SUPPLEMENTAL PHASE 1B AND PHASE 2 ARCHAEOLOGICAL AND HISTORICAL INVESTIGATIONS OF RIVERSIDE GALLERIA

(FORMERLY WATERFRONT COMMONS)
BLOCK 7620, LOT 1
BLOCK 7632, LOTS 1, 6, 50, 150, AND 151
AND RICHMOND VALLEY ROAD EXTENSION, LOTS 100 and 110
RICHMOND COUNTY, STATEN ISLAND, NEW YORK
07PR04902

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MANAGEMENT SUMMARY

SHPO Project Review Number	07PR04902
Government Agencies:	OPRHP, DEC, USAC
Phase of Survey:	Phase 1B/2

Location Information

Location	Block 7620, Lot 1 Block 7632, Lots 1, 6, 50, 100, 110, 150, 151
Minor Civil Division	Richmond Valley South Richmond Development District
County	Richmond County

Survey Area

Length:	n/a
Width:	n/a
Depth:	n/a
Number of Acres Surveyed:	24.54 acres/9.93 hectares

USGS 7.5 Minute Quadrangle Map:	Arthur Kill NJ/NY 1981

Archaeological Survey Overview

Number & Interval of Shovel Tests:	223 tests,171 tests @ 5m interval, 52 tests @ radial interval
Number & Size of Units:	Area 1 Catbriar (2), West (1); Area 5 (2), all 1x1m
Backhoe Trenches:	Area 2 (1)
Surface Survey Transect Interval:	n/a

Results of Archaeological Survey

Number & name of prehistoric sites identified:	3 (Area 1), Catbriar, West; (Area 5) 1
Number & name of historic sites identified:	Area 1 West (1), Area 5 (1)
Number & name of sites recommended for Phase 2 avoidance:	n/a

Results of Architectural Survey

Number of buildings/structures/cemeteries within project area:	1
Number of buildings/structures/cemeteries adjacent of project area:	n/a
Number of previously determined NR listed or eligible buildings/structures/cemeteries/districts:	n/a
Number of identified eligible buildings/structures/cemeteries/districts:	n/a

Report authors:	Crowley, Sandy, Raber, Boesch
Date of report:	2017

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1.0 INTRODUCTION

This report has been prepared by Greenhouse Consultants Incorporated of Bayonne, New Jersey. These supplemental archaeological and historical investigations survey cover the proposed Riverside Galleria (formerly Waterfront Commons) commercial development in the Borough of Staten Island, New York, New York. Previously, a Phase I archaeological survey was being submitted to the New York State Office of Parks, Recreation and Historic Preservation, which reviewed it and assigned Project Review Number 07PR04902, in conjunction with the New York State Department of Environmental Conservation and the United States Army Corps Permits (Greenhouse 2015).

The project is located in the USGS Arthur Kill Quadrangle (Figure 1-1). This project is bounded in the north by the elevated Outerbridge Crossing/Route 440, on the east by Arthur Kill Road and the veterinary medicine and beverage distribution complex, on the south it is bounded by Richmond Valley Road extension and Weir's Mill Creek, and on the west side by the Arthur Kill. The current APE (December 22, 2016) is shown as Figure 1-2.

Fieldwork was directed by William Sandy, RPA, who was assisted by Jonathan Bream, Christopher Dritto, David C. Martin and Michael Thomas. Sandy conducted supplemental deed research online, while Crowley, Sandy and Martin conducted research at the Staten Island Museum's History Archives. Sandy and Bream took the field photographs. Michael Raber acted as Industrial Archaeologist and was assisted by Thomas Flagg. Eugene Boesch identified the Precontact pottery and authored that chapter of this report. Project management, artifact processing, and analysis was completed by GCI Project Manager Paula Crowley. Graphics are by Crowley and Sandy. This report was written by Crowley, Sandy, Boesch and Raber.

The report includes a discussion of the industrial archaeology of Area 4 and vicinity. This is followed by the results of field investigations in Areas 1, 2, 4, and 5. This is followed by a discussion of the cistern in Area 7. Next is the artifact analysis, and finally, conclusions and recommendations.

Evaluations of the significance or potential significance of cultural resources were made using the Criteria of Eligibility of the New York and National Registers of Historic Places Programs. The Criteria of Eligibility for the National Register of Historic Places are described by the U.S. Department of the Interior National Register Program:

> The quality of significance in American history, architecture, archaeology, engineering and culture is present in districts, sites,

buildings, structures or objects that possess integrity of location, design, setting, materials, workmanship, feeling and associations and

(a) that are associated with events that have made a significant contribution to the broad patterns of our history; or
(b) that are associated with the lives of persons significant in our past; or
(c) that embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic value, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
(d) that have yielded, or are likely to yield information important in prehistory or history.

Criterion D is most often used when evaluating archaeological sites (Kuhn and Little 2000).

1.1 Scope of Work

Greenhouse Consultants Incorporated provided a scope for archaeological services for a Phase 1B/2 survey of the proposed Riverside Galleria project area in the Borough of Staten Island, New York in February 2016. The scope of work was prepared in response to the comments of October 13, 2015 by Philip A. Perazio of the New York State Office of Parks, Recreation and Historic Preservation. The scope of work addressed issues raised concerning Areas 1 through 5, and Area 7. The scope also addresses concerns raised by Beth A. Cumming, NYSOPRHP, of October 16, 2015 concerning impacts upon the Cole House (Area 7) and the Outerbridge Crossing (to the north of the project area). See Figure 1-3 for the illustration of archaeological testing areas.

There were two components to the scope of work in order to address the SHPOs' comments: research and fieldwork.

Research

Area 1. The prehistoric ceramics were the only datable prehistoric artifacts recovered during excavation. Identification and analysis were needed to associate the artifacts with their cultural period.

Area 4. An industrial archaeologist was required for a full evaluation of Area 4 in order to determine the components of the mill complex and subsequent industries. The result of this evaluation would enable archaeologists to investigate the mill complex adequately through archaeological investigations of any potentially significant resources within the APE.

Area 7. An architectural historian was needed to evaluate the Cole House. In February 2016, the SHPO's office had on file the Building Structure Form completed by the Staten Island Institute, dated 1979. Since this document was the only document in the file, this was the reason the SHPO's office was questioning impacts to the Cole House. Current 2016 plans call for adaptive reuse of the Cole-Dissosway House as a restaurant/office.

Background research also needed to be completed in Area 7 in order to evaluate the Hilliard House site.

Outerbridge Crossing. The SHPO's office has also questioned impacts to the Outerbridge Crossing. In 2016 the SHPO's office had a 2003 memo of a meeting of SHPO and LPC representatives who drew up a "wish list" of structures to be evaluated for the National Register. The Outerbridge Crossing had not yet been evaluated, and will not be impacted by the project, except maybe visually. Visual impacts, if any, will be limited, given that no new construction (except wetland mitigation areas) will be near the Outerbridge Crossing.

Fieldwork

Three methodologies were used to investigate the six areas identified by the SHPO's office for further fieldwork. The methodologies included shovel testing, excavation units and backhoe trenching. The testing will be undertaken to (1) identify/delineate the site boundaries; and (2) determine whether potential culture-bearing deposits are within the Area of Potential Effects (APE).

Area 1. Historic site (now called West Site): One to two small excavations units were proposed in this area, in particular, one unit near the North Devon Gravel Tempered test (Shovel Test 246).

Catbriar site: Newly proposed impacts to the 2014 engineering plan include: Shovel Tests 4, 239, 242, 244, 246 and 250, which required radial shovel testing. Plans were made for additional shovel testing requiring up to 100 additional tests to establish the site boundary now within the APE. Two excavation units were planned, one near the "hearth" (Shovel Test 313) and a second unit near the shovel test with the most prehistoric pottery (Shovel Test 384). Archaeological fieldwork was dependent based upon the subsequently revised site plan of 2016.

Area 2. Deep trenching was needed to reach the former surface where cultural deposits could exist: trenches were planned to be 5 to 9 feet wide, and up to 18 feet deep (based upon soil borings), and 50 to 80 feet long. Due to the depth of the trench, instead of shovel tests being placed in the floor of the trenches, the hoe would lift a sample to be screened.

Area 3. Deep trenching was planned to reach the former surface where cultural deposits could exist: trenches would be 5 to 9 feet wide, up to 18 feet deep, and 50 to 60 feet long, located in the vicinity of the boat house and road. Due to the depth of the trench, instead of shovel tests being placed in the floor of the trenches, the hoe would lift a sample to be screened.

Area 4. Any field investigations would be based upon the industrial archaeologist's recommendations.

Area 5. Testing was planned to include shovel tests at 5m intervals to evaluate historic and Precontact resources; between 40 and 60 additional shovel tests were planned. There were six shovel tests forming a rectangle which were particularly deep, and prolific in terms of artifacts. These tests had about 5 layers and up to 182 artifacts in a test. Artifacts dated from the late eighteenth century to the early nineteenth century. One to two small excavation units in this area were needed to explore the Totten/Dissosway occupation of the area.

Area 7. Additional testing at the Hilliard and Cole residences were planned after review of the historic literature/maps. The only artifacts discovered during Phase 1B testing related to the recent fire and the twentieth century. The cistern at the Hilliard residence also needed to be investigated.

Methodology

Shovel testing methodology was planned in accordance with the New York State Historic Preservation Archaeological Report Format Requirements (2005) and the Standards for Cultural Resource Investigations and the Curation of Archaeological Collections in New York State (1995). Roughly circular tests approximately 1.3 feet (0.4m) in diameter shall be manually excavated until 0.5 feet (15cm) of sterile subsoil have been removed. All soils from the shovel tests will be screened through ¼ inch (0.63cm) mesh to assist with the recovery of artifacts. Soils will be excavated and recorded by natural stratigraphic deposits. The strata encountered will be measured, described and recorded in terms of texture, inclusions, Munsell colors and thickness. Artifacts will be bagged by provenance.

Excavation unit methodology is planned in accordance with the New York State Historic Preservation Archaeological Report Format Requirements (2005) and the Standards for Cultural Resource Investigations and the Curation of Archaeological Collections in New York State (1995). The excavation units shall be manually excavated until 0.5 feet (15cm) of sterile subsoil have been removed. All soils from the shovel tests will be screened through ¼ inch (0.63cm) mesh to assist with the recovery of artifacts. Soils will be excavated and recorded by natural stratigraphic deposits. The strata encountered will be measured, described and recorded in terms

of texture, inclusions, Munsell colors and thickness. Artifacts will be bagged by provenance.

Backhoe trenching methodology will use a trackhoe to open the trenches. The trackhoe operations will be supervised by a R.P.A. archaeologist. Samples will be taken from the floor of the trench for screening through ¼ inch (0.63cm) mesh to assist with the recovery of artifacts. Soils will be recorded by natural stratigraphic deposits. The strata encountered will be measured, described and recorded in terms of texture, inclusions, Munsell colors and thickness. Artifacts will be bagged by provenance.

All shovel tests, excavation units, and trenches will be backfilled under the supervision of archaeologists.

All artifacts, field notes, photographs and other materials will be returned to Greenhouse Consultants Incorporated for processing and analysis. Procedures for artifact processing and basic stabilization will be established by, and carried out under direct supervision of the staff laboratory director. Principles of object conservation will be applied throughout processing, both in the field (if necessary), and at the laboratory.

Based upon subsequent 2016 revisions to the project area, there were no further impacts to Area 3. Subsequent revisions shown in the December 23, 2016 APE indicate that impacts will be made in Area 3. See Figure 1-4 for the Builders Pavement Plan (2017) and Figure 1-5 for the Site Grading Plan (2015).

The applicant, WF Liberty, LLC, proposes the redevelopment of a 17.72-acre portion of a 33.68-acre property (the “Project Site”) along the Arthur Kill waterfront in Western Staten Island. The proposed 17.72-acre development area is composed of a 589,619-gross-square-foot (gsf) mixed-use commercial center including the following uses: (a) destination and smaller scale retail, supermarket, restaurant, cinema, and small office use; (b) below-ground and on-street parking; (c) publicly accessible waterfront open space; (d) signage; and (e) street and infrastructure improvements. In addition to the creation of a new private drive through the Project Site, the Proposed Project includes the opening of Richmond Valley Road west of Arthur Kill Road and the addition of new turning lanes into the Project Site along Arthur Kill Road. In addition, the Proposed Project will create 2.90 acres of freshwater wetland habitat in the northern portion of the site and create or restore 2.99 acres of tidal wetlands along the northwestern, western, and southern shores of the Project Site. The Proposed Project would retain the Cole House, the existing residential building on the Project Site, for use as a restaurant on the ground floor

and office space on the second floor (e.g., management office). (See Figures 1-4 and 1-5.)

Prior to the commencement of construction, the work area would first be prepared for construction and would involve the installation of public safety measures such as fencing and signs. Access points to the Proposed Project Site would be established. Field office trailers for the construction engineers and managers, portable toilets, and dumpsters for trash would be hauled to the Proposed Project Site and installed. Next, placement of sediment control devices around and throughout the construction envelope and natural resources to be preserved. The erosion and sediment control devices will prevent sediment laden runoff from running off site and directly entering the wetlands throughout the duration of the construction activities. Orange construction fencing will demarcate the Limit of Disturbance for the Project Site. Haybales and silt fencing will be erected around the entirety of the Project Site with the exception of upper slopes. Stabilized construction entrances will be installed at the two access points to the Proposed Project Site at the northern entrance and Richmond Valley Road. Erosion and sediment controls are depicted and detailed on Figures 1-6 and 1-7, Phase II and Phase III Erosion and Sediment Control Plans and Details prepared by Capital Environmental Consultants, Inc. dated March 22, 2017.

The Proposed Project construction would entail clearing and grading activities. Site clearing activities would include the use of a variety of forestry equipment (i.e., harvester, log hauler, chipper, etc.). To facilitate the building construction (commercial center and parking garage), excavators and front end loaders would be used for the task of soil excavation. The soil would be loaded onto dump trucks for transport to a licensed disposal facility or for reuse on a construction site that needs fill. Any stockpiled soil will be placed in designated locations that are surrounded by haybale and silt fencing. Then, piles would be driven to support the new buildings. Localized dewatering will occur, as necessary. The minimal amount of pumped water will be re-infiltrated onsite. Pile caps would be formed and concrete poured to build the foundations for the buildings.

When the below-grade construction is completed, construction of the superstructures of the new buildings would begin. The superstructure of the proposed buildings would include the building's framework (beams and columns) and floor decks. Construction of the interior structure, or core, of the building would include elevator shafts; vertical risers for mechanical, electrical, and plumbing systems; electrical and mechanical equipment rooms; core stairs; and restroom areas. Cranes would be used to lift structural components, façade elements, and other large materials.

Finally, interior fit-out activities would commence and would include the construction of nonstructural building elements such as interior partitions, lighting fixtures, and interior finishes (i.e., flooring, painting, etc.).

The Proposed Project would include building and opening as a public street the mapped but unbuilt portion of Richmond Valley Road that would extend in an east-west direction from Arthur Kill Road, terminating to the west along the Arthur Kill waterfront. Sections of Arthur Kill Road would also become part of the improved public street including the new intersection with Richmond Valley Road and turning lanes into the Proposed Project Site. New sidewalks along Arthur Kill Road and Richmond Valley Road would be constructed as a part of the Proposed Development..

New roadway construction typically entails laying down three to four layers of roadbed material. First a subbase is placed and compacted, followed by the base layer, a binder layer, and finally the top layer of asphalt. The final work would be striping the streets and crosswalks. Construction of the roads would involve graders, bull dozers, and compactors for the first three layers. The asphalt would need a paving machine and rollers to compact the asphalt. The materials would be brought to the site by trucks and immediately placed by the graders and bull dozers. The roller/compactor would be used after each layer has been placed. The asphalt would be brought by trucks and placed into the paving machine for spreading and compacting. For the construction of the sidewalks, forms are placed by hand to shape the curb and sidewalk. After reinforcing mesh is laid, concrete is poured from concrete trucks to form the sidewalk.

The Proposed Project also includes waterfront open space that would include passive recreational open space with a public walkway and landscaping improvements. During construction of the open space, clean top soil would be imported for installation of the grassy areas and landscaping. The top soil would involve dump trucks bringing the soil and hand spreading. Trees would also be planted during this stage of construction. Concrete sidewalks would be poured, and furniture such as benches, would be installed. Additionally, there would be new sidewalks and walkways throughout the development site that would be finished with landscaping and tree plantings. This includes both along the proposed private drives as well as Richmond Valley Road.

Figures 1-8 through Figures 1-11 illustrate the proposed mitigation plan for the project area. Figure 1-8 is the legend details for the following figures. Figure 1-9 shows the overall mitigation plan for the shoreline tidal mitigation and the freshwater wetland mitigation, which will impact Area 1, in particular the Catbriar Site. The Area 1 West site is not part of this freshwater wetland mitigation. Figure 1-10 illustrates

the cross-sections of the shoreline tidal mitigation. Figure 1-11 shows the freshwater wetland mitigation cross-sections, with their impacts on the Catbriar Site in Area 1.

The boundaries of the two archaeological sites in the north end of the property, the Catbriar Site and the Area 1 West Site, will be delineated in the field prior to walkway and landscape construction. That work will avoid any subsurface impacts to these two archaeological sites. When freshwater wetlands are created within the Catbriar Site, they will occur following the Phase 3 archaeological mitigation excavations, and subsurface impacts to the remainder of the Site will be avoided.

2.0 HISTORIC BACKGROUND

2.1 Mary Hilliard and the Cole/Dissosway Families

The Dissosway and Cole families controlled portions of the project area for well over 200 years. The gristmill and sawmill complex that was located in and around the southernmost part of the project area was founded in 1700 by Cornelius Dissosway, and was the only mill to serve Tottenville for a 200 year period, By the late nineteenth century, it had also become a sawmill for the ship building and carpentry industry in the area (Clute 1877, Joline 1950, Mangino 2000). The industrial history and archaeology of the project is covered in the next chapter of this report.

Documentary research focused on the family of Mary Hilliard, the original owner of the small house lot in the southeast corner of the property. Mary Collins Cole Hilliard (1868 – 1940) was the daughter of Cornelius Dissosway Cole (1841 – 1887) and Harriet Kennedy Robinson (1836 – 1896), the granddaughter of Captain Abram Cole (1810 – 1876), and the great-granddaughter of Captain Abram Cole (1778 – 1833). Mary married Frederick Whittlesey Hilliard (died 1933). They had five children during the period 1898 to 1912 (Harper n.d.). See Table 1-1. Mary was one of a number of relatives in 1899 who received a parcel in Block 7632 in 1899. It may be that she received the corner lot in settlement of that transaction. Or it may be that the family gave her the parcel for her economic security. It is notable that the property was in her name for decades before the death of her husband in 1933.

The 1907 Robinson atlas map shows the addition of a small house owned by Mary F. Hilliard on a small lot at the northeast corner of Arthur Kill Road and Richmond Valley Road (Robinson 1907). The same house, fronting on Arthur Kill Road had a small garage added (Sanborn 1917a, 1917b).

Table 1-1 Mary Collins Cole Hilliard Geneaology (from Maryetta Harper 09-1998, Spruce Grove, Alberta)

			Captain Abraham = Cole (1778-1833)	Ann Johnson (1782-1863)							
Winant Johnson = Cole (abt. 1807-	Mary Journeay	Isaac Cole (1808-	***Captain Abraham = Cole (1810-1876)***	Anna M. Dissosway (? - 1899)	Susannah = Cole (1813 -	Baret Parke Winant	Harriet Cole (1816 -	Mary Johnson Cole (?) (1818-	Jacob G. Cole (?) (1821 -	Abigail Cole (?) (1825 -
		Joseph Albert Cole (1832 -	***Cornelius = Dissosway Cole (1841-1887)***	Harriet Kennedy Robinson (1836-1894)	Jacob W. Cole	James T.Cole	Abram Cole	Sarah Ann Cole =	Paul Mersereau Van Name	
		Cornelius Howard Cole (?) (1866-1869)	***Mary = Collins Cole (?) (1868-1940)***	Frederick Whittlesey Hilliard (? - 1933)	Charles = Pendexter Cole (?) (1876-1948)	Edith Wood (1876-1956)				
		Thomas Kier Hillard (? - 1981)	***Ebba Swanson***	***Frederick Hilliard (1898-1912)***	***Helen (1901-1902)***	***Marion = (Peggy) Hilliard (1901 -***	***Ralph Blomley***	***Elias = Brewster Hilliard (1906 -***	***Helen Buch***	***John Hilliard (1907-1932)***

2.2 Dissosway Homestead Cemetery

A note about Mary Hilliard and the Dissosway Homestead Cemetery were found. According to Salmon it was on land granted to Mark Dissosway, located near the Outerbridge Crossing. Mary Hilliard, when she was a child, visited the cemetery and copied one of her ancestor's epitaph. The woman was Mary Fitz Randolph Baldwin Dissosway, a Revolutionary War heroine. Mary Dissosway was the wife of Cornelius Dissosway, featured prominently on the Revolutionary War era maps. Mary Dissosway died September 10, 1808, aged 61 years. The epitaph was as follows:

> A soul prepared need no display
> The summons came the Saints obey
> She closed her eyes and saw her God
> The flesh rests here till Jesus comes
> And claims the treasure from the tomb

Tombstones or headstones or ledger stones were specially ordered in the eighteenth century. During headstone at that time cost about two to three pounds sterling, and a ledger stone could cost ten pounds. Stone was often imported from Bergen County. Inscribers were masons, cordwainers, brass workers and wood carvers. As a form of advertising, they would inscribe their name on the grave stones (Salmon 2006:213-220). The family had to be well-off financially in order to afford this cost during this time period. As development occurred during the nineteenth century, headstones were often removed, or laid flat. If headstones were not relocated to a proper cemetery, they could be recycled into walkways, fences, foundations, and in one case, the base of a bread oven. Earlier concepts of the afterlife precluded removing the bodies. A person was literally planted in the grave and needed to stay there until Judgment Day. Salmon found little evidence for removal of bodies, but much more evidence of headstones being removed.

The location is noted as being near the Outerbridge Crossing, but no exact location. W.T. Davis' notes examined but unhelpful. Salmon's map shows the cemetery marked as being north of the Outerbridge. This location is unlikely for two reasons. That area was sold early on, with the DuBois family occupying it by the nineteenth century. Secondly, it is a thickly wooded, marshy area on the 1913 Richmond Topographic Bureau Survey Sheet 88.

2.3 Cole House

A study was prepared by Erin Brennan of ARKF on the Cole House. These documents were submitted to the SHPO office during February 2016. Perazio (February 29, 2016) approved the scope of archaeological work submission and the Cole House submission. The SHPO's office declared no further interest in the standing structures and buildings.

3.0 INDUSTRIAL ARCHAEOLOGY

by Dr. Michael S. Raber

Michael S. Raber, Ph.D., of Raber Associates acted as co-principal investigator for study of historic industrial resources, assisted by Thomas R. Flagg, a member of the Society for Industrial Archeology who has been active in study and documentation of waterfront and marine resources in the Port of New York for over forty years.

3.1 Historic Industrial Resource Issues

Previous investigations identified possible historic industrial resources, but the condition and potential significance of many of these resources could not be determined. Until the mid-19th century, there were no known or expected historic industrial sites within Project limits. Immediately south of the Project, tidal flow in Wier's Mill Creek powered a grist and saw mill from ca. 1700-1900. In the south half of the Project area within Block 7632, Lot 150, a series of poorly-documented industrial operations ca. 1857-1963 were identified in local histories, pre-1925 maps and aerial photographs, and deed abstracts (Greenhouse Consultants Incorporated 2015). As discussed in Chapter 3 below, these operations were associated with a number of small frame structures and a pond of approximately 1.4 acres in Area 2, and with several timber waterfront structures in Area 3 (Figure 3-1). None of the mapped structures or pond in Area 2, much of which contains deep fill deposits, are visible. Fill depths inhibited Phase 1 investigations of these possible resources. Additional background and field investigations described in Chapter 3 addressed the potential integrity and significance of Area 2 industrial resources. In Area 3, limited pile remains of two waterfront structures remain visible, but have been previously determined as non-significant resources (Raber *et al.* 1996).

East of Areas 2 and 6, there were previously-undocumented landscape or archaeological features in Area 4 identified in previous investigations as possible industrial resources. Located within Block 7632, Lots 6, 50 and 151, these features included a narrow channel running southwest towards Wier's Mill Creek, earthen berms on Lot 50 close to a buried terracotta pipe found in Backhoe Trench 3, and a large piece of riveted iron plus some concrete fragments some distance north of the berms and pipe (Figure 3-1). Phase 1 investigations hypothesized these features might represent a mill operation, but none of the Phase 1 written or graphic sources indicated any structures or other features in these areas, or any road connections to Arthur Kill or Richmond Valley roads which might be expected for an industrial operation (Greenhouse Consultants Incorporated 2015). As discussed in Chapter 3 below, additional background sources including post-1925 maps and aerial photographs confirmed the absence of any mill operations, and indicated the likely or possible sources of most of the observed features.

3.2 Areas 2 and 3

3.2.1 Summary of Background Data

Local histories and deed abstracts indicate three small industrial operations in these areas. A sample of available deeds for properties including these and adjacent Project test areas, between 1884 and 1974, indicated no descriptions or identification of non-residential structures. Interpretation of known or possible historic industrial archaeological resources is therefore based primarily on interpretation of cartographic sources and two backhoe trenches. A detailed 1913 topographic map is especially important for interpretation, as the elevations shown near the Cole House on Arthur Kill Road are almost identical to those on present Project mapping, allowing for comparisons of present elevations with those shown for structures and features in Areas 2 and 3 ca. 1870-1940 (Figures 3-1, 3-4; Borough of Richmond 1913; Greenhouse Consultants 2015: Appendix 1; Richmond County Clerk n.d.: 154: 306-11; 273: 169-71, 171-77, 178-79, 180; 1020: 180; 1600: 151; 1927: 401-2; 2027: 125-26; 2073: 207).

The Cole family operated a lumber, wood, and coal business ca. 1857-1895, known as Cole Brothers after 1875, with a number of sheds north of Wier's Mill Creek and a lane running east to present Arthur Kill Road. As there was a tide-powered sawmill running on the adjacent property to the south, it is possible the Coles only stored and sold bulk materials, perhaps supplying the nearby sawmill. A structure housing a small boiler house in place by the early twentieth century does not appear on any of the small-scale maps available for the period of Cole operations, further suggesting a lack of machinery at a site which had no waterpower, as discussed below. Since the Coles sold lumber, however, they may have operated a sawmill not clearly indicated on these maps. The Coles probably received deliveries by barge at a pile-supported timber wharf along the creek, shown most clearly on maps post-dating their operations but suggested on several maps published in the late nineteenth century. Limited remains of this wharf survive in or south of Area 3 (Figures 3-1 to 3-3; U.S. Coast Survey 1866; Beers 1874, 1887; Bayles 1887; Vermeule and Bien 1890; U.S. Geological Survey 1891, 1898; Hubbell 1893; Sanborn Map Company 1898-1910; Borough of Richmond 1913; Leng and Davis 1930; Greenhouse Consultants Incorporated 2015).

By the mid-1870s, there was a 1.4-acre pond immediately north of the Cole structures on the family's property. The pond, which remained in place until filled c 1945, was identified as a freshwater feature on a 1910 insurance map. The pond surface, mapped at elevation 2 feet (probably above mean sea level) in 1913, was probably just below mean high water, with immediately surrounding surfaces on which the buildings sat at about elevation 4 feet, probably just above mean high water. The pond and building elevations indicate no waterpower was available to the

industrial site from either the pond or Wier's Mill Creek. It is possible the pond served as log storage, a common feature at many sawmills which minimized risks of fire or log splitting prior to milling. Use of freshwater precluded attacks by marine borers and other saltwater organisms. A log pond tends to suggest the Cole Brothers may have operated a sawmill. Given the pond's elevation and proximity to brackish groundwater, the Coles may have needed to line the presumably-shallow pond area with less permeable clayey materials to maintain freshwater conditions. Drains from adjacent fields approximately 5 feet above the pond may have provided the freshwater (Figures 3-1 to 3-4; Borough of Richmond 1913; G.W. Bromley 1917; Ho and Li 1987; U.S. Department of Agriculture 2010; Wikipedia 2016).

