well as boot covers and chemically resistant, coated PPE when entering the trenches. Air quality monitoring was conducted during all ground disturbance activities by an environmental sciences team on the site, and full-face air purifying respirators were available if needed.

Overall, the trenches revealed extensive prior ground disturbance and filling of the site location. As originally stated in the Protocol, the trenching was only slated to go to a depth above the water table. Based on field observations, it was determined that a perched water table sat across the site at approximately 5-6ft. bgs. This was running through the coarse fill layers associated with the early twentieth century disturbance of the area. This water complicated the recording of the trenches, as it created an environment in which the trenches could not be safely entered. Profiles were cleaned as best as possible with the excavator bucket, though water saturation caused the walls to slump. Recordation of depths were collected by lowering a tape down the sides of the trench from the top, and colors and sediment texture were recorded by eye at a distance. Trenches extended between 8 and 14ft. in depth in an attempt to reach sterile subsoils which were identified by a lack of visible mixing and/or artifacts. The natural water table was typically encountered at 10-ft. bgs, turning the sediment into a soupy mix of clayey sand. Combining the square footage of the trench investigation and the disturbance associated with the basement hole in the northwestern corner of the plot, approximately 60 percent of the 8,200 square foot area was documented as disturbed at the completion of the trenching phase of the investigation. The following sections are descriptions of each of the trenches.

Trench 1

Trench 1 was located in the northern corner of the Van Alst cemetery plot in the West Street area. This was a 20x20ft. square trench. Excavation began on January 26, 2015 with the removal of concrete and two feet of fill (Figure 11). Work was suspended for a day due to a snow storm, and resumed January 28. Trenching continued to remove various fill layers for approximately three additional feet. Artifacts from these fill layers included barrel pieces, glass, brick, rubber fragments, and one piece of brown transfer print whiteware, an assemblage that dates to the late-nineteenth through the early-twentieth century. A foundation wall ran north-to-south the length of the trench approximately 5ft. from the western edge of the trench, with a cross-wall running from it to the west which prevented excavation in this part of the trench. The remaining depth of the trench was therefore only approximately 15ft. east-to-west and approximately 20ft. north-to-south. At approximately 4.8ft. bgs a dark organic layer was encountered over what appeared to be marsh sediments. A potential grave shaft (3x5ft.) was identified at the contact between this surface and the marsh sediments. At this interface, water inundation was a major factor; therefore, the feature could not be hand-excavated (Plate 4). The approved Protocol stated that trenching would end once the water table was reached. However, since the water table appeared to be perched and a potential burial was identified, we felt that we needed to continue deeper. After documenting the feature's

location using the sub-meter GPS unit, the decision was made to use the backhoe to excavate the southern portion of the feature, as the trench was no longer safe to enter, and the water would have made hand excavation impossible. It was soon apparent that the feature was only a lens of darker sediment, and that this feature was not a grave shaft. Additionally, a shoe piece (no associated disarticulated remains) and some bottle fragments were noted as the trenching continued deeper. The trench was excavated to approximately 10ft. bgs in order to determine that no burials were present. The sediment appeared to be sterile marsh sediment until pieces of punched metal were pulled out at approximately 10ft. bgs. This punched metal is cannery waste, and could be related to the cannery structures that were located along Jackson Avenue during the late nineteenth century and into the early twentieth century. Without being able to look at the structure of the sediment in place, it was unclear whether these materials were something that had sunk into naturally deposited marsh sediments, or if this area was built up using dredged marsh sediments. Excavation ceased due to the increase in water at the bottom of the trench, preventing a clear view of the excavated sediment. No evidence of burials was found in this trench, and no human remains or associated cultural materials were seen or recovered.

Trench 2

Trench 2 was originally going to be located farther to the west, but was repositioned along the northern boundary of the Van Alst plot due to the location of the basement hole which was full of water. Excavation began and was completed on January 29, 2015. The 40x10ft. trench was excavated in two sections, divided by an interior support wall. The trench itself was excavated within foundation walls that extended to a depth of approximately 5ft. bgs on all sides of the trench. There was no foundation wall on the western section of the south wall, as this was where the basement hole was intersected. The stratigraphy commenced with a rubble fill layer directly under the reinforced concrete (Figure 11). Below this was approximately 4.5ft. of dark grayish brown sandy fill with architectural debris such as brick and stone, wood planking, and large pieces of metal. No artifacts were collected from this trench, and no diagnostic artifacts were observed. Below this fill, and extending under the concrete walls was a layer of sandy fill heavily stained with creosote (see Plate 5). While this trench was not inundated with water, it was clear that this sandy fill layer was acting as an aquifer, with the water and creosote seeping through it. Below this, at approximately 7ft. bgs, was a gray fine sandy clay. At this point the trench was no longer safe to enter, but this stratum did appear to have intact laminations and mottling, suggesting that this was an intact, undisturbed sediment. No evidence of burials was found in this trench, and no human remains or associated cultural materials were seen or recovered.

Trench 3

Trench 3 was located within the LIRR bed at the south end of the Van Alst plot. Excavation began and was completed February 3, 2015. This trench was approximately 35x20ft. and extended to a depth of approximately 13ft. bgs (Figure 12). The top horizon of this trench was approximately 0.5ft. of topsoil, with no concrete floor in this location. Below this was about 1.5ft. of strong brown fill over 1ft. of the creosote-stained sand observed in Trench 2. A bottle with a plastic lid was documented from this stratum, dating this layer to the twentieth century. Water began to come into the trench in this layer, at about 2.2 feet bgs. The level at which water was entering Trench 3 is higher than seen in the other trenches because the LIRR rail bed is approximately three feet below the concrete floors where the buildings stood. Below this was a thin layer of dark gray clay over a pale brown mixed with gray sand. This layer also had creosote in it, though not the quantity observed above. The sediment appeared to be mixed, rather than natural; however, no artifacts were documented in this layer. At approximately 11ft. bgs, a layer of olive brown clayey sand was excavated. From the top of the trench, this layer appeared to have some lamination. Plate 6 shows the profile of Trench 3, though the shadows obscure the transition into this

layer. The concrete columns are visible to the left which are the clustered micropiles that were put in to support the early twentieth-century building. No evidence of burials was found in this trench, and no human remains or associated cultural materials were seen or recovered.

Trench 4

Trench 4 was located in the center of the Van Alst plot running north-south. The length of this trench was approximately 60ft., while the width was 25ft. at the southern end and narrowed to approximately 12ft. in the north due to the configuration of the concrete walls that we were working in. This trench was excavated January 29-30, 2015. The entirety of the trench was capped with approximately 1ft. of reinforced concrete; below this was approximately 3.5ft. of dark brown fill with architectural debris, machinery, wood, and concrete rubble (see Figure 12). One bottle that was examined was embossed with the name "Henry Downes." This blob top, aqua bottle dates from the late-nineteenth century to the early-twentieth century. Another dark amber bottle was noted in this layer. This bottle type was seen in Trenches 5 and 6 as well, and may have been a WDC bottle for one of their chemicals or disinfectants. A metal drum was also encountered and removed at about 4ft. bgs. Below this was a layer of dark gray clay about 1ft. thick. At approximately 5.2ft. bgs, water began entering the trench and a 2.8ft. thick layer of creosote-stained sandy fill was encountered. A piece of fabric was noted but appeared industrial in nature, rather than a piece of clothing. More architectural debris such as wood, brick, and stone were noted. A small window was excavated deeper, as the water levels were reducing visibility within the overall trench. Dark gray clayey sand with lenses of brown sand was reached at 8ft. bgs (Plate 7). This sand appeared to be undisturbed, natural sediment; no artifacts were noted in this layer. No evidence of burials was found in this trench, and no human remains or associated cultural materials were seen or recovered.

Trench 5

Trench 5 was the westernmost trench, located between the remaining WDC building basement hole and the LIRR railroad bed. This trench was approximately 40x15ft. and was excavated on January 30, 2015. Once the reinforced concrete was removed, approximately 4.5ft. of dark brown fill was excavated and contained architectural debris, metal, glass, and textile (Figure 13). Of all seven of the trenches, Trench 5 contained the most artifacts. Artifacts from this level included pieces of shoe leather and an abundance of late-nineteenth to early-twentieth century bottles. Below this was a 4.5ft.-thick layer of creosote-stained sand. This was full of metal fragments, bottles (including the dark amber bottle similar to those in Trench 4), wood, and an intact wooden barrel, from which a wire nail was collected. At approximately 9.5ft. bgs, an olive brown clayey sand was encountered. This appeared natural, but it was difficult to determine due to the infilling of the trench with water (Plate 8). No evidence of burials was found in this trench, and no human remains or associated cultural materials were seen or recovered.

Trench 6

Trench 6 was located south of West Street. Excavation began and was completed on February 3, 2015. The trench dimensions ended up being approximately 25x25ft. due to the constraining concrete reinforcement walls. Below the reinforced concrete pad was 5ft. of strong brown fill with lenses of asphalt-like material (Figure 13). The majority of the artifacts from this layer were bottles that date between the late-nineteenth and early-twentieth century, including the dark amber bottle type. No creosote-stained sand was documented in this area as observed in other trenches. Instead a mixed olive brown sand with artifacts (primarily bottles) extended from 5.5 to almost 10ft. bgs where it transitioned to an olive gray sand. Below this was an olive brown clayey sand void of artifacts. The trench was excavated

down to approximately 14ft. bgs at its deepest. No evidence of burials was found in this trench, and no human remains or associated cultural materials were seen or recovered.

Trench 7

A seventh judgmentally-placed trench was excavated between Trench 1 and Trench 6 in order to obtain a 50 percent sample of the site area. Excavation began and was completed on February 4 2015. The trench measured approximately 20x15ft. The same strong brown fill was observed below the concrete floor as seen in Trench 6 (Figure 14). This was filled with concrete rubble and architectural debris, with the majority of this in the initial 3ft., and at approximately 3ft. bgs, a 5x5ft. brick feature was encountered (Plate 9). Fourteen courses high and sitting on a 6in. concrete pad, this brick feature was not related to the burial ground. The interior contained debris from the latter half of the twentieth century including plastic, candy wrappers, and caution tape. Several of the bricks of this feature were stamped with the word “NASSAU,” dating the feature to between the 1930s and 1980s when the Nassau Brick Company was in business, and postdating the documented 1925 removal and reinternment of Van Alst family cemetery to Cypress Hills Cemetery. The utility of this brick structure is unknown, but likely related to the industrial nature of the building. Below the fill was a creosote-stained sand through which water was running. Below this was an olive gray sand that transitioned to a pale brown clayey sand at approximately 10.2ft. bgs. At about 12.5ft. bgs, the same cannery waste recorded in Trench 1 was recovered from a thin, dark brown layer within a window (due to water issues) excavated down to 13.5ft. bgs on the southern side of the trench. The dark brown color may be due to the cannery waste degradation. Below this was more of the same pale brown clayey sand. No evidence of burials was found in this trench, and no human remains or associated cultural materials were seen or recovered.

Summary

Following the trenching, Commonwealth submitted a management summary regarding the findings during the exploratory trenching and reported that no human remains, intact or disarticulated, were encountered during the trenching. While every attempt was made to excavate the trenches to sterile subsoil, it could not be conclusively determined whether the sediment (a clayey sand) that was reached at the base of the trenches was naturally deposited or perhaps a redeposition of marsh sediment from elsewhere. This redeposition hypothesis is due to the fact that cannery waste was found in this sediment at 10ft. and 12.5ft. in Trench 1 and Trench 7. Either this cannery waste was buried by redeposition of the sediment above, or it sank through natural marsh sediment. The inability to enter the trench to more closely examine the profile due to the infilling of the trenches with water, made it difficult to determine whether the sediment was *in situ*. Commonwealth recommended monitoring during the removal of the sediment within the Van Alst plot once the contaminated soil removal and de-watering process started within the Van Alst plot. If burials were even deeper than the trenches, or located within the remaining 50 percent of the area, an archaeologist would be available to initiate the Protocol processes.

2.2.4 Monitoring

Monitoring of sediment removal activities began in April 2015 and ended in January 2016. The length of time was due to the periodic nature of sediment removal from the Van Alst plot area caused by complication of the permitting process for the soil removal, issues with de-watering the area, a need for construction to be focused elsewhere in the parcel, and a re-filling of the plot with clean fill in order to use the space to store necessary equipment. Whenever sediment removal was anticipated within the Van Alst plot, a Commonwealth archaeologist was on site to monitor. Monitoring included watching both the excavation process as well as the truck loading in order to visually identify any grave shaft stains, human

remains, or artifacts associated with a burial such as hardware, personal items, or wood related to the coffin.