After approximately a decade of apparent inactivity at this site, the Coles sold the property to the Southern Shipbuilding Company in late 1907. Southern Shipbuilding had a large plant in Jacksonville, Florida, and also owned a lumber company dealing in yellow pine from the American South. The initial intent of the purchase may have been to move the Florida operations to the Port of New York, and perhaps to sell or process yellow pine for marine and waterfront construction, but insurance maps suggest periods of inactivity or leasing to other firms. By ca. 1910, Southern Shipbuilding built three launching ways, through or adjacent to the Cole Brothers wharf, located at or beyond the extreme southern edge of Area 3. These structures, presumably of pile-supported timber, were evidently removed by 1913 and replaced with a small pier, perhaps reflecting a shift from ship or barge construction to sale and processing of lumber. A small steam engine in a shed at the south end of the pond, visible on 1913 and some 1917 maps, was likely built at about this time and may have powered sawmilling and other equipment in an adjacent 2-story frame building. The engine may have been served by waterlines running from Arthur Kill Road. There is no evidence the pond was used for engine condensing water, more commonly seen with much larger compound engines, and it is likely the engine at this site just exhausted into the atmosphere. At the beginning of World War I, with other shipbuilding contracts in hand at yards in other states, Southern Shipbuilding sold the property to the Moran Towing Corporation (Figures 3-1, 3-3 to 3-5; Borough of Richmond 1913; Sanborn Map Company 1898-1910, 1917, 1917 revised; *New York Times* 1907; *International Marine Engineering* 1917a, 1917b; Richmond County Clerk n.d.: 329: 509, 341: 212, 469: 148; personal communication, Gerald Weinstein).

Begun in 1855, the Moran firm became the largest towing operation in the Port, and incorporated in 1905. Moran used the property in the Project area to berth and service its fleet of scows, barges and dredges, extending the Southern Shipbuilding pier, and may have maintained the Southern Shipbuilding facilities as a repair works. Although Moran owned the property until 1963, it appears to have demolished the facilities and filled the pond early in World War II. There were no subsequent industrial activities at the site, which was extensively filled during construction of

Route 440 ca. 1969-72 (Figures 3-1, 3-7 to 3-9; New York City, Bureau of Engineering 1924; Historic Aerials by NETROnline 1940, 1947; Works Progress Administration c1941; Anonymous n.d.b; Richmond County Clerk n.d.: 1600: 151).

3.2.2 Field Investigations and Interpretation

The extremely low elevations of the demolished frame structures built c 1857-1940 in Area 2, a few feet above mean high tide, strongly suggest that none of the structures had basements and that removal of the structures would have left little if any intact remains. Present ground elevations are approximately 10 feet/3 meters above the surfaces on which the structures sat. Backhoe trenches BT3 and BT3 Extension, excavated to depths of 10.2-12.5 feet through the approximate footprints of several of the structures, revealed deep fill and fragments of piping perhaps associated with former water supply or drainage at the industrial site. Background and field data indicate no likely historic industrial resources in Area 2 with sufficient integrity to provide any significant new information, or eligibility for the state or national historic registers of historic places. As noted in Chapter 1, the fragmentary pile remains of a wharf and pier associated with the Cole Brothers/Southern Shipbuilding/Moran Towing site in Area 3 were previously determined non-significant (Figures 3-1, 3-4; Raber *et al.* 1996).

3.3 Area 4

3.3.1 Summary of Background Data

No maps or aerial photographs consulted for this study show any structures in Area 4 resembling an industrial operation or mill. These and other sources, including the 1913 topographic map, clearly indicate that the channel running northwest-southeast, noted in earlier investigations, was not a watercourse, but was created as part of the grading for the ca. 1925 construction of a spur of the West Shore Branch of the Staten Island Rapid Transit Railway (SIRT). SIRT originated as the Staten Island Railroad in 1851, which completed lines from Tottenville to Clifton and Clifton to Eltingville before going bankrupt in 1861. Following some additional line expansion under receivership ca. 1861-63, the line was acquired by the Baltimore & Ohio Railroad in 1884 and re-organized as SIRT. SIRT built the spur crossing the Project area to facilitate the 1925-1928 construction of Outerbridge Crossing. The spur originally ran north of the bridge approach to Allentown Lane, which was beyond the end of Drumgoole Boulevard. Along with another section of the West Shore Branch further north, SIRT planned to create a single freight line from Arlington to Tottenville, but the Depression evidently slowed and eventually terminated this plan. The spur to Outerbridge was cut back to a point just south of the bridge by 1940, and was removed by 1954 (Figures 3-1, 3-4, 3-7 to 3-9; Clute 1877; Borough of Richmond

1913; Railway Age 1936; NETROnline 1940, 1947, 1954; Bogart 1951; Reier 1977; Bommer 2015; Pitanza 2015; Anonymous n.d.a).

3.3.2 Interpretation

No further subsurface investigations appeared necessary in Area 4 based on background data assembled for this report and Phase 2 infield inspection. Construction of the rail spur may have required drainage structures associated with the cut made in Area 4. It is possible the berms observed in 2015, and the terracotta pipe found at the approximate 7 foot elevation in Backhoe Trench 4, were associated with rail-related, undocumented drainage. Comparison of 1913 and 2015 contours indicates the pipe was placed on several feet of fill, which along with the berms could have been generated by material excavated for the rail spur. The berms and pipe may also be associated with later undocumented drainage work, as suggested by a 1954 aerial photograph on which a very small body of water is shown close to the berms and pipe alignment. The iron and concrete fragments found on the surface north of Backhoe Trench 4 in 2015 appear to be random pieces of demolition debris from no identifiable source. None of the cultural material found in Area 4 appears to have potential to provide significant new information, or to have any eligibility for the state or national historic registers of historic places (Figures 3-1, 3-4, 3-9).

4.0 FIELD INVESTIGATIONS

Fieldwork was carried out between March 17 and June 8, and again on November 2, and November 15, 2016. The Riverside Galleria project was previously subdivided into Test Areas 1 through 7. Independent grids were established in each Area (Greenhouse 2015: Figures 30 to 37). All measurements used the metric system. Figure 4-1 shows the location of fieldwork conducted in 2016.

The format for numbering artifacts from the Riverside Galleria project is xxxx.xx, where xxxx.xx, represents the Context Number. The two digits to the right of the decimal are used only as needed to refer to strata within a context. The four digits to the left of the decimal point are the base code. The four digits numeric base code is divided into two parts; the first digit and the last three. The first digit of the base code indicates the type of field investigation used. The codes are as follows:

unprovenienced surface collection	1000
provenienced surface collection	2000
shovel test	3000
backhoe trenches	4000
excavation units	5000
feature excavation	6000

The three digits which follow the technique code are unique for each location and are assigned sequentially. Decimal subdivisions may be used for techniques three, five and six to indicate specific strata. For example, 3001.02 refers to shovel test (3000) number 1 (001), layer 2 (.02), while 5001.02 refers to excavation unit (5000) number 1 (001), layer 2 (.02).

Previously, Phase IB shovel tests were excavated at 15 meter (50 ft) intervals and each shovel test was assigned grid coordinates (Greenhouse 2015: Appendices 3 and 4). Subsequently, in Area 1, two types of supplemental shovel tests (STs) were excavated. At isolated finds, a cluster of up to eight STs were dug. They were placed at 1m (3.3 ft) and 3m (10 ft) intervals in the four cardinal directions, when feasible. In site areas, where nearby STs were positive for cultural material, a 5m (16.5 ft) ST grid was established. Effort was made to have two negative STs in order to provide a site boundary. Similarly, the site in the south part of Area 5 was tested using a 5m ST grid.

In Area 2, backhoe trench BT3 was excavated in 2013. It reached a depth of 3.1m and had a profile consisting entirely of fill. BT3 Extension was excavated with a larger machine in 2016 with the intent of reaching natural soils and testing them to see if they contained artifacts.

The field director and industrial archaeologist reconnoitered and assessed the industrial archaeology of Area 4, which was detailed in the previous section.

In Area 7, archaeologists had previously proposed using mechanical equipment to expose and explore the large twentieth century cistern associated with the Hilliard house. Because of safety issues and issues related to the required tree clearing, it was decided to delay this work until tree clearing and safe backhoe excavations are possible.

Shovel Tests (STs) measured about 35 centimeters on a side. Excavation units were 1m squares. Soil textures were determined using a flow chart diagram. Soil colors were determined with the aid of a Munsell Soil Color Chart. Soil descriptions are included in the Field Summary (Appendix 1). Recovered artifacts are listed in the Artifact Inventory (Appendix 2). All excavated soil was screened through ¼- inch mesh hardware cloth. All excavations were promptly refilled.

Backhoe trenches were selectively used to examine depth of fill, look at site stratigraphy, and probe for features. Size and depth of the trenches varied with conditions, discoveries, and depth of fill. Samples of selected contexts, removed from the trench by the backhoe, were sifted through ¼-inch mesh. One backhoe trench was completed in Area 2.

4.1 Area 1: The Catbriar Site

Test Area 1 is located on the north end of the Riverside Galleria property. The Outerbridge Crossing property is on the north, Arthur Kill Road is to the east, a medical complex and Area 5 are to the south, and the shores of the Arthur Kill are to the west. Area 1 is up to 100m (330 ft) long (north – south) and 300m (990 ft) wide. Most of Area 1 is covered by successional forest. The understory was particularly thick and difficult to survey; dominant plants included catbrier and poison ivy. Thick stands of *Phragmites* reeds are present in the wetter sections.

There were 85 preliminary, 15m (50 ft) interval shovel tests completed in Area 1 in 2008. A total of seventeen Precontact lithics were recovered from ten STs. Most came from plowzone (A horizon contexts). A variety of historic ceramics, other historic remains, shell, and modern debris were also recovered.

GCI returned to Area 1 in 2013. East of the intermittent streambed that divides the area, GCI tested two isolated locations of historic finds and each received an additional cluster of eight STs. There were no significant finds and no further work in those two spots was recommended.

West of the intermittent drainage an additional 179 STs were excavated in a 5m grid in 2013. These tests linked the previous positive STs into a single Precontact archaeological site, named the Catbriar Site. About half of the tests held Precontact finds. The most common finds were chert flakes and fire-cracked rock (FCR). A possible hearth feature, including many pounds of FCR and a chopper was found in ST313 (N65 E185) (Greenhouse 2015:Photo 16). Native American pottery was found in eight STs. Four were clustered in a 15m circle. The vast majority of the Precontact finds were found in contexts within the top 40cm (1.3 ft), in a strata considered to be a plowzone (Greenhouse 2015:Appendix 3). Shell was found in many tests, presumably in both historic and Precontact contexts.

Further investigation of the Catbriar Site in 2016 included more STs at 5m intervals. They were intended to probe for deposits and to further delineate the site boundaries. There were an additional 40 STs excavated: ST554 to 568, 575 to 593, and 634-639 (see Figure 4-2). Eleven of these tests (27%) had Precontact artifacts. Because shell was omnipresent in the Area, it was not considered definitively indicative of Precontact occupation and is excluded from this discussion. Ten of these eleven positive STs (90%) of these tests had fire-cracked rock (FCR). Three of these tests (27%) had chert flakes. Most of the Precontact finds were in the A horizon. Three STs had Precontact material in the B horizon.

In addition to the STs, two 1m square excavation units were completed in Area 1, Units 1 and 2 (see Figure 4-2). Unit 1 (N100E188.5) was positioned on the west side of ST384 because this ST had the most Precontact ceramics (see Figure 4-3). The top stratum consisted of about 14cm of very dark brown sandy loam Ao horizon and held only modern trash (see Figure 4-4;, Photos 4-1 and 4-2). The second stratum was brown loamy sand and it was divided into four arbitrary contexts (5001.02 through 5001.05). These contexts had a mixed artifact inventory including chert flakes, a chert core, and historic materials like brick, bottle glass and a nail. A piece of decorated Precontact pottery came from 5001.03 (Appendices 2 and 3). The third stratum or B horizon was two arbitrary contexts of strong brown sand (5001.06 and 5001.07). Artifacts were limited to chert flakes, FCR, and, at the top, shell fragments. Below this the sand was lighter; it was yellowish brown grading into brownish yellow, and this was taken for a C-horizon. It was divided into two arbitrary contexts. The first, 5001.08, produced chert flakes while the second was devoid of artifacts.

Unit 2 (N64E184.75) was located in the southeast part of the site. It was positioned adjacent to ST313, which previously encountered a possible Precontact hearth with a chopper (Greenhouse 2015:37). The top stratum (5002.01) was up to 15cm of very dark brown loamy sand full of roots (see Figure 4-5, Photo 4-3). It held shell and nails. The second stratum was dark brown loamy sand A horizon which was subdivided into two contexts (5002.02 and 5002.03). They held shell, FCR, flakes,

and a biface, along with historic ceramics. The B horizon was about 50cm of brown sand and was subdivided into four context (5002.04, 5004.05, 5002.06, and 5002.07). FCR and flakes came from context 5002.04, while the others were culturally sterile (see Figure 4-5, Photo 4-3). A C horizon of light yellowish brown sand was reached on the east side of the square.

The Catbriar Site, as defined through shovel testing extends from the drainage ditch at E230 west to E75, a distance of 155m. The eastern half of the site extends the full distance from the marsh on the south to the Outerbridge Crossing Property, a distance of 50m. The west half of the site is about 35m from south to north. This yields a total site area of about 7,000 square meters. A revised Prehistoric Archaeological Site Inventory Form for the Catbriar is included as Appendix 4.

4.1.1 Area 1: Radial Shovel Testing

In addition to the testing at the Catbriar Site, other locations in Area 1 which had positive Phase 1B STs were further tested with radial shovel tests. There were six such locations ST4 in the east and ST239, ST242, ST244, ST246, and ST250 in the west (see Figure 4-5)

ST4 is located in the southeast corner of Area 1; a flake came from it. There were six radial tests completed (ST569 to ST574); the area to the south of ST4 was heavily eroded and not testable (see Appendix 1). All these tests had disturbed profiles. This was evidenced by the mixed nature of the soil and the presence of modern trash, like in ST569

ST 569 N46E300

Depth (cm)	Soil type	Color	Artifacts	Interpretations
0-29	Loam	brown	NCM	Fill
29-79	Sand	yellowish brown mixed w/ brown	Plastic*, mod bottle glass, paper*	Fill

NCM = No Cultural Material *= Discarded

ST239 (N60E60) is about 60m west of the Arthur Kill. A jasper flake was recovered from the B horizon during the initial Phase 1B. A typical array of eight shovel tests was completed here; they were 1m and 3m from the original tests, in the four cardinal directions (ST594 to ST601). They ranged in total depth from 48 to 74 cm; all had three strata, like ST600 (see Photos 4-4 and 4-5).

ST 600 N60E57

Depth (cm)	Soil Type	Color	Artifacts	Interpretations
0-7	Loam	very dark brown	brick frag*	Ao
7-39	Loamy sand	strong brown	NCM	A
39-68	Gravelly loamy sand	brown	NCM	B/root obstruction

NCM = No Cultural Material *=Discarded

Except for bottle glass in ST601, only brick was found in these tests.

ST242 (N75E45) is northwest of ST239 and produced interesting early ceramics, white salt-glazed stoneware and porcelain. A cluster of eight radial shovel tests was completed here (ST602 to ST609) (Photos 4-6 and 4-7). ST608 had a typical profile

ST608 N75E44

Depth (cm)	Soil Type	Color	Artifacts	Interpretations
0-10	Loam	black	NCM	Ao
10-38	Loamy sand	brown	NCM	A
38-60	Loamy sand	strong brown	NCM	B

NCM = No Cultural Material

With the exception of pearlware and redware in ST609, brick and modern debris were the only finds.

ST250 (N90E30) is northwest of ST242, in the northwest end of the property. An array of eight shovel tests followed in 2016 (ST610 to ST617). These tests had four types of profiles. ST612 had an intact natural profile, but no artifacts. There were four STs with intact profiles covered by up to 28cm of fill. They produced only modern debris. There were two STs that were truncated and covered with fill, like ST616 (see Photo 4-8), and one that was entirely fill.

ST616 N90E29

Depth (cm)	Soil Type	Color	Artifacts	Interpretations
0-7	Loam	black	NCM	Ao
7-38	Loamy sand	brown mixed w/strong brown	iron*, glass, ironstone, charcoal*	Fill
38-60	Loamy sand	dark yellowish brown	NCM	C/Sterile subsoil

NCM = No Cultural Material * = discarded

4.2 Area 1: West

Two positive shovel tests in the southwest part of Area 1 were investigated initially with clusters of eight STs (ST244 and ST246). ST244 (N45E60) produced a plethora of historic artifacts, including kaolin pipestem fragments, in the second and third levels. It also had a chert flake in the third level. A cluster of eight STs was excavated around ST244 (ST618 to ST625) in 2016. These eight STs had consistent profiles with three levels; a thin organic topsoil (Ao), plowzone (A horizon), and subsoil (B horizon), like ST625 (see Photo 4-9).

ST625 N45E42

Depth (cm)	Soil Type	Color	Artifacts	Interpretations
0-11	Loam	black	NCM	Ao
11-34	Sandy loam	dark yellowish brown	metal, charcoal, ironstone	A
34-70	Sandy loam	strong brown	NCM	C/Sterile subsoil

NCM = No Cultural Material

All eight tests produced historic artifacts, including glass and a kaolin smoking pipe bowl. Ceramics included creamware and slipware, both eighteenth century wares, along with redware. Four of these tests also held Precontact artifacts; three flakes and a core were recovered. All the Precontact finds came from the plowzone except for a flake from the B horizon in ST624.

In 2008, ST246 (N30E30) produced an early type of historic ceramic (North Devon Gravel Tempered ware), a possible rosehead nail, shell, and fire cracked rock (FCR) in the top stratum (Greenhouse 2015:36). In 2016, a cluster of eight STs was completed around ST246 (ST626 to ST633). Profiles were similar to ST625

described above. All eight of these STs produced historic artifacts, including a kaolin pipestem in ST626, and crude brick. Six of these STs also produced Precontact artifacts. These included a chert biface fragment, flakes and FCR. Most of these finds came from the A horizon, but the biface fragment was found in the B horizon in ST628.

Following these two sets of radial STs, which are less than 21.5m (71 ft) apart, it was decided to use a 5m grid of STs to gather more artifacts and attempt to delineate the site boundaries. A total of 21 STs were excavated at 5m intervals (ST750 to ST770) (see Figure 4-6). ST765, on the north end, had a typical profile with three strata.

ST765 N50E45

Depth (cm)	Soil Type	Color	Artifacts	Interpretations
0-9	Loam	black	NCM	Ao
9-33	Sandy loam	brown	many brick frags, slag	A
33-64	Sand	strong brown	NCM	B/Sterile subsoil

NCM = No Cultural Material

Fifteen of the 21 5m shovel tests had a similar profile. In a few the Ao organic level was very dark grayish brown or very dark brown. This top stratum was from 7 to 30cm thick, and was absent in three STs, ST750, ST751, and ST769. The second stratum, or A horizon was either sandy loam or loam and some were dark brown. Thickness ranged from18 to 37cm. The third and final stratum, or B horizon, was usually sand, but one was gravelly sand. Precontact finds included two gray chert flakes from the Ao horizon of ST754, a flake from the A horizon of ST768, and FCR in the B horizon of ST767. Eighteenth century ceramics included white salt glazed stoneware from the A horizon of ST759 and Jackfield redware from the A horizon in ST761.

Unit 5 (N30E32.5 was on the north side of ST629 (see Photos 4-10 and 4-11, Figure 4-7). The top context (5005.01) was the Ao horizon and it yielded brick, glazed brick, and redware, along with container glass and shell. The next three levels (5005.02, 5005.03 and 5005.04) comprise the A horizon, which was about 36cm thick. Precontact artifacts from the A include a core of upstate Deepkill chert, and flakes of Deepkill chert, gray chert and chalcedony, along with FCR. Historic finds include a kaolin pipe bowl and stem fragments, brick, nails, glass, and a brass button. The brick is relatively crude; it may have been handmade at an on-site kiln. Ceramics included ironstone, pearlware, redware, delftware, and yelloware. The next three

contexts (5005.05, 5005.06, and 5005.07) were arbitrary subdivisions of the B horizon. Most of the artifacts were Precontact flakes and FCR; a scraper was also found in the top of the stratum. North Devon Gravel Tempered ware was found in Context 5005.06. Context 5005.07 and 5005.08 were devoid of artifacts. The latter context extended into the lighter C horizon.

A Prehistoric Archaeological Site Inventory Form for the Area 1 West site is included as Appendix 4. A Historic Archaeological Site Inventory Form for the Area 1 West Site is attached as Appendix 4.

4.3 Area 2

Area 2 comprises much of the southern part of Riverside Galleria. Area 6 is to the north, Area 4 is to the northeast Area 3 and Weir's Mill Creek are to the south, and the Arthur Kill is to the west (see Figure 4-8). Previous shovel testing in Area 2 showed profiles consisting entirely of fill. The previous backhoe trench (BT3) had a profile 3.1m (10.2 ft) deep and consisting entirely of fill (Greenhouse 2015:39-40).

In 2016, BT3 Extension was excavated on the east side of BT3, using a larger trackhoe capable of excavating deeper (see Photo 4-12). This trench was 20m (66 ft) long, 2m (6.6 ft) to 3m (9.9 ft wide) and about 3.9m (12.9 ft) deep. A column profile was recorded (see Photo 4-13).

BT3 Extension

Depth (cm)	Soil Type	Color	Interpretations
0-20	Loamy sand	brown	Fill
20-110	Gravelly sandy loam	reddish brown	Fill
110-280	Loam	brown, very dark brown & reddish brown	Mixed fill
280-350	Sand	olive gray	A?
350-390	Sand	yellowish brown	B

Like in BT3, there were obsolete utility lines encountered in the fill. Three large pieces of iron that could have been part of an industrial flume or pipeline were removed from the fill. The olive gray sand at 2.8m has an unusual color for an A horizon while the yellowish brown B horizon is typical of the area. Because of the unstable nature of these sandy deposits, the trench was particularly wide. The profiles were only stable for a matter of minutes, and the sides of the trench began to collapse long before it was completed, as seen in the photos.

Three samples of the two natural basal strata were removed at regular intervals by the machine and sifted (see Photo 4-14). Nothing was found in the olive gray sand. A single small sherd of historic ceramics was recovered from the yellowish brown sand. Oyster shell fragments were also noted.

4.4 Area 5

Area 5 is on the west side of the project area (see Figures 4-1 and 4-9). Area 1 is to the north, the medical complex and beer distributor are to the east, Area 6 is to the south, and the Arthur Kill is to the west. Area 5 extends up to 120m (400 ft) from south to north. Most of it is about 105m (350 ft) wide, except the north end, which extends to the east and is 195m (650 ft) wide. The northeast end includes a gravel-covered parking lot. Small, dump truck-sized piles of fill and debris occur over much of Area 5. Macadam fill predominates in the area just west of the parking lots. A causeway-like berm feature, built of debris and concrete pipe fragments extends east to west through the northwest end of Area 5. Another raised, dyke-like ridge of fill extends north-south along the shore of the Arthur Kill. It runs between the Kill and a marsh on the north end. The grid was oriented along the fencelines of the business' parking lots.

There were 52 STs previously completed in Area 5 (ST156 – 207) (Greenhouse 2015:Figure 33). Many of the tests had profiles entirely of fill. Others had historic artifact bearing strata beneath layers of fill.

Six Phase I Area 5 tests produced a single flake each. The historic material was fairly widespread in the southwest side of Area 5. Historic material was recovered from many tests and included ceramics from the eighteenth and nineteenth centuries (Greenhouse 2015:Figure 34). Two backhoe tests were previously excavated in the southeast part of Area 5, BT1 and BT2 (Greenhouse 2015:Figure 34). These trenches showed that some of the area has intact natural strata under fill, while other areas were disturbed.

In 2016, investigations in Area 5 included radial shovel tests around ST191, where a Precontact flake was found. Shovel tests in a 5m grid were also dug around previous tests with Precontact and/or historic finds. Together, these efforts included 110 additional shovel tests (ST640 – ST749). They were followed by two 1m excavation units.

ST191 is located to the northwest of the Area 5 site. This ST was dug during the Phase IB survey and produced a flake. To the immediate west are wetlands; it appeared disturbed and was not examined. Six STs were excavated at 1m and 3m distances to the north, east, and south of ST191 (ST713 – ST718). All six profiles consisted entirely of fill, like ST716 (see Photos 4-15 and 4-16).

ST 716 N170 E143

Depth (cm)	Soil Type	Color	Artifacts	Interpretations
0-11	Loam	very dark grayish brown	NCM	Fill
11-53	Sand	brown w/reddish brown	Glass, metal, ceramic	Fill

NCM = No Cultural Material

STs were positioned so that there was a 5m grid of tests encompassing the site. The north end of the site was a large man-made berm. Total depth of these STs ranged from 32 to 95cm (Appendix 1). The most common profile was simple, with two strata. The upper layer was an A horizon usually of dark brown or brown loam or loamy sand over a B horizon of strong brown, yellowish brown, or brownish yellow sand. This profile includes 24 of the 110 STs (21%) and is typified by ST654 (see Photos 4-17 and 4-18).

ST 654 N155E180

Depth (cm)	Soil Type	Color	Artifacts	Interpretations
0-35	Loamy sand	brown	Shell, ceramic, brick	A
35-94	Sand	strong brown	NCM	B

NCM = No Cultural Material

There were 16 STs (14%) that were similar to ST654 but were topped with an organic Ao horizon. Four STs (3%) had similar profiles but with the addition of a basal C horizon. One (1%) had those three strata and also had a top stratum of organic Ao horizon.

Most of the other STs had one or two strata of fill, over a partial or complete natural profile. For example, ST656 was one of eight (7%) that had two strata of fill over an A horizon (see Photos 4-19 and 4-20).

ST 656 N155 E165

Depth (cm)	Soil Type	Color	Artifacts	Interpretations
0-9	Loam	brown	Shell	Fill
9-50	Sand	strong brown	NCM	Fill
50-85	Loamy sand	dark brown	Ceramic, flakes, shell	A

NCM = No Cultural Material

This buried A horizon was a midden feature full of shell, slag, coal, and container glass. Ceramics included porcelain, redware, yellowware, and ironstone. The earliest ceramics included creamware as well as slipware, dated by South (1977) to 1670 – 1795. A large, flat stone lay at the bottom of this ST. It may be the floor of a structure or building.

There were sixteen STs (14%) with two strata of fill over intact A and B horizons. Others had truncated or natural profiles over one or two layers of fill.

Midden deposits were present in many of the STs; among those with the densest concentrations of artifacts were ST643 in the northwest, and ST690, ST693 and ST701 in the south. Ceramics from ST643 included ironstone, redware, and porcelain. ST693 had ironstone, redware, and stoneware. Finds from ST701 included ironstone made in the 1880s and Nottingham stoneware manufactured between 1700 and 1810, along with buttons, a comb, a kaolin pipe bowl and container glass.

During the course of the shovel testing, two alignments of large, partially exposed stones were noted and then each was examined with a 1m square excavation unit (Units 3 and 4). Unit 3 was positioned on the south side of a linear arrangement of boulders, thought to be a potential building foundation (see Photos 4-21 and 4-22, Figure 4-10). The top stratum (5003.01) was about 5cm of dark brown loamy sand. The second stratum, (5003.02 and 5003.03) which encompassed the bottom of the boulders, was a mixed fill. This red clay is typical of areas to the north, where Brunswick shale bedrock is present. Below this fill in the north end of the unit were three thin strata predominantly of dark yellowish brown loamy sand. They may be historic A horizons (5003.04). Below this depth, the unit was arbitrarily subdivided into four ten centimeter thick levels of brown sand subsoil (5003.05 to 5003.08). The first had brick and fire-cracked rock (FCR). The second had FCR, while the third had FCR and a jasper flake. The final context had no artifacts.

Unit 4 was located about 20m northwest of Unit 3, within a concentration of large, flat boulders (see Photos 4-23 and 4-24, Figures 4-9 and 4-11). The first context (5004.01) was a thin organic lens that held yelloware, pearlware, container glass, and a various other artifacts. The next two contexts (5004.02 and 5004.03) subdivided a stratum of mixed sand with reddish brown clay. Ironstone, Jackfield redware and pearlware were among the artifacts. The final two arbitrary 10cm-thick levels (5004.04 and 5004.05) of subsoil held only shell and brick fragments.

As defined through 5m grid testing, Area 5 is up to 75m (250 ft) from north to south and between 25m (82 ft) and 35m (115 ft) wide, or approximately 2000 square meters. It contains Precontact artifacts like flakes, biface fragments, and fire cracked hearthrock. Historic finds span the eighteenth, nineteenth, and twentieth centuries. Sections of the site have been disturbed. Other locations contain intact strata below layers of fill. In the past, this site was disturbed by construction, first by the Outerbridge Crossing, and later by nearby commercial development and shoreline stabilization efforts. In recent years (since 2013) it has also been degraded by four wheel drive trucks that use it and nearby areas as a track. Therefore, actual intact locations within the site includes about 1500 square meters.

A Prehistoric Archaeological Site Inventory Form for the Area 5 Site is included as Appendix 4. A Historic Archaeological Site Inventory Form for the Area 1 West Site is attached as Appendix 4.