During April and May, the monitoring was focused primarily along the LIRR rail bed, as drilling and shoring the perimeter of the property began. Additional deeper digging was conducted where micropiles needed to be removed for drilling purposes. No intact sediment or burials were noted during any monitoring in this location. By May 11, approximately 60 percent of the plot was taken down by around 6ft., exposing a forest of micropiles (Plate 10) and by May 12, about 80 percent of the site was down to about 7ft. bgs. Water inundation made observation of intact sediments difficult. Plate 11 shows the sediment after de-watering progress had been made by May 18. This is the clayey sand seen at the base of the trenches. No evidence of any grave shafts or artifacts related to burials was observed at this depth of approximately 9-10ft. bgs.

Monitoring activity ceased while efforts were shifted to other areas of the parcel outside the Van Alst plot. During this time, the plot was refilled with clean fill material in order to create an area to store equipment (Plate 12). Excavation work started again in and around the Van Alst plot in December 2015 and continued into January. Much of the area was stripped down to bedrock, due to contamination issues. No human remains were encountered in these locations. At the end of January, excavation had removed the soil to a depth across the plot below which no artifacts had been recovered, and sediments appeared natural.

The remaining area of concern was the area at the end of West Street. The final environmental sampling depth at EP-102 (Figure 15) was reached January 28, 2016 at approximately 1.9ft. above grade. The excavator took out another 3 feet near this location, bringing the depth to approximately 1ft. below grade. This translates to about 14ft. below the original surface. This was the first time the archaeologist was able to look at the profile without water inundation. The sediment appeared natural, and the historic water table sat around 12.5ft. below ground surface (0.5ft. above grade), evidenced by the gradual color change from the pale brown clayey sand into a gleyed (gray) clayey sand. The gleying is caused by the translocation of oxides by water. There was no evidence of grave shafts, and burials are typically not interred below the water table. Based on this evidence, it appears that all the burials were removed during the early twentieth century construction activities. No further archaeological investigation or monitoring was recommended.

2.3 POST-DISCOVERY PROCEDURES (SECTION 4.0 OF THE PROTOCOL)

Since no human remains or cultural material associated with burials were encountered during any phase of the fieldwork for this project, no post-discovery procedures are discussed in this report.

2.4 DISPOSITION OF RECOVERED REMAINS (SECTION 5.0 OF THE PROTOCOL)

While no remains were recovered during the archaeological investigation, Commonwealth did follow the “Prior to fieldwork” protocol under this section. This included the following:

- Alerting LPC as to the date that field work will to start.
- Establishing on-call services with Mr. Phil Cardaci, Funeral Director, James Romanelli-Stephen Funeral Home, who can obtain permits as per New York City Health Code §205.27 and store the remains until reburial.

- Establishing an on-call osteologist, Dr. Thomas Crist, Professor of Anatomy and Anthropology at Utica College in Utica, NY, and additional field techs (if necessary) to assist with any possible disinterments.
- Emailing Brad Adams of the Office of the Chief Medical Examiners to inform him that we are conducting an excavation of the site and that historic burials may be uncovered.

3.0 SUMMARY AND CONCLUSIONS

Following the finalization of the *Protocol for Archeological and Forensic Anthropological Investigations at the Site of the Van Alst Family Cemetery, Long Island City (Queens County), New York* in December 2014, Commonwealth conducted an archaeological investigation within the Queens Plaza Residential Development parcel between January 2015 and January 2016. In anticipation of potentially finding intact burials related to the Van Alst Family Cemetery, Commonwealth prepared a team of field archaeologists and support staff for the excavation and reinternment of any human remains encountered during the field investigation. Through the monitoring of soil borings, exploratory trenching, and ultimately the monitoring of sediment removal within the historical boundary of the Van Alst cemetery, as mapped in the nineteenth century, Commonwealth has concluded that the burials that were interred in the area were either removed by construction activities related to the WDC building and/or moved and reinterred by Henry Van Alst in 1925. No evidence of burials was encountered or observed, and no human remains were encountered. No artifacts associated with burials or dating prior to the mid-nineteenth century were recovered from any fill layers during the trenching. No artifacts were collected during monitoring. As the artifacts collected during trenching represent filling episodes from the early nineteenth-century construction activities, no further analysis has been undertaken and no permanent curation is recommended.

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Figure 1. QPRD Project location (detail, ESRI's Topographic Basemap, accessed 3/2/16).



Figure 2. Map of Kings and part of Queens Counties, Long Island N.Y. (Conner 1852) showing approximate location of the QPRD project location.



Figure 3. *Dutch Kills Part of Long Island City, Queens Co. (Beers 1873)* showing approximate location of the QPRD project location. Note the Cemetery boundary.

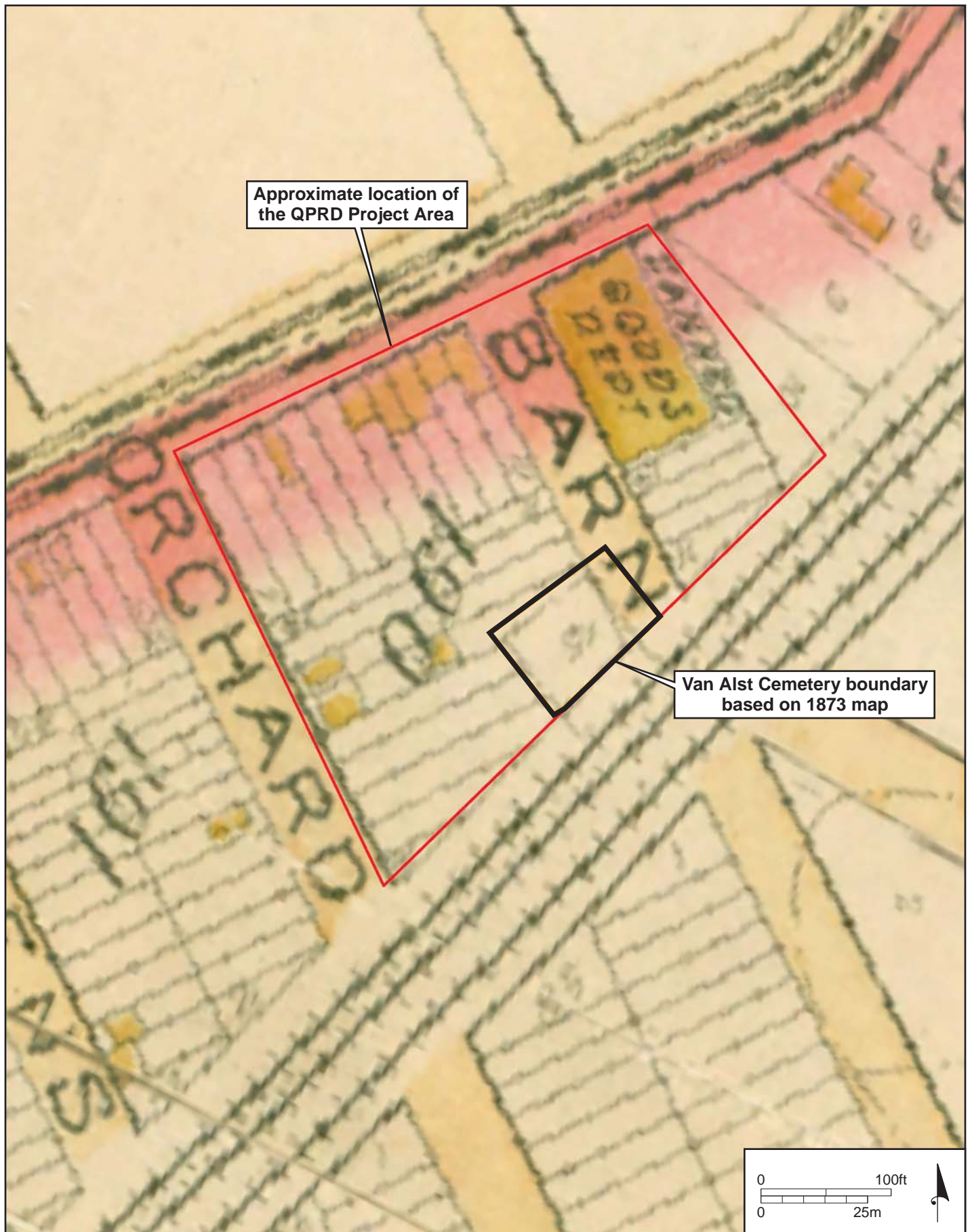


Figure 4. *Part of Long Island City, Ward 2 (Plate 5) (Wolverton 1891)* showing approximate location of the QPRD project location and 1873 cemetery boundary within the project area.

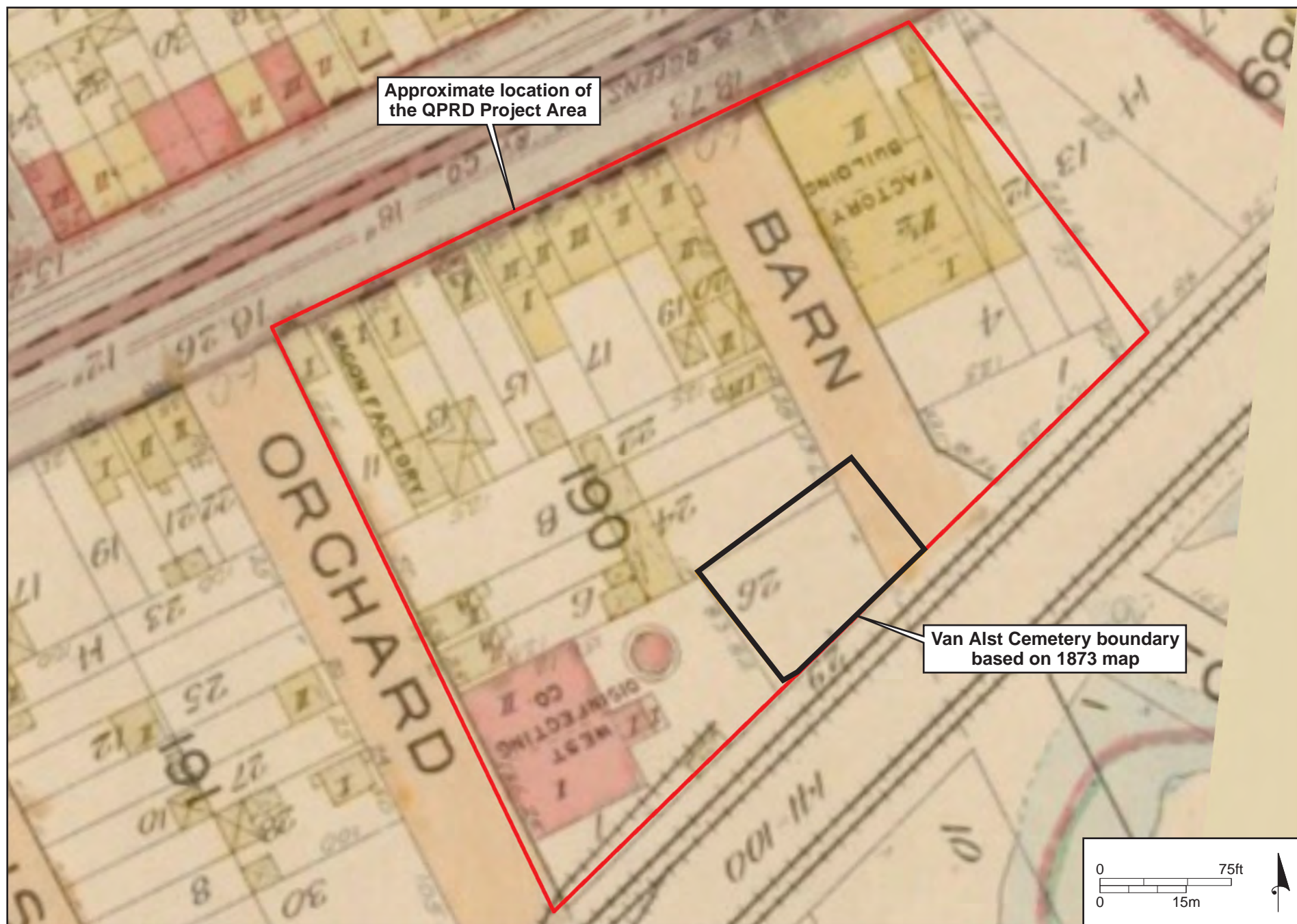


Figure 5. *Part of Long Island City Ward One (Part of Old Wards Two, Three and Four)* (Hyde 1903) showing approximate location of the QPRD project location and 1873 cemetery boundary within the project area.

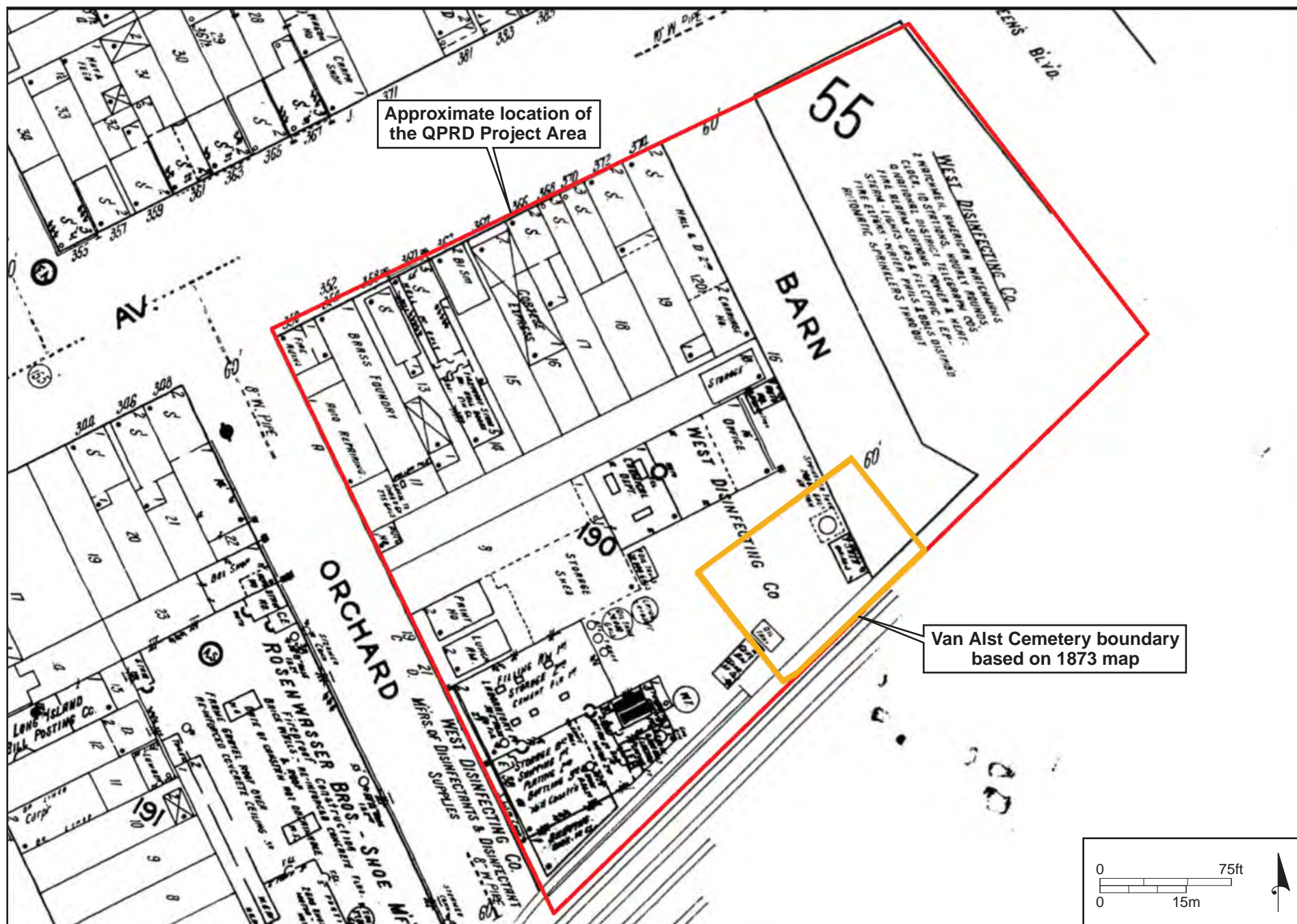


Figure 7. Map of the Boro. Of Queens, Volume I. Plate 24. (Sanborn 1917) showing approximate location of the QPRD project location and 1873 cemetery boundary within the project area.

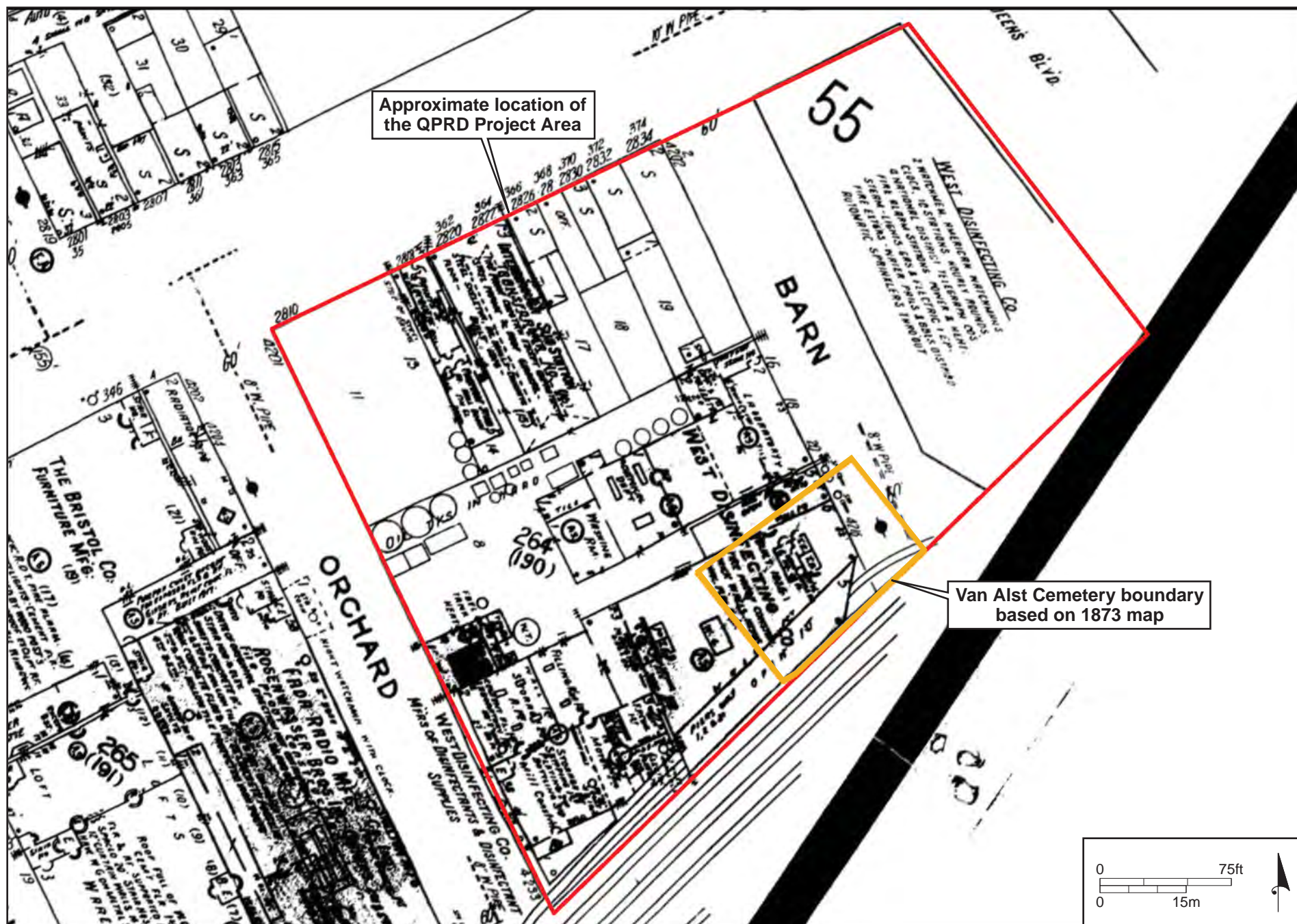


Figure 8. Map of the Boro. Of Queens, Volume I, Plate 24. (Sanborn 1943) showing approximate location of the QPRD project location and 1873 cemetery boundary within the project area.

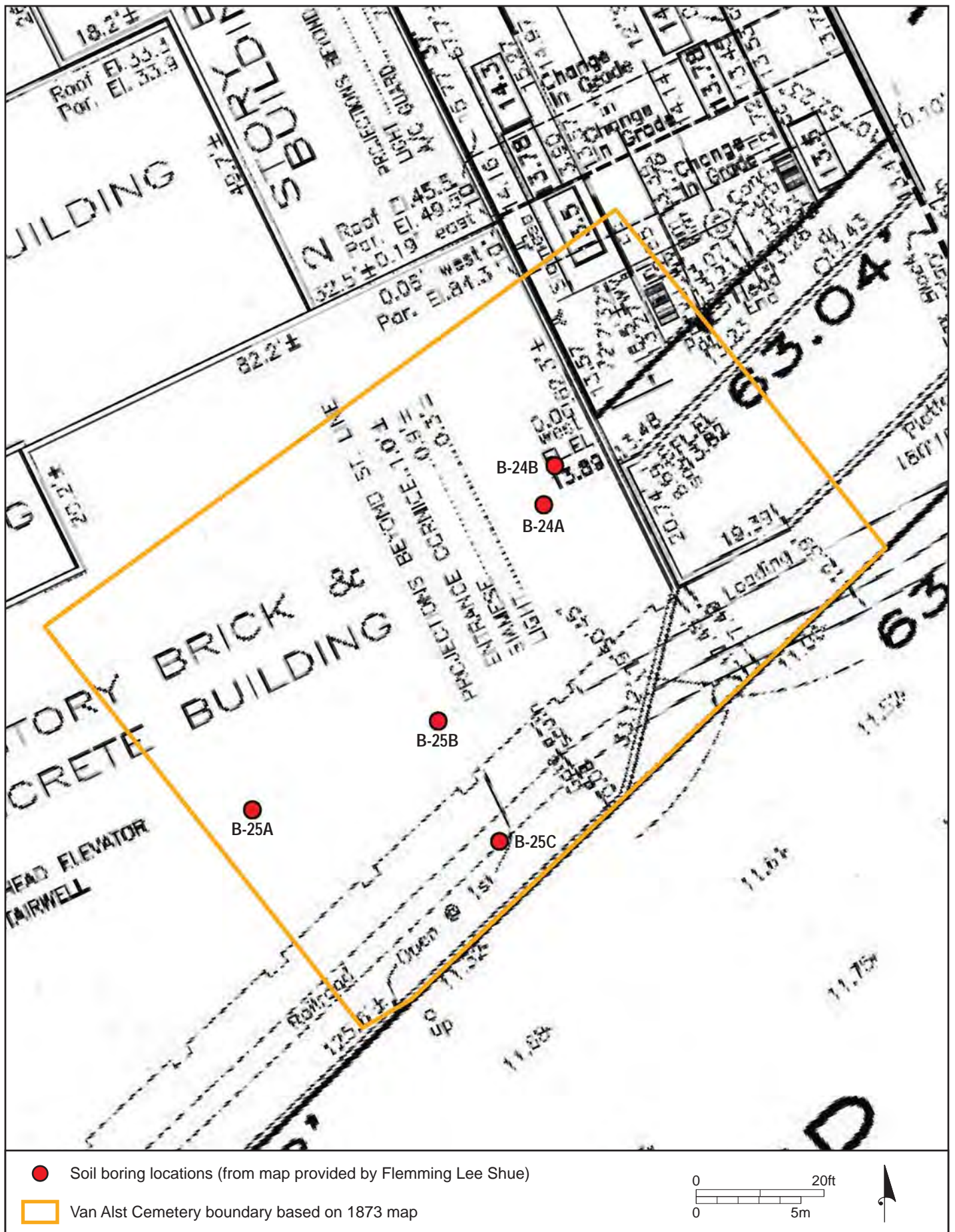
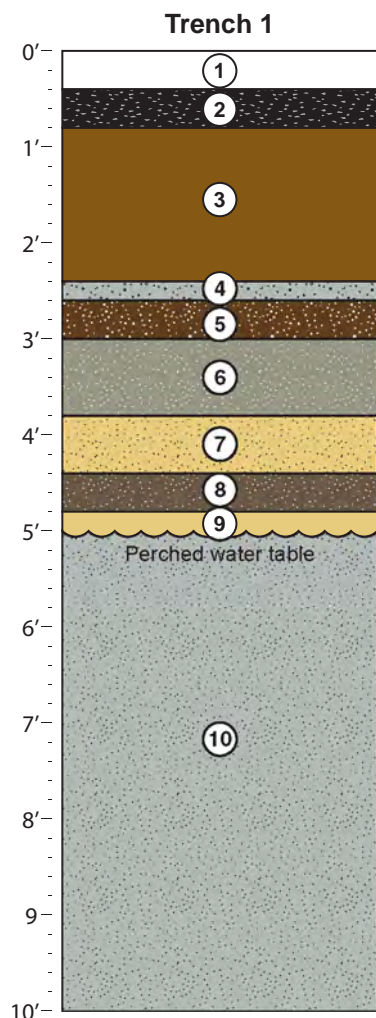
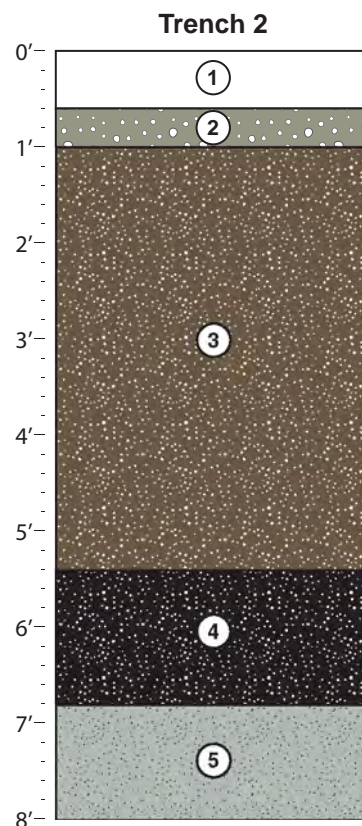


Figure 9. Approximate location of the Van Alst cemetery boundary and of the soil borings taken by Flemming Lee Shue, overlain on the survey map created by Montrose Surveying Co. for the QPRD project.