4.5 Area 7

Area 7 is the property at the southeast end of Riverside Galleria. The veterinary medical complex is to the north, Arthur Kill Road is to the east, and Areas 2 and 4 are to the west (see Figure 1-3). It measures is up to 113m (375 ft) from south to north, and up to 83m (275 ft) from east to west. It includes the nineteenth century Greek Revival Style Abram Cole House (4927 Arthur Kill Road) and a corner parcel with building ruins (Mary Cole. Hilliard). Previous shovel testing followed current guidelines and included STs in a 7.5m (25 ft) grid near the house and ruins, and a 15m grid elsewhere (Greenhouse 2015: Figure 36, Photo 24).

The Cole house has a red brick driveway and brick walkways that surround the house (Greenhouse 2015: Photos 25 and 26). A 1913 map shows a gravel driveway north of the house (Greenhouse 2015: Figure 18), supplying a no earlier than 1913 date for the driveway. A landscape feature south of the Cole House incorporates a huge mill stone (Greenhouse 2015:Photo 28). A concrete pad west of the house is likely a removed twentieth century outbuilding or guest house.

A total of 64 STs were previously completed in Area 7 (Greenhouse 2014:Figure 35). Construction impacts are slated for the backyard, west of the Cole House. No potentially significant features or deposits were encountered behind the Cole House, and no additional testing took place there.

In the southeast corner of the new parcel, at the corner of Arthur Kill Road and Richmond Valley Road, are the ruins of the Mary Cole Hilliard house built circa 1912 - 1917. There is an exposed concrete slab on grade floor that is about 12 ft (3.6m) wide and over 25ft (7.5m) long (Greenhouse 2015:Figure35 and Photo 30). Remains of walkways built of concrete blocks are present west and north of the concrete floor. In addition to the house remains, the remains of a vaulted brick cistern or well was partially exposed (Greenhouse 2015:Photo 31). Shovel testing also located what is probably the garage floor (Greenhouse 2015:Photo 32). With the exception of the cistern, the Mary Cole Hilliard house site is not considered of archaeological interest, primarily because it is of recent vintage.

Dating to the early 1900s, the Hilliard cistern is considered of some archaeological interest. Backhoe testing of the cistern would require deep excavation and this raised safety concerns. Features of this type are typically 3m (10 ft) to 4m (13 ft) deep. In order to safely excavate this type of feature, tree clearing and a large excavation are needed. This made it impractical to examine this feature at this time. For this reason, excavation of this feature was delayed until such an excavation is feasible. This feature should be examined and documented when practical, and in advance of construction in this area.

5.0 ARTIFACT ANALYSIS

5.1 Laboratory Methodology

Artifacts recovered from the Phase 1B/2 fieldwork at Riverside Galleria, Staten Island, New York were brought to the Greenhouse Consultants laboratory for processing. The material was washed at room temperature tap water, dried, marked and catalogued. The drying procedure consisted of slow air drying on screens. The artifacts were labeled with their appropriate context number.

Artifacts were identified using a modified form of the Cultural Material Data Base Taxonomy of the National Park Service. Artifacts were coded for their functional group, class and material. Technological and stylistic manufacturing ranges were assigned when an artifact exhibited a datable attribute. Establishing a range of manufacture of artifacts provides a time frame for establishing dates after which the refuse deposits were made. This information was recorded on a tyvek label which was inserted with the artifact into a clear polyethylene ziplock bag. The bags were also labeled with context and catalog numbers.

Subsequent to cataloguing, the information from all artifacts with their appropriate codes were inventoried using a relational database software, which provides sorted inventory lists for contexts and artifact groups.

Contexts were assigned series numbers in accordance to the type of data recovery method. Shovel testing is identified by the 3000 series. Backhoe trenching used the 4000 series. Excavation units were assigned the 5000 series.

5.2 Analysis

A total of 2978 artifacts were recovered and processed from Areas 1, 2, and 5. Material observed in shovel tests that were either sampled or discarded in the field include shell, modern glass, and other modern debris. The following table shows the distribution of artifacts among the 3 archaeological areas:

Table 5-1 Artifact Summary by Area

Area	Total
1	920
2	1
5	2057
Total	2978

The Cultural Material Data Base Taxonomy structure artifact assemblages by functional group: Groups 1 through 9 are related to European settlers and Group 10 is prehistoric. Group 1 is kitchen related, Group 2 is floral/faunal, Group 3 is architectural, Group 4 is furnishings, Group 5 is weapons, Group 6 is clothing related, Group 7 is personal, Group 8 is tobacco related, and Group 9 is activities. Group 98 is miscellaneous.

Group 10 constitutes prehistoric artifacts. Class 1 consists of artifacts using in hunting and fishing activities. Class 2 consists of artifacts used in domestic activities, such as cooking and food preparation. Class 3 includes artifacts used to make stone tools, and can be stone tools themselves. Wood-working tools compose Class 4 and are used for crafting objects from wood as well as marking trails or clearing underbrush. Digging tools comprise Class 5 and are associated with activities such as subsistence farming. Other fabricating and processing tools reside in Class 6. These tools serve a variety of purposes including incising, drilling, sewing and other activities. Class 7 is a category containing general utility tools. Many of the stone tools in this category are associated with food processing, especially meat and preparation of skins, pelts and furs. Ceremonial and ornamental objects form Class 8. Their significance lies in body ornamentation or use in ritual.

Prehistoric artifacts recovered were from Classes 2, 3 and 7. Class 2 includes the fire-cracked rock and prehistoric pottery.

Class 3 is composed of tools used to manufacture other tools and artifacts that are byproducts of stone tool manufacturing. Tested pieces of rocks of chert, flint or other suitable material which can be used to manufacture a stone tool. A tested piece usually exhibits one or two flake scars, as though stone tool makers had assessed the quality of the rock before proceeding further. Homogeneity, hardness and low resistance to fracture are qualities that are valued. A core is raw material, suitable for stone tool manufacture, which exhibits a striking platform(s) and a pattern of flake scar removal. Flakes which are removed from cores can be made into tools or the core itself may be modified into a tool. Exhausted cores may be also used as rough tools. A primary flake is a spall from the outside of the core. They usually exhibit a sheen or patina, the result of the mechanical and chemical weathering of the rock. The presence of cores and primary flakes at a site are indicative of the initial stages of stone tool manufacturing. Primary flakes can be modified into scrapers or knives with the cortex serving as a natural handle for grasping the tool. A secondary flake can result from several activities. One activity is when a flake is removed from a core after the initial layer of primary flakes. A secondary flake may also result from shaping the tool through subsequent stages of manufacture. Third, a secondary flake can be a byproduct of the resharpening of a stone tool. A site containing

secondary flakes with few or no primary flakes or cores can be interpreted as a place where the initial stages of stone tool manufacturing were conducted elsewhere. In this scenario, the inhabitants were completing their stone tools, after rough ly forming them at the stone quarries. A site yielding only small resharpening lakes can be interpreted as the result of people using stone tools to butcher and process food and skins. As stone tools are used, the working edge grows dull and subsequently need to be resharpened in order to complete tasks. Flakes, both primary and secondary, and cores which are discarded during stone tool production are referred to as debitage. Other byproducts include chunks and shatter which are large and small, respectively, angular pieces of lithic material. Chunks and shatter have random flakes scars and usually result when the stone is dried out from weathering or is not homogeneous.

Class 7 tools are described as other general utility tools. Tools subsumed under this classification could be described as multifunctional in nature, such as scrapers and knives. A second type of tool is expediency tools which are artifacts which were never finished but had enough of a working edge that could be used to scrape, cut or chop something. Utilized flakes and bifaces are examples of such artifacts. A biface is an artifact exhibiting flake scars on the dorsal and ventral surface (Crabtree 1972:38). A biface is the result of either Stage II, III or IV in the lithic reduction sequence, depending upon the degree of edge preparation, shaping, thinning and finishing. A biface is not a finished tool. It can be used as a tool, in case the need arises. A Stage II biface could function in a heavy maintenance task, such as chopping. A Stage III or IV biface with the appropriate degree of edge thinness could be used for slicing or cutting.

5.2.1 *Area 1*

A total of 920 artifact were recovered from the shovel tests and excavation units in Area 1. Group 1 artifacts included bottle and container glass, and ceramics which included ironstone, redware, creamware, pearlware, stoneware, and North Devon Gravel Tempered. Bone, oyster and clam shell composed Group 2. Nails, brick and flat glass composed Group 3. Tobacco pipe fragments composed Group 8. The historic artifacts found in Area 1 span the colonial era to the twentieth century, starting at ca. 1600.

The prehistoric artifacts of Group 10 total 260 objects, composing of nearly 28 percent of the artifacts recovered from Area 1. Fire-cracked rock composed a large portion of the prehistoric assemblage along with tools such as a core, biface, chopper, tested pieces, primary flakes, secondary flakes and a prehistoric pottery rimsherd.

The Catbriar Site in Area 1 contained 700 artifacts, distributed among the shovel tests (409), Excavation Unit 1 (153) and Excavation Unit 2 (138). The faunal/floral functional group was the largest, composed primarily of oyster and clam shell. Mammal and avian bone were present. A pig molar in 3626.02.

Historic ceramics consisted of creamware, ironstone, pearlware, redware, combed slipware (1670-1795), Whieldon (1740-1770), dotware/dotted slipware (1700-1750), and bristol slipped stoneware (1880-1920), which represented a two hundred year timespan.

The prehistoric artifacts recovered at the Catbriar site were composed of chert, jasper, quartz, quartzite and chalcedony. The artifact types were primary and secondary flakes. Three tested pieces were present. The one from Shovel Test 3623,02 was made on jasper. The tested pieces from 5001.03 and 5002.04 were also composed of jasper. Two biface fragments were also found. The biface fragment in 3629.03 was made on grey chert as well as the one present in 5001.06.

The West Site in Area 1 contained 220 artifacts from the shovel tests (66) and Excavation Unit 5 (154). The faunal/floral functional group was the largest, with oyster and clam shell predominating. Mammal and bird bone were present. A horse molar was in 5005.03.

Historic ceramics consisted of North Devon Gravel Tempered (1635-1725), redware, pearlware, ironstone, delftware (1600-1790), and white salt-glazed stoneware (1720-1805). The North Devon Gravel Tempered sherd was found in 5005.06, the lowest artifact level, at the shovel test location where a previous piece of the ceramic had been found during the 2013 excavations. North Devon was to ceramics in the late 1500s, 1600s, and early 1700s, what Staffordshire was to ceramic making during the late 1700s to the present. The North Devon Gravel Tempered pottery was made exclusively for export to its colony, initially Ireland. It was never meant for English use. It became popular in America, as England expanded its colonial enterprise. Two of the Virginia factors were also owners in North Devon potteries, and the pottery also served as ballast in ships coming to America to retrieve raw products from the colonies (Watkins 1960).

Five prehistoric artifacts were found in the shovel tests in the West Site, and 36 were found in Excavation Unit 5. The artifacts were made on chert, quartz and chalcedony. Twenty-five secondary flakes were found, one thinning flake, five chunks, a core, a retouched flake and a distolateral scraper. The distolateral scraper was found in 5005.05 and made on chert. The retouched flake was present in 5005.04 and made in an agate-like grey-green chert. The core was found in 5005.03, and made on excellent quality Deepkill chert. Deepkill is not native to

Staten Island, but comes from a quarry, 90-100 miles north on the Hudson River. Two other artifacts were composed of Deepkill chert: a secondary flake in 5005.02 and a secondary flake in 5005.04. There three possible scenarios to the presence of Deepkill: (a) glaciation brought it to this location, and it was discovered and used by Native Americans; (b) it was traded or brought by Native Americans to this location for use; (c) colonists needed flint for their flintlocks and either mined it themselves or acquired it through trade. Since the Deepkill lies with historic ceramics dating from the 1600s-1700s, any of the scenarios is possible. All three pieces of the chert are excellent quality.

5.2.2 *Area 2*

One artifact was recovered from the Backhoe Trench 3 extension. This was a small fragment of ironstone, possibly mocha decorated.

5.2.3 *Area 5*

A total of 2057 artifacts were recovered, 1777 from the shovel tests and 280 from the excavation units. Shovel Test 3659 held the largest number of artifacts: 231. Group 1 included container, bottle, jar and tableware glass. Ceramics included ironstone, redware, creamware, stoneware, porcelain, yellowware, pearlware, combed slipware and delftware. Group 2 consisted of bone, oyster and clam shell. The architectural group included concrete, nails, flat glass, brick tile and drainpipe. Tobacco pipe fragments were also found. The historic artifacts span the time from the late seventeenth century to the early twentieth century. Prehistoric artifacts included primary and secondary flakes, three biface fragments and a tested piece. The prehistoric artifacts were made on chert, jasper and quartzite.

In Area 5, the kitchen functional group predominates the collection in the shovel tests and Excavation Unit 3. The ceramics cross all three historical occupations. There is Rhenish stoneware (1650-1775), white salt-glazed stoneware (1720-1805), scratch blue (1715-1775) delftware, basaltware, Whieldon (1740-1770), combed slipware (1670-1795), creamware, agateware (1740-1775), and pearlware. These ceramics would have coincided with the Dissosway occupation in Area 5, running from the late 1600s to the early to middle 1800s. The Totten/Starr occupation is represented by nineteenth century ceramics such as ironstone, yellowware, Rockingham decorated yelloware, bristol slipped stoneware and Steubenville pottery ironstone from the 1880s. These ceramics are all small fragments, some mendable, representing cups, bowls, plates and saucers from the families' use of the site. Three pieces of toy dinnerware were present in the form of a saucer, pitcher and teapot/sugar bowl. These pieces were made of porcelain.

The faunal remains consisted primarily of oyster and clam shell. A few whelk shells were also present. Mammal and bird bone were present, with some of the mammal bone sawed. A horse molar was present in 3731.02, possibly around 5 years of age.

The prehistoric artifacts were composed of chert, jasper and quartzite. Three biface fragments and a tested piece were present. Two biface fragments were composed of chert, and the third of jasper. The tested piece was made of chert, which appeared to be heat treated.

The artifact assemblages from the archaeological areas are shown in the following table in functional groups.

Table 5-2 Artifacts by Functional Group

Group / Area	1	2	3	4	5	6	7	8	9	98	10	*Totals*
Area 1	82	435	110	1		1		11	7	13	260	***920***
Catbriar												*700*
Shovel Tests	55	201	66	`1				4	3	11	68	*409*
Ex Unit 1	5	54	1								93	*153*
Ex Unit 2	2	69	9								58	*138*
Area 1 West Site												*220*
Shovel Tests	3	49	7					1		1	5	*66*
Ex Unit 5	17	62	27			1		6	4	1	36	*154*
Area 2	1											***1***
Area 5	712	643	452	32	1	8	3	10	13	63	120	***2057***
Shovel Tests	658	578	394	28	1	8	2	10	11	50	37	*1777*
Ex Unit 3	27	12	40	2			1		1	8	83	*174*
Ex Unit 4	27	53	18	2					1	5		*106*
Totals	*795*	*1078*	*562*	*33*	*1*	*9*	*3*	*21*	*20*	*76*	*380*	*2978*

The Catbriar Site, based upon the recovery of classes of artifacts, appears to be a domestic situation with the presence of prehistoric pottery. Primary and secondary

flakes are present and three tested pieces are evidence for stone tool manufacture or repair. Two biface fragments represent worn lithic tools. At the West Site there is the presence of secondary flakes, as well as a core, retouched flake, and a distolateral scraper. No prehistoric ceramics were found at this location.

6.0 NATIVE AMERICAN PRE-CONTACT CERAMIC IDENTIFICATION AND ANALYSIS

6.1 Introduction

The Pre-Contact period Native American pottery recovered during an archaeological investigation of the Native American Catbriar archaeological site (CBS), located within the Riverside Galleria/Waterfront Commons (RGWC) development project area, was examined to characterize the assemblage and determine the Woodland Period occupations present within the surveyed area. The CBS and RGWC are located south of the Outerbridge Crossing and west of Arthur Kill Road on Staten Island, New York. The work was conducted for Greenhouse Consultants, Incorporated (GHC) of Bayonne, New Jersey and Atlanta, Georgia. A proposal to undertake the work was prepared and submitted to GHC on November 14, 2016. GHC approved the proposal and provided authorization to begin the pottery analyses.

Towards this objective, sherds have been classified according to ceramic typologies of coastal New York developed by Ritchie and MacNeish (1949) and especially Smith (1944, 1950) and elaborated upon by others (Ritchie 1958, 1980; Funk 1976; Jacobson 1980; Lavin and Morse 1985; Lavin 1986, 1987, 1988; Chilton 1992, Stewart 1992, and Lavin, Gudrian and Miroff 1993a and 1993b). In particular, Smith's typology has served as the standard for pottery identification in the coastal New York region for almost seven decades while the other works have clarified the associations and descriptions among the known ceramic types and identified the existence of additional ones. The ceramics were observed mostly without magnification, but when warranted they were viewed under a 70x to 300x magnification Bausch and Lomb Stereo Zoom binocular microscope. Upon examination vessel part was determined, typology assigned, and maximum thickness for each sherd measured. Sherd weight and preliminary observations on surface treatment/decoration previously had been determined by Greenhouse Consultants staff. Sherd temper was determined by unaided observation and/or microscopic examination. Exterior and interior surface treatment and decoration were recorded for each sherd. Lip and rim shape for the single rim sherd recovered also were determined and maximum rim/lip thickness recorded as were the presence or absence of interior rim modifications.

An attempt was made to mend ceramics from the collection in order to determine vessel shape and stratigraphic associations. This proved unsuccessful with none of the sherds mendable although some specimens likely came from the same vessel. In terms of function, the Native American ceramics from the CBS can be classified as domestic equipment and probably functioned primarily as cooking and/or storage vessels. While the pots may have been functionally variable (the concept of the

multipurpose tool can also apply to pottery vessels) there are insufficient data to determine exact uses.

Forty-three ceramics recovered from the CBS site were analyzed. Forty-two were body sherds and one was a rim sherd. Two of the pottery types (totaling 18 sherds) represented in the assemblage are associated with the Windsor Tradition (ca. 1000 B.C. - A.D. 1000 on western Long Island, Manhattan, Staten Island, and adjoining mainland and 1,000 B.C.- A.D. 1400/1500 on eastern Long Island and southern Connecticut). Four types (totaling 16 sherds) represented in the assemblage are associated with the East River Tradition (c. A.D. 1000 –A.D. 1600). The assemblage's remaining nine sherds were not identifiable as to type. These sherds are non-diagnostic, however, they belong to some Windsor Tradition or East River Tradition ceramic type.

The two Windsor Tradition varieties represented at the CBS site are Clearview Stamped (17 body sherds, 39.5%) and Windsor Brushed (1 body sherd, 2.3%). The four East River Tradition types represented are: 1) East River Cordmarked (seven body sherds, 16.3%); 2) Bowmans Brook Incised (six body sherds, 14%); 3) Bowmans Brook Stamped (two body sherds, 4.7%); and 4) Eastern Incised (one rim sherd, 2.3%). The nine remaining body sherds (21%) not identifiable as to type/tradition probably are associated with a late Middle Woodland and/or Late Woodland period culture (see Section 3).

In general, the recovered sherds are small with some exhibiting eroded surfaces and edges. This suggests post depositional exposure, disturbance and/or compaction fragmenting the pottery. This could have occurred during the Pre-Contact period, Historic period, and/or modern era.

Information on the individual sherds analyzed with appropriate metrics are presented in Appendix 3 of this report. Table 6.1 identifies the sherds by specimen number associated with each pottery type identified in the CSB artifact assemblage.

6.1.2 Windsor Tradition

6.1.2.1 Clearview Stamped

Clearview Stamped ceramics tend to be coarse textured with a crumbly or laminated paste. Shell temper predominates although grit and sand tempered examples are known particularly from Manhattan and Staten Island. Exterior vessel surfaces are plain, smooth, or wiped with parallel or rocker lines of crude dentate or punctate stamping. Interior surfaces tend to be plain, smoothed, or wiped. Vessel shape usually is elongated with straight sides, slightly rounded shoulders, and pointed bases (Smith 1950:195). Rims tend to be straight and lips either rounded or flattened

in shape. The thickness of Clearview Stamped sherds usually ranges between six and eight mm. This type is common on western Long Island, Manhattan, and Staten Island extending northward onto the mainland and southern Connecticut. The ceramic type is a later Middle Woodland style and diagnostic of the Clearview phase (A.D. 500- 1000).

6.1.2.2 Windsor Brushed

Windsor Brushed ceramics are almost exclusively restricted in their distribution to eastern Long Island and southern Connecticut but occasionally found on western Long Island, Staten Island, and adjoining areas, especially during the late Middle Woodland period (Smith 1950:193-194).

As with other types within the Windsor Tradition, Windsor Brushed ceramics are usually coarse in texture with a crumbly, laminated paste. Vessels tend to be constructed using a coiled technique. Exterior and interior surfaces are always brushed or impressed with marks formed by dragging the edge of a shell over the surfaces. The treatment is haphazardly applied with frequent crossing of brush strokes. Occasionally, the brush marks are applied somewhat more formally, most frequently near the rim, in parallel groups to create areas of vertical or horizontal lines or other decorative-like effects. Rear portions of such brush strokes sometimes exhibit a trailed appearance. Temper of Windsor Brushed sherds is either shell, crushed rock (grit), sand or a combination of the latter two items (Smith 1950:131). Windsor Brushed vessel forms are predominantly semi-globular or elongated in shape with conical-shaped bases. Shoulders are lacking and some necks are constricted. Rims on Windsor Brushed vessels are usually vertically oriented or in sloping. Flaring rims also are occasionally found. Lips are most frequently flattened but occasionally rounded and may be finished ina crude or irregular manner (Smith 1950:193). The thickness of Windsor Brushed vessels ranges from c. six to eight mm. In coastal New York, Windsor Brushed ceramics apparently first appeared during late Clearview phase times, reaching their greatest frequency on sites dating to the latter portion of the era (A.D. 800 – A.D. 1000) although the type does continue into the initial portions of the East River Tradition on Staten Island and other areas but at lower frequencies most likely as trade items. As such, the type can be considered a late Middle Woodland to Late Woodland type (Boesch 1996).

6.1.3 East River Tradition

6.1.3.1 East River Cordmarked

East River Cordmarked sherds have a compact paste and are moderately coarse in texture. Vessels were manufactured by clay coils and are grit/sand or shell tempered. The exterior surface is cordmarked/cordwrapped paddle impressed. The impressions are vertically or diagonally oriented. The interior surface on East River

Cordmarked sherds is plain and smooth. Vessel form can be elongated or elongated-globular with straight or in sloping vessel walls and sometimes rounded shoulders. Bases may be pointed or round. Rims may be flaring or straight and lips flat or round. Sherd thickness usually ranges between six and eight mm. The type is present on western Long Island and Staten Island, the adjacent mainland, and northern New Jersey (Smith 1950:193). It is generally diagnostic of all East River Tradition phases but predominates during the Bowmans Brook – early Clasons Point period (c. A.D. 900-1400).

6.1.3.2 Bowmans Brook Incised

Bowmans Brook Incised sherds possess a moderately compact paste and moderately coarse texture with vessels usually manufacture by clay coil construction. Grit/sand is the most common tempering agent associated with the type although shell tempered examples are known. The exterior surface finish usually is smoothed although some cordmarked bodies have been identified (Smith 1950:192). Decorations primarily consist of broadly incised lines surrounding the rim and extending down the vessel shoulder similar to that seen on Eastern Incised specimens but more crudely done. The incising is done in triangular or rectangular patterns in a herringbone like motif. Some examples are noded with punctuates placed on the nodes to form stylized faces.

The interior surfaces on Bowmans Brook Incised sherds are plain, smoothed, or wiped. Vessel form is elongated with rounded shoulders and pointed bottoms. Rims tend to be straight or insloping with flat lips. The thickness of Bowmans Brook Incised sherds usually ranges between six and eight mm. The pottery is common on Staten Island, western Long Island, and parts of New Jersey. The type first appears during the latter part of the Bowmans Brook Phase (c. A.D. 1150 – A.D. 1300/1400) and extends through the Clasons Point Phase (c. A.D. 1300 – A.D. 1600) making it a Late Woodland to early Contact period manifestation. It is most common, however, between c. A.D. 1200- A.D.1400.

6.1.3.3 Bowmans Brook Stamped

Bowmans Brook Stamped sherds possess a compact paste and moderately coarse texture with vessels usually manufacture by clay coil construction. Grit/sand is the most common tempering agent associated with the type. The exterior surface is cordmarked with parallel horizontally oriented stamped lines encircling the rim and neck and, occasionally, the shoulder area where the decoration tends to be horizontally oriented. The stamping apparently was achieved by impressing the end of a cord wrapped stick or edge of a cord wrapped paddle. The interior surface on Bowmans Brook Stamped sherds is plain, smoothed, or wiped, however, vertical or diagonally oriented stamping is sometimes found on the inner surface immediately below the lip. Stamping was sometimes applied across the lip. Vessel form is

elongated with a rounded shoulder, constricted neck, and pointed bottom. Rims tend to flare and lips are flat or round. Flat lips usually were so shaped by the application of stamping. The thickness of Bowmans Brook Stamped sherds usually ranges between six and eight mm. The ceramics are common on Staten Island Native American sites but also known from western Long Island, the adjacent mainland, and New Jersey. The type first appears during the Bowmans Brook phase (c. A.D. 900 – A.D. 1300/1400) and disappears during the Clasons Point phase (c. A.D. 1300 – A.D. 1600) making it a Late Woodland to early Contact period manifestation. It is most common, however, between c. A.D. 1000-1400.

6.1.3.4 Eastern Incised

Eastern Incised ceramics are grit/sand or shell tempered and possess a compact paste. Vessels usually were constructed by clay coils. The interior and exterior surfaces are usually smoothed although both surfaces sometimes are cordwrapped paddle impressed, cordmarked or partially smoothed over cordmarked. The diagnostic attribute for the type is the decorative zone consisting of parallel sequences of horizontally, vertically, or diagonally oriented incised lines encircling the rim or vessel collar. The lines sometime obliquely intersect but do not overlap. A stylized face is sometimes incised at intervals on the rim. Vessels are globular in shape with rounded shoulders. Their bases may be pointed or rounded. Rims tend to be collared and rise vertically above a constricted neck but may be straight during its initial appearance. Two or four rim castellations frequently are present and lips are flat. Castellated rims produce square mouthed vessels while uncastellated rims form round mouthed vessels. The thickness of Eastern Incised sherds usually ranges between six and seven mm. Eastern Incised ceramics are widespread in coastal New York, western Long Island, the Hudson Valley, central New York, and parts of southern New England. The type is diagnostic of the Clasons Point phase (c. A.D. 1300- A.D. 1600).

6.1.4 Unidentified

This category is used in this study to classify ceramics that possess attributes characteristic of many pottery types associated with the Windsor or East River Traditions but which do not definitively contain an attribute that would exclusively identify it to a particular type. General characteristics of the category, as used in this study, include crush rock (grit)/sand temper, undecorated (plain) exterior and interior surfaces or eroded surfaces.

6.2.0 Discussion

6.2.1 Windsor Tradition Pottery

During the Clearview Phase (c. A.D. 500 – 1000), Windsor Tradition ceramics were widely distributed around coastal New York with their distribution extending from the

Hudson River mouth across Staten Island and Long Island and northward to southeastern Connecticut. Towards the very end of the phase, WindsorTradition/cultures ceramics became restricted to eastern Long Island and parts of southern Connecticut with East River Tradition cultures and wares beginning to replacing it in other locales beginning around c. A.D. 900/1000 (Smith 1950:116, 129; see below). Clearview Stamped is a Middle Woodland wares around coastal New York, disappearing after around A.D. 1000. Windsor Brushed pottery first appears during the late portion of the Clearview phase (c. A.D. 800 – 1,000). After that time, as the East River Tradition made inroads into the western New York area, Windsor Brushed wares became restricted to eastern Long Island and southern Connecticut, continuing into the Late Woodland period. Some Windsor Brushed ceramics are found at low frequencies at some East River Tradition sites but their occurrence is considered to be as trade items.

6.2.1.1 Clearview Stamped Sherds

Clearview Stamped pottery is common on western Long Island, Manhattan, and Staten Island extending northward onto the mainland and southern Connecticut during the Clearview phase (c. A.D. 500 – A.D. 1000). It is a later Middle Woodland style. It also is contemporary with Abbott Zoned Dentate pottery, also a Middle Woodland pottery type found in New Jersey, Staten Island, and elsewhere. As such, Clearview Stamped pottery predates the appearance of the East River Tradition in the New York City area.

Seventeen body sherds included in the Catbriar site pottery assemblage are classified as Clearview Stamped, part of the Native American coastal New York cultural manifestation referred to as the Windsor Tradition. No Clearview Stamped rim sherds were recovered. Twelve of the sherds (Specimens number 775, 777-781, 783-786, 792, and 795) contain a plain, smoothed, or wiped exterior surface possessing from one to three rows, or indication of rows, of crudely stamped oval or rectangular shaped dentates/punctates. The interior surface treatment for the 12 specimens also is plain, smoothed, or wiped. One of these plain interior surfaces (Specimen number 775) also contains a row of dentates/punctates. The temper of the 12 sherds is sand, sand and grit, or sand, shell, and grit. Maximum sherd thickness ranges between 6 and 10 mm. and the paste is crumbly. See Photo 6-1 for an example of Clearview Stamped pottery.

Specimen number 638 is a sand tempered sherd that contains smoothed over brushing with crudely stamped dentates/punctates on both the exterior and interior surfaces. The paste is crumbly. Maximum sherd thickness is 6.0 mm.

Two specimens (numbers 705 and 706) possess slightly smoothed over cordmarked exterior surfaces with crude, trailed oval shaped dentates/punctates. The interior

surfaces of the two sherds are plain, smoothed, or wiped with oval shaped dentates/punctates. The temper of the sherds is sand. They each have a maximum thickness of 6.0 mm with a crumbly paste. These two sherds may derive from the same vessel.

Specimen 748 contains a plain, smoothed, or wiped exterior surface with crude trailed rectangular shaped dentates/punctates and a section of incised line. The interior surface is smoothed over brushed. The paste is crumbly and sand tempered. The sherd's maximum thickness is 7.2 mm.

Specimen 782 is a sand and grit tempered body sherd with a plain, smoothed, or wiped exterior surface that contains double rows of five crudely applied rectangular shaped trailed dentates/punctates and one row of trailed rectangular shaped dentates/punctates. The latter row is oriented obliquely to the double dentate/punctate row. The interior surface is plain, smoothed, or wiped. The paste is crumbly and the temper is sand/grit. The maximum thickness is 8.5 mm.

The attributes of the seventeen sherds are consistent with what has been described by Smith (1950) and observed on other Clearview Stamped sherds (Boesch, Bianchi, and Howson 2000). The sherds also were compared to the Abbott Zone Dentate variety which also is known from Staten Island and from the Abbott Farm site near Trenton (Stewart 1992). The dentate/punctate stamping on sherds associated with that variety is generally more formalized and better executed than what is generally found on Clearview Stamped ceramics. As a result, this category of pottery is not considered to be part of the Catbriar site pottery assemblage.

Along with the Windsor Brushed pottery sherd (see Section 6.2.1.2), it is speculated that the Clearview Stamped pottery recovered from the Cat Brier site is associated with a late Middle Woodland occupation (A.D. 800 – A.D. 1000). The number of vessels represented by the sherds is difficult to ascertain but is likely at least two.

6.2.1.2 Windsor Brushed Sherd

One body sherd recovered from the Catbriar site archaeological excavations was classified as Windsor Brushed (Specimen number 725). No rim sherd associated with the variety was recovered. The sherd's exterior surface treatment is lightly brushed. The interior surface is eroded. The temper is sand and grit and the paste is crumbly. The brushed surface treatment, temper, and paste consistency are consistent with what has been described by Smith (1950) for the variety. While the range of Windsor Brushed pottery is usually restricted to eastern Long Island and southern Connecticut some examples are known from western Long Island and Staten Island. The specimen recovered at the RGWC property likely is associated with the latter portion of the Windsor Tradition on Staten Island, dating to the late

Middle Woodland period (c. A.D. 800 – A.D. 1000), and prior to the introduction of East River Tradition pottery to the New York region. The Windsor Brushed sherd may be associated with the Clearview Stamped pottery recovered from the site. See Photo 6-2 for the example of Windsor Brushed pottery.

6.2.2 East River Tradition Pottery

East River Tradition cultures/ceramics began moving into the New York City region from the south and west by c. A.D. 900-1000 replacing Windsor Tradition cultures/ceramics in the western portion of the region. The exact details of this transition remain speculative. Sites identified with the East River Tradition generally are distributed from Staten Island northward through the Hudson Valley to the Bear Mountain region, westward across the northeastern corner of New Jersey and eastward though the southeastern mainland of New York into western Long Island.

Four East River Tradition types are represented at the Catbriar site. East River Cordmarked ceramics are common throughout the East River Tradition but are prevalent during the Bowmans Brook phase (c. A.D. 900/1000- A.D. 1300). The Bowmans Brook Incised and Bowmans Brook Stamped ceramics first appear during portions of the Bowmans Brook phase and extend through the early portion of the East River Tradition's succeeding Clason's Point phase (c. A.D. 1300/ 1400 - 1600). Eastern Incised ceramics are typical of the Clason's Point phase and also are found on early Contact Period sites (c. AD. 1525 - A.D. 1625).

6.2.2.1 East River Cordmarked Sherds

Of the seven East River Cordmarked body sherds (Specimens number 652, 681, 726, 727, 774, 776, and 793) recovered from the RGWC project property, the exterior surface treatment on two specimens is cordmarking while five are smoothed over cordmarking. No rim sherds relating to this type were recovered during excavations. The interior surface treatment on five of the specimens is plain or untreated, possibly smoothed or wiped. The interior surfaces displayed on the remaining two specimens are eroded. Five of the specimens are sand tempered, one is grit tempered, and one is sand and grit tempered. Maximum sherd thickness ranges between 6.5 and 10 mm. for the seven sherds. The relatively large variability in sherd thickness likely is a result of where on the vessel a sherd derived from. It is impossible to know the number of vessels represented by these seven sherds but it is probably low. The attributes on the seven sherds are consistent with what has been described by Smith (1950) and observed on other East River Cordmarked sherds. The variety predominates during the Bowmans Brook – early Clasons Point period (c. A.D. 900/1000 – A.D. 1400). This range, along with the recovery of the Bowmans Brook pottery varieties and the Eastern Incised sherd from the Catbriar site may indicate a late Bowmans Brook or early Clasons Point phase association for the sherds on the

project property (c. A.D. 1200 – A.D. 1400). See Photo 6-3 for an example of East River Cordmarked pottery.

6.2.2.2 Bowmans Brook Incised Sherds

Six body sherds included in the Catbriar site pottery assemblage are classified as Bowmans Brook Incised pottery within the East River Tradition. No rim sherds classified as this pottery type were recovered. Four of the sherds (Specimens number 787, 790, 791, and 797) possess a plain, smoothed, or wiped surface containing a portion an incised line. Two sherds (Specimens number 790 and 791) also possess a plain, smoothed, or wiped surface containing a curvilinear line. These last two specimens may be from the same vessel. The interior surface treatment on the six specimens are plain, smoothed, or wiped with no interior decoration. Maximum sherd thickness ranges between 7.2 – 9 mm. Three sherds are sand and grit tempered, one sherd is grit tempered, one sherd is sand tempered, and one sherd is sand, grit and shell tempered. The paste of all six sherds is moderately compact. It is impossible to know the number of vessels represented by these six sherds but it is probably small. The attributes on the body sherds are consistent with what has been described by Smith (1950) and observed on other Bowmans Brook Incised sherds. The occurrence of Bowmans Brook Incised sherds is most common between c. A.D. 1200 - A.D.1400 making it a late Bowmans Brook Phase – early Clasons Point phase variety. This dating is consistent with the temporal period assigned in this report to the East River Cordmarked, Bowmans Brook Stamped, and Eastern Incised pottery recovered from the Cat Brier site suggesting an occupation at the site dating to that period. See Photo 6-4 for an example of Bowmans Brook Incised pottery.

6.2.2.3 Bowmans Brook Stamped Sherds

Two Bowmans Brook Stamped body sherds are part of the pottery assemblage from the Catbriar site. No rim sherds were recovered during the site excavations. The exterior surface of one specimen (number 707) is smoothed over cordmarked. The interior treatment of that sherd has a cord wrapped stick stamp or impression on a plain, smoothed, or wiped surface. It is sand and grit tempered with a compact paste and a maximum thickness of 6.0 mm. The exterior surface of the second specimen (number 747) is plain, smoothed, or wiped with a cordwrapped stick stamp or impression. The interior surface on this specimen is smoothed over brushed with two oval shaped trailed dentates/punctates impressions and a section of incised line. It is sand tempered with a compact paste and has a maximum sherd thickness of 8.8 mm. It is impossible to know whether one or two vessels are represented by these two sherds. The attributes on the sherds are consistent with what has been described by Smith (1950) and observed on other Bowmans Brook Stamped sherds. Its most common occurrence is between c. A.D. 1000 – A.D. 1400 making the variety a Late Woodland Bowmans Brook Phase to early Clasons Point phase manifestation.

This dating is consistent with the temporal period assigned in this report to the East River Cordmarked, Bowmans Brook Incised, and Eastern Incised pottery recovered from the Cat Brier site. It is consistent with a presumed occupation at the site dating to c. A.D. 1200 – A.D. 1400. See Photo 6-5 for an example of the Bowmans Brook Stamped pottery.

6.2.2.4 Eastern Incised Sherd

One Eastern Incised rim sherd (Specimen number 1958) is part of the ceramic assemblage from the Catbriar site. No Eastern Incised body sherds were recovered during the site excavations. The exterior surface possesses a row of dentates/punctuates extending 6.7 mm. from the lip. The dentates/punctates are rectangular shaped and approximately 4.0 mm. in size. Below them is a zone of horizontal incised lines extending to 12.2 mm below the rim. Beneath that zone is another zone of vertical incised lines that intersect and are oblique to the horizontal incised Line zone and extend to at least 22.4 mm. below the lip. The rim's interior treatment is a plain, smoothed, or wiped surface with slight cord wrapped stick notching on the interior lip of the rim. The rim's shape is beveled towards the interior and the lip is flat. The specimen is sand and shell tempered with a compact paste and a maximum thickness of 9.2 mm. The maximum rim/lip thickness of the sherd is 7.7 mm. The attributes of the rim are consistent with what has been described by Smith (1950) for Eastern Incised pottery. The type is diagnostic of the Clasons Point phase (c. A.D. 1300 - A.D. 1600) but its recovery at the Catbriar site, which also contains Bowmans Brook varieties pottery, suggests an association with the early portion of the phase (c. A.D. 1300 – A.D. 1400). See Photo 6-6 for the example of the Eastern Incised pottery.

6.2.3 Unidentified Sherds

Nine of the body sherds (Specimens number 651, 728, 794, 796, 798, 799, 800, 836, and 929) from the Catbriar site pottery assemblage are classified as unidentifiable as to type. No rim sherds are part of this classification. Exterior surface treatment on all the sherds is plain and undecorated, possibly smoothed over or wiped. The interior surfaces of four of the specimens also is plain and undecorated, possible smoothed over or wiped. The interior surfaces of the remaining five specimens are eroded. Maximum sherd thickness ranges between 6.5 and 10 mm. for the non-eroded specimens. Seven specimens are sand tempered, one is grit tempered and one is sand and shell tempered. It is not possible to determine the number of vessels represented by these sherds. Although speculative, the sand and grit tempered sherds with generally compacted paste associated with eight of the sherds possibly may represent one or more East River Tradition varieties while the crumblier sand and shell tempered sherd (Specimen number 929) may be a Windsor Tradition variety.

6.3.0 Conclusions

The analyses of the 43 pottery fragments recovered from the Catbriar site indicate the presence of at least two Pre-Contact period occupations. One occupation dates to the late Middle Woodland period (c. A.D. 800 – A.D. 1000) and the second dates to the late Bowmans Brook – early Clasons Point period (c. A.D. 1200 – A.D. 1400).

The first occupation is suggested by the recovery of 17 body sherds identified as examples of Clearview Stamped pottery and one body sherd of Windsor Brushed pottery. Clearview Stamped ceramics, a Middle Woodland ware, are temporally restricted to the Clearview phase (c. A.D. 500 – A.D. 1000) in the New York City area whereas Windsor Brushed pottery predominated during the latter portion of the phase (c. A.D. 800 – A.D. 1000). Windsor Brushed continued to occur into Late Woodland times on eastern Long Island and southern Connecticut (Smith 1950; Salwen and Ottesen 1972; McBride 1984; Lavin 1987). At the Catbriar site, therefore, it is likely that the Clearview Stamped and Windsor Brushed sherds are associated with a late Clearview phase (c. A.D. 800 – A.D. 1000) occupation of the site.

The second occupation at the Cat Brier site is reflected by the recovery of 16 sherds representing four East River Tradition pottery types: East River Cordmarked, Bowmans Brook Incised, Bowmans Brook Stamped, and Eastern Incised. The types are well represented on Staten Island and other portions of the New York City region. East River Cordmarked and Bowmans Brook Incised ceramics predominated during the Late Woodland Bowmans Brook – early Clasons Point period (c. A.D. 1000 – A.D. 1400). Bowman's Brook Stamped wares are slightly later in time, predominating during the period c. A.D. 1200-1400. This is indicative of the later Bowmans Brook – early Clasons Point period. Finally, Eastern Incised ware is diagnostic of the Clasons Point phase (c. A.D. 1300 - A.D. 1600) but its recovery at the Catbriar site, which also contains East River Cordmarked and Bowmans Brook variety wares, suggests an association with the early portion of the phase (c. A.D. 1300 – A.D. 1400).

These date ranges for the 16 East River Tradition ceramics identified in the pottery assemblage suggest a late Bowmans Brook or early Clasons Point phase occupation (c. A.D. 1200 – A.D. 1400) at the Cat Brier site.

The nine unidentified sherds recovered from the pottery assemblage could be associated with either the Windsor Tradition or East River Tradition occupations at Cat Brier site.

The 43 sherds generally were small specimens with some exhibiting eroded surfaces and sharp edges suggesting post-depositional exposure, disturbance, and/or compaction fragmenting the pottery. This could have occurred at the Catbriar site during the Pre-Contact period, Historic period, and/or modern era.

Table 6.1 Pottery Types and Associated Sherds from the Catbriar Site							
Ceramic Type	Windsor Tradition Clearview Stamped	Windsor Tradition Windsor Brushed	East River Tradition East River Cordmarked	East River Tradition Bowmans Brook Incised	East River Tradition Bowmans Brook Stamped	East River Tradition Eastern Incised	Unidentified
Catalog Number	638, 705, 706, 748, 775, 777-786, 792, 795	725	652, 681, 726, 727, 774, 776, 793	787, 788, 790, 791, 797	707, 747	1958	651, 728, 794, 796, 798, 799, 800, 836, 929

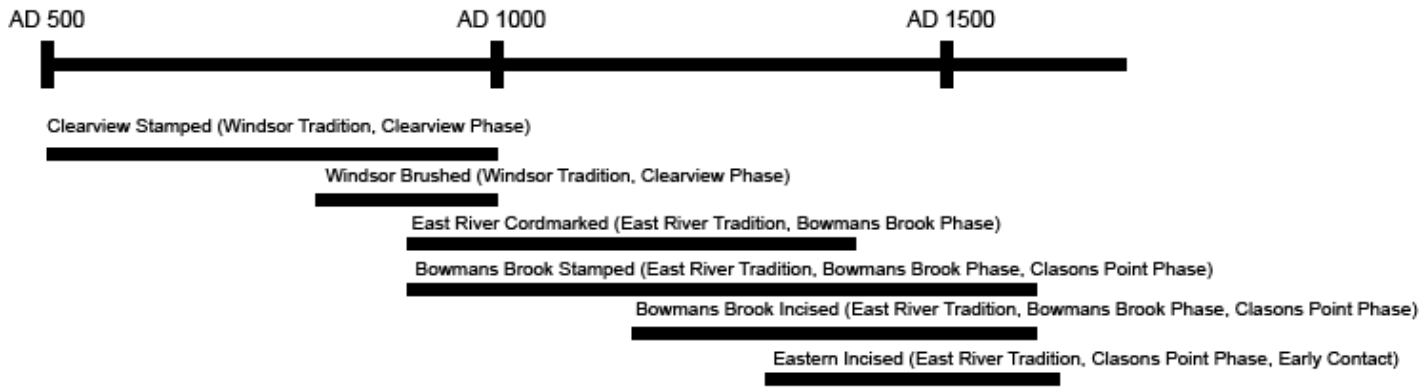

Figure 6-1 Middle-Late Woodland Ceramic Timeline

7.0 DISCUSSION

7.1 Area 1

The Phase IB survey has discovered a large Precontact site, named the Catbriar Site after the dominant vegetation. This site was slated for construction impacts from wetland replacement areas for Riverside Galleria. The site is considered significant, because of the presence of lithics, a rock hearth feature, and dateable Precontact pottery. The main purpose of this Phase II study was to set site boundaries. It also attempted to recover additional datable ceramics and examine a hearth feature, in order to better assess the site.

Through the excavation of STs at 5m intervals, the boundaries of the Catbriar Site have been determined. In many places, natural boundaries, like marshes set site borders. In the north, the limit is often disturbed areas near the Outerbridge Crossing. In other spots, double negative STs have set the boundaries. Two excavation units were completed at the Catbriar Site. One unit near an ST that produced pottery yielded a decorated rimsherd. Once the boundaries of the Catbrier Site were set, this information was evaluated against the latest site plans (Figures 1-2, 4-1, 4-2).

Several other locations with positive Phase IB shovel tests were examined with radial shovel tests and have been evaluated as not significant. Fieldwork has defined overlapping historic and Precontact sites, named the Area 1 West Site in the west end of the area. The historic site likely includes an unlabeled building shown on two mid-nineteenth century maps (US Coast 1845; Butler 1853; Greenhouse 2015: Figures 8 and 9).

7.2 Areas 2 and 3

Boring data has shown that there is deep fill blanketing most of Area 2, and it is particularly deep in the west (Greenhouse 2015). A previous backhoe test showed that the fill was in excess of 3m (10 ft) deep. Excavation of an extension of this test, using a larger machine, located natural strata. A sample of those contexts was sifted and no significant artifacts were found.

Four sets of borings were conducted in Areas 2 and 3 in 2008/2009, and 2016. See Figures 7-1, 7-2, and 7-3 for the location of these borings in Areas 2 and 3.

The Greenhouse 2015 report (pp.54-55, Appendix 6) discussed the borings conducted previously:

Area 2

Through the analysis of boring data, GCI has attempted to determine depth of fill, and analyzing the proposed plans to see if they will impact potentially intact buried stratum. Extensive deep fill appears only in the southern part of the project area, designated Areas 2 and 3. Although there are clearly localized areas of fill in the northern and central portions of the project area, they do not appear as large, deep, or as extensive as in Areas 2 and 3. With a few exceptions, most of the testing in Areas 1, 4, 5, and 7 reached culturally sterile subsoil.

A local informant stated that deep fill was deposited in Area 2 during the construction of Route 440. Two independent sets of borings were completed in Areas 2 and 3. A series of 7 borings (B1 to B7) were completed (see Appendix 6), at intervals of about 150 feet along the proposed location of the west end of Richmond Valley Road. Near Arthur Kill Road, fill was 2.5 feet deep in Boring B1. Boring B2 had 9 feet of fill, B3 had 6.5 feet of fill. B4 had 8 feet of fill over silty peat. In B5 there was 13 to 16 feet of fill, which extended below the water table. Borings B6 and B7 had 8 feet of fill over peat. This fill continued below the water table. Because of deep fill continuing below the water table, testing anywhere west of B4 is not recommended.

The second set of borings covered the property to the north of the Richmond Valley Road tests. In Areas 2 and 3, there were 8 borings completed, B4, B12, B16, B24, B31, B32, B33, and B34 (Mechanics Drilling Corp. 2009). B4 showed a profile with 17 feet of fill; this is about 1 foot below the water table. The 13 feet of fill in B12 also extended below the water table. There was also 13 feet of fill in B13, it extended to about the water table. Boring B15 showed 20 feet of fill, there was 14 to 18 feet of fill in B16, and 16 to 20 feet in B21. B24 had 18 feet of fill extending below the water table. The 15 feet of fill in B31 extended to the water table. B32 and B33 had 19 feet of fill, B34 had 16 feet; all 3 had fill extending below the water.

This information along with the Richmond Topographic Bureau (1913) and the APE (2016) maps were studied in relation to the site plans of 2016. Plans for Backhoe Trench 3 Extension were made with the January 2016 site plans showing that a utility trench in Area 2 would have the greatest depth. Figure 3-1 (Greenhouse 2017) shows the base slab of the parking garage at an elevation of 7-8 ft.

During the summer of 2016, borings were completed for the stormwater drainage and structural placement. The two boring maps and the two reports are attached. Stormwater Borings 1-7 were placed within Areas 2 and 3. SW borings 1-6 terminated at 14 feet and SW7 terminated at 10 feet. Moist conditions were present by two feet in SW3 and 6. In Borings SW1, 2, and 7, moist conditions were present by 4 feet. Moist conditions were found by six feet in SW4 and 5. Wet conditions were encountered by 4 feet in SW6, and by six feet in SW3 and 7. SW2 encountered moist conditions by 8 feet and SW1 and 5 encountered wet conditions by 10 feet. Two Structural Boring logs are included in the report that are pertinent to Areas 2 and 3: 26 and 46. Both terminate at 50 feet. Structural Boring 46 encountered wet conditions by six feet and SB26 encountered that condition at 15 feet.

Also during the summer of 2016, borings and test pits were done to investigate subsurface conditions, conducted by Delta Geophysics for AKRF. Within Areas 2 and 3, one soil boring was placed (SB-5), 1 soil boring/soil vapor/groundwater (SB/SV/MW-2) was placed and 6 test pits (TP1-6). In the test pits, fill extended from 8 to 12 feet below surface, with a upper layer of brown sand and silt, some clay, little cobbles and gravel. Beneath that layer was fill of brown silt with some clay, snad, cobbles and gravel. Test pits terminated at 10 to 14 feet below surface. Natural soil encountered at that level usually consisted of red-brown clay with little cobbles. An exception was the bottom layer of TP1, a brown fine sand. The two borings extended 20 feet below the surface, and fill was identified to 10 feet below surface. SB-2 had a fill layer of red-brown sand and silt with fine gravel and brick. SB-5 had a fill layer of brown sand with some gravel, asphalt and brick. In both borings, a red-brown clay with little gravel and cobbles was observed. See Appendix 5 for soil boring logs.

Figure 7-4 from Capital Environmental Consultants Inc., illustrates the profile cross-section of the 2009 borings in Areas 2 and 3. Extensive fill increases from east to west.

Figure 7-5 from Capital Environmental Consultants Inc., illustrates the profile cross-section of the 2016 borings in Areas 2 and 3. The contractor conducting the borings used Chapter 18 of the New York City Building Code to identify soils. That document does not analyze the boring components in terms of fill and natural soil.

A comparison was made of the elevation of locations of the borings on the 2016 and the 1913 maps and are shown in the following table:

Elevation in feet above sea level		
Boring	1913 Richmond Topo	2016 Current Conditions
SW3	2-4 ft, closer to 4 ft	12-14 ft
SW4	2-4 ft	10 ft
SW5	0-2 ft	16 ft
SW6	0-2 ft, 1913 shoreline	14-16 ft
SW7	appx. 100 ft west of shoreline	4 ft
SB26	2-4 ft., in mill pond	20 ft
SB46	in marsh	12 ft

A pair of borings from 2009 and 2016 were selected for comparative purposes. B-4 and SW4 have nearly an identical location along the Richmond Valley Road extension. Their profiles are shown below in the following table:

2009, B-4, GS = 8.61 ft		2016, SW-4, GS = +/- 10.0 t	
1-2 ft	FILL, silty sands, rock fragments, roots	0-2 ft	Medium-fine sand, some silt, gravel, very dense, dry
3-8 ft	FILL, silty sands, gravel, rock, concrete, roots	2-4 ft	No recovery
		4-6 ft	No recovery, gravel in split spoon sampler tip
		6-8 ft	Medium-fine sand, trace of silt, fine gravel, medium dense, wet
8-13 ft	Silty peat	8-10 ft	Peat, very soft, wet
13-18 ft	Poorly graded sands, medium-fine sand, trace silt	10-12 ft	Fine gravel, medium-fine sand, little silt, dense, wet
18-23 ft	Clays, sandy clay, trace of gravel, rock	12-14 ft	Medium-fine sand, little silt, very dense, set

The 2009 boring identifies up to eight feet of fill, consisting of silty sands with rock fragments, concrete, gravel and roots before encountering peat between 8 to 13 feet. The 2016 boring found medium to fine sand with some silt and gravel before finding peat at 8-10 feet. Medium to fine sand with some silt was found below the peat. The depth of the fill identified in the 2009 boring corresponds to the difference between the 1913 Richmond Topo and the 2016 current conditions map elevations. Based upon examination of Figures 3-8 and 3-9 (Raber, Greenhouse 2016) of the 1948 and 1954 aerial photos of the project area, and area approximately 550 feet by 600 feet was covered with fill. If twelve feet of fill covered the area, approximately 3,600,000 cubit feet were brought to the project area. If 18 feet of fill was brought in, approximately 5,400,00 cubit feet is the extent of coverage.

Testing of Area 2 was limited by many constraints, and GCI tested the vicinity with the highest potential. East of Trench 3 and Trench 3 Extension the vicinity was disturbed by excavation for the Staten Island Rapid Transit spur. West of the two trenches was an artificial pond. To the northwest was an extensive marsh under deep fill. The entire area was likely disturbed when the pond was filled and then the area blanketed with deep fill.

7.3 Area 4

The topography of Area 4 is unusual and is not natural. It was heavily modified by industrial concerns in the late nineteenth and early twentieth centuries. The deep

linear depression was a cut for an early twentieth century rail line. Linear mounds to the south are thought to date to this era. Because of the recent vintage and lack of research potential, these features are not considered potential significant.

7.4 Area 5

Area 5 contains a Precontact and historic archaeological site. It has partially disturbed by twentieth century construction. Some deposits are disturbed, while others are blanketed with fill. The historic material was fairly widespread. The ceramics from Area 5 are the most time sensitive indicators among the artifacts. Collectively they span most of the eighteenth and nineteenth centuries, with varieties like Delftware, creamware, pearlware, redware, yelloware, porcelain, and ironstone (Appendix 2). This material reflects the occupation of the Dissosway/Totten/Starr houses. There are historic artifact middens of archeological interest. Exposed boulders on the surface of the site are not considered significant. The Precontact artifact inventory includes primary and secondary flakes, biface fragments, and fire cracked hearth rock.

7.5 Area 7

The Abram Cole house is a mid-nineteenth century dwelling that is associated with the Cole and Dissosway families, both with long and rich family histories in the Tottenville area. The house was reviewed for possible New York City Landmark status in 2009 but was rejected (MAS NYC 2008), The discovery of a large millstone in the garden of the Cole house is an interesting link with Staten Island's industrial history. If possible, the millstone should be incorporated into a history themed exhibit in Riverside Galleria. If not possible, the millstone should be donated to a local historical society or museum. Despite their great size and weight, millstones are prized and are readily stolen. Riverside Galleria should take measures to secure the safety of the millstone during construction. No archaeological features or deposits were located in the APE behind the Abram Cole house, and no further investigations are recommended.

The cistern associated with the early twentieth century Mary Cole Hilliard House is of archaeological interest. This feature should be investigated when tree clearance is permitted and a deep, wide excavation is possible. Other features and deposits at the Hilliard site are not considered of archaeological interest.

The house was owned by Mary Collins Cole Hilliard (1868-1940), and first appears on the 1907 map. Mrs. Hilliard lived there with her husband Frederick Whittlesey Hilliard (died 1933), and their 5 children. Mary was the daughter of Cornelius Dissosway Cole (1841-1887) and Harriet Kennedy Robinson (1836-1876), the

granddaughter of Captain Abraham Cole (1810-1876), and the great granddaughter of Captain Abraham Cole (1778-1833).

Investigation of the Hilliard cistern at Riverside Galleria has the potential to yield information in a number of ways about the late nineteenth and early twentieth century transformation of the rural to suburban development in a corner of New York City that is adjacent to the State of New Jersey. This property was owned by the Dissosway-Cole families since the late 1600s. One potential piece of information is upon the construction of the cistern. Another is changing foodways. Transformations occurred during the late nineteenth century, as people relied less upon farming and turned to more manufactured food products bought at grocery stores. The Dissosways-Coles derived income from several sources through the grist mill, their farming, their oystering, and later their lumber yard. The grist mill was sold, and Cole retired from oystering. The cistern has the potential to hold information that were occurring at the family level, as well as locally and regionally.

8.0 CONCLUSIONS AND RECOMMENDATIONS

In the north end of the property, Area 1 includes a large Precontact site, dubbed the Catbriar Site. It produced stone tools, flakes, fire-cracked rock, and Native American pottery. A hearth feature and areas with shell middens were also found. The Phase II investigation of the Catbriar Site used shovel tests at 5m (16.5 ft) intervals to define the site boundaries and sample the artifacts. Two test excavation units were also completed. No temporally diagnostic lithic artifacts were found; ceramics are thought to date to the Middle Woodland, Late Woodland, and possibly Historic Contact. The Catbriar Site is a large, significant Precontact Site. Wetland mitigation (i.e. grading and planting) is planned for this area. Accordingly, a data recovery plan is to be developed with SHPO/LPC input.

Six other Area 1 locations with positive shovel tests all outside of the Catbriar Site, were tested with arrays of additional shovel tests. No additional finds were at ST4, ST239, ST242, and ST250. No additional work is recommended at these four locations.