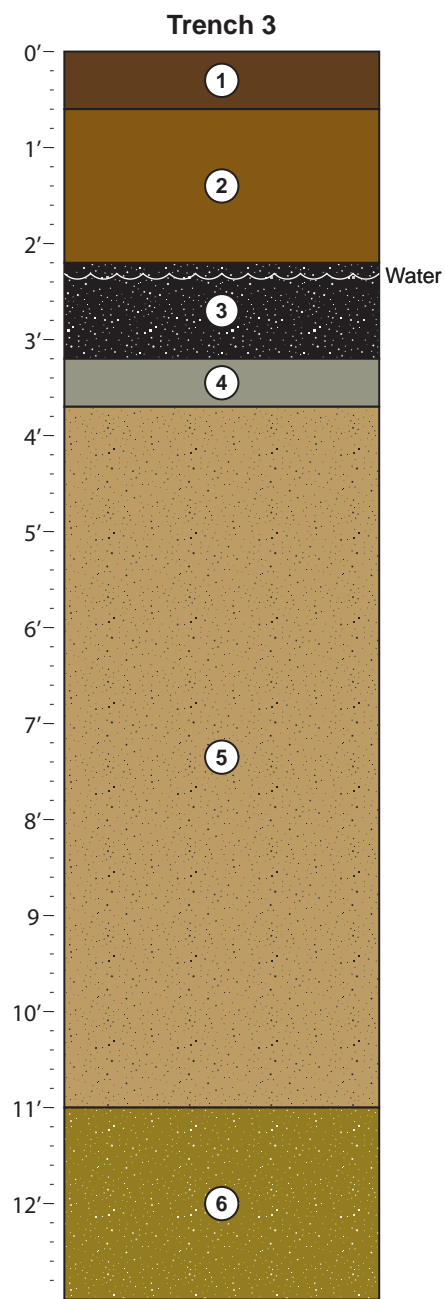


- 1 Reinforced concrete
- 2 Gley 1 2.5/N black ashy layer
- 3 7.5YR 5/6 strong brown fill
- 4 2.5Y 5/1 gray coarse sand
- 5 10YR 3/3 dark brown coarse sand
- 6 10YR 4/1 dark gray fine sand with iron mottling
- 7 10YR 6/4 light yellowish brown fine sand
- 8 10YR 4/2 dark grayish brown fine sand
- 9 10YR 6/4 light yellowish brown loam
- 10 Gley 1 5/N gray clayey fine sand

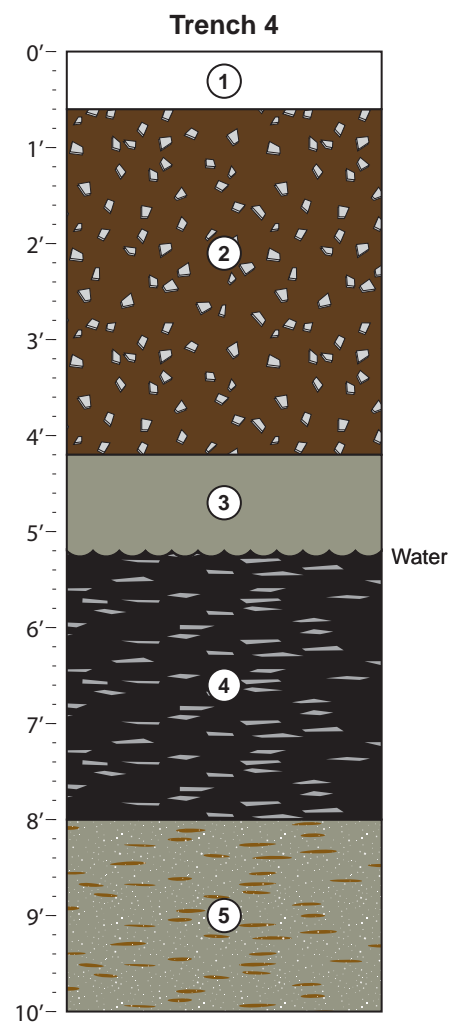


- 1 Reinforced concrete
- 2 2.5Y 4/1 dark gray gravel and cement mix
- 3 10YR 4/2 dark grayish brown sandy fill with brick and stone (avg. size 6"), wood planking, and large pieces of metal
- 4 2.5Y 2.5/1 black creosote stained sandy fill
- 5 2.5Y 5/1 gray fine sandy clay; appears to be laminations and intact mottling

Figure 11. Composite of stratigraphy seen in Trench 1 and Trench 2.

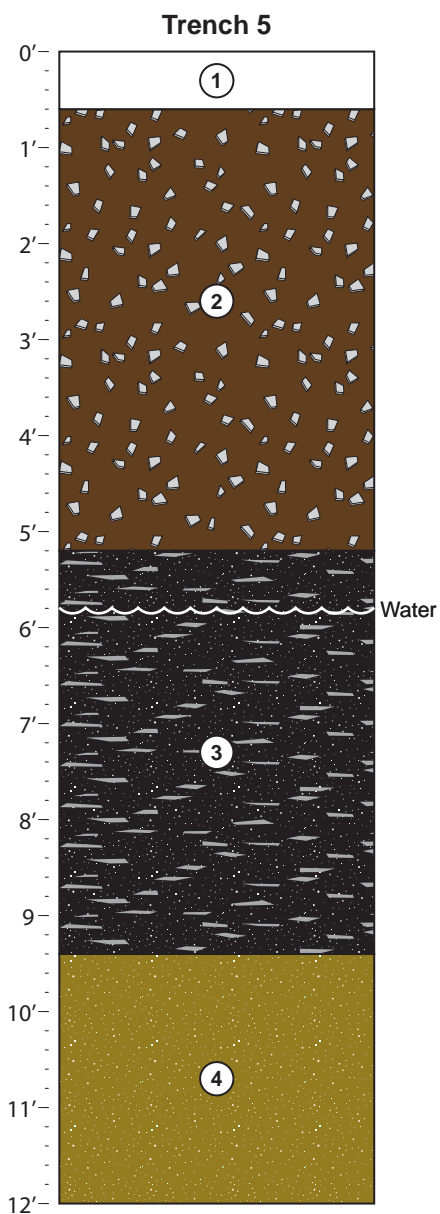


- 1 10YR 3/3 dark brown topsoil
- 2 7.5YR 5/6 strong brown fill
- 3 2.5Y 2.5/1 black creosote stained sand
- 4 2.5Y 4/1 dark gray clay
- 5 10YR 6/3 pale brown and Gley 1 5/N gray sand stained with creosote
- 6 2.5Y 4/3 olive brown clayey sand with apparent laminations

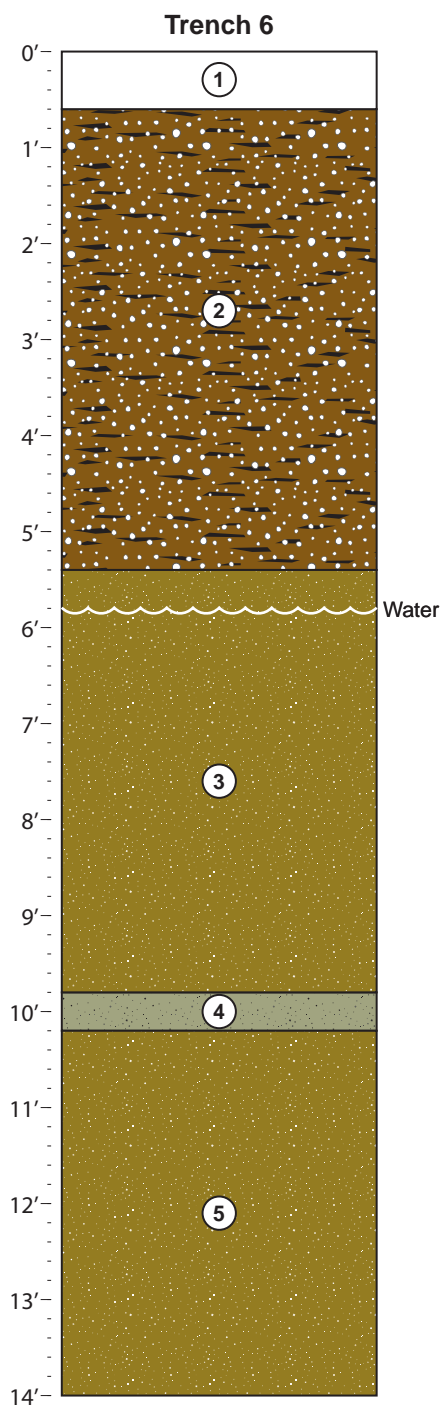


- 1 Reinforced concrete
- 2 Mix of 10YR 3/3 dark brown fill with architectural debris, machinery and concrete rubble
- 3 2.5Y 4/1 dark gray clay
- 4 2.5Y 2.5/1 black creosote stained fill (more architectural debris); some lenses of cleaner Gley 1 5/N gray sandy fill
- 5 2.5Y 4/1 dark gray clayey sand with lenses of 10YR 4/3 brown sand

Figure 12. Composite of stratigraphy seen in Trench 3 and Trench 4.

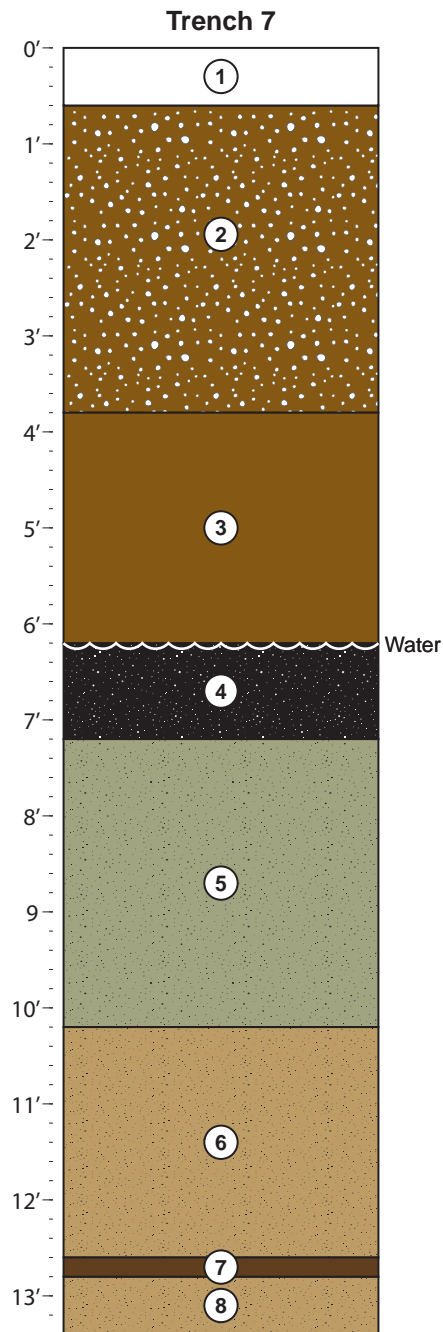


- 1 Reinforced concrete
- 2 Mix of 10YR 3/3 dark brown fill with architectural debris, metal, glass and textiles
- 3 2.5Y 2.5/1 black sand with lenses of cleaner Gley 1 5/N gray sand
- 4 2.5Y 4/3 olive brown clayey sand



- 1 Reinforced concrete
- 2 7.5YR 5/6 strong brown modern fill/concrete rubble with lenses of asphalt material
- 3 2.5Y 4/3 olive brown sand
- 4 5Y 4/2 olive gray sand
- 5 2.5Y 4/3 olive brown clayey sand

Figure 13. Composite of stratigraphy seen in Trench 5 and Trench 6.