Potentially significant Precontact and historic artifacts were recovered from radial shovel tests near ST244 and ST246 on the west end of Area 1. Subsequent 5m shovel testing was then used to gather more artifacts and set site boundaries. Dubbed the Area 1 West site, it is a small (circa 30m diameter) Precontact site, within a slightly larger historic site. No dateable finds came from the Precontact occupation. The historic occupation may date to early in the Colonial period. The current plans show that this area is located outside the project APE. Because there are no impacts, no further investigations are required.

Areas 2 and 3 are blanketed with thick modern fill. The first backhoe trench in Area 2 showed in excess of 3m (10 ft) of fill; it did not reach natural soils. A second trench was excavated using a larger trackhoe. It reached natural soils at 3.5m. Samples of these soils were removed by the machine and sifted. No Precontact artifacts or potentially significant historic resources were found. Soil borings conducted in 2008/2009 and 2016 yielded further information on the extent of the fill. No further work is recommended for Areas 2 and 3. See Appendix 6 for correspondence.

Area 4 includes the remains of a sawmill complex. Evidence of the mill complex includes a huge piece of riveted iron, likely from a boiler. The large ditch-like feature is believed to be a cut for a twentieth century rail line. These resources are not considered significant and no further work is recommended in Area 4.

Area 5 has produced both historic and Precontact artifact deposits. In 2016, an additional 110 shovel tests were dug to complete a 5m grid over the site. Shovel testing confirmed that parts of the site had intact profiles while others were heavily

disturbed. Much of Area 5 has two layers of fill that mimic the natural strata below. There were intact features, including a midden feature within the natural strata. Two test excavation units examined two wall-like features on the surface. These were found to be placed on fill and are not considered historic since they likely postdate Outerbridge Crossing. Historic artifacts were fairly widespread over Area 5. These finds span most of the eighteenth and nineteenth centuries. This dates to the occupation of the Dissosway/Totten/Starr house.

A limited Phase 3 mitigation of the Area 5 Site is recommended. It would begin with additional excavation units to sample the buried Precontact and historic artifact middens. Then power equipment would be used to strip fill and topsoil from specified locations, and expose any sub-plowzone features. Those features would then be excavated. A data recovery plan is being prepared. An isolated positive shovel test (ST191) in the northwest corner of Area 5 was tested with an array of additional shovel tests. Because of disturbance, no more work is suggested at this location.

Area 7 includes the mid-nineteenth century Greek Revival Abram Cole House and the ruins of a small house to the south. The Cole house was damaged by fire in recent decades. A large millstone, presumably from the nearby grist mill is incorporated into the landscaping. A brick driveway and brick walkways, built after 1913, are prominent features. Artifacts dated to the nineteenth and twentieth centuries. Riverside Galleria should consider incorporating the millstone into a display or landscaping of the project. The rear of the Cole House site is slated for construction impacts. This area did not yield potentially significant finds and no further work is needed there.

Also in Area 7 are the ruins of the small house once owned by Mary Cole Hilliard. Features include a cement foundation, cement block walkways, a large brick cistern, and a garage floor. The recent date of the house, it is about 100 years old, limits the research potential. The house and yard features are not considered archaeological significant. The cistern was slated for investigation. However safety requires extensive tree clearing and a large, deep excavation. Since that work is not feasible at this time, it is recommended that the cistern should be mitigated through recordation and excavation prior to the start of construction in that location.

A mitigation and curation plan is being developed for the Phase III and retention of arifacts and files on Staten Island. The boundaries of the two archaeological sites in the north end of the property, the Catbriar Site and the Area 1 West Site, will be delineated in the field prior to walkway and landscape construction. That work will avoid any subsurface impacts to these two archaeological sites. When freshwater wetlands are created within the Catbriar Site, they will occur following the Phase 3

archaeological mitigation excavations, and subsurface impacts to the remainder of the Site will be avoided.

8.1 Evaluation for National Register Eligibility

Evaluations of the significance or potential significance of cultural resources were made using the Criteria of Eligibility of the New York and National Registers of Historic Places Programs. The Criteria of Eligibility for the National Register of Historic Places are described by the U.S. Department of the Interior National Register Program:

> The quality of significance in American history, architecture, archaeology, engineering and culture is present in districts, sites, buildings, structures or objects that possess integrity of location, design, setting, materials, workmanship, feeling and associations and
>
> (a) that are associated with events that have made a significant contribution to the broad patterns of our history; or
> (b) that are associated with the lives of persons significant in our past; or
> (c) that embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic value, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
> (d) that have yielded, or are likely to yield information important in prehistory or history.

Criterion D is most often used when evaluating archaeological sites (Kuhn and Little 2000).

Using Criterion D, the Catbriar Site occupies a transitional zone between the cultures of the late Middle Woodland and Late Woodland periods that moved from the south and west into the New York City region, and continued eastward onto Long Island and northeastward into Connecticut and beyond, bearing new cultural traditions. The Catbriar Site holds evidence of the late Middle Woodland Clearview Phase of the Windsor Tradition. It also holds evidence for the Late Woodland period in the form of the Bowmans Brook Phase of the East River Tradition and the Clasons Point/Early Contact Phase of the East River Tradition. Few sites remain within the City of New York that could possibly yield information *in situ* on Native American occupation. Questions that the Catbriar Site could contribute information include the time of the occupation, subsistence patterns, and settlement patterns. Knowledge of the transition between the Middle and Late Woodland is based primarily on Smith's 1950 work, with contributions from the Abbott Farm in New Jersey. Wiegand (1987:23) said that the study of prehistoric ceramics had not progressed much in the 30 years since Smith's study and Rouses study. More documentation in the form of sites is

needed. The Middle Woodland period is characterized by increasing reliance on horticulture, strategies for storing and cooking food (i.e. ceramics), which led to changing settlement patterns. The Late Woodland period, the trends in horticulture intensify, settlement patterns shift to year round villages, and increasing changing in ceramic technology. Village sites tend to be located along major waterways such as rivers. Temporary camps, such as hunting camps are inland, along small streams. Although Riverside Galleria is situated today along the Arthur Kill, the sea level may have been lower, 500 to 1000 years ago.

Williams and Thomas (1982) analyzed the Early and Middle Woodland Period in New Jersey. Research questions proposed dealt with the relationship of culture and environment, particularly microenvironmental changes that led to cultural changes. Another question dealt with the Abbott Phase trade system, a regional interaction sphere, similar to the Hopewell Interaction Sphere of the Mid-West. The Early and Middle Woodland Period in New Jersey was based upon a centrally-based and wandering settlement pattern. Large base camps, where the majority of the population resided, coincided with specialized resource procurement camps such as fish, nuts, and other resources which were seasonally, or situationally available. Riverine camps would have used nets, fish weirs, fish hooks and gorges. "Fish processing areas, represented archeologically by sites containing large "beds" of fire-cracked rock," (1982:124), sounds similar to the Catbriar Site. The problem on the New Jersey side is that such sites have suffered from erosion or have fallen below rising sea levels.

Kraft and Mounier (1982) analyzed the Late Woodland Period in New Jersey. They found that there was a great lack of knowledge about the Late Woodland in New Jersey. Large areas of New Jersey had been overlooked in previous surveys, particularly along the Outer Coastal Plain. In 1982:170 they stated:

> Not a single Late Woodland housepattern or village site has been discovered or excavated on the New Jersey coast including the Delaware and Raritan Bays. In fact, there is no information on the kinds, sizes, or shapes of the houses, or the kinds of settlements employed by the late prehistoric Indians who lived here before, or at the time of, European exploration.

Kraft called for information on the local pottery chronologies during the Late Woodland. Paleoeinvironmental reconstructions of habitats were also urged. Settlement patterns and population distribution were also a research topic. In general, the interpretation of culture change and transition needed to be done for the Woodland period.

The Catbriar Site is a significant archaeological resource, for both New York and New Jersey in understanding the cultural manifestations and transitions of the Middle and

Late Woodland periods. It appears from archaeological documentation that it is a scarce resource. The Catbriar Site is recommended as eligible for listing in the National Register of Historic Places under Criterion D. Current project plans call for wetland mitigation in the Catbriar Site. The adverse effects to the site need to be mitigated in the form of Phase 3 mitigation.

Criterion D also applies to the Area 1 West Site, both the prehistoric and historic components. The prehistoric component contains Deepkill chert, which indicates trade of some kind from the Middle Hudson Valley, the quarry located approximately 100 to 120 miles north of the project area. While there are no datable prehistoric artifacts, the presence of Deepkill indicates a trade interaction being conducted between Staten Island and the Middle Hudson Valley. The historic component contains the earliest datable historic artifacts, two sherds of North Devon Gravel Tempered, one discovered in a test pit in 2013, and a second being recovered from an excavation unit placed next to that test pit in 2016. The seventeenth century origin of this particular English ceramic ties in with the late seventeenth patent dates for the area by French Huguenots, such as the Dissosways, DuBois, and (La)Fontaines, in this section of Staten Island. The Area 1 West Sites have the potential to make a contribution to the first settlement of the area by European colonists was well as the prehistoric component with a trade interaction sphere. At the current time, no construction activity is planned for this location. A construction plan to protect the sites is being developed to avoid nearby construction disturbance.

Criterion D also applies to the Precontact site in Area 5. While no datable finds, like pottery, has been found in Area 5, Phase 3 mitigation may reveal further information pertaining to subsistence and settlements patterns, as well as datable material. If the site is dated, it would be compared with the occupations of the Catbrier Site.

The historic segment of the Area 5 site relates to the occupation by the Dissosway, Starr, and Totten households, and possibly others. The archaeological deposits qualify under Criterion B, in that they are associated with the lives of persons significant in the history of the Tottenville area. They also relate to Criterion D.

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APPENDIX 1

CONTEXT NUMBERING AND PROVENIENCE LABELING

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CONTEXT NUMBERING AND PROVENIENCE LABELING

A field recording system which encompasses a variety of conditions and situations is optimal for any archaeological project. Among these situations are the size of the project, the number of different field techniques and the number of expected artifacts. The field recording system used was developed by Greenhouse Consultants and was based on modifications of other accepted systems.

All contexts are numbered in the field and these numbers are applied to the artifacts. The format for numbering is XX-9999.99 where X is alphanumeric and 9 is numeric. The alphanumeric characters to the left of the hyphen are the prefix. The two digits to the right of the decimal point are used only when it is necessary to refer to strata within a context. The four digits between the prefix and decimal subdivision may be called the base code.

The prefix is a two character designation of the project parcel. The four digit numeric base code can be divided into two parts; the first digit being separate from the last three. The first numeric digit indicates the type of field technique used. The codes are as follows:

1000: unprovenienced surface collection
2000: provenienced surface collection
3000: shovel testing
4000: trenching
5000: excavation units
6000: feature excavation
7000: borings
8000:
9000: transects

The three digits following the technique code are unique for each location and are assigned sequentially. Decimal subdivisions may be used for techniques three through six to indicate specific strata. For example, 01-3001.02 refers to Area 1 (01), shovel test (3), number 1 (001), at the second layer (.02).

FIELD SUMMARY AREA 1
Catbriar Site and West SIte 2016

Context AREA 1	Coordinates Catbriar Site	Munsell Shovel Tests	Color	Texture	Horizon	Depth (cm)	Cultural Material	Comments
3554.01	N85E95	10YR2/1	Black	Loam	Ao	0-6	NCM	
3554.02	N85E95	10YR4/3	Brown	Loamy Sand	A	6-38	FCR	Bag 14
3554.03	N85E95	10YR5/6	Yellowish brown	Loamy Sand	B	38-76	NCM	Sterile Subsoil
3555.01	N85E105	10YR2/1	Black	Loam	Ao	0-8	NCM	
3555.02	N85E105	10YR4/4 mixed w/ 10YR4/3	Yellowish brown w/ brown	Loamy sand	Fill	8-22		
3555.03	N85E105	10YR4/4	Dark yellowish brown	Loamy sand	B	22-62	NCM	Root obstruction
3556.01	N90E95	10YR2/1	Black	Loam	Ao	0-6	NCM	
3556.02	N90E95	10YR4/3	Brown	Loamy Sand	A	6-27	FCR, Flake	Bag 20
3556.03	N90E95	10YR5/6	Yellowish brown	Loamy Sand	B	27-63	FCR, Flake	Bag 21
3556.04	N90E95	10YR5/8	Yellowish brown	Loamy Sand	C	63-72	NCM	Sterile Subsoil
3557.01	N95E100	10YR2/1	Black	Loam	Ao	0-8	NCM	
3557.02	N95E100	10YR4/3	Brown	Loamy Sand	A	8-32	FCR	Bag 26
3557.03	N95E100	10YR4/4	Dark yellowish brown	Loamy Sand	B	32-62	NCM	
3557.04	N95E100	10YR4/6	Dark yellowish brown	Loamy sand	C	62-71	NCM	Sterile Subsoil
3558.01	N95E150	10YR2/1	Black	Loam	Ao	0-15	NCM	
3558.02	N95E150	10YR4/3	Brown	Loamy Sand	A	15-31	NCM	
3558.03	N95E150	10YR5/6	Yellowish brown	Loamy sand	B	31-79	NCM	Sterile Subsoil
3559.01	N70E150	10YR2/1	Black	Loam	Ao	0-11	Shell*	
3559.02	N70E150	10YR4/6	Yellowish brown	Loamy sand	B?	11-69	NCM	Sterile Subsoil
3560.01	N90E160	10YR2/1	Black	Loam	Ao	0-10	NCM	
3560.02	N90E160	10YR4/3 mottled 10YR4/4	Brown w/ yellowish brown	Loamy Sand	Fill	10-32	NCM	
3560.03	N90E160	10YR4/3	Brown	Loamy Sand	A	32-46	NCM	
3560.04	N90E160	10YR4/4	Yellowish brown	Loamy Sand	B	46-57	NCM	Root obstruction
3561.01	N85E165	10YR2/1	Black	Loam	Ao	0-12	Shell*	
3561.02	N85E165	10YR4/3	Brown	Loamy Sand	A	12-23	NCM	
3561.03	N85E165	10YR4/5	Dark yellowish brown	Loamy Sand	B	23-63	NCM	Root obstruction
3562.01	N95E160	10YR2/1	Black	Loam	Ao	0-10	Plastic*, styrofoam*	
3562.02	N95E160	10YR4/3 mixed w/ 10YR4/4	Brown w/ yellowish brown	Loamy sand w/ clay loam	Fill	10-32	Plastic*, styrofoam*	Sterile subsoil
3562.03	N95E160	10YR4/3	Brown	Loamy sand	A	32-46	NCM	
3562.04	N95E160	10YR4/4	Yellowish brown	Loamy sand	B	46-57	NCM	Root obstruction, moved 1m S for fill piles
3563.01	N90E165	10YR2/1	Black	Loam	Ao	0-13	NCM	
3563.02	N90E165	10YR4/3	Brown	Loamy Sand	A	13-38	NCM	
3563.03	N90E165	10YR4/4	Dark yellowish brown	Loamy Sand	B	38-60	NCM	Root obstruction
3564.01	N95E165	10YR2/1	Black	Loam	Ao	0-13	NCM	
3564.02	N95E165	10YR4/3 mixed w/ 10YR4/4	Brown w/ yellowish brown	Loamy sand	Fill	13-20	NCM	
3564.03	N95E165	10YR4/3	Brown	Loamy sand	A	20-38	Shell	Bag 22
3564.04	N95E165	10YR4/4	Dark yellowish brown	Loamy sand	B	38-64	NCM	
3564.05	N95E165	10YR4/6	Dark yellowish brown	Loamy sand	C	64-80	NCM	Sterile subsoil
3565.01	N85E190	10YR2/1	Black	Loam	Ao	0-16	NCM	
3565.02	N85E190	10YR4/3	Brown	Loamy sand	A	16=40	NCM	Sterile subsoil
3565.03	N85E190	10YR4/4	Dark yellowish brown	Loamy sand	B	40-60	NCM	
3565.04	N85E190	10YR4/6	Dark yellowish brown	Loamy sand	C	60-92	NCM	Sterile subsoil
3566.01	N95E170	10YR2/1	Black	Loam	Ao	0-8	NCM	
3566.02	N95E170	10YR4/3 mixed w/ 10R4/4	Brown w/ weak red	Loamy sand w/ clay loam	Fill	8-17	Shell*, styrofoam*	
3566.03	N95E170	10YR4/3	Brown	Loamy sand	A	17-32	Shell*	
3566.04	N95E170	10YR4/4	Dark yellowish brown	Loamy sand	B	32-73	NCM	
3566.05	N95E170	10YR4/6	Dark yellowish brown	Loamy sand	C	73-88	NCM	Sterile subsoil
3567.01	N90E170	10YR2/1	Black	Loam	Ao	0-7	NCM	
3567.02	N90E170	10YR4/3	Brown	Loamy sand	A	7-28	NCM	
3567.03	N90E170	10YR4/4	Dark yellowish brown	Loamy sand	B	28-60	NCM	
3567.04	N90E170	10YR4/6	Dark yellowish brown	Loamy sand	C	60-72	NCM	Sterile subsoil
3568.01	N50E220	10YR2/2	Very dark grayish brown		Ao	0-3	NCM	
3568.02	N50E220	10YR4/3	Brown	Loamy sand	A	3-26	NCM	
3568.03	N50E220	10YR4/4	Dark yellowish brown	Loamy sand	B	26-55	NCM	
3568.04	N50E220	10YR4/6	Dark yellowish brown	Loamy sand	C	55-65	NCM	Sterile Subsoil
3569.01	N46E300	10YR4/3	Brown	Loam	Fill	0-28	NCM	1m N of ST4

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Context	Coordinates	Munsell	Color	Texture	Horizon	Depth (cm)	Cultural Material	Comments
3569.02	N46E300	10YR5/6 w/ 10YR4/3	Yellowish brown w/ brown	Sand	Fill	28-79	Plastic*, paper*, mod. Bottle glass*	
3570.01	N48E300	10YR4/3	Brown	Loam	Fill	0-14	NCM	@ ST4
3570.02	N48E300	10YR4/3 w/ 10YR2/1 & 10YR5/8	Brown, w/ black & yellowish brown	Sand	Fill	14-65	NCM	
3571.01	N45E301	10YR4/3	Brown	Loamy sand	A	0-30	Paper*, mod. bottle glass*	@ST4
3571.02	N45E301	10YR5/6	Yellowish brown	Loamy Sand	B	30-41	Milk glass*	Root obstruction
3572.01	N45E303	10YR4/3	Brown	Loamy sand	Fill	0-8	Coal*, plastic*	@ST4
3572.02	N45E303	10YR4/3 mixed w/ 10YR5/6	Brown w/ yellowish brown	Sand	Fill	8-50	Mod. Bottle glass*	Root obstruction
2573.01	N45E299	10YR4/3	Brown	Sandy loam	A	0-35	Mod. Bottle glass*	
2573.02	N45E299	10YR4/4	Dark yellowish brown	Sand	B	35-57	Strofoam*, plastic*	Root obstruction
3574.01	N45E297	10YR4/3	Brown	Sandy loam	Fill	0-20	NCM	
3574.02	N45E297	10YR4/4 mixed w/ 10YR4/3	Dark yellowish brown w/ brown	Sand	Fill	20-68	Plastic*	
3575.01	N55E220	10YR2/1	Black	Loam	Ao	0-6	Shell	Bag 1 Catbriar Site
3575.02	N55E220	10YR4/3	Brown	Sandy loam	A	6-25	NCM	
3575.03	N55E220	10YR4/4	Dark yellowish brown	Loamy sand	B	25-45	FCR	Bag 2
3575.04	N55E220	10YR5/8	Yellowish brown	Loamy sand	C	45-66	NCM	Sterile subsoil
3576.01	N55E225	10YR2/1	Black	Loam	Ao	0-11	Shell, glass	Bag 3
3576.02	N55E225	10YR4/3	Brown	Sandy loam	A	11-36	NCM	3m w of slope to stream
3576.03	N55E225	10YR4/4	Dark yellowish brown	Loamy sand	B	36-60	Shell frags*	
3576.04	N55E225	10YR5/8	Yellowish brown	Loamy sand	C	60-70	NCM	Sterile Subsoil
3577.01	N65E225	10YR2/1	Black	Loam	Ao	0-11	Shell	Bag 23
3577.02	N65E225	10YR4/3	Brown	Sandy loam	A	11-31	Shell	Bag 24
3577.03	N65E225	10YR4/4 mixed w/ 10YR4/3	Dark yellowish brown w/ brown	Loamy sand	B	31-51	FCR, plastic	Bag 25, disturbed
3577.04	N65E225	10YR4/6	Dark yellowish brown	Loamy sand	C	51-66	NCM	Sterile Subsoil, groundhog burrowsNE & NW, 4m W of drainage
3578.01	N50E215	10YR4/3	Brown	Sandy loam	A	0-13	NCM	
3578.02	N50E215	10YR4/4	Dark yellowish brown	Loamy sand	B	13-35	NCM	
3578.03	N50E215	10YR5/6	Yellowish brown	Loamy sand	C	35-68	NCM	Sterile Subsoil
3579.01	N50E210	10YR2/1	Black	Loam	Ao	0-8		
3579.02	N50E210	10YR4/3	Brown	Sandy loam	A	8-34		
3579.03	N50E215	10YR6/6	Brownish yellow	Loamy sand	B	34-50		
2579.04	N50E215	10YR5/8	Yellowish brown	Loamy sand	C	50-55		Sterile Subsoil, 5m N of marsh
2580.01	N95E175	10YR3/2	Very dark grayish brown	Loam	Ao	0-6	Styrofoam*	
3580.01	N95E175	10YR4/3	Brown	Sandy loam	A	6-32	Shell	Bag 5
3580.03	N95E175	10YR5/6	Yellowish brown	Loamy sand	B	32-76	Shell, FCR	Bag 6, Sterile subsoil
3581.01	N90E175	10YR3/2	Very dark grayish brown	Loam	Ao	0-8	NCM	
3581.02	N90E175	10YR4/3	Brown	Sandy loam	A	8-29	Shell, FCR	Bag 7
3581.03	N90E175	10YR5/6	Yellowish brown	Loamy sand	B	29-47	Shell, FCR	Bag 8
3581.04	N90E175	10YR6/8	Brownish yellow	Loamy sand	C	47-70	NCM	Sterile Subsoil
3582.01	N85E150	10YR3/2	Very dark grayish brown	Loam	Ao	0-9	NCM	
3582.02	N85E150	10YR4/3	Brown	Sandy loam	A	9-26	Shell	Bag 9
3582.03	N85E150	10YR4/6	Dark yellowish brown	Loamy sand	B	26-56	Shell, FCR	Bag 10
3582.04	N85E150	10YR5/6	Yellowish brown	Loamy sand	C	56-75	NCM	Sterile subsoil
3583.01	N85E155	10YR3/2	Very dark grayish brown	Loam	Ao	0-4	NCM	
3583.02	N85E155	7.5YR4/4 mixed w/ 10YR4/3	Brown w/ brown	Loamy sand	Fill	4-19	NCM	
3583.03	N85E155	10YR4/3	Brown	Loamy sand	A	19-40	NCM	
3583.04	N85E155	10YR5/6	Yellowish brown	Loamy sand	B	40-73	NCM	Sterile Subsoil
3584.01	N85E160	10YR3/2	Very dark grayish brown	Loam	Fill	0-8	NCM	
3584.02	N85E160	7.5YR4/4 mixed w/ 10YR4/3	Brown w/ brown	Loamy sand	Fill	8-14	NCM	
3584.03	N85E160	10YR4/3	Brown	Loamy sand	A	14-39	NCM	
3584.04	N85E160	10YR4/6	Dark yellowish brown	Loamy sand	B	39-66	FCR, Shell	Bag 11, Sterile subsoil
3585.01	N80E165	10YR3/2	Very dark grayish brown	Loam	Ao	0-9	NCM	
3585.02	N80E165	10YR4/3	Brown	Sandy loam	A	9-30	FCR, Shell	Bag 12
3585.03	N80E165	10YR4/6	Dark yellowish brown	Sandy loam	B	30-74	NCM	Sterile subsoil

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Context	Coordinates	Munsell	Color	Texture	Horizon	Depth (cm)	Cultural Material	Comments
3586.01	N75E115	10YR3/1	Very dark gray	Loam	Ao	0-13	NCM	
3586.02	N75E115	10YR4/3 mixed w/ 10YR4/4	Brown w/ dark yellowish brown	Loamy sand	Fill	13-20	Shell, whiteware	Bag 13
3586.03	N75E115	10YR4/4	Dark yellowish brown	Loamy sand	B	20-75	NCM	Sterile subsoil
3587.01	N70E115	10YR3/1	Very dark gray	Loam	Ao	0-10	NCM	
3587.02	N70E115	10YR4/4	Dark yellowish brown	Loamy sand	A	10-43	Shell	Bag 14
3587.03	N70E115	10YR4/6	Dark yellowish brown	Loamy sand	B	43-70	NCM	Sterile subsoil
3588.01	N75E110	10YR3/1	Very dark gray	Loam	Ao	0-6	NCM	
3588.02	N75E110	10YR4/3	Brown	Loamy sand	A?	6-76	Oyster shells	Feature, not mottled, Bag 15
3588.03	N75E110	10YR4/6	Dark yellowish brown	Loamy sand	B	76-94	NCM	Sterile subsoil
3589.01	N85E100	10YR4/3	Brown	Loamy sand	A	0-20	NCM	
3589.02	N85E100	10YR4/4	Dark yellowish brown	Loamy sand	B	20-65	FCR, Shell	Bag 16, feature
3589.03	N85E100	10YR4/6	Dark yellowish brown	Loamy sand	C	65-72	NCM	Sterile subsoil
3590.01	N90E100	10YR3/1	Very dark gray	Loam	Ao	0-8	auto hardware*	
3590.02	N90E100	10YR4/3	Brown	Loamy sand	A	8-18	FCR	Bag 17
3590.03	N90E100	7.5YR5/8	Strong brown	Loamy sand	B	18-73	FCR, flake	Bag 18, sterile subsoil
3591.01	N70E100	10YR2/1	Black	Loam	Ao	0-12	NCM	
3591.02	N70E100	10YR4/3	Brown	Loamy sand	A	12-42	Shell*	
3591.03	N70E100	10YR5/6	Yellowish brown	Loamy sand	B	42-46	NCM	Root obstruction
3592.01	N65E85	10YR2/1	Black	Loam	Ao	0-8	NCM	
3592.02	N65E85	10YR4/3	Brown	Loamy sand	A	8-32	Iron spike*	
3592.03	N65E85	10YR5/6	Yellowish brown	Loamy sand	B	32-61	NCM	
3592.04	N65E85	10YR5/8	Yellowish brown	Loamy sand	C	61-71	NCM	Sterile subsoil
3593.01	N85E85	10YR2/1	Black	Loam	Ao	0-5	NCM	
3593.02	N85E85	10YR4/3	Brown	Loamy sand	A	5-18	NCM	
3593.03	N85E85	10YR4/4	Dark yellowish brown	Loamy sand	B	18-55	NCM	Root obstruction
3594.01	N61E60	10YR2/2	Very dark brown	Loam	Ao	0-8	NCM	Array @ST239
3594.02	N61E60	7.5YR4/6	Strong brown	Loamy sand	A	8-29	Brick frag.*	
3594.03	N61E60	7.5YR4/4	Brown	Loamy sand	B	29-60	NCM	Sterile subsoil
3595.01	N63E60	10YR2/2	Very dark brown	Loam	Ao	0-6	NCM	Array @ST239
3595.02	N63E60	7.5YR4/6	Strong brown	Loamy sand	A	6-35	NCM	
3595.03	N63E60	7.5YR4/4	Brown	Stony loamy sand	B	35-48	NCM	Sterile subsoil
3596.01	N60E61	10YR2/2	Very dark brown	Loam	Ao	0-8	Brick frags.*	Array @ST239
3596.02	N60E61	7.5YR4/6	Strong brown	Loamy sand	A	8-34	NCM	
3596.03	N60E61	7.5YR4/4	Brown	Gravelly loamy sand	B	34-55	NCM	Sterile subsoil
3597.01	N60E63	10YR2/2	Very dark brown	Loam	Ao	0-8	NCM	
3597.02	N60E63	7.5YR4/6	Strong brown	Loamy sand	A	8-29	Half-brick, brick frags.	Bag 27
3597.03	N60E63	7.5YR4/4	Brown	Gravelly loamy sand	B	29-58	NCM	Sterile subsoil
3598.01	N59E60	10YR2/2	Very dark brown	Loam	Ao	0-8	Glazed brick frags.	Bag 28
3598.02	N59E60	7.5YR4/6	Strong brown	Loamy sand	A	8-34	NCM	
3598.03	N59E60	7.5YR4/4	Brown	Gravelly loamy sand	B	34-56	NCM	Rock obstruction
3599.01	N57E60	10YR2/2	Very dark brown	Loam	Ao	0-7	Brick frags.*	Array @ST239
3599.02	N57E60	7.5YR4/6	Strong brown	Loamy sand	A	7-25	Many brick frags.*	
3599.03	N57E60	7.5YR4/4	Brown	Gravelly loamy sand	B	25-60	NCM	Sterile subsoil
3600.01	N60E59	10YR2/2	Very dark brown	Loam	Ao	0-7	Brick frags.*	Array @ST239
3600.02	N60E59	7.5YR4/6	Strong brown	Loamy sand	A	7-29	NCM	
3600.03	N60E59	7.5YR4/4	Brown	Gravelly loamy sand	B	39-68	NCM	Sterile subsoil, Photos look W in progress & profile
3601.01	N60E57	10YR2/2	Very dark brown	Loam	Ao	0-8	NCM	Array @ST239, Bag 29
3601.02	N60E57	7.5YR4/6	Strong brown	Loamy sand	A	8-30	NCM	
3601.03	N60E57	7.5YR4/4	Brown	Gravelly loamy sand	B	30-74	NCM	Sterile subsoil
2602.01	N76E45	10YR2/1	Black	Loam	Ao	0-12	Mod. Bottle glass*, bottle cap*	Array @ST242
3602.02	N76E45	7.5YR4/3	Brown	Loamy sand	A	12-39	charcoal*	
3602.03	N76E45	7.5YR4/6	Strong brown	Loamy sand	B	39-60	NCM	Sterile subsoil
3603.01	N78E45	10YR2/1	Black	Loam	Ao	0-10	Plastic*	Array @ST242
3603.02	N78E45	7.5YR4/3	Brown	Loamy sand	A	10-51	NCM	
3603.03	N78E45	7.5YR4/6	Strong brown	Loamy sand	B	51-68	NCM	Sterile subsoil
3604.01	N75E46	10YR2/1	Black	Loam	Ao	0-10	NCM	Array @ST242
3604.02	N75E46	7.5YR4/3	Brown	Loamy sand	A	10-39	NCM	