- 1 Reinforced concrete
- 2 7.5YR 5/6 strong brown modern fill/concrete rubble
- 3 7.5YR 5/6 strong brown fill
- 4 2.5Y 2.5/1 black creosote stained sand
- 5 5Y 4/2 olive gray sand
- 6 10YR 6/3 pale brown clayey sand
- 7 10YR 3/3 dark brown layer with waste
- 8 10YR 6/3 pale brown clayey sand

Figure 14. Composite of stratigraphy seen in Trench 7.

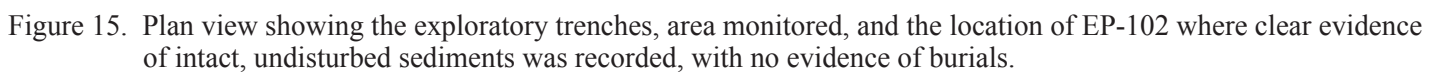




Plate 1. View of the QPRD site post-demolition. View from the southwest corner of the Van Alst Cemetery plot towards the bottom of West Street.



Plate 2. View of the rail siding area from the southwest corner of the Van Alst Cemetery plot.



Plate 3. View of the soil boring process monitored by archaeologists. The extracted sediment tubes are in the foreground.



Plate 4. View of Trench 1 (looking west) during the recording of the potential burial feature; further excavation revealed that this was not burial related.



Plate 5. View of Trench 2 (looking north) profile with base of stratigraphy below the foundation wall; final depth is approximately eight feet below ground surface.



Plate 6. View of Trench 3 (looking east) profile with a final depth of approximately thirteen feet below ground surface. The cement cylinders standing upright to the left of the profile are micro-piles.



Plate 7. View of Trench 4 (looking west) with a window dug to approximately ten feet below ground surface. The water inundation was problematic in this trench.



Plate 8. View of Trench 5 (looking south) profile with a final depth of approximately seven feet. An additional three feet window was dug in the foreground, now filled with water.



Plate 9. View of Trench 7 (looking west) during the recordation of the brick feature which was 5x5 feet and 14 courses high. The top of the feature was at three feet below ground surface.



Plate 10. View of the Van Alst plot during monitoring of the overall excavation of the area.



Plate 11. The sediment at this level appears to be void of artifacts and may be natural; estimated depth at ten feet below ground surface.



Plate 12. The Van Alst plot has been filled in with clean fill. Photo courtesy of Frank Langan, Hudson Meridian via email dated 7/30/15.



Plate 13. Profile of sediment near EP-102, reaching a depth of approximately fourteen feet below ground surface (bgs). The sediment appears natural, with the historic water table boundary at about 12.5 feet bgs evidenced by gleying of the sediment.

APPENDIX I:
PROTOCOL

FINAL

**PROTOCOL FOR ARCHEOLOGICAL AND FORENSIC
ANTHROPOLOGICAL INVESTIGATIONS AT THE SITE OF THE VAN
ALST FAMILY CEMETERY
LONG ISLAND CITY (QUEENS COUNTY), NEW YORK**

Prepared for
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Original Protocol date November 2013

Fourth Revision December 12 2014

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1.0 INTRODUCTION

2014 PREFACE

This protocol was originally submitted to New York City Landmarks Preservation Commission in November 2003 and approved by the LPC 8 December 2003. The version presented here (August 2014) has been revised to ensure consistency with current regulatory requirements, scientific methods, notification procedures for descendant community(s), and treatment of human remains. The GPR section was reviewed by a geophysical archeologist to ensure that conclusions reached 12 years ago were still valid. No other substantial revisions have been made to the approved protocol.

1.1 BACKGROUND

In connection with a proposed rezoning action in downtown Long Island City (Queens County), New York) (Figure 1), the New York City Department of City Planning (DCP) was required to prepare a Draft Environmental Impact Statement (DEIS) to satisfy the requirements of the City Environmental Quality Review (CEQR) process. As part of the DEIS process, Historical Perspectives, Inc. (HPI) prepared a preliminary archeological assessment of the area affected by the proposed rezoning (HPI 2000). That assessment notes that the “Van Alst Burying Ground” was described by Seyfried (1984) as being located on the west side of Barn Street [now West Street] at the Long Island Railroad property line. An 1873 atlas (Beers 1973) (Figure 2) clearly marks the cemetery and shows it extending into Barn Street. An 1870 survey (HPI 2001:Figure 2) also shows the outline of the cemetery in the same location as that shown on the 1873 atlas map, but does not label it as such.

A subsequent Phase 1A archeological survey (HPI 2001) developed cultural and topographic chronologies for Lot 26, Block 264 where the cemetery was presumed to have been located. A 1903 map shows that the West Disinfecting Company (WDC) had erected a complex of structures on the western portion of the lot adjacent to Orchard Street, but the eastern portion where the cemetery was located is shown as vacant. A long, narrow, concrete/stucco structure appears for the first time within the boundaries of the cemetery on a 1913 atlas map (Hyde 1913).

On February 23, 1925, the *Daily Star* newspaper carried an article under the headline “May Halt Digging at Old Cemetery Site in Long Island City: Harry Van Alst Says Ancestors Were Buried in Barn Street.” The digging referred to was presumably associated with the construction of a new building for the West Disinfecting Company. (The extant five story structure appears for the first time on a 1928 atlas map). The newspaper account indicates that Mr. Van Alst, a Queens attorney, received an anonymous telephone call informing him that “excavators had dug up bones and pieces of caskets and that presumably the bones were those of his ancestors. . . Mr. Van Alst had always understood that the remains of the bodies interred in the former cemetery had been removed some time ago and transferred to Cypress Hills Cemetery. . .” (Daily Star 1925, cited in HPI 2001:5). Cypress Hills Cemetery records indicate that “unknown bones of the Van Alst family” were buried on March 16, 1925, in a plot purchased by Harry Van Alst.

The Phase 1A archeological survey concluded that “the subsurface disturbance record suggests that there is still the possibility that undisturbed burials exist within the potential development site, on Block 264 and along West Street and beneath the railroad siding [that served the West Disinfecting Company and runs along the south side of the building] and right-of-way” (HPI 2001:13). HPI was unable to discover the number of original interments in the cemetery, any confirmation of any removals prior to 1925, or a record of how many individuals were re-interred in 1925.

Present plans for Lot 26 call for the demolition of the former WDC building and as yet undefined future development on the site. HPI recommended archeological testing of the former cemetery location if it could not be avoided by future development activities and that prior to such testing a protocol be developed to define levels of testing, procedures for handling skeletal material, and research issues to be addressed. This document, subject to review by the New York City Landmarks Commission (LPC), is

intended to serve as that protocol.

1.2 PRESENT CONDITIONS

HPI reviewed available topographic mapping and boring log data from the 1990s but was unable to reach any definitive conclusions about current subsurface conditions within the limits of the former cemetery or the extent of filling and/or other changes resulting from historic development of the site. HPI did conclude that the basement of the extant structure may extend only three feet below the pre-development surface. HPI was also able to determine that the area occupied by the rail siding on the southern side of the existing structure may be 1.7 feet above the grade that existed in 1875. The extent of disturbance associated with construction of the rail siding, below this presumed 1.7-foot fill layer, is unknown.

A Voluntary Cleanup Site Assessment Report (AKRF 1996) prepared for Blocks 263 and 264 concluded that there is a miscellaneous fill from 5 to 14 feet thick over the entire site. The fill is described as “containing some silt and gravel, with occasional brick, cinders, concrete, cobbles, and wood” (1996:1). However, this may not reflect actual conditions within the limits of the former cemetery.

JMA personnel visited the site on January 21, 2001. The rail siding along the south side of the building is still extant although it has clearly not been used for some time. West Street is paved and evidence of in-street utilities was observed. The basement level of the former WDC building was also examined. Although building plans and survey data were not available for review, inspection of the basement area suggests that the south side of the basement floor may be at or close to original grade. It was possible to determine this by observing the height of the bottom of railroad siding access doors above the basement floor and comparing that with their height above ground surface on the exterior of the building. It was apparent that the depth of excavation for the basement was progressively deeper as one travels from south to north within the basement. The floor of the north side of the basement is well below the outside grade.

Figure 3 shows the outline of the cemetery as shown on the 1873 atlas map superimposed upon a plot of current site conditions. The majority of the cemetery appears to have been located in the area now occupied by the former WDC building and the railroad siding. Considerably smaller portions are located under what is now West Street, the portion of an extant 2-story building at the foot of West Street, and the Long Island Railroad property south of the railroad siding.

1.3 APPLICABLE LAW AND GUIDANCE

The Division of Cemeteries and the New York State Cemetery Board regulate only cemeteries that are incorporated under the Not-for-Profit Corporation Law. Religious, municipal, and private or family cemeteries (like the Van Alst cemetery) do not fall under the jurisdiction of the Division of Cemeteries.

No provisions of the New York State Public Health Law have been identified that would appear to apply to the Van Alst cemetery. Section 4218 of Title II of the Public Health Law deals with opening graves, but only deals with situations where this is done “from malice or wantonness.” No relevant sections of the New York City Health Code were identified.

On April 12, 2002, the LPC issued the *Guidelines for Archaeological Work in New York City* (the *LPC Guidelines*). Section 7.6 of the *LPC Guidelines* deals with unexpected human remains. It states that when such remains are found the New York City Police Department and the Medical Examiner’s Office must be contacted immediately, and that those agencies will determine the appropriate action. It also states that if the human remains are found on a project that has been reviewed by the LPC the LPC must be notified. It is unclear whether or not any human remains found at the Van Alst cemetery site can be considered “unexpected.” LPC staff was contacted to discuss this matter (A. Sutphin, personal communication, November 2003).

Since that time, additional guidance has been developed by the Department of Health (A. Sutphin, personal communication, August 2014). Contrary to the 2002 guidelines, the new guidance requires the

immediate notification of the Office of the Medical Examiner upon discovery of human remains. The Medical Examiner's Office will make a determination of whether the burial(s) is forensic or historic (the latter case will apply to the Van Alst cemetery). Following this determination, a plan for exhumation and off-site transportation and reburial will be developed by a licensed funeral director, using the protocol presented in Section 4.0 protocol. Exhumations that may occur once the disinterment permits are issued will adhere to the standard archaeological practice as noted in section 4.2 of this protocol, unless otherwise requested by the descendant community(s).

The new guidance also requires that the project sponsor make a reasonable and good faith effort, prior to any excavation, to locate and contact the appropriate descendant community(s). In the event that an appropriate descendant community(s) has been identified and located, the project sponsor shall seek the involvement of the descendant community(s) prior to any excavation as outlined in Section 3.0 of this protocol.

2.0 FIELD INVESTIGATION

Several alternative approaches can be applied to determine if human remains are extant within Lot 26. These may be generally divided into those that involve pre-demolition archeological investigation and those that involve post-demolition investigation.

The applicability of this protocol applies to all property owned by the project sponsor. Human remains discovered that extend beyond the boundaries of the property controlled by the project sponsor are not the responsibility of the sponsor and are not governed by this protocol.

2.1 PRE-DEMOLITION APPROACH

The building over the Van Alst property is a 1-story structure made of masonry. It will be demolished by "mechanical means." This means that humans will not be accomplishing the demolition. Instead, a large excavator will be fitted with a "grappler" or "shear" attachment on its arm. This equipment will take large pieces out of the structure starting with the roof, and working its way down the exterior walls (most all interior demolition is negligible). It will also push down walls into the interior of the building. Once the building is down to the slab on grade, a front end loader will take all of the material out of the footprint of the building and place it in waste removal containers for removal from the site. The remains of the building will be the slab on grade and 6" of exterior wall. These remains will be removed with the soil remediation program.

Four distinct areas can be identified within the former limits of the Van Alst cemetery. The first is the area under the WDC building. The second is the strip of land immediately adjacent to the south side of the WDC building containing the railroad siding and a portion of the Long Island Railroad's property. The third is the former right-of-way of demapped West (formerly Barn) Street. The last is the small area under the extant 2-story building at the foot of West Street.