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Context	Coordinates	Munsell	Color	Texture	Horizon	Depth (cm)	Cultural Material	Comments
3604.03	N75E46	7.5YR4/6	Strong brown	Loamy sand	B	39-50	NCM	Rock obstruction
3605.01	N75E48	10YR2/1	Black	Loam	Ao	0-10	NCM	Array @ST242
3605.02	N75E48	7.5YR4/3	Brown	Loamy sand	A	10-40	NCM	
3605.03	N75E48	7.5YR4/6	Strong brown	Loamy sand	B	40-60	NCM	Sterile subsoil
3606.01	N74E45	10YR2/1	Black	Loam	Ao	0-10	NCM	Array @ST242
3606.02	N74E45	7.5YR4/3	Brown	Loamy sand	A	10-38	NCM	
3606.03	N74E45	7.5YR5/6	Strong brown	Loamy sand	B	38-61	NCM	
3607.01	N72E45	10YR2/1	Black	Loam	Ao	0-16	NCM	Array @ST242
3607.02	N72E45	7.5YR4/3	Brown	Loamy sand	A	16-49	NCM	
3607.03	N72E45	7.5YR5/6	Strong brown	Loamy sand	B	49-61	NCM	In progress photo looks S, sterile subsoil
3608.01	N75E44	10YR2/1	Black	Loam	Ao	0-7	NCM	Array @ST242
3608.02	N75E44	7.5YR4/3	Brown	Loamy sand	A	7-38	NCM	
3608.03	N75E44	7.5YR4/6	Strong brown	Loamy sand	B	38-60	NCM	Sterile subsoil, photo looks W, profile looks N
3609.01	N75E44	10YR2/1	Black	Loam	Ao	0-10	Whiteware, brick frags.	Array @ST242, Bag 30
3609.02	N75E44	7.5YR4/3	Brown	Loamy sand	A	10-34	NCM	
3609.03	N75E44	7.5YR4/6	Strong brown	Loamy sand	B	34-70	NCM	Sterile subsoil
3610.01	N91E30	10YR2/1	Black	Loam	Ao	0-6	Plastic*, foil*, coal*	Array @ST250
3610.02	N91E30	10YR4/3 mixed w/ 7.5YR4/4	Brown w/ brown	Loamy sand	Fill	6-22	NCM	
3610.03	N91E30	10YR4/3	Brown	Loamy sand	A	22-40	NCM	
3610.04	N91E30	10YR4/4	Dark yellowish brown	Sand	B	40-59	NCM	Sterile subsoil
3611.01	N93E30	10YR2/1	Black	Loam	Ao	0-8	NCM	Array @ST250
3611.02	N93E30	10YR4/3 mixed w/ 7.5YR4/4	Brown w/ brown	Loamy sand	Fill	8-20	NCM	
3611.03	N93E30	10YR4/3	Brown	Loamy sand	A	20-41	NCM	
3611.04	N93E30	10YR4/4	Dark yellowish brown	Sand	B	41-58	NCM	Sterile subsoil
3612.01	N90E31	10YR2/1	Black	Loam	Ao	0-8	Rebar*	Array @ST250
3612.02	N90E31	7.5YR4/3	Brown	Loamy sand	A	8-30	NCM	
3612.03	N90E31	10YR4/4	Dark yellowish brown	Sand	B	30-57	NCM	Sterile subsoil, wet
3613.01	N90E33	10YR2/1	Black	Loam	Ao	0-6	NCM	Array @ST250
3613.02	N90E33	10YR4/3 mixed w/ 7.5YR4/4	Brown w/ brown	Loamy sand	Fill	6-25	NCM	
3613.03	N90E33	10YR4/3	Brown	Loamy sand	A	25-42	NCM	
3613.04	N90E33	10YR4/4	Dark yellowish brown	Sand	B	42-54	NCM	Sterile Subsoil, wet
3614.01	N89E30	10YR2/1	Black	Loam	Ao	0-8	NCM	Array @ST250
3614.02	N89E30	10YR4/3 mixed w/ 7.5YR4/4	Brown w/ brown	Loamy sand	Fill	8-28	NCM	
3614.03	N89E30	10YR4/3	Brown	Loamy sand	A	28-50	NCM	
3614.04	N89E30	10YR4/4	Dark yellowish brown	Sand	B	50-67	NCM	Sterile subsoil, wet, Photo Look S a ST614 w/ ST616 on rt
3615.01	N87E30	10YR2/1	Black	Loam	Ao	0-10	Window glass	Array @ST250
3615.02	N87E30	10YR4/3 mixed w/ 7.5YR4/4	Brown w/ brown	Loamy sand	Fill	10-40	NCM	
3615.03	N87E30	10YR4/4	Dark yellowish brown	Sandy loam	B	40-57	NCM	Sterile subsoil
3616.01	N90E29	10YR2/1	Black	Loam	Ao	0-7	NCM	Array @ST250
3616.02	N90E29	10YR4/3 mixed w/ 7.5YR4/6	Brown w/ strong brown	Loamy sand	Fill	7-58	Glass, ceramic, iron*, charcoal*	Bag 31
3616.03	N90E29	10YR4/4	Dark yellowish brown	Sandy loam	C	58-68	NCM	Sterile subsoil
3617.01	N90E27	10YR2/1	Black	Loam	Ao	0-13	NCM	Array @ST250
3617.02	N90E27	10YR4/3 mixed w/ 7.5YR4/6	Brown w/ strong brown	Loamy sand	Fill	13-47	Glass, charcoal, brick, ceramic	Bag 32
3617.03	N90E27	10YR4/4	Dark yellowish brown	Clay loam	Fill	47-67	NCM	
3618.01	N46E45	10YR2/2	Very dark brown	Loam	Ao	0-10	NCM	Array @ST244
3618.02	N46E45	10YR4/4	Dark yellowish brown	Loamy sand	A	10-42	Whiteware, glass	Bag 33
3618.03	N46E45	7.5YR5/6	Strong brown	Sand	B	42-63	Flakes, metal, brick	Bag 34, rock obstruction
3619.01	N48E45	10YR2/2	Very dark brown	Loam	Ao	0-11	NCM	Array @ST244
3619.02	N48E45	10YR4/4	Dark yellowish brown	Loamy sand	A	11-39	Whiteware, nail, brick, glass	Bag 35
3619.03	N48E45	7.5YR5/6	Strong brown	Sand	B	39-70	NCM	Sterile subsoil
3620.01	N45E46	10YR2/2	Very dark brown	Loam	Ao	0-7	NCM	Array @ST244
3620.02	N45E46	10YR4/4	Dark yellowish brown	Loamy sand	A	7to36	Nail frag.	Bag 36
3620.03	N45E46	7.5YR5/6	Strong brown	Sand	B	36-71	NCM	Sterile subsoil

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Context	Coordinates	Munsell	Color	Texture	Horizon	Depth (cm)	Cultural Material	Comments
3621.01	N45E48	10YR2/2	Very dark brown	Loam	Ao	0-9	NCM	Array @ST244
3621.02	N45E48	10YR4/4	Dark yellowish brown	Loamy sand	A	9-36	Ceramics, brick, glass, shell	Bag 37
3621.03	N45E48	7.5YR5/6	Strong brown	Sand	B	36-80	NCM	Sterile subsoil
3622.01	N44E45	10YR2/2	Very dark brown	Loam	Ao	0-8	NCM	Array @ST244
3622.02	N44E45	10YR4/4	Dark yellowish brown	Loamy sand	A	8-35	Nail, ceramic, flake	Bag 38
3622.03	N44E45	7.5YR5/6	Strong brown	Sand	B	35-69	NCM	Sterile subsoil
3623.01	N42E45	10YR4/1	Dark gray	Loam	Ao	0-8	Shell, glass, plastic*	Bag39,, Array @ST244
3623.02	N42E45	10YR4/4	Dark yellowish brown	Loamy sand	A	8-44	Core	Bag 40
3623.03	N42E45	7.5YR5/6	Strong brown	Sand	B	44-76	NCM	Sterile subsoil
3624.01	N45E44	10YR4/1	Dark gray	Loam	Ao	0-7	NCM	Array @244
3624.02	N45E44	10YR4/4	Dark yellowish brown	Sandy loam	A	7-38	Pipe bowl	Bag 41
3624.03	N45E44	7.5YR4/6	Strong brown	Sandy loam	B	38-64	Shell, ceramic, flake	Bag 42. Sterile subsoil
3625.01	N45E42	10YR2/1	Black	Loam	Ao	0-11	NCM	Array @244
3625.02	N45E42	10YR4/4	Dark yellowish brown	Sandy loam	A	11-34	Ceramic, metal, charcoal	Bag 43
3625.03	N45E42	7.5YR4/6	Strong brown	Sandy loam	B	34-70	NCM	Sterile subsoil. Photos look E
3626.01	N31E30	10YR3/2	Very dark grayish brown	Loam	Ao	0-10	Shell*	Array @ST246
3626.02	N31E30	10YR3/3	Dark brown	Loamy sand	A	10-50	Shell, teeth (deer?), pipe, ceramic, FCR	Bag 44
3626.03	N31E30	7.5YR4/4	Brown	Sandy loam	B	50-72	NCM	Sterile subsoil
3627.01	N33E30	10YR3/2	Very dark grayish brown	Loam	Ao	0-9	NCM	Array @ST246
3627.02	N33E30	10YR4/3	Brown	Loamy sand	A	9-40	Shell, brick, glass, flake	Bag 45
3627.03	N33E30	7.5YR4/4	Brown	Sandy clay loam	B	40-72	NCM	Sterile subsoil, view looks w, profile looks E
3628.01	N30E31	10YR3/2	Very dark grayish brown	Loam	Ao	0-7	NCM	Array @ST246
3628.02	N30E31	10YR3/3	Dark brown	Sandy loam	A	7-57	Flakes, shell, bone, brick, pottery?	Bags 46 & 47
3628.03	N30E31	7.5YR4/4	Brown	Sandy loam	B	57-80	Flake, shell	Bag 48, sterile subsoil
3629.01	N30E33	10YR3/2	Very dark grayish brown	Loam	Ao	0-6	NCM	Array @ST246
3629.02	N30E33	10YR3/3	Dark brown	Sandy loam	A	6-41	Shell, brick, nail	6-29cm brick layer w/ stones, Bags 49 & 50
3629.03	N30E33	7.5YR5/6	Strong brown	Sand	B	41-66	Flake, glass	Bag 51, sterile subsoil, photo S profile
3630.01	N29E30	10YR3/2	Very dark grayish brown	Loam	Ao	0-8	NCM	Array @ST246
3630.02	N29E30	10YR3/3	Dark brown	Sandy loam	A	8-37	Brick, shell, ceramics, glass	Bag 52
3630.03	N29E30	7.5YR5/4	Brown	Sandy loam	B	37-70	NCM	Sterile subsoil
3631.01	N27E30	10YR3/2	Very dark grayish brown	Loam	Ao	0-6	NCM	Array @ST246
3631.02	N27E30	10YR3/3	Dark brown	Sandy loam	A	6-37	Shell, brick, glass, flake	Bag 53
3631.03	N27E30	7.5YR5/4	Brown	Sandy loam	B	37-66	NCM	Sterile subsoil
3632.01	N30E29	10YR3/2	Very dark grayish brown	Loam	Ao	0-9	NCM	Array @ST246, Bag 54
3632.02	N30E29	10YR3/3	Dark brown	Sandy loam	A	9-48	Shell, ceramic	Root obstruction, Bag54
3633.01	N30E27	10YR3/2	Very dark grayish brown	Loam	Ao	0-9	NCM	Array @ST246
3633.02	N30E27	10YR4/4	Dark yellowish brown	Sandy loam	A	9-40	Shell, FCR	Bag 55
3633.03	N30E27	7.5YR4/4	Brown	Sandy loam	B	40-70	NCM	Sterile subsoil
3634.01	N80E95	10YR3/1	Very dark grey	Sandy loam	Fill?	0-9	NCM	
3634.02	N80E95	7.5YR4/6	Strong brown	Sand	Fill?	9-42	Flake	Bag 29
3634.03	N80E95	10YR4/3	Brown	Loamy sand	A?	42-60	NCM	
3634.04	N80E95	10YR4/6	Dark yellowish brown	Loamy sand	B?	60-85	NCM	Sterile subsoil
3635.01	N90E85	10YR2/1	Very dark grey	Loam	Ao	0-9	NCM	
3635.02	N90E85	10YR4/3	Brown	Loamy sand	A	9-31	Glass. FCR	Bag 30
3635.03	N90E85	10YR4/4	Dark yellowish brown	Loamy sand	B	31-60	FCR	Bag 31
3635.04	N90E85	10YR4/6	Dark yellowish brown	Loamy sand	C	60-88	NCM	Sterile subsoil, moved 1m S to avoid fill
3636.01	N100E100	10YR2/2 mixed w/ 10YR4/4	Very dark grayish brown w/ dark yellowish brown	Loam	Fill	0-25	Mod. Bottle glass	
3636.02	N100E100	5YR4/4 mixed w/ 10YR4/6	Reddish brown w/ dark yellowish brown	Clay loam w/ sand	Fill	25-58	NCM	
3636.03	N100E100	10YR4/3 mixed w/ 10YR4/6		Loamy sand	Fill	58-76	NCM	Disturbed
3637.01	N100E95	10YR3/2	Very dark grayish brown	Loam	Ao	0-8	NCM	
3637.02	N100E95	5YR5/6 mixed w/ 10YR4/4 dark yellowish brown	Yellowish red w/ dark yellowish brown	Clay loam w/ loamy sand		8-40	NCM	Disturbed
3638.01	N95E95	10YR2/1	Very dark grey	Loam	Ao	0-4	NCM	
3638.02	N95E95	10YR4/3	Brown	Loamy sand	A	4-29	Stoneware	Bag 32

FIELD SUMMARY AREA 1
Catbriar Site and West SIte 2016

Context	Coordinates	Munsell	Color	Texture	Horizon	Depth (cm)	Cultural Material	Comments
3638.03	N95E95	10YR4/4	Dark yellowish brown	Sand	B	29-48	NCM	
3638.04	N95E95	10YR4/6	Dark yellowish brown	Sand	C	48-70	NCM	Sterile subsoil
3639.01	N95E85	10YR2/1	Very dark grey	Loam	Ao	0-5	NCM	
3639.02	N95E85	10YR4/3	Brown	Loamy sand	A	5-38	Shell*	
3639.03	N95E85	10YR4/4	Dark yellowish brown	Sand	B	38-75	NCM	Sterile subsoil, 9m S of fence
Area 1	**West Site**	**Shovel Tests**						
3750.01	N30E35	10YR3/2	Very dark grayish brown	Loam	A	0-38	Brick*, shell, nail,	Bag 192
3750.02	N30E35	7.5YR4/3	Brown	Sand	B	38-60	NCM	Rock obstruction
3751.01	N30E40	10YR3/2	Very dark grayish brown	Loam	A	0-33	Metal, shell, bone	Bag 193
3751.02	N30E40	7.5YR4/3	Brown	Loam	B	33-45	NCM	Sterile subsoil, rocks throughout profile, foundation?
3752.01	N35E30	10YR2/2	Very dark brown	Loam	Ao	0-16	NCM	
3752.02	N35E30	10YR3/3	Dark brown	Sandy loam	A	16-53	Shell, pipestem	Bag 194
3752.03	N35E30	7.5YR4/6	Strong brown	Sand	B	53-68	NCM	Sterile subsoil
3753.01	N40E30	10YR2/2	Very dark brown	Loam	Ao	0-12	NCM	
3753.02	N40E30	10YR3/3	Dark brown	Loam	A	12-35	NCM	
3753.03	N40E30	7.5YR4/6	Strong brown	Sand	B	35-57	NCM	Sterile subsoil
3754.01	N35E35	10YR3/2	Very dark grayish brown	Loam	Ao	0-30	Flake, shell, brick	Bag 195
3754.02	N35E35	7.5YR4/3	Brown	Loam	A	30-48	NCM	Root obstruction
3755.01	N35E40	10YR2/2	Very dark brown	Loam	Ao	0-12	NCM	
3755.02	N35E40	10YR3/3	Dark brown	Loam	A	12-38	NCM	
3755.03	N35E40	7.5YR4/6	Strong brown	Sand	B	38-60	NCM	Sterile subsoil
3756.01	N35E45	10YR3/2	Very dark grayish brown	Loam	Ao	0-9	Plastic*	
3756.02	N35E45	7.5YR4/3	Brown	Loam	A	9-30	NCM	
3756.03	N35E45	7.5YR4/6	Strong brown	Gravelly loam	B	30-48	NCM	Rock obstruction
3757.01	N40E35	10YR2/2	Very dark brown	Loam	Ao	0-7	Glass	Bag 196
3757.02	N40E35	10YR3/3	Dark brown	Loam	A	7-36	Shell, brick	Bag 197
3757.03	N40E35	7.5YR4/6	Strong brown	Sand	B	36-65	NCM	Sterile subsoil
3758.01	N40E40	10YR2/1	Black	Loam	Ao	0-18	NCM	
3758.02	N40E40	7.5YR4/3	Brown	Loam	A	18-48	flake?	Bag 198
3758.03	N40E40	7.5YR4/6	Strong brown	Sand	B	48-66	NCM	Sterile subsoil
3759.01	N40E45	10YR2/1	Black	Loam	Ao	0-11	NCM	
3759.02	N40E45	7.5YR4/3	Brown	Loam	A	11-44	Ceramic, nail, shell	Bag 199
3759.03	N40E45	7.5YR4/6	Strong brown	Sand	B	44-80	Flake	Bag 200, Sterile subsoil, near groundhog burrow
3760.01	N45E35	10YR2/1	Black	Loam	Ao	0-8	NCM	
3760.02	N45E35	7.5YR4/3	Brown	Loam	A	8-42	Shell frags*	
3760.03	N45E35	7.5YR4/6	Strong brown	Gravelly sand	B	42-66	NCM	Sterile subsoil
3761.01	N45E40	10YR2/1	Black	Loam	Ao	0-8	NCM	
3761.02	N45E40	7.5YR4/3	Brown	Loam	A	8-30	Shell, brick, ceramic	Bag 201
3761.03	N45E40	7.5YR4/6	Strong brown	Sand	B	30-53	NCM	Root obstruction
3762.01	N45E50	10YR2/1	Black	Loam	Ao	0-10	NCM	
3762.02	N45E50	7.5YR4/3	Brown	Sandy loam	A	10-38	NCM	
3762.03	N45E50	7.5YR4/6	Strong brown	Sand	B	38-60	NCM	Sterile subsoil
3763.01	N45E55	10YR2/1	Black	Loam	Ao	0-8	NCM	
3763.02	N45E55	7.5YR4/3	Brown	Sandy loam	A	8-31	Shell frags*	
3763.03	N45E55	7.5YR4/6	Strong brown	Sand	B	31-50	NCM	Rock obstruction
3764.01	N50E45	10YR2/1	Black	Loam	Ao	0-6	NCM	
3764.02	N50E45	7.5YR4/3	Brown	Sandy loam	A	6-30	Brick frag.*	
3764.03	N50E45	7.5YR4/6	Strong brown	Sand	B	30-53	NCM	Rock obstruction
3765.01	N50E45	10YR2/1	Black	Loam	Ao	0-9		
3765.02	N50E45	7.5YR4/3	Brown	Sandy loam	A	9-33	Many brick frags., slag	Bag 202
3765.03	N50E45	7.5YR4/6	Strong brown	Sand	B	33-69	NCM	Sterile subsoil, photos look N
3766.01	N50E40	10YR2/1	Black	Loam	Ao	0-8	NCM	
3766.02	N50E40	7.5YR4/3	Brown	Loam	A	8-26	NCM	
3766.03	N50E40	7.5YR4/4	Brown	Sand	B	26-50	NCM	Sterile subsoil

FIELD SUMMARY AREA 1
Catbriar Site and West SIte 2016

Context	Coordinates	Munsell	Color	Texture	Horizon	Depth (cm)	Cultural Material	Comments
3767,01	N40E50	10YR2/1	Black	Loam	Ao	0-14	NCM	
3767.02	N40E50	7.5YR4/4	Brown	Sand	B	14-53	FCR	Bag 216, Sterile subsoil
3768.01	N40E55	10YR3/2	Very dark grayish brown		A	0-31	NCM	Disturbed?
3768.02	N40E55	7.5YR4/4	Brown	Sand	B	31-58	NCM	Sterile subsoil, on berm near wetlands
3769.01	N35E50	10YR2/1	Black	Loam	Ao	0-12	NCM	
3769.02	N35E50	7.5YR4/4	Brown	Sand	B	12-57	Brick*	Disturbed?, Sterile subsoil
3770.01	N40E60	10YR2/1	Black	Loam	Ao	0-9	NCM	
3770.02	N40E60	7.5YR4/4	Brown	Sand	B	9-41	NCM	S of berm
Area 1	**Catbriar Site**	**Excavation**	**Units**					
5001.01	N100E188.5	10YR2/2	Very dark grey	Sandy loam	Ao	7-27	Mod. Bottle glass, plastic*, metal*, shell*, rubber*	
5001.02	N100E188.5	7.5YR4/3	Brown	Loamy sand	A	23-36	Flake, shell, brick, mod. Bottle glass*	Bag 149
5001.03	N100E188.5	7.5YR4/3	Brown	Loamy sand	A	34-46	Flakes, core, shell, pottery	Bag 150
5001.04	N100E188.5	7.5YR4/3	Brown	Loamy sand	A	45-57	Shell, flakes	Bag 151
5001.05	N100E188.5	7.5YR4/3	Brown	Loamy sand	A	54-66	Shell, flakes, nail	Bag 152
5001.06	N100E188.5	7.5YR4/6	Strong brown	Sand	B	64-77	Shell*, flakes, FCR	Bag 153
5001.07	N100E188.5	7.5YR4/6 mixed w/ 10YR5/6	Strong brown w/ yellowish brown	Sand	B	76-89	Flakes	Bag 154
5001.08	N100E188.5	10YR5/6 and 10YR6/6	Yellowish brown and brownish yellow	Sand	C	88-99	Flakes	Bag 155
5001.09	N100E188.5	10YR6/6	Brownish yellow	Sand	C	98-111	NCM	Sterile subsoil
5002.01	N64E184.75	10YR2/2	Very dark grey	Loamy sand	Ao	2-18	Shell, nails	Bag 156
5002.02	N64E184.75	10YR3/3	Dark brown	Loamy sand	A	16-29	Shell, flakes, FCR, ceramics	Bag 157
5002.03	N64E184.75	10YR3/3	Dark brown	Loamy sand	A	27-39	Shell, FCR, flakes, biface?	Bag 158
5002.04	N64E184.75	7.5YR4/4	Brown	Sand	B	36-50	Flake, FCR	Bag 159
5002.05	N64E184.75	7.5YR4/4	Brown	Sand	B	48-59	NCM	
5002.06	N64E184.75	7.5YR4/4	Brown	Sand	B	58-70	NCM	
5002.07	N64E184.75	7.5YR4/4 w/ 10YR6/4	Brown w/ light yellowish brown		B/C	69-88	Shell frags*	Sterile subsoil
Area 1	**West Site**	**Excavation**	**Unit**					
5005.01	N30E32.5	10YR2/1	Black	Loam	Ao/A	10-19	Brick, ceramics, glas, shell	Bag 217
5005.02	N30E32.5	10YR3/2	Very dark grayish brown	Loam	A	16-29	Brick, flakes, pipes	Bag 218
5005.03	N30E32.5	10YR3/2	Very dark grayish brown	Loam	A	25-37	Core, bone, shell, brick, nails, ceramic	Bag 219
5005.04	N30E32.5	10YR3/2	Very dark grayish brown	Loam	A	36-52	Brick, shell, ceramics, glass, pipes, nails, glass, brass button, unid. Metal, flakes, bone	Bag 220
5005.05	N30E32.5	7.5YR4/6	Strong brown	Sand	B	47-69	Flakes, tool, FCR	Bag 221
5005.06	N30E32.5	7.5YR4/6	Strong brown	Sand	B	64-77	Flakes, ceramic	Bag 222
5005.07	N30E32.5	7.5YR4/6	Strong brown	Sand	B	76-88	NCM	
5005.08	N30E32.5	7.5YR4/6 into 7.5YR5/6	Strong brown	Sand into sandy loam	B/C	86-99	NCM	Sterile subsoil

FIELD SUMMARY AREA 5
2016

Context	Coordinates	Munsell	Color	Texture	Horizon	Depth (cm)	Cultural Material	Comments
AREA 5	Shovel Tests							
3640.01	N170E180	10YR2/2	Very dark brown	Sandy loam	Ao	0-15	Ceramic, glass, nail, charcoal	Bag 56
3640.02	N170E180	7.5YR4/4	Brown	Sandy loam	A	15-46	NCM	
3640.03	N170E180	7.5YR5/6	Strong brown	Loamy sand	B	46-56	NCM	Sterile Subsoil
3641.01	N170E175	10YR2/2	Very dark brown	Loam	Ao	0-5	NCM	
3641.02	N170E175	7.5YR4/3	Brown	Sandy loam	A	5-28	Point base, flakes, ceramic, glass	Bag 57
3641.03	N170E175	7.5YR4/6	Strong brown	Gravelly sandy loam	B	28-41	NCM	Sterile subsoil
3642.01	N170E165	10YR2/2	Very dark brown	Loam	Ao	0-8	NCM	
3642.02	N170E165	7.5YR4/3	Brown	Sandy loam	A	8-20	Ceramic, glass, nail	Bag58
3642.03	N170E165	7.5YR4/6	Strong brown	Gravelly sandy loam	B	20-32	NCM	Sterile subsoil
3643.01	N170E160	10YR2/2	Very dark brown	Sandy loam	Fill	0-7	NCM	
3643.02	N170E160	10YR4/4	Dark yellowish brown	Sand	Fill	7-27	Ceramic, shell, metal, glass	Bag 59, possible feature
3643.03	N170E160	10YR2/1	Black	Loamy sand	Ao	27-32	Glass, ceramic, nail, brick	Bag 60
3643.04	N170E160	10YR4/3	Brown	Sandy loam	A	32-44	NCM	
3643.05	N170E160	10YR4/6	Dark yellowish brown	Loamy sand	B	44-63	NCM	Sterile subsoil
3644.01	N175E170	10YR2/2	Very dark brown	Loam	Ao	0-15	NCM	
3644.02	N175E170	7.5YR4/3	Brown	Sandy loam	A	15-30	Ceramic, glass	Bag 61
3644.03	N175E170	7.5YR4/6	Strong brown	Gravelly sandy loam	B	30-42	NCM	Sterile subsoil
3645.01	N165E170	10YR2/2	Very dark brown	Sandy loam	Ao	0-6	NCM	
3645.02	N165E170	7.5YR4/3	Brown	Sandy loam	A	6-26	Ceramic, glass, nails, brick	Bag 62
3645.03	N165E170	7.5YR4/6	Strong brown	Gravelly sandy loam	B	26-43	NCM	Sterile subsoil
3646.01	N160E170	10YR2/2	Very dark brown	Sandy loam	Ao	0-8	NCM	
3646.02	N160E170	10YR6/6	Brownish yellow	Sand	Fill	8-29	NCM	
3646.03	N160E170	10YR4/2	Dark grayish brown	Loamy Sand	B	29-64	Ceramic, glass, nail, charcoal	Root obstruction
3647.01	N165E165	10YR4/3	Brown	Loamy sand	Fill	0-20	Flakes, shell, nail	Bag 65
3647.02	N165E165	10YR4/4 mixed w/ 10YR4/4		Loamy Sand	Fill	20-66	Redware	Mixed fill, Bag 66
3648.01	N163E175	10YR2/2	Very dark brown	Sandy loam	Ao	0-4	NCM	
3648.02	N163E175	10YR3/3	Dark brown	Loamy sand	A	4-29	Pipe,ceramic, shell	Bag 64
3648.03	N163E175	7.5YR5/6	Strong brown	Gravelly loamy sand	B	29-53	NCM	Sterile subsoil
3649.01	N160E165	10YR4/3	Brown	Loamy sand	Fill	0-16	Shell, glass	Bag 67
3649.02	N160E165	7.5YR5/4	Brown	Sand	Fill	16-44	NCM	
3649.03	N160E165	10YR3/3	Dark brown	Sand	A?	44-62	Shell, glass, brick, ceramic	Bag 68
3650.01	N160E175	10YR4/3	Brown	Sandy loam	Fill	0-9	NCM	
3650.02	N160E175	7.5YR5/4	Brown	Sand	Fill	9-37	NCM	
3650.03	N160E175	10YR4/3	Brown	Loamy sand	A	37-67	Shell, glass, ceramic, nails, etc.	
3650.04	N160E175	7.5YR4/4	Brown	Loamy sand	B	67-74	NCM	Sterile Subsoil
3651.01	N160E185	10YR3/3	Dark brown	Loamy sand	A	0-36	Ceramic, glass, nails, shell, flake?, etc.	Bag 70
3651.02	N160E185	7.5YR4/4	Brown	Sand	B	36-66	NCM	Root obstruction
3652.01	N165E185	10YR2/2	Very dark brown	Sandy loam	Ao	0-5	NCM	
3652.02	N165E185	10YR3/3	Dark brown	Sandy loam	A	5-33	Flake, glass	
3652.03	N165E185	7.5YR4/6	Strong brown	Gravelly sandy loam	B	33-58	NCM	Sterile Subsoil