Archaeological excavation within the basement of the extant WDC building is not recommended. Evidence of two soil borings was noted by JMA personnel during their site visit. To facilitate the collection of boring samples circular holes approximately 6-8 inches in diameter had been cut through the concrete basement floor. These indicated that the basement floor is between 6 and 10 inches thick. Hand excavation through the basement floor would be extremely labor intensive and it would not permit opening of large areas. It would be possible to bring a small piece of excavation equipment (e.g. a Bobcat) into the basement via an existing freight elevator. However, such equipment is not designed for excavation through thick layers of concrete. A large piece of excavation equipment such as a backhoe could be used if a way could be found to get it into the basement. However, use of any motorized equipment in the enclosed space could present air quality concerns. For all of these reasons pre-demolition excavation within the WDC building is not recommended.

A backhoe could be used to excavate within the limits of West Street and along the former rail siding at the south side of the WDC building. Excavation in the latter area would be impeded by the narrowness of the area and the presence of rails. The rails would have to be removed before any excavation could be safely undertaken in this area. In addition, the proximity of the existing WDC building to any excavation could present safety issues if deep excavation becomes necessary. The narrowness of the area would preclude the effective excavation of stepped trenches and necessitate the use of shoring that would significantly impede archeological interpretations of stratigraphy.

The 1870 and 1873 maps of the project area show the limits of the Van Alst cemetery extending into the area now covered by the extreme southwest portion of West Street. The degree of disturbance associated with underground utility construction in this area is unknown, but subsurface disturbance in this area is likely to be less extensive than under the footprint of the WDC building. It would be possible to carry out pre-demolition archeological investigations in this area. However, given that investigation of other portions of the former cemetery site would be more effectively carried out post-demolition, it would

certainly be more efficient to conduct all archeological investigations as part of a single operation. It should also be noted that because of the expected pronounced variability of subsurface conditions from one area of the former cemetery to another, conditions and findings in one area (West Street, for example) would not be a reliable indicator of what might be found in other areas (under the WDC building or under the rail siding). Finally, the small size of this area (estimated at approximately 500 square feet) would not seem to warrant a separate approach.

The soil remediation program controlled by NYSDEC requires the project sponsor to remove contaminated soil from the entire development site. Even though the program requires the removal of approximately 4 feet of soil across the entire site, soiling testing from the area around the Van Alst Family Cemetery parcel does not indicate any major contamination. As we go through the process we will have professional environmental engineers employed by the project sponsor on site every day who will advise as to the proper way to address any contamination in that area if anything is encountered.

2.2 POST-DEMOLITION APPROACH

Given the difficulties involved in undertaking archeological investigations of the former cemetery site prior to demolition of the WDC building and the adjacent 2-story structure, post-demolition investigation is considered a viable alternative. The post-demolition approach will require that all demolition debris be removed from the site prior to the start of investigations. Debris will be removed down to the surface of West Street, the current ground surface along the rail siding, and to the basement floors within the footprint of the WDC building and the adjacent 2-story structure at the foot of West Street. This will be followed by the removal of the paved surface of West Street and the basement floors to expose the underlying ground surfaces. Care will be taken to minimize disturbance of the area immediately below the pavement and the concrete floor. Equipment and methods of removal employed in this activity will be selected with this requirement in mind.

Following the removal of basement floor from the WDC building and the paving from West Street, the underlying ground surface will be inspected by archeologists walking parallel transects, spaced no more than two meters apart, across the site. The purpose of the inspection is to determine if grave shaft outlines are visible. If grave shafts are identified the procedures described in Section 4.2 will be followed.

The depth of disturbance in various portions of the former cemetery site is believed to vary considerably from one area to the next. In addition, there is some indication from the available limited boring log data that some areas of the site may be covered with extensive fill deposits. For these reasons the first step in the post-demolition investigation will be for the archeologist to monitor the excavation of a series of small backhoe test trenches to collect information about subsurface stratigraphy (except in those areas where grave shaft outlines are apparent) and the depth to the local water table. The number, location and size of these trenches will be determined in the field, but we anticipate no more than six (6) trenches. However, at least one trench will be excavated in each of the three distinct areas (West Street, rail siding, WDC basement) within the limits of the former cemetery. Excavated spoil from these trenches will be inspected by project archeologists monitoring the work to determine if disarticulated human remains are present. Any remains found will be treated in accordance with the procedures described in Section 4.3, below.

The type of heavy equipment employed during subsequent phases of the investigation will depend upon the depth and nature of any fill identified in the test trenches. If no fill (a possibility under the basement floor of the WDC building) or only limited amounts of fill are identified, and soil conditions permit, a Grade-all or road grader will be employed to remove the fill and then progressively strip the exposed ground surface. As the Grade-all or grader works the exposed ground surfaces will be inspected to determine if grave shafts can be identified or if disarticulated bone is present. Any disarticulated remains found will be treated in accordance with the procedures described in Section 4.3, below. All excavation within the footprint of the former Van Alst cemetery will be under the supervision of a Project Archeologist that possesses the qualifications described in Section 6.1 and has been pre-approved by the LPC.

In the event that use of a Grade-all or grader is not feasible, a backhoe or excavator equipped with a toothless bucket or flat blade will be used to excavate a series of trenches across the site. Both the depth of fill deposits and the height of the water table will dictate the depth of excavation. Excavation will be to the depth of natural sterile soils, or will halt if water is encountered. The size and placement of trenches will be determined in the field. Each trench or trench section will be given a unique identifier and its location mapped.

Excavation spoil will be examined by the monitoring archeologist for the presence of disarticulated remains. Trench profiles will be examined for the presence of disarticulated remains and evidence of the possible presence of burials or other features. If no evidence of human remains is identified in a trench or trench section it may be refilled to facilitate excavation in nearby areas.

If intact or partial burials are encountered construction work will cease within 25 feet of intact or partial until a forensic anthropologist is present on-site. (The forensic anthropologist will be an individual possessing the qualifications described in Section 6.2). Sufficient area will be excavated around and above the area of concern to create a suitable work area and the procedures described in Section 4.2 will be followed.

The total area excavated will total not less than 50 percent of the total area believed to be within the limits of the former cemetery site (as defined in figure 3), except that in no event (unless human remains are identified) will the time window available for the investigation exceed 30 calendar days. If human remains are encountered the Project Archeologist will provide the project sponsor with an estimate of additional time that may be required to complete fieldwork.

The need to deviate from or modify any of the excavation protocol described above will be determined by the Project Archeologist. In the event that any deviations or modifications are deemed necessary the Project Archeologist will immediately notify the LPC describing why the deviation or modification is deemed necessary. It is anticipated that the LPC will concur or provide requests for further modification within three business days.

2.3 GROUND PENETRATING RADAR (GPR)

GPR could be used as an adjunct investigative technique in either pre- or post-demolition contexts. GPR has been used successfully to identify burials and grave shafts. GPR would not, however, be useful in locating disarticulated human remains that are no longer associated with a grave or other burial feature. The existing basement of the WDC building has a generally open floor plan that would permit the operation of GPR equipment in a pre-demolition context. However, several other factors militate against the successful use of GPR at the site.

GPR is designed to identify the contrasts in physical properties between soil layers, rock types, and man-made materials. The selected GPR method must be appropriate to the property contrasts that exist within the given study area or site. Even when an appropriate method is used, the degree of the properties contrast must be sufficient to allow for their discrimination. Required depth of investigation and desired resolution also require consideration. Different methods give different penetrations and provide substantially different subsurface detail. As a broad generalization the greater the penetration depth required, the less the detail of the information obtained. The available information about the site suggests that the depth of penetration required on Lot 26 will be highly variable. Urban areas provide particular challenges for GPR because interference from neighboring structures, buried utilities, and traffic can degrade the quality of the data produced.

The properties of the subsurface materials at the site are unknown. As a result, it is unlikely that the significance and depth of anomalies identified during the survey could be determined without excavation. In addition, if subsurface deposits are of clay or fine silt (as is suggested by the available boring log data for Lot 26), the attenuation of the electromagnetic (EM) signal would make the survey incompatible with the objectives. Also, because GPR utilizes the transmission of EM waves into the ground, any unanticipated electromagnetic interference within the project area (for example, the steel structure of the building and the possible presence of reinforcing mesh or rebar in the concrete floor of the WDC building) may render this survey invalid.

Finally, GPR is not a substitute for excavation. Under ideal conditions GPR and excavation are complementary, with excavations confirming or refuting the results of a GPR survey. Use of GPR at Lot 26 is not recommended for the following reasons:

- Use of GPR would not eliminate the need for subsequent archeological investigation to ground-truth the GPR findings;
- GPR would not be able to identify the presence of disarticulated remains that are not associated with a grave or other feature;
- Available information about subsurface materials in the study area suggests that they would impede optimum effectiveness of GPR;
- Attenuation of the GPR signal can be expected because of the presence of underground utilities and large quantities of metal in and around the study area.

3.0 DESCENDANT IDENTIFICATION AND INVOLVEMENT

Cemeteries represent a special category of archeological site in that they embody emotional and religious aspects that other types of sites normally do not. The descendants of individuals buried in historical cemeteries are often overlooked when planning the disinterment and relocation of their relatives and ancestors. These individuals need to be included as much as is practical in the various stages of work associated with the excavation of a cemetery. Archeologists need to be sensitive and responsive to the religious and spiritual values these family members hold (Roberts and McCarthy 1995).

In areas identified as potentially sensitive for human remains, field testing will proceed in accordance with the requirements presented in Section 4.0 of this protocol. Subsurface work will only be undertaken in areas potentially sensitive for human remains following notification and consultation with the appropriate descendant community (if such appropriate descendant community can be reasonably identified and located) as outlined in this Section of the protocol.

The Van Alst Cemetery presents special challenges. There is some indication that the interments may not be limited to Van Alsts. HPI (2000) cite Seyfried (1984) as stating, in reference to the Van Alst cemetery, that "In 1887 six stones of Van Alst's, Hunters and Parsells could still be read." In addition, HPI notes that the 1924 Van Alst family genealogy typescript noted marriages to members of the Bragaw and Paynter families (2001:10). All of these families trace their roots back to the original colonial settlers of the area.

A preliminary check of standard references indicates that the Parsells and Hunters were related by blood and/or marriage to the Van Alsts. Riker (1852:383) states that Johannes Van Alst (d. 1749) had a daughter Leah who married a John Parsell. Munsell (1882:265) states that a Richard B. Hunter "had located on an adjoining section of the Van Alst farm lands, which he had purchased from his father-in-law, Henry Van Alst.

The last known Van Alst who can be presumed to have had a direct connection with the cemetery is a man described as a Queens attorney named Harry Van Alst (HPI 2001). Harry Van Alst was anonymously notified in 1925 when during construction of the West Disinfecting Company building on the site of the cemetery bones and caskets were discovered. HPI (2001) unsuccessfully attempted to locate additional Van Alst descendants who may be alive. They reviewed land conveyances, cemetery records, death certificates, church records, family genealogies, transcriptions from a Van Alst family bible, and 1930's oral histories. HPI was able to confirm that Cypress Hills Cemetery (CHC) records show that "unknown bones of Van Alst family" were buried in a plot purchased by Harry Van Alst in 1925 (CHC file card for Grave No. 14720, cited in HPI [2001:6]).

Because the Van Alsts were a very large extended family one cannot assume that any individual bearing that family name would be related to any of the interments from the Van Alst family cemetery. A logical starting point is to attempt to locate a relative of Harry Van Alst. An internet check of telephone directories for the New York metropolitan area identified a number of Van Alsts, but none in Queens. Without directly contacting these individuals it is impossible to determine if any of these individuals is related to the Harry Van Alst who arranged for the 1925 reinterments.

A check of the Social Security Death Index identified 16 Van Alsts. Only one of these, Florence Van Alst of Rego Park, Queens (b. 13 Jun 1917, d. Dec 1986), had a last reported residence in the New York Metropolitan area. It is possible that Florence Van Alst is a relative of Harry.

Several potential lines of inquiry should be pursued before abandoning attempts to identify a Van Alst descendant. The project sponsor shall make a reasonable and good faith effort to complete the bulleted tasks outlined below.

- The Queens County Bar Association and the New York Office of Court Administration will be contacted. Either or both of these organizations may have information that could be used to identify an approximate date of death for Harry Van Alst or to locate a descendant. If an approximate date of death for Harry Van Alst can be established, newspaper obituaries should be checked to determine if a Harry Van Alst obituary identifies family survivors.
- Cypress Hills Cemetery will be contacted to determine if they have records of anyone maintaining the graves containing the 1925 re-interments.
- Attempts may be made to locate relatives of Florence Van Alst. Her Social Security number is known and this should facilitate a search of death certificates and cemetery interments.
- Public notices will be placed in the *New York Times*, *New York Daily News*, *New York Post*, *Newsday*, and local Queens newspapers requesting Van Alst descendants to contact the project sponsor.