FIELD SUMMARY AREA 5
2016

Context	Coordinates	Munsell	Color	Texture	Horizon	Depth (cm)	Cultural Material	Comments
3653.01	N155E175	10YR4/3	Brown	Loam	Fill	0-10	Nails, shell	Bag 71
3653.02	N155E175	10YR4/3 mixed w/ 10YR4/4	Brown w/ Dark yellowish brown	Loamy sand	Fill	10-23	NCM	
3653.03	N155E175	10YR3/3	Dark brown	Loam	A	23-60	Shell, spikes, ceramics, etc.	Bag 72
3653.04	N155E175	7.5YR4/6	Strong brown	Sand	B	60-95	Pipe, nail, shell, chert	Bag 73, Sterile subsoil
3654.01	N155E180	10YR4/3	Brown	Loamy sand	A	0-35	Shell, ceramic, brick, etc.	Bag 74
3654.02	N155E180	7.5YR4/6	Strong brown	Sand	B	35-94	NCM	Sterile subsoil, on E end of rd, photos N profile & Look N at ST
3655.01	N155E190	10YR4/3	Brown	Loamy sand	A	0-31	Shell, glass	Bag 75
3655.02	N155E190	7.5YR4/4	Brown	Sand	B	31-53	NCM	
3655.03	N155E190	7.5YR4/6	Strong brown	Gravelly sand	C	53-70	NCM	Sterile subsoil, N of pile
3656.01	N155E165	10YR4/3	Brown	Loam	Fill	0-9	Shell	Bag 76
3656.02	N155E165	7.5YR5/6	Strong brown	Sand	Fill	9-50	NCM	
3656.03	N155E165	10YR3/3	Dark brown	Loamy sand	A	50-85	Ceramic, flakes, shell	Bag 77, rock obstuction/cellar?, Photos look N
3657.01	N155E160	10YR4/3	Brown	Loam	Fill	0-10	NCM	
3657.02	N155E160	7.5YR5/6	Strong brown	Sand	Fill	10-53	NCM	
3657.03	N155E160	10YR3/3	Dark brown	Loamy sand	A	53-75	Brick, ceramic, shell, coal	Bag 78
3658.01	N150E170	10YR4/3	Brown	Loam	Fill	0-14	Brick, shell, glass	Bag 79
3658.02	N150E170	7.5YR4/6	Strong brown	Sand	Fill	14-26	NCM	
3658.03	N150E170	10YR3/3	Dark brown	Loamy sand	A	26-55	Shell, bone, nails, glass, etc.	Bag 80
3658.04	N150E170	7.5YR5/6	Strong brown	Sand	B	55-90	Ceramic, shell, glass	Bag 81, Sterile subsoil
3659.01	N150E175	10YR4/3	Brown	Loam	A	0-40	Shell, ceramic, nails, brick, bone, etc.	Lots of shell @ 20-35cm, midden feature, Bag 82, w side of road
3659.02	N150E175	7.5YR5/6	Strong brown	Sand	B	40-85	NCM	Sterile subsoil
3660.01	N150E180	10YR4/3	Brown	Loamy sand	A	0-22	Shell, ceramic, nail	Truncated, Bag 85
3660.02	N150E180	7.5YR5/6	Strong brown	Sand	B	22-90	NCM	Sterile subsoil
3661.01	N150E185	10YR4/3 mixed w/ 10YR4/4	Brown w/ Dark yellowish brown	Loamy sand	Fill	0-33	Ceramic, nails, FCR, etc	
3661.02	N150E185	7.5YR3/4	Dark brown	Sand	Fill	33-70	Nail, ceramic	Bag, 87, 1m W of mound w/ stones
3662.01	N145E170	10YR4/3	Brown	Loam	A	0-23	Shell, glass	Bag 88
3662.02	N145E170	7.5YR4/6	Strong brown	Sand	B	23-94	Shell, shotgun shell	Bag 89
3663.01	N145E175	10YR4/3	Brown	Loam	A	0-8	Flake, shell, brick	Truncated, Bag 90
3663.02	N145E175	7.5YR5/6	Strong brown	Sand	B	8-80	NCM	Sterile subsoil, S side of road
3664.01	N145E180	10YR4/3	Brown	Loam	A	0-8	Historics	Truncated, Bag 91
3664.02	N145E180	7.5YR5/6	Strong brown	Sand	B	8-68	Historics	Bag 92, Sterile subsoil, in road
3665.01	N145E185	10YR4/3	Brown	Loamy sand	Fill	0-10	Shell, ceramic	Bag 93
3665.02	N145E185	7.5YR5/4	Brown	Sand	Fill	10-30	NCM	
3665.03	N145E185	10YR4/3	Brown	Loamy sand	A	30-53	Shell, glass, brick, ceramic	Bag 94
3665.04	N145E185	10YR6/8	Brownish yellow	Sand	B	53-64	NCM	Sterile subsoil

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Context	Coordinates	Munsell	Color	Texture	Horizon	Depth (cm)	Cultural Material	Comments
3666.01	N140E175	10YR4/3	Brown	Loam	A	0-18	Shell, glass, brick, FCR	Bag 95
3666.02	N140E175	7.5YR5/6	Strong brown	Sand	B	18-43	NCM	Root obstruction
3667.01	N140E180	10YR4/3	Brown	Loam	A	0-21	Mod. Glass*, brick*	
3667.02	N140E180	7.5YR4/6	Strong brown	Sand	B	21-71	NCM	Sterile subsoil
3668.01	N140E190	10YR4/3	Brown	Loam	Fill	0-9	Brick frag.*	
3668.02	N140E190	7.5YR4/6 mixed w/ 7.5YR5/6	Strong brown	Sandy loam	Fill	9-40	NCM	
3668.03	N140E190	10YR3/3	Dark brown	Loam	A	40-59	Ceramic, brick, glass, coal	Bag 96
3668.04	N140E190	10YR5/8	Yellowish brown	Sand	B	59-92	NCM	Sterile subsoil
3669.01	N140E195	10YR4/3	Brown	Loam	Fill	0-13	Brick*	
3669.02	N140E195	7.5YR4/6 mixed w/ 7.5YR5/6	Strong brown	Sandy loam	Fill	13-33	NCM	
3669.03	N140E195	10YR3/3	Dark brown	Loam	A	33-70	Ceramic, shell	Bag 97
3669.04	N140E195	10YR5/8	Yellowish brown	Sand	B	70-80	NCM	Sterile subsoil
3670.01	N155E195	10YR4/3	Brown	Loamy sand	A	0-18	FCR?, pipe, ceramic, shell	Bag 83
3670.02	N155E195	7.5YR4/4	Brown	Sand	B	18-71	shell, FCR?, ceramic	Bag 84
3671.01	N140E165	10YR4/3	Brown	Loam	A	0-17	Shell frags.*	Truncated
3671.02	N140E165	7.5YR5/6	Strong brown	Sand	B	17-71	NCM	Sterile subsoil
3672.01	N135E170	10YR4/3	Brown	Loamy sand	A	0-24	Window glass*	
3672.02	N135E170	7.5YR4/6	Strong brown	Sand	B	24-60	Window glass*	Sterile subsoil
3673.01	N135E165	10YR4/3	Brown	Loam	A	0-16	NCM	
3673.02	N135E165	7.5YR5/6	Strong brown	Sand	B	16-73	NCM	Sterile subsoil
3674.01	N135E1655	10YR3/3	Dark brown	Loam	A	0-39	Shell, nails, ceramics, glass	Bag 107
3674.02	N135E155	7.5YR5/6	Strong brown	Sand	B	39-75	NCM	Sterile subsoil
3675.01	N135E175	10YR4/3	Brown	Loam	A	0-40	Plaster, shell, glass	Bag 98, Root obstruction, near big tree
3676.01	N135E180	10YR4/3	Brown	Loam	A	0-30	Ceramic, brick, shell	Bag 99
3676.02	N135E180	7.5YR5/8	Strong brown	Sand	B	30-66	NCM	Sterile subsoil
3677.01	N135E185	7.5YR4/6 mixed w/ 7.5YR5/6	Strong brown	Sand	Fill	0-11	NCM	
3677.02	N135E185	10YR4/3	Brown	Loam	A	11-34	Shell, ceramic, nail	Bag 100
3677.03	N135E185	7.5YR5/6	Strong brown	Sand	B	34-69	NCM	Sterile subsoil, in road
3678.01	N130E185	10YR4/3	Brown	Loam	Fill	0-6	NCM	
3678.02	N130E185	7.5YR5/6	Strong brown	Sand	Fill	6-28	NCM	
3678.03	N130E185	10YR3/3	Dark brown	Loam	A	28-53	Metal, brick, bone	Bag 101
3678.04	N130E185	7.5YR5/6	Strong brown	Sand	B	53-76	NCM	Sterile subsoil, in road
3679.01	N130E180	10YR4/3	Brown	Loam	Fill	0-6	NCM	
3679.02	N130E180	7.5YR4/6	Strong brown	Sand	Fill	6-28	NCM	
3679.03	N130E180	10YR3/3	Dark brown	Loam	A	28-60	Spike, brick, ceramic	Bag 102
3679.04	N130E180	7.5YR4/6	Strong brown	Sand	B	60-84	NCM	Sterile subsoil
3680.01	N130E175	10YR4/3	Brown	Loam	Fill	0-8	NCM	
3680.02	N130E175	7.5YR4/6	Strong brown	Sand	Fill	8-36	Shell	Bag 103

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Context	Coordinates	Munsell	Color	Texture	Horizon	Depth (cm)	Cultural Material	Comments
3680.03	N130E175	10YR3/3	Dark brown	Loam	A	36-70	Shell, brick, ceramic, plaster, etc.	Bag 104
3680.04	N130E175	7.5YR4/6	Strong brown	Sand	B	70-85	NCM	Sterile subsoil
3681.01	N130E170	10YR4/3	Brown	Loam	Fill	0-10	NCM	
3681.02	N130E170	7.5YR4/6	Strong brown	Sand	Fill	10-38	NCM	
3681.03	N130E170	10YR3/3	Dark brown	Loam	A	38-56	Flakes, glass	Bag 105
3681.04	N130E170	7.5YR5/6	Strong brown	Sand	B	56-86	Ceramic, shell, flake	Bag 106, Sterile subsoil
3682.01	N130E165	10YR4/3	Brown	Loam	A	0-24	Brick*, coal*, shell*, glass, nails	Bag 108, building stone
3682.02	N130E165	7.5YR5/6	Strong brown	Sand	B	24-92	Brick*, shell*, glass	Bag 109
3683.01	N130E160	10YR4/3 mixed w/7.5YR5/6	Brown w/ strong brown	Loam w/ sand	Fill	0-37	FCR, Flake, historics	Bag 110
3683.02	N130E160	7.5YR5/6	Strong brown	Sand	B	37-76	FCR, flak, coal*	Bag 111
3684.01	N130E155	10YR4/3 mixed w/7.5YR4/6	Brown w/ strong brown	Sand	Fill	0-45	Brick, nails, glass, ceramics	Bag 112
3684.02	N130E155	7.5YR4/6	Strong brown	Sand	B	45-80	Ceramic, glass	Bag 113, Sterile subsoil, W side of road
3685.01	N125E145	10YR4/3 mixed w/7.5YR4/4	Brown	Sandy loam	Fill	0-25	NCM	
3685.02	N125E145	7.5YR4/4	Brown	Sand	B	25-59	Brick frags.*	Disturbed, water @ 50cm
3686.01	N125E150	10YR3/3	Dark brown	Loam	A	0-18	Nails, brick frags.*	Bag 114
3686.02	N125E150	7.5YR4/4	Brown	Sand	B	18-49	Brick frags.*	Truncated, root obstruction
3687.01	N125E160	10YR4/3	Brown	Loam	Fill	0-5	NCM	
3687.02	N125E160	7.5YR5/6 mixed w/ 10YR4/3	Stong brown w/ brown	Sandy loam	Fill	5-14	NCM	
3687.03	N125E160	10YR4/3	Brown	Loam	A	14-30	Glass, slag, ceramics, nails	Bag 115
3687.04	N125E160	7.5YR5/6	Strong brown	Sand	B	30-70	Brick frags.*	Sterile subsoil, E of road
3688.01	N125E165	10YR4/3	Brown	Loam	Fill	0-6	NCM	
3688.02	N125E165	7.5YR4/4 mixed w/ 10YR4/3	Brown	Sandy loam	Fill	6-29	Coal*, shell, brick*, glass	Bag 116
3688.03	N125E165	10YR4/3	Brown	Loam	A	29-44	Shell*, brick*	
3688.04	N125E165	7.5YR4/4	Brown	Sand	B	44-60	NCM	Root obstruction
3689.01	N125E175	10YR4/3	Brown	Loam	Fill	0-6	Mod. Bottle glass*	
3689.02	N125E175	7.5YR4/4	Brown	Sand	Fill	6-30	Plastic*, Mod. Bottle glass*	
3689.03	N125E175	10YR4/3	Brown	Loam	A	30-55	Coal*, shell* glass	Bag 117
3689.04	N125E175	7.5YR4/4	Brown	Sand	B	55-60	NCM	Root obstruction
3690.01	N125E180	10YR4/3	Brown	Loam	Fill	0-7	NCM	
3690.02	N125E180	7.5YR5/6 mixed w/ 5YR4/4	Strong brown w/ reddish brown	Sand w/ loamy sand	Fill	7-25	NCM	
3690.03	N125E180	10YR3/4	Dark yellowish brown	Loam	A	25-60	Glazed brick, shell, ceramic, bone	Bag 118, Midden
3690.04	N125E180	7.5YR5/6	Strong brown	Sand	B	60-72	NCM	Sterile subsoil
3691.01	N120E155	10YR2/2	Very dark brown	Sandy loam	Ao	0-5	NCM	
3691.02	N120E155	7.5YR4/4	Brown	Sandy loam	A	5-28	Ceramic, charoal*, glass	Bag 124
3691.03	N120E155	7.5YR4/6	Strong brown	Sandy loam	B	28-44	NCM	
3691.04	N120E155	7.5YR5/2	Greyish brown	Sand	C	44-60	NCM	Sterile subsoil
3692.01	N120E160	10YR3/3	Dark brown	Sandy loam	Ao	0-5	NCM	
3692.02	N120E160	&.5YR4/3 mixed w/ 2.5YR5/6	Brown w/ red	Sandy loam	A?	5-54	Nails, glass, ceramic, charcoal*	
3692.03	N120E160	7.5YR5/6	Strong brown	Sand	B	54-68	NCM	Sterile subsoil

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Context	Coordinates	Munsell	Color	Texture	Horizon	Depth (cm)	Cultural Material	Comments
3693.01	N120E165	10YR3/3	Dark brown	Sandy loam	A	0-22	Nails, shell, glass, ceramic, charcoal	Bag 125
3693.02	N120E165	10YR4/3	Brown	Loam	B	22-47	Shell, glass, ceramic, nail frag.	Shell midden feature, Bag 127
3693.03	N120E165	7.5YR4/6	Strong brown	Sand	C	47-68	NCM	Sterile subsoil
3694.01	N120E170	10YR4/3	Brown	Loam	A	0-26	Shell, ceramic, nail, glass	Bag 119
3694.02	N120E170	7.5YR4/6	Strong brown	Sand	B	26-58	Ceramic	Sterile subsoil
3695.01	N120E175	10YR4/3	Brown	Loam	A	0-30	Shell, ceramic, rick, nail, glass	Bag121
3695.02	N120E175	7.5YR5/6	Strong brown	Sand	B	30-74	FCR	Bag 122, Sterile subsoil
3696.01	N120E180	10YR4/3	Brown	Loam	Fill	0-6	NCM	
3696.02	N120E180	7.5YR5/6	Strong brown	Sand	Fill	6-18	NCM	
3696.03	N120E180	10YR4/3	Brown	Loam	A	18-51	Coal*, brick*, glass, unident.	Bag 123
3696.04	N120E180	7.5YR5/6	Strong brown	Sand	B	51-73	NCM	Sterile subsoil
3697.01	N115E180	10YR3/3	Dark brown	Sandy loam	Ao	0-5	NCM	
3697.02	N115E180	7.5YR4/3	Brown	Loam	A	5-38	Brick, glass, nail, ceramic, charcoal*	Bag 128
3697.03	N115E180	7.5YR5/8	Strong brown	Sand	B	38-66	NCM	Sterile Subsoil
3698.01	N115E175	10YR3/3	Dark brown	Sandy loam	Ao	0-7	NCM	
3698.02	N115E175	7.5YR4/4	Brown	Loamy sand	A	7-28	Flake, brick, glass, ceramic	Bag 129
3698.03	N115E175	7.5YR5/8	Strong brown	Sand	B	28-79	NCM	Sterile subsoil
3699.01	N115E170	10YR3/3	Dark brown	Sandy loam	Ao	0-4	Spike, brick, ceramic	Bag 130
3699.02	N115E170	10YR4/3	Brown	Loamy sand	A	4-20	Shell, nail,glass, ceramic	Bag 131
3699.03	N115E170	7.5YR5/8	Strong brown	Sand	B	20-53	NCM	Sterile subsoil
3700.01	N115E165	10YR4/3	Brown	Loamy sand	A	0-21	Flake, charcoal, brick, metal	Bag 132
3700.02	N115E165	7.5YR5/6	Strong brown	Sand	B	21-79	NCM	Sterile subsoil
3701.01	N115E160	10YR4/3	Brown	Loamy sand	Fill	0-33	Brick, shell, glass, charcoal, nail	Bag 133, in road
3701.02	N115E160	10YR4/3	Brown	Loamy sand	Fill	33-59	Shell, nails, metal, buttons, ceramics, pipe, coal ash, charcoal	Bag 134, burn level
3701.03	N115E160	7.5YR5/6	Strong brown	Sand	B	59-74	NCM	Sterile subsoil
3702.01	N115E155	10YR3/3	Dark brown	Sandy loam	Ao	0-6	NCM	
3702.02	N115E155	10YR4/2	Dark grayish brown	Sandy loam	Fill	6-45	Brick, glass, ceramic, shell, charcoal	Bag 135
3702.03	N115E155	7.5YR5/6	Strong brown	Sand	B	45-57	NCM	Sterile subsoil
3703.01	N110E160	10YR3/3	Dark brown	Sandy loam	Ao	0-4	NCM	
3703.02	N110E160	7.5YR4/3	Brown	Loamy sand	A	4-16	Shell, ceramic	Bag 136
3703.03	N110E160	7.5YR5/6	Strong brown	Sand	B	16-50	NCM	Sterile subsoil
3704.01	N110E165	10YR4/3	Brown	Sandy loam	A	0-6	NCM	
3704.02	N110E165	7.5YR5/6	Strong brown	Loamy sand	B	6-27	NCM	
3704.03	N110E165	7.5YR6/6	Reddish yellow	Loamy sand	C	27-45	NCM	Sterile subsoil
3705.01	N110E175	10YR4/3	Brown	Loam	Fill	0-8	Brick*	
3705.02	N110E175	10YR4/4	Dark yellowish brown	Sand	Fill	8-28	Brick*, charcoal*	
3705.03	N110E175	10YR4/3	Brown	Loam	A	28-66	NCM	Rock

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Context	Coordinates	Munsell	Color	Texture	Horizon	Depth (cm)	Cultural Material	Comments
3706.01	N110E180	10YR4/4 mixed w/ 7,5YR4/6	Dark yellowish brown w/ strong brown		Fill	0-76	Brick*, mod. Bottle glass	Disturbed
3707.01	N125E190	10YR3/3	Dark brown	Loam	Fill	0-8	NCM	
3707.02	N125E190	10YR6/8 mixed w/ 10YR6/3	Brownish yellow w/ pale brown	Silty loam	C	8-42	NCM	Sterile subsoil
3708.01	N125E195	10YR4/3	Brown	Loam	Fill	0-8	NCM	
3708.02	N125E195	7.5YR4/6 mixed w/ 5YR4/4	Strong brown w/ reddish brown	Loam	Fill	8-44	NCM	Sterile subsoil
3709.01	N120E185	10YR4/3	Brown	Loam	Fill	0-18	NCM	
3709.02	N120E185	7.5YR4/6	Strong brown	Sand	Fill	18-28	NCM	
3709.03	N120E185	10YR4/3	Brown	Loam	A	28-54	Nail, ceramic, coal, glass	Bag 137
3709.04	N120E185	7.5YR4/6	Strong brown	Sand	B	54-87	NCM	Sterile subsoil
3710.01	N115E185	10YR4/3	Brown	Loam	Fill	0-15	NCM	
3710.02	N115E185	10YR4/6 mixed w/ 10YR4/3	Dark yellowish brown w/ brown	Sand	Fill	15-31	Glass, ceramic	Bag 138
3710.03	N115E185	10YR3/3	Dark brown	Loam	A	31-50	Glass	Bag 139
3710.04	N115E185	7.5YR4/6	Strong brown	Sand	B	50-71	NCM	Sterile subsoil
3711.01	N105E170	10YR4/3	Brown	Loam	Fill	0-5	Coal*, brick*	
3711.02	N105E170	10YR4/4	Dark yellowish brown	Loamy sand	Fill	5-26	Ceramic, glass	Bag 140
3711.03	N105E170	10YR3/3	Dark brown	Loam	A	26-42	NCM	
3711.04	N105E170	7.5YR5/4	Brown	Sand	B	42-78	NCM	Sterile subsoil
3712.01	N100E170	7.5YR4/3	Brown	Loam	A	0-18	NCM	
3712.02	N105E170	7.5YR5/6	Strong brown	Sand	B	18-74	Shell, ceramic, glass	Bag 141, Sterile subsoil
3713.01	N171E140	10YR3/2	Very dark grayish brown	Loam	Fill	0-12	Glass, brick	Bag 142, Array @ ST191
3713.02	N171E140	10YR4/3 mixed w/ 10YR4/6	Brown w/ Dark yellowish brown	Sand	Fill	12-57	Glass, brick	Bag 143, Water @ 35cm
3714.01	N173E140	10YR3/2	Very dark grayish brown	Loam	Fill	0-8	NCM	Array @ ST191
3714.02	N173E140	10YR4/3 mixed w/ 10YR4/6	Brown w/ Dark yellowish brown	Sand	Fill	8-44	Ceramic, glass,	Bag 144, water @25cm
3715.01	N170E141	10YR3/2	Very dark grayish brown	Loam	Fill	0-8	Aluminum*, coal*	Array @ ST191
3715.02	N170E141	10YR4/3 mixed w/ 10YR4/6	Brown w/ Dark yellowish brown	Sand	Fill	8-69	NCM	Water @ 58cm
3716.01	N170E143	10YR3/2	Very dark grayish brown	Loam	Fill	0-11	NCM	Array @ ST191
3716.02	N170E143	10YR4/3 mixed w/ 5YR4/6	Brown w/ reddish brown	Sand	Fill	11-53	Glass, ceramic, metal	Bag 145, Rock obstruction Photos look E. progress & profile
3717.01	N169E140	10YR3/2	Very dark grayish brown	Loam	Fill	0-8	Brick, glass	Array @ ST191Bag 146
3717.02	N169E140	10YR4/3 mixed w/ 10YR4/6	Brown w/ Dark yellowish brown	Sand	Fill	8-79	Ceramic, brick, glass	Bag 147, Water @ 68cm
3718.01	N167E140	10YR3/2	Very dark grayish brown	Loam	Fill	0-11	Mod. Glass*	Array @ ST191
3718.02	N167E140	10YR4/3 mixed w/ 10YR4/6	Brown w/ Dark yellowish brown	Sand	Fill	11-72	Glass, charcoal	Bag 148, water @ 65
3719.01	N135E150	10YR3/3	Dark brown	Loam	Fill	0-4	Glass	Bag 203
3719.02	N135E150	10YR3/3 mixed w/ 7,5YR4/4	Dark brown w/ brown	Sand	Fill	4-31	Coal, glass	Bag 204
3719.03	N135E150	10YR4/3	Brown	Sand	A	31-50	NCM	
3719.04	N135E150	7.5YR4/4	Brown	Sand	B	50-77	NCM	Water @ 60cm, Sterile Subsoil
3720.01	N135E145	10YR3/3	Dark brown	Loamy sand	A	0-30	Glass, ceramic, nails	Bag 205