Public notices will be posted in the above media outlets for 30 days. Descendant community members shall have 30 calendar days to respond to public notices and opportunities to contact the project sponsor. If these avenues of investigation are unsuccessful, and given the extent of prior research conducted by HPI, it will be presumed that no living descendants of any remaining interments at the Van Alst family cemetery exist or can be located. Treatment of any recovered remains will be dealt with accordingly, as described in Sections 4.0, below.

In the event that a living descendant(s) is identified, a copy of this protocol will be provided to that descendant(s). Representatives of the project sponsor, including the Project Archeologist, will meet with members of the Van Alst family if they desire.

Anticipated Schedule

- Notices posted (30 days)
- Responses from descendants (30 days)
- This schedule does not preclude a descendant identification at a later date, but treatment of remains will be as outlined in Section 4.0 below.

4.0 POST-DISCOVERY PROCEDURES

4.1 NOTIFICATIONS

The LPC has indicated that in situations such as the Van Alst cemetery, the Office of the Medical Examiner will need to be notified immediately if human remains are encountered. If descendants of the Van Alsts were previously identified under Section 3.0 of this protocol, they will be immediately advised of the status of the project. The reasonable desires of any Van Alst descendant regarding the treatment and/or disposition of human remains from the site will be determined prior to the beginning of field work.

The LPC-designated representative will be advised immediately if human remains are encountered and will be provided with progress reports in accordance with the procedures described in Section 6.1.

4.2 IDENTIFICATION AND EXCAVATION OF INTACT AND PARTIAL GRAVES AND INTERMENTS

The following excavation methods are proposed to ensure that any artifacts that may be recovered can be associated with particular remains and that any artifacts recovered from the graves can be re-associated with their original location (their provenience) in the grave. Artifacts will be retained and analyzed to attempt to determine relative age or chronology of burials. A licensed funeral director will be retained to oversee the exhumation and transportation of all human remains, but fieldwork involving the excavation of intact and partial burials will be under the supervision of a forensic anthropologist. Identified descendants have reviewed this protocol and have no objections to the procedures described below.

If grave shaft outlines are identified at any time during field investigations they will be mapped by the archeologists. Each grave will be assigned a number and each specific location within the shaft, whether it is a number of artifacts from the fill or a single artifact associated with an individual burial, will be given a context number that identifies its provenience or location in the grave. The soil from the grave shaft will be excavated and screened through 0.25-inch hardware cloth to recover artifacts that may be present in the shaft fill. When the level of the coffin is reached, the field crew will carefully expose the coffin lid, if present and preserved, and draw and photograph it in place. Each artifact, such as coffin nails or coffin hardware, will be mapped and given its own context number. Elevations of the artifacts and the lid will be recorded as well. All artifacts recovered from the graves will be placed in archivally-stable containers labeled with the appropriate provenience information.

The soil from inside the coffin and around the skeleton will be given another context number and screened. The skeleton and associated artifacts will be drawn and photographed in place. Photography will include color slides, black-and-white print film, and digital formats. After photography, the in-field analysis described below will begin. The procedures described above will be conducted by professional archeologists.

4.3 ANALYSIS

The primary goal in collecting osteological and dental data from archeological contexts is to generate information that parallels data collected from other historic skeletal samples for comparative studies. This is accomplished by following standard bioarcheological procedures for collecting and recording morphological and metric data. Paleopathological and artifact analyses will be completed off-site. Data from complete and fragmentary remains will be recorded following the recommendations and guidelines provided in *Skeletal Database Committee Recommendations* (Paleopathology Association 1991), *Standards for Data Collection from Human Skeletal Remains* (Buikstra and Ubelaker 1994), *Data Collection Procedures for Forensic Skeletal Material* (Moore-Jansen et al. 1994), *Dental Anthropology* (Hillson 1996), among others.

All burials will be assessed for their potential to yield human biological information. This assessment will be made by the project's Physical Anthropologist and will include an in-field identification of baseline data including age, sex, biological ancestry and other personal characteristics for all interred individuals, to the extent possible. Detailed analysis of all skeletal and dental remains will take place following field investigations. No destructive analytical procedures will be applied to these remains. This analysis will focus on five general areas: Inventory, Demographic Data, Epidemiological Data, Anthropometrics, and Personal Characteristics.

4.3.1 INVENTORY

The examination of each set of remains will begin with an inventory of the recovered bones and bone fragments. The purpose of this inventory is two-fold. First, it will document what materials were removed and are available for subsequent reinterment. Second, an inventory will identify the number of individuals present in each grave, as well as their skeletal elements and their condition. These data will be used to calculate the prevalence of different kinds of responses to health stresses and, particularly among fragmentary remains, clarify why observations on certain data were not made (for example, a particular bone could be missing or too deteriorated, making a particular observation impossible).

4.3.2 DEMOGRAPHIC DATA

To the extent possible, a demographic profile will be established for the cemetery sample, based on the age, sex and biological ancestry of each individual. Given that less-than-complete remains likely will be encountered, a battery of age, sex, and ancestral-sensitive metric and morphological features will be observed. Demographic assignments will be based on the greatest overlapping agreement between these observations.

Age-at-death ranges will be estimated for each adult individual using a variety of macroscopic methods including skeletal and dental maturation, suture development, auricular and symphyseal morphology, spinal osteophytosis and general joint deterioration. Among immature individuals, age-at-death will be based on dental development and eruption, diaphyseal length and growth, and epiphyseal union.

For the purposes of this project, individuals will be divided by age into adults and subadults. Subadults are defined as individuals who did not attain the age of 16 prior to death. While some indicators may be observable, sex and biological ancestry of adolescents below the age of 16 years cannot be accurately determined. If subadults are recovered, the age at death will be the only demographic features assessed.

Age-at-death will be reported twice for each individual. First, a standard age range, reflecting the greatest overlap between individual age observations, will be provided. Adult and most subadult ages will be rounded to the nearest year, while individuals under the age of five years will be expressed by a range including year and month. As a means of enabling reconstruction of demographic survivorship data, age-at-death will then be reported in five-year increments. Individuals under the age of five will be reported in one-year increments.

The sex of each adult individual will be determined using a combination of morphological and metric techniques. Pelvic and cranial morphology, skeletal robusticity, and dental features are primary components of the sex estimation battery. Sex will not be assessed for subadults.

Biological ancestry can be identified by a number of evolutionary adaptations to ancestral home environments. Metric and non-metric data will be gathered following standard forensic anthropological references and individuals defined as Euro-American, African-American, Native American or Asian. Minimally, these data will be used to correct stature and other determinations based on the proper population ranges.

4.3.3 EPIDEMIOLOGICAL DATA

Living bone responds to environmental stress agents by morphological modifications referred to as health responses. Health responses include traumatic, degenerative, mechanical, biochemical, and disease-based reactions. An examination of these responses reveals important information on an individual's disease load and quality of life.

In this analysis, an epidemiological screening will be applied to assess the assemblage's health. Each health response will be subjected to a gross examination. Any observed response will be described following the terminology suggested by Buikstra and Ubelaker (1994) and the Paleopathology Association (1991). Health responses will be recorded by location (proximal, medial, or distal section) on each long bone shaft (diaphysis), extent of involvement (widespread or localized), and degree of response and remodeling of the physical form of the bone. Responses are graded as mild, moderate, or severe and listed as either remodeled or unremodeled. A differential disease diagnosis will be made where possible to identify the stress agent responsible for these health responses.

If the remains are sufficiently well preserved, the prevalence of each type of health response will be determined for each individual and then analyzed for the group. Prevalences will be based on the number of affected limb portions relative to unaffected portions in the assemblage. Prevalence odds ratios will be calculated for epidemiological comparisons following Matternes (2000).

4.3.4 ANTHROPOMETRY (OSTEOMETRY)

Anthropometry is the technique of quantitatively expressing the form of the body. Osteometry is the subdivision of anthropometry that specifically addresses measurement of the skeleton and skull. Osteometry is used in forensic anthropology and bioarcheology to help identify the age, sex, and biological ancestry of undocumented human skeletal remains. More general applications of these data include documentation of secular trends in nutrition and health status among both historic and prehistoric human populations.

Measurement of intact and fragmentary skeletal remains will be accomplished following the methods outlined by the University of Tennessee Forensic Data Bank (Moore-Jansen et al. 1994) and Martin (1928). Beyond its use to explore this particular human assemblage, the resulting data will be submitted to the University of Tennessee Forensic Data Bank, where it will be available for future forensic and bioarcheological investigations, if agreeable to the descendent community.

4.3.5 PERSONAL CHARACTERISTICS

The personal characteristics of each individual will be recorded, where possible. These include stature, non-metric morphological variation, non-pathological evidence of violence, medical intervention, and biomechanical stress (including enthesophytes and sesimoid bone formation), dental attrition, and evidence of intentional socio-cultural modification. When reflected against the other data collected, it is sometimes possible to identify personal characteristics and behaviors of the individual. These data will be assessed with the historical data and if feasible personal identification will be suggested.

4.3.6 INCOMPLETE AND DISARTICULATED REMAINS

Many of the techniques used to analyze human remains can be applied to individual bones recovered from disturbed contexts. Should only partial remains be found, the analysis phase will consist of the same general methods described above, but tailored to the specific bones recovered. The minimum number of individuals represented by the remains will be determined, followed by determinations of sex, and age at death. Personal characteristics and documentation of lesions and anomalies will also be recorded. Dental analyses will likewise follow the methods described above. While the accuracy of determinations from partial remains will be limited, partial remains can provide still meaningful information regarding the burial population.

5.0 DISPOSITION OF RECOVERED REMAINS

Van Alst descendants have reviewed this Protocol and reburial will take place in accordance with their wishes. The following procedures will be determined in consultation with a licensed undertaker and with all concerned parties:

Prior to fieldwork

- Alert LPC as to the date that field work will to start.
- Establish on-call services with Mr. Phil Cardaci, Funeral Director, James Romanelli-Stephen Funeral Home, who can obtain permits as per New York City Health Code §205.27 and store the remains until reburial.
- Establish an on-call osteologist, Dr. Thomas Dr. Crist, Professor of Anatomy and Anthropology at Utica College in Utica, NY, and additional field techs (if necessary) to assist with any possible disinterments.
- Email Brad Adams of the Office of the Chief Medical Examiners to inform him that we are conducting an excavation of the site and that historic burials may be uncovered.

Procedures for removal from the ground

- Once intact burials have been discovered a call will be placed to Office of the Chief Medical Examiner (OCME), the client and the LPC to inform them that burials have been encountered.
- The area where burials have been encountered will be avoided while human remains are removed.
- Construction-related activities will continue in the other areas of the construction site.
- If burials are discovered, any construction activities or ground disturbance will be ceased in the area containing the burial(s). Locations of burials awaiting disinterment will be recorded (digital photography, drawing, and total station/or hand-held GPS with submeter accuracy) on a plan of the site, and covered with plastic or other protective waterproof material.
- If burials are to be disinterred the next day the funeral director will be contacted by 2pm so that they may acquire the proper permits from the Department of Health and to schedule the human remains pick up the next day.
- At the end of the day a call will be made to LPC and the project sponsor to report the number of burials encountered and the expected date of disinterment.
- Disinter the burials the next day with the on-call osteologist and additional field techs (if needed).
 - a. Expose the remains
 - b. Fill out burial form and take measurements.
 - c. Photograph burial.
 - d. Remove remains and place in labeled paper bags.
 - e. Maintain bag log.
 - f. Inventory bags with funeral director
 - g. Turn over to funeral director, who signs for the remains.
- The excavations will be recorded on a standard feature form. Any scaled drawings will use the Metric system of measurement.
- All excavations will be photographed using a digital camera with a photo board and meter stick.
- A field journal will be kept to record all field activities.
- The excavation and back dirt piles will be observed for artifacts.
- Human remains recovered in the field will be carefully wrapped in acid free tissue and placed in Piece Leahy buffered acid free archivally-stable fiberboard containers (or a similar brand of acid free box), one set of skeletal remains per container (respectful curation).
- Human remains and associated objects will be temporarily stored with the James Romanelli-Stephen Funeral Home until reinterment;
- It is anticipated that analysis of human remains, as outlined in Section 4 of this protocol, will be

undertaken at the James Romanelli-Stephens Funeral Home;

- The James Romanelli-Stephen Funeral Home will transfer remains and associated objects to the designated place of re-interment;
- Should human remains be recovered, these will be reburied in 20 gauge steel, silver non-sealer casket(s) in a grave at a local cemetery. Family descendants have selected Mount Olivet Cemetery for reinterment. Recovered artifacts, including personal belongings, offerings, and shroud- or clothing-related items, will be inventoried and cataloged (including photography), and then will be reinterred with the human remains. Coffin-related items, including nails, handles, plaques, and wood, will be treated in a similar manner;
- Arrangements for a service will be developed by the funeral director. It is anticipated that a stone grave marker identifying the grave as the location of Van Alst family members will be placed to mark the site.

6.0 REPORTING

This reporting described here will be in addition to any reporting requested by the project sponsors.

6.1 PROGRESS REPORTING

The Project Archeologist will immediately notify the LPC and the Office of the Medical Examiner by telephone when the first evidence of the presence of human remains on the project site is identified. In addition, the Project Archeologist will make a verbal progress report on a weekly basis to an LPC-designated representative. The contents of the progress report will be determined in consultation with the LPC. The LPC-designated representative will also be notified when fieldwork has been completed. The Project Archeologist will make a recommendation at that time as to whether or not archeological monitoring of construction in the project area should be undertaken. The final decision as to whether or not monitoring is necessary will be made by the LPC.

6.2 FINAL PROJECT REPORT

A final report will be prepared when both fieldwork and any subsequently required laboratory analyses have been completed. The report will:

- review and summarize the research design and outline the report;
- provide a historical context for the cemetery;
- describe the methods used in the various stages of the investigation; and
- present the results of the field investigations and archeological and osteological analyses.

These sections will be supplemented with a catalog of all recovered artifacts and osteological material, site maps, photographs, and other relevant illustrations.

7.0 PERSONNEL QUALIFICATIONS

The names and qualifications of the individuals selected by the project sponsors to serve in the capacity of Project Archeologist (Principal Investigator) and Forensic Anthropologist, or in any other supervisory capacity will be submitted to the LPC at least 10 calendar days prior to the initiation of any archeological fieldwork. (Building demolition and removal of demolition debris down to pre-demolition grade is not considered to be part of archeological fieldwork). The final selection of the Project Archeologist and Forensic Anthropologist is subject to the approval of the LPC.

7.1 PROJECT ARCHEOLOGIST

The Project Archeologist will be a Registered Professional Archeologist (RPA).

7.2 FORENSIC ANTHROPOLOGIST

The *LPC Guidelines* do not contain specific qualification requirements for forensic anthropologists, except that this “individual must be able to demonstrate significant research experience with human remains’ (LPC 2002:31).

8.0 REFERENCES CITED

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Prepared for NYS Department of Environmental Conservation.

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Rosen & Fleming, Inc., New York.

2001 Phase 1A Archaeological Survey, Van Alst Cemetery, Block 264, Lot 26, Long Island City.
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Matternes, Hugh B.

2000 Social and Biological Structures in the Mound C Cemetery, Wickliffe Mound Group (15BA4).
Unpublished Ph.D. Dissertation, Department of Anthropology, University of Tennessee –
Knoxville.

Martin, Rudolph

1928 *Lehrbuch der Anthropologie*. Gustav–Fisher Verlag, Stuttgart.

Moore–Jansen, Peer H., Stephen D. Ousley, and Richard L. Jantz

1994 *Data Collection Procedures for Forensic Skeletal Material* Third Edition. Department of
Anthropology, University of Tennessee – Knoxville.

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Paleopathology Association

1991 *Skeletal Database Committee Recommendations*. Paleopathology Association, Detroit.

Riker, James

1852 *The Annals of Newtown in Queens County*. D. Fanshaw, New York.

Seyfried, Vincent

1984 *Three Hundred Years of Long Island City, 1630-1930*. Queens Community Series/Edgian.

FIGURES

APPENDIX II:

QUALIFICATIONS



ELISABETH LAVIGNE

Project Archeologist/Geoarcheologist
535 North Church Street
West Chester, PA 19380
(610) 436-9000
elavigne@johnmilnerassociates.com

EDUCATION

M.A.	Boston University, MA	Geoarcheology	2009
B.A.	Wheaton College, IL	Archeology	2004

EXPERIENCE PROFILE

Elisabeth LaVigne, RPA is a Project Archeologist/Geoarcheologist. She holds a Bachelor of Arts degree in Archeology from Wheaton College, IL, and a Master of Arts degree in Geoarcheology from Boston University where she specialized in micromorphology. Her training also includes Geographic Information Systems (GIS), quantitative geomorphology, sedimentology, geochemistry, and paleoethnobotany. Before coming to JMA, she worked with the Monadnock Archeology Consulting and the State Conservation and Rescue Archeology Program in NH as a lab and field technician. She also has excavation experience at Gault, TX; Ashkelon, Israel; and Pompeii, Italy, and conducted sediment sample analysis from the Maya site of K'axob in Belize in order to determine site depositional and post-depositional processes. Since joining JMA, she has been involved in archeological survey, deep testing and trenching projects, geophysical surveying, and topographic surveying throughout the Mid-Atlantic. Elisabeth also has extensive experience with utilizing GIS and other geospatial technologies in archeological contexts creating and populating cultural resource geodatabases, modeling viewsheds for historic architectural surveys, modeling prehistoric and historic sensitivity, georeferencing historic maps, recreating historic survey data, creating archaeological survey maps, and processing field data. She is a Registered Professional Archaeologist.

LICENSES/CERTIFICATIONS/TRAINING

Registered Professional Archeologist since 2011
Section 106 Review Process workshop (Chester County Historical Society Cultural Center - 2011)
OSHA 40 Hour HAZWOPER (2011; updated)
OSHA 8 Hour Training for Supervisors (2011)
OSHA Excavation Safety training (2011)
OSHA Confined Spaces Safety training (2011)

SOFTWARE PROFICIENCIES

ESRI ArcGIS 9.0 – 10	TDS Survey Works Survey Pro
Golden Software's SURFER	TDS Survey Works Foresight DXM
Trimble Pathfinder Office	Microsoft Office Program Suite

PROFESSIONAL AFFILIATIONS

Register of Professional Archaeologists

KEY PROJECTS

2014	Project Archeologist. A Phase I survey for the US. Fish & Wildlife in the Great Swamp National Wildlife Refuge, New Jersey
2014	Project Archeologist. A Phase IB survey of seven-mile pipeline through Chester County, Pennsylvania.
2014	Project Archeologist. Trench monitoring and shovel testing survey for a water main through historic Christiana Village, Delaware.

- 2014 GPR technician. Geophysical survey conducted at the Virginia Theological Seminary in order to identify potential Civil War period burials.
- 2014 Project Archeologist. A Phase I survey at Naval Weapons Station Earle, Monmouth County, NJ.
- 2014 Project Archeologist. A Phase IA archeological assessment for a proposed transmission line through Lancaster County, PA.
- 2013-2014 Project Archeologist and GIS Specialist. Creation of the architectural and archeological sensitivity GIS databases for the proposed Cricket Valley Transmission line in eastern New York and subsequent Phase IB archeological survey.
- 2013 GIS Specialist and GPR Technician. A geophysical survey at the Mount Holly Friends Cemetery conducted in order to identify grave locations, Mount Holly, New Jersey.
- 2013 Geoarcheologist and GIS Specialist. A geomorphological investigation of the proposed Nebasco Creek boardwalk crossing utilizing gouge augers in Prince William County, Virginia.
- 2013 GIS Specialist and Surveyor. Geophysical Archeological Survey and associated topographic survey conducted in order to locate buried historic resources and graves at Howell Farm in New Jersey.
- 2013 GIS Specialist and Archeologist. A Phase I Archeological Survey and GIS-based reconstruction of the historic landscape based upon the geomorphological survey along Pennypack Creek, Philadelphia, PA.
- 2013 GPR Technician. GPR survey in order to locate historic burials at Prince George's Chapel in Delaware.
- 2012 Archeologist. A Phase I archeological investigation utilizing trenching in order to assess the West Shipyard site in Philadelphia.
- 2012 Project Geoarcheologist and GIS Specialist. Archeological, geomorphological, and GIS-based investigation of the French Mill complex area in East Pikeland, PA, locating the historic mill race and mill complex foundations.
- 2012 GIS Specialist and Archeologist. Phase IB archeological survey at Gettysburg, Pennsylvania. Developed GIS-based cut and fill model of the project area. Tested previously identified GPR anomalies and metal detection artifact clusters.
- 2012 GIS Specialist and Archeologist, Phase I Archeological Investigation and Phase II Archeological evaluation at a wastewater facility in Sussex County, Delaware.
- 2011-2012 GIS Specialist and Project Geoarcheologist. Phase II Cobb's Creek Water Reservoir Project, Cumberland County, VA, which included deep testing, trenching, and monitoring of engineering borings, Phase II archeological survey, topographic survey, and GIS-based viewshed analysis for historic architectural survey.
- 2011 Project Geoarcheologist. Phase I Geomorphic Assessment, Cobb's Creek Water Reservoir Project, Cumberland County, VA. Assessment conducted through deep testing with hand-operated Eijkelkamp Edelman augers. Located two different buried paleosols with archeological potential within the floodplain project area.
- 2010 Project Geoarcheologist. Geomorphologic Assessment, Virginia Avenue Tunnel Railroad Project for the CSX Transportation, Inc. National Gateway Initiative, Washington, District of Columbia. Assessment conducted through use of a geoprobe to locate potential buried landscapes
- 2009-2011 GIS Specialist. NHPA Section 110 Compliance, Cultural resources Investigations, U.S. Army Corps of Engineers American Recovery & Reinvestment Act 2009. For 17 Districts of the U.S Army Corps of Engineers.

Ms. LaVigne is co-author on 27 cultural resource reports.



KATE MCCORMICK

Bioarcheologist and Field Technician

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kate.a.mccormick@gmail.com

EDUCATION

M.A.	New York University, NY	Biological Anthropology, Human Skeletal Biology	2014
B.A.	Boston University, MA	Archeology	2009
	Mercyhurst College, PA	Forensic Anthropology Short Courses	2009

EXPERIENCE PROFILE

Kate McCormick, RPA is serving as JMA's onsite forensic anthropologist for the Archeological and Forensic Anthropological Investigations at the Site of the Van Alst Family Cemetery. She holds a Bachelor of Arts degree in Archeology from Boston University, MA, and a Master of Arts degree in Biological Anthropology, Human Skeletal Biology. Her bioarcheological experience includes forensics studies, excavation of skeletal remains of adults and juveniles, laboratory processing of remains, and work for the Northern Regional Medical Examiner's (ME) Office in Newark, NJ and the Office of the Chief ME in New York, NY. Work for ME's included processing bone samples, inventorying remains, and using archeological techniques at the World Trade Center site to find human remains and personal effects. Ms. McCormick's traditional archeological experience includes Phase III historic site excavation in Philadelphia, utilization of Geographic Information Systems (GIS) in archeological contexts, and work overseas on the Spanish island of Menorca and in Poland. She is a Registered Professional Archaeologist.

LICENSES/CERTIFICATIONS/TRAINING

Registered Professional Archeologist

OSHA 40 Hour HAZWOPER (updated)

SOFTWARE PROFICIENCIES

ESRI ArcGIS

TDS Survey Works Survey Pro

Microsoft Office Program Suite

PROFESSIONAL AFFILIATIONS

Register of Professional Archaeologists

Society for American Archaeology

RELEVANT EXPERIENCE

- | | |
|------|---|
| 2014 | Field Technician. A Phase III survey at the future site of the Museum of the American Revolution in Old City, Philadelphia. Hand-excavated and recorded seventeenth- and eighteenth-century features, monitored ongoing mechanical excavation in order to identify archeological features, assisted in total station survey, and cleaned and sorted artifacts for future cataloging and curation. |
| 2014 | NYU Data Consultant. Provided ArcGIS support to students, staff & faculty on a variety of projects, including obtaining and managing relevant data, geocoding, georeferencing and building high-quality maps for reports and presentations. |
| 2013 | Northern Regional Medical Examiner (NJ) Intern. Extracted and macerated bone samples; photographed skeletal elements, and completed inventories of remains. |

- 2012 Chief Medical Examiner, Special Operations Division Intern. Assisted in the 2012 International Mass Fatality Management Conference and the 2012 Regional Mass Fatality Management Training Exercise.
- 2011 Slavia Mortuary Field School. Identified burial features and excavated skeletal remains of adults and juveniles in a seventeenth-eighteenth-century rural cemetery in Drawsko, Poland. Cleaned and examined remains in the laboratory and prepared them for storage.
- 2010-2013 Chief Medical Examiner (New York, NY) Criminalist. Used archeological survey techniques to search through debris from the World Trade Center site, searching for human remains and personal effects as part of Phases III & IV of recovery efforts.
- 2008 Boston University Archeological Field School. Participated in excavations at Torre d'en Galmes, a Classical Talayotic and Roman site. Cleaned artifacts in the laboratory and prepared them for museum conservation.