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Context	Coordinates	Munsell	Color	Texture	Horizon	Depth (cm)	Cultural Material	Comments
3720.02	N135E145	7.5YR4/4	Brown	Sand	B	30-97	Glass	Bag 206, Sterile subsoil
3721.01	N130E150	10YR3/2	Very dark grayish brown	Loamy sand	Ao	0-8	NCM	
3721.02	N130E150	10YR3/3	Dark brown	Loamy sand	A	8-35	Nails, bottle cap, ceramic	Bag 207
3721.03	N130E150	7.5YR4/4	Brown	Sand	B	35-75	Nail	Bag 208, Water @ 55cm, sterile subsoil
3722.01	N120E145	10YR3/2 mixed w/ 7.5YR4/4 and 2.5YR4/4	Very dark grayish brown w/ brown and reddish brown		Fill	0-32	Ceramic, metal, glass	Bag 209
3722.02	N120E145	10YR4/3	Brown	Loamy sand	A	32-54	Glass, nail, ceramic	Bag 210
3722.03	N120E145	7.5YR4/4	Brown	Sand	B/C	54-74	NCM	Water @ 65cm
3723.01	N120E150	10YR3/3	Dark brown	Loamy sand	A	0-38	Spike, glass	Bag 211, Root obstructions, 1.5m SE of lg Maple, 1m W of road
3724.01	N115E150	10YR3/3	Dark brown	Loamy sand	Fill	0-5	Plastic*	
3724.02	N115E150	10YR3/3 mixed w/ 5YR4/4	Dark brown w/reddish brown	Loamy sand w/ clay loam	Fill	5-20	NCM	
3724.03	N115E150	10YR3/3	Dark brown	Loamy sand	A	20-42	Ceramic, coal*	Bag 212, rock obstruction
3725.01	N115E145	10YR3/3	Dark brown	Loamy sand	Fill	0-8	NCM	
3725.02	N115E145	7.5YR4/4 mixed w/ 10YR3/4	Brown w/ dark yellowish brown		Fill	8-25	NCM	
3725.03	N115E145	10YR3/3	Dark brown	Loamy sand	A	25-53	Brick*	Water @ 48cm, 4m N of road
3726.01	N135E160	10YR3/3	Dark brown	Loam	Ao	0-8	Shell, brick, ceramic	Bag 213, lots of roots
3726.02	N135E160	10YR3/4	Dark yellowish brown	Loamy sand	A	8-28	Shell, glass, ceramics	Bag 214
3726.03	N135E160	7.5YR4/4	Brown	Sand	B	28-74	NCM	Sterile subsoil, in road
3727.01	N140E160	10YR3/3	Dark brown	Loam	Ao	0-7	Shell frags.*	
3727.02	N140E160	10YR3/4	Dark yellowish brown	Loamy sand	A	7-29	Shell, brick, glass, ceramic	
3727.03	N140E160	7.5YR4/4	Brown	Sand	B	29-90	NCM	Sterile subsoil, W of road
3728.01	N145E160	10YR3/3	Dark brown	Sand	Fill	0-6	Brick*, shell*	
3728.02	N145E160	10YR4/3 mixed w/ 7.5YR4/4	Brown	Sand	Fill	6-30	Brick*, shell*, nails	Bag 170
3728.03	N145E160	10YR3/3	Dark brown	Loamy sand	A?	30-58	Shell, spike, glass, nails, coal, ceramic	Bag 171
3728.04	N145E160	7.5YR4/4	Brown	Sand	B?	58-87	FCR, bone (FAU), shell, glass, ceramic	Bag 172, Sterile subsoil
3729.01	N145E165	10YR3/3	Dark brown	Loam	Ao	0-6	Shell, nail, ceramic, glass	Bag 173
3729.02	N145E165	10YR4/3	Brown	Loamy sand	A	6-30	Shell, ceramic, glass	Bag174
3729.03	N145E165	7.5YR4/4	Brown	Sand	B	30-77	Glass frag.*	Sterile subsoil
3730.01	N150E160	10YR4/3	Brown	Loam	Fill	0-8	NCM	
3730.02	N150E160	10YR5/6	Yellowish brown	Sand	Fill	8-52	Shell, nail	Bag 175
3730.03	N150E160	10YR3/3	Dark brown	Loamy sand	Ao	52-70	Ceramic, glass, shell	Bag 176
3730.04	N150E160	10YR4/4	Dark yellowish brown	Sand	A	70-94	Bone (Faun), glass, nail	Bag 177
3730.05	N150E160	10YR5/6	Yellowish brown	Sand	B	94-103	Ceramic	Bag 178, Sterile subsoil
3731.01	N150E165	10YR4/3	Brown	Loam	Fill	0-13	Glass	Bag 179
3731.02	N150E165	7.5YR4/4 mixed w/ 10YR4/3	Brown	Sand w/ loam	Fill	13-46	Glass, tooth (fauna)	Bag 180
3731.03	N150E165	10YR3/3	Dark brown	Loamy sand	A	46-64	Glass, shell	Bag 181

FIELD SUMMARY AREA 5
2016

Context	Coordinates	Munsell	Color	Texture	Horizon	Depth (cm)	Cultural Material	Comments
3732.01	N155E150	10YR4/3	Brown	Loam	Fill	0-6	Ceramic	Bag 182
3732.02	N155E150	10YR4/3 mixed w/ 7.5YR4/4	Brown	Sand	Fill	6-23	Shell*	
3732.03	N155E150	7.5YR4/4 mixed w/ 10YR4/3	Brown	Sand w/ loam	Fill	23-70	Brick*	Sterile subsoil
3733.01	N160E160	10YR3/3	Dark brown	Loam	Fill	0-15	NCM	
3733.02	N160E160	7.5YR4/4	Brown	Sand	Fill	15-40	NCM	
3733.03	N160E160	10YR4/3	Brown	Loam	Fill/A	40-56	Glass, yelloware	Bag 183, Sterile subsoil
3734.01	N165E160	10YR3/3	Dark brown	Loam	Fill	0-18	Coal*, mod. Bottle glass*	
3734.02	N165E160	7.5YR4/4 mixed w/ 10YR3/3	Brown w/ dark brown	Gravelly sand w/ Loam	Fill/C?	18-42	Coal*, mod. Bottle glass*	
3735.01	N179E150	10YR3/3	Dark brown	Loam	Fill	0-25	Spike*	
3735.02	N170E150	10YR3/3 mixed w/ 7.5YR4/4	Dark brown w/ brown	Sand	Fill	25-53	NCM	
3736.01	N175E160	10YR3/3	Dark brown	Loamy sand	Fill	0-21	Mod. Glass*, shell*	
3736.02	N175E160	10YR3/3 mixed w/ 7.5YR4/4	Dark brown w/ brown	Loamy sand w/ sand	Fill	21-70	Mod. Glass*, shell*, brick*	
3737.01	N175E165	10YR3/3	Dark brown	Loamy sand	Fill	0-12	NCM	
3737.02	N175E165	7.5YR4/6	Strong brown	Sand	Fill	12-43	Glass	Bag 184
3738.01	N175E175	10YR3/4	Dark yellowish brown	Sand	Fill	0-15	NCM	
3738.02	N175E175	7.5YR4/4	Brown	Gravelly sand	B	15-32	NCM	Truncated, Sterile subsoil
3739.01	N175E180	10YR3/3	Dark brown	Loam	Ao	0-5	Plastic*, Mod. Bottle glass*	
3739.02	N175E180	7.5YR4/4	Brown	Sand	B	5-33	Ceramic	Bag 185, Rock obstruction
3740.01	N115E190	10YR3/3	Dark brown	Loam	A	0-12	NCM	
3740.02	N115E190	10YR5/6	Yellowish brown	Sand	C	12-30	NCM	Root obstruction
3741.01	N115E195	10YR3/3	Dark brown	Loam	Fill	0-10	NCM	
3741.02	N115E195	7.5YR5/6	Strong brown	Sand	Fill	10-29	NCM	
3741.03	N115E195	10YR5/6	Yellowish brown	Sand	Fill	29-43	NCM	
3741.04	N115E195	10YR3/3	Dark brown	Sand	Fill	43-53	NCM	
3742.01	N120E195	10YR3/3	Dark brown	Loam	Fill	0-10	NCM	
3742.02	N120E195	7.5YR5/6	Strong brown	Sand	Fill	10-21	NCM	
3742.03	N120E195	10YR5/6	Yellowish brown	Sand	Fill	21-42	NCM	
3743.01	N115E180	10YR3/3	Dark brown	Loam	A	0-25	Brick*, glass	Bag 186
3743.02	N115E180	7.5YR5/6	Strong brown	Sand	B	25-55	NCM	Sterile subsoil
3744.01	N105E175	10YR4/3	Brown	Loam	Fill	0-9	Ceramic	Bag 187
3744.02	N105E175	7.5YR4/6	Strong brown	Sand	Fill	9-18	NCM	
3744.03	N105E175	7.5YR3/3	Dark brown	Loam	A	18-31	Glass, brick, ceramic	Bag 188
3744.04	N105E175	7.5YR5/6	Strong brown	Sand	B	31-58	NCM	Sterile subsoil
3745.01	N105E165	7.5YR3/3	Dark brown	Loam	A	0-16	Brick, ceramics	Bag 189
3745.02	N105E165	7.5YR5/6	Strong brown	Sand	B	16-35	NCM	
3745.03	N105E165	7.5YR5/6	Strong brown	Gravelly sand	C	35-50	NCM	Sterile subsoil
3746.01	N100E165	7.5YR3/3	Dark brown	Loam	A	0-22	Glass	Bag 190
3746.02	N100E165	7.5YR5/6	Strong brown	Sand	B	22-60	NCM	Sterile subsoil
3747.01	N105E160	7.5YR3/3	Dark brown	Loam	A	0-30	Ceramic	Bag 191

FIELD SUMMARY AREA 5
2016

Context	Coordinates	Munsell	Color	Texture	Horizon	Depth (cm)	Cultural Material	Comments
3747.02	N105E160	7.5YR4/6	Strong brown	Sand	B	30-70	NCM	Sterile subsoil
3748.01	N100E160	7.5YR3/3	Dark brown	Loam	Fill	0-26	NCM	
3748.02	N100E160	7.5YR4/6	Strong brown	Sand	B	26-50	NCM	Sterile subsoil
3749.01	N105E155	7.5YR3/3	Dark brown	Loam	Fill	0-6	Mod. Bottle glass*	
3749.02	N105E155	7.5YR4/4 nixed w/ 2.5YR5/4	Brown w/ reddish brown	Sand w/ loam	Fill	6-26	NCM	
3749.03	N105E155	7.5YR3/3	Dark brown	Sand	A	26-38	NCM	
3749.04	N105E155	7.5YR4/6	Strong brown	Sand	B	38-50	NCM	Sterile subsoil
AREA 5	Excavation Units							
5003.01	N127.2E188	10YR3/3	Dark brown	Loamy sand	Fill	14-46	Brick*, metal, glass	Bag 160
5003.02	N127.2E188	10YR3/3 mixed w/ 10YR4/6	Dark brown w/ dark yellowish brown	Loamy sand	Fill	22-50	Flakes, glass, metal, ceramic, brick, coal	Bag 161
5003.03	N127.2E188	10YR3/3 mixed w/ 10YR4/6	Dark brown w/ dark yellowish brown	Loamy sand	Fill	35-59	Glass, coal, ceramic, brick, Bag 162	
5003.04	N127.2E188	10YR3/3 mottled 7.5YR4/6	Dark brown w/ strong brown	Loamy sand w/ sand	Fill	47-70	FCR, brick, nails, metal, glass, Bag 163	
5003.05	N127.2E188	7.5YR4/6	Strong brown	Sand	B	47-69	FCR. Brick	Bag 164
5003.06	N127.2E188	7.5YR4/6	Strong brown	Sand	B	59-79	FCR	Bag 165
5003.07	N127.2E188	7.5YR4/6	Strong brown	Sand	B	69-88	Flake, FCR	Bag 166
5003.08	N127.2E188	7.5YR4/6	Strong brown	Sand	B	79-100	NCM	Sterile subsoil
5004.01	N143E177	10YR3/3	Dark brown	Loamy sand	Fill	4-25	Shell, brick, glass, metal, ceramic	Bag 167
5004.02	N143E177	7.5YR4/4 mottled 10YR3/3, 10YR4/6 and 2.5YR4/6	Brown w/ dark brown, dark yellowish brown and reddish brown	Sand	Fill	8-36	Brick, glass, shell, ceramics	Bag 168
5004.03	N143E177	7.5YR4/4 mottled 10YR3/3, 10YR4/6 and 2.5YR4/6		Sand w/ clay	Fill	28-49	Brick, glass, shell	Bag 169
5004.04	N143E177	7.5YR4/4	Brown	Sand	B/C	33-49	Shell*, brick*	
5004.05	N143E177	7.5YR4/4	Brown	Sand	B/C	44-55	Shell*	Sterile subsoil

APPENDIX 2

ARTIFACT INVENTORY

APPENDIX 2

COMPLETE ARTIFACT INVENTORY

TABLES FOR CODING MATERIAL CULTURE

A. Table for National Park Service Material Culture Data Base Coding Chart: Groups, Classes and Material

B. Table for Data Base Coding Chart: Groups and Classes

C. Table for Data Base Coding Chart: Prehistoric Artifacts - Class and Morphology

D. Table for Data Base Coding Chart: Ambiguous Items of Material Culture

APPENDIX 2

A. Table for National Park Service Material Culture Data Base Coding Chart: Groups, Classes and Materials

GROUPS AND CLASSES

01 KITCHEN GROUP
- 01 Dishes
- 02 Containers
- 03 Tableware
- 04 Kitchenware

02 FAUNAL/FLORAL GROUP
- 01 Mammalia
- 02 Ares
- 03 Reptilia
- 04 Amphibia
- 05 Pisces
- 09 Ethnofaunal/Zoological
- 16 Ethnobotanical

03 ARCHITECTURAL GROUP
- 01 Window glass
- 02 Nails
- 03 Spikes
- 04 Door & Window hardware
- 05 Other structural hardware
- 06 Construction materials

04 FURNITURE GROUP
- 01 Hardware
- 02 Materials
- 03 Lighting device
- 04 Decorative furnishings

05 ARMS GROUP
- 01 Projectiles
- 02 Cartridge case
- 03 Arms accessories
- 04 Gun parts

06 CLOTHING GROUP
- 01 Apparel
- 02 Ornamentation
- 03 Making and repair
- 04 Fasteners

07 PERSONAL GROUP
- 01 Coins
- 02 Keys
- 03 Writing paraphernalia
- 04 Grooming and hygiene
- 05 Personal ornamentation
- 06 Other personal items

08 TOBACCO PIPE GROUP
- 01 Kaolin pipe class
- 02 Nonkaolin pipe
- 03 Smoking accessories

09 ACTIVITIES GROUP
- 01 Construction tools
- 02 Farm tools
- 03 Leisure activities
- 04 Fishing gear
- 05 ---
- 06 ---
- 07 Pottery class
- 08 Storage items
- 09 ---
- 10 Stable and barn
- 11 Miscellaneous hardware
- 12 Specialized activities
- 13 Military objects
- 14 Housekeeping
- 15 Public services

10 PREHISTORIC GROUP
- 01 Hunting and fishing activities
- 02 Domestic activities
- 03 Stone working
- 04 Wood working
- 05 Digging tools
- 06 Other fabricating or processing tools
- 07 Other general utility tools
- 08 Ceremonial & ornamental
- 09 Miscellaneous

11 SAMPLES
- -- Charcoal samples for radiocarbon dating
- -- Flotation samples
- -- light fraction
- -- heavy fraction
- -- Soil samples

98 UNSPECIFIED GROUP

MATERIALS - COMMON LIST (CLASSIFIED)

INORGANIC MATERIALS

CERAMIC
- 001 Porcelain
- 002 Stoneware
- 003 Earthenware
- 004 Whiteware/ironstone/granite
- 134 Undifferentiated ceramic

CLAY
- 047 Clay
- 062 Kaolin
- 079 Red clay

CONSTRUCTION
- 069 Brick
- 071 Cement
- 070 Mortar
- 072 Plaster

GLASS
- 013 Milk glass
- 078 Glass
- 112 Slag and clinker

METALS
- 005 Tin
- 019 Silver
- 021 Gold
- 026 Cuprous metal
- 028 Ferrous alloy
- 029 Aluminum
- 032 Steel
- 034 Lead
- 035 Chrome
- 096 Mercury
- 136 Undifferentiated metal

STONE
- 129 Agate
- 075 Asbestos
- 133 Chalk
- 052 Chert
- 042 Granite
- 046 Gravel
- 109 Jet
- 038 Limestone
- 041 Marble
- 049 Mica
- 058 Obsidian
- 057 Ochre
- 068 Precious stone
- 053 Quartz
- 054 Quartzite
- 039 Sandstone
- 044 Shale
- 040 Slate
- 060 Steatite
- 043 Schist
- 126 Undifferentiated stone

ORGANIC MATERIALS

CELLULOSIC
- 115 Bark
- 108 Burlap
- 128 Charcoal
- 092 Cork
- 087 Cotton
- 131 Fiberboard/masonite
- 085 Hemp
- 011 Paper
- 006 Wood
- 121 Cellulose seeds/ seed covering

CONSTRUCTION
- 093 Asphalt
- 125 Formica
- 101 Linoleum
- 102 Tar paper

WAX
- 076 Wax

GUM/RESIN
- 010 Rubber, elastic
- 009 Rubber, hard

PETROCHEMICALS
- 073 Carbon
- 095 Coal
- 048 Graphite
- 116 Tar

PROTEIN
- 118 Chitin (arthropod, exoskeleton)
- 106 Felt
- 122 Flesh
- 016 Hair
- 117 Keratin (horns/fingernail/claws)
- 015 Leather
- 107 Silk
- 090 Sponge, natural
- 105 Wool

COMBINATION MATERIALS
- 017 Bone
- 132 Ivory
- 067 Pearl
- 089 Shell

SYNTHETIC MATERIALS
- 103 Celluloid
- 088 Nylon
- 008 Plastic
- 077 Soap
- 091 Sponge, synthetic
- 104 Synthetic

TEXTILE
- 151 Undifferentiated textile

APPENDIX 2
B. Table for Data Base Coding Chart: Groups and Classes

GROUPS AND CLASSES	SAMPLE ARTIFACTS
01 KITCHEN	
01 Dishes	Plate, cup, salt cellar
02 Containers	Bottle glass fragments
03 Tableware	Eating utensils
04 Kitchenware	Cooking utensils, pot, kettle
02 FAUNAL/FLORAL GROUP	
01 Mammalia	Mammal
02 Aves	Bird
03 Reptilia	Reptile
04 Amphibia	Amphibian
05 Pisces	Fish
09 Other ethnofaunal/zoological	Oyster, crab, egg shells
16 Ethnobotanical	Seeds, nuts
03 ARCHITECTURAL GROUP	
01 Window glass	Window pane glass
02 Nails	Nails
03 Spikes	Railroad spikes
04 Door & Window hardware	Doorknob, door hinge
05 Other Structural hardware	Pipe, fireplace tiles
06 Construction materials	Brick, mortar, roofing
04 FURNITURE GROUP	
01 Hardware	Handle, drawer pull, latch
02 Materials	Stove parts, chair part, bedframe
03 Lighting device	Candlestick, lamp base
04 Decorative furnishings	Flowerpot, clock parts, vase
05 ARMS GROUP	
01 Projectiles	Shot, bullets
02 Cartridge case	Cartridge
03 Arms accessories	Gun flints, bullet molds, powder horn
04 Gun parts	Pistol barrel, flintlock assembly
06 CLOTHING GROUP	
01 Apparel	Hat, coat, scarves, glove, shoe
02 Ornamentation	Beads, sequin, hatpin, feather
03 Making and Repair	Thimble, straight pin, scissors
04 Fasteners	Buttons, snaps, buckles, cufflink
07 PERSONAL GROUP	
01 Coins	Coins
02 Keys	Door lock keys, padlock keys
03 Writing paraphernalia	Quill, fountain pen nib, graphite pencil
04 Grooming & hygiene	Hairbrush, razor, mirror, tweezers
05 Personal ornamentation	Jewelry, ribbon, ornamental comb
06 Other personal items	Pocket watch, key chain, pocket knife

GROUPS AND CLASSES	
08 TOBACCO PIPE GROUP	
01 Kaolin pipe	Kaolin pipe
05 Nonkaolin pipe	Corncob pipe
06 Smoking accessories	Snuff tin, cuspidor, tobacco tin, pipe cleaner
09 ACTIVITIES GROUP	
01 Construction tools	Axe head, drill bit, saw, paintbrush
02 Farm tools	Hoe, rake, plow blade
03 Leisure activities	Marbles, jew's harp, doll parts
04 Fishing gear	Fish hooks, sinkers, crab trap
05 ---	
06 ---	
07 Pottery class	Indian water jar, effigy pot
08 Storage items	Crock, barrel staves, sacks
09 --	
10 Stable and barn	Stirrup, horseshoe, rein, harness belt
11 Miscellaneous hardware	Rope, bolts, nuts, washers, chain
12 Specialized activities	Button blanks, metallurgic debris, saggars
13 Military objects	Insignia, bayonets
14 Housekeeping	Broom, coat hanger, washboard
15 Public services	Sewer pipe, water pipe
10 PREHISTORIC GROUP	
01 Hunting and Fishing	Projectile point, ataltl hook
02 Domestic	Vessel, mortar, pestle
03 Stone working	Hammerstone, baton, flake, core
04 Wood working	Celt, grooved axe
05 Digging Tools	Hoe
06 Other fabricating or processing tools	Drill, chisel, needle
07 Other general utility tools	Knife, prismatic blade, chopper
08 Ceremonial & ornamental	Sheet, gorget, bead
09 Miscellaneous	Function unknown

APPENDIX 2

C. Table for Data Base Coding Chart: Prehistoric Artifacts - Class and Morphology

Class 01: Hunting and Fishing Activities

01 - Projectile point
02 - Birdstone
03 - Bannerstone
04 - Boatstone
05 - Fish hook
06 - Netsinker
07 - Atlatl hook

Class 02: Domestic Activities

13 - vessel
14 - mortar
15 - pestle
16 - muller
17 - groundstone fragment

Class 03: Stone Working

21 - Hammerstone
22 - Baton
23 - Tine
24 - Splinter
25 - Drift or "punch"
26 - Anvil
27 - Flake, primary
28 - Flake, secondary
29 - Bifacial thinning flake
30 - Core
31 - Blank
32 - Tested piece

Class 04: Wood Working

37 - Celt
38 - Grooved axe
39 - Spokeshave

Class 16: Ethnobotanical

Seeds
Nuts

Class 06: Other Fabricating or Processing Tools

51 - Perforator
52 - Drill
53 - Awl
54 - Reamer
55 - Chisel
56 - Microperforator
57 - Needle
58 - Graver

Class 07: General Utility Tools

67 - Knife
68 - Side scraper
69 - Core scraper
70 - Stemmed end scraper
71 - Other end scraper
73 - Prismatic blade
74 - Chopper
75 - Utilized/Retouched flake
76 - Pitted pebble
77 - Gouge
78 - Maul
79 - Abrader
80 - Whetstone
81 - Biface
82 - Adze
83 - Distolateral scraper
84 - Bifacial end scraper
85 - Bifacial scraper

Class 08: Ceremonial & Ornamental Objects

85 - Angled pipe
86 - Tube
87 - Platform pipe
88 - Cloud blower pipe
89 - Sheet
90 - Plates
91 - Comb
92 - Bead
93 - Gorget
- - Hematite
- - Ochre

APPENDIX 2

D. Table for Data Base Coding Chart: Ambiguous Items of Material Culture

Note: The items listed below may be ambiguous or hard to place in a taxonomic category, but as a convention, for inventory purposes, will be coded as follows:

Unidentified wood fragments	98	00		006
Construction wood	03	06		006
Pegs, Wood planks	03	06		006
Twigs, branches	09	16		006
Burned wood (partial)	Code as wood (above) and put "burnt wood" in the comments section			
Charcoal and all small fragments of completely burnt wood	Code as charcoal			
Coal	98	00		095
Slag, burned coal, vitrified metalworking or manufacturing by-products	98	00		112
Pantiles	03	06		003
Delft fireplace tiles, wall skirting, etc.	04	04		003
Porcelain bathroom tiles, other bathroom furniture (tub, toilet, etc.)	03	05		001
Chamber pot	04	02		00-
Flowerpot	04	04	002	00-
Teeth	02	--		132
Fish scales	02	09		118
Coral	04	04		119
Eggshell	02	09		119
Seeds, seed covering	02	16		121
Schist (construction)	03	06		043
Schist (unidentified)	98	00		043
Red brick	03	06		169
Yellow brick	03	06		155
Linoleum	03	06		101
Metal hardware (probably construction)	03	06		( )
Furniture hardware	04	01		( )
Miscellaneous hardware (other and unidentified including screws, car parts)	09	11		( )
Leather shoe parts	06	01		015
Unidentified leather scraps	98	00		015
Leather personal items	07	()		015

AREA 1
SHOVEL TEST INVENTORY

Area 1 Database Inventory Catbriar and West Sites

CONTEXT	AREA	GP	CL	MPH	MAT	IDENTITY	COUNT	WEIGHT	COMMENTS	REFERENCE	RANGE	CAT#
Area 1 Catbriar Site												
3554.02	1	10	02		126	Fire-cracked rock	1					1234
						Subtotal =	1					
3556.02	1	10	02		126	Fire-cracked rock	1					1235
3556.02	1	10	03	028	051	Secondary flake	1		Jasper			1236
						Subtotal =	2					
3556.03	1	10	02		126	Fire-cracked rock	1					1237
3556.03	1	10	03	028	052	Secondary flake	1		Chert			1238
						Subtotal =	2					
3557.02	1	10	02		126	Fire-cracked rock	1					1239
						Subtotal =	1					
3561.01	1	02	09		089	Shell			Discarded in field			
						Subtotal =	0					
3562.01	1	09	11		008	Plastic			Discarded in field			
3562.01	1	09	11		157	Styrofoam			Discarded in field			
						Subtotal =	0					
3562.03	1	09	11		008	Plastic			Discarded in field			
3562.03	1	09	11		157	Styrofoam			Discarded in field			
						Subtotal =	0					
3564.03	1	02	09		089	Shell	1		Oyster			1240
						Subtotal =	1					
3566.02	1	02	09		089	Shell			Discarded in field			
3566.02	1	09	11		157	Styrofoam			Discarded in field			
						Subtotal =	0					
3569.02	1	01	02		078	Bottle glass			Modern glass discarded in field			
3569.02	1	09	11		006	Paper			Discarded in field			0
3569.02	1	09	11		008	Plastic			Discarded in field			
						Subtotal =	0					
3571.01	1	01	02		078	Bottle glass			Modern glass discarded in field			
3571.01	1	09	11		006	Paper			Discarded in field			
						Subtotal =	0					
3571.02	1	01	02		078	Glass			Milk glass discarded in field			
						Subtotal =	0					
3572.01	1	09	11		008	Plastic			Discarded in field			
3572.01	1	98			095	Coal			Discarded in field			
						Subtotal =	0					
3572.02	1	01	02		078	Bottle glass			Modern glass discarded in field			
						Subtotal =	0					
3573.01	1	01	02		078	Bottle glass			Modern glass discarded in field			
						Subtotal =	0					

Area 1 Database Inventory Catbriar and West Sites

CONTEXT	AREA	GP	CL	MPH	MAT	IDENTITY	COUNT	WEIGHT	COMMENTS	REFERENCE	RANGE	CAT#
3573.02	1	09	11		008	Plastic			Discarded in field			
3573.02	1	09	11		157	Styrofoam			Discarded in field			
						Subtotal =	0					
3574.02	1	09	11		008	Plastic			Discarded in field			
						Subtotal =	0					
3575.01	1	02	09		089	Shell	1		Oyster			1241
						Subtotal =	1					
3575.02	1	10	02		126	Fire-cracked rock	1					1242
						Subtotal =	1					
3576.01	1	02	09		089	Shell	1		Clam			1243
3576.01	1	03	01	001	078	Flat glass	1		Blue-green			1244
						Subtotal =	2					
3577.01	1	02	09		089	Shell	2		Oyster			1245
						Subtotal =	2					
3577.02	1	02	09		089	Shell	1		Clam			1246
3577.02	1	02	09		089	Shell	1		Oyster			1247
						Subtotal =	2					
3577.03	1	09	11		008	Plastic	2		Discarded in lab			
3577.03	1	10	02		126	Fire-cracked rock	1					1248
						Subtotal =	3					
3579.03	1	01	01		003	Creamware	1		Spall			1249
						Subtotal =	1					
3580.02	1	02	09		089	Shell	1		Clam			1250
3580.02	1	02	09		089	Shell	2		Oyster			1251
						Subtotal =	3					
3580.03	1	02	09		089	Shell	1		Clam			1252
3580.03	1	02	09		089	Shell	3		Oyster			1253
3580.03	1	10	02		126	Fire-cracked rock	5					1254
						Subtotal =	9					
3581.02	1	02	09		089	Shell	1		Clam;Discarded in lab			
3581.02	1	02	09		089	Shell	1		Oyster;Discarded in lab			
3581.02	1	10	02		126	Fire-cracked rock	1					1255
						Subtotal =	3					
3581.03	1	02	09		089	Shell	1		Clam;Discarded in lab			
3581.03	1	10	02		126	Fire-cracked rock	1					1256
						Subtotal =	2					
3582.02	1	02	09		089	Shell	1		Oyster			1257
						Subtotal =	1					
3582.03	1	02	09		089	Shell	1		Clam;Discarded in lab			0

Area 1 Database Inventory Catbriar and West Sites

CONTEXT	AREA	GP	CL	MPH	MAT	IDENTITY	COUNT	WEIGHT	COMMENTS	REFERENCE	RANGE	CAT#
3582.03	1	10	02		126	Fire-cracked rock	8					1258
						Subtotal =	9					
3584.04	1	02	09		089	Shell	1		Clam;Discarded in lab			
3584.04	1	10	02		126	Fire-cracked rock	3					1259
						Subtotal =	4					
3585.02	1	02	09		089	Shell	1		Clam;Discarded in lab			
3585.02	1	10	02		126	Fire-cracked rock	2					1260
						Subtotal =	3					
3586.02	1	01	01		004	Ironstone	1		Spall			1261
3586.02	1	02	09		089	Shell	1		Clam;Discarded in lab			
3586.02	1	02	09		089	Shell	4		Oyster;Discarded in lab			
						Subtotal =	6					
3587.02	1	02	09		089	Shell	1		Clam			1262
3587.02	1	02	09		089	Shell	1		Oyster			1263
						Subtotal =	2					
3588.02	1	02	09		089	Shell	9		Oyster			1264
						Subtotal =	9					
3589.02	1	02	09		089	Shell	1		Oyster;Discarded in lab			
3589.02	1	10	02		126	Fire-cracked rock	10					1265
						Subtotal =	11					
3590.02	1	10	02		126	Fire-cracked rock	3					1266
3590.02	1	98			112	Slag	1		Discarded in lab			
						Subtotal =	4					
3590.03	1	10	02		126	Fire-cracked rock	2					1267
3590.03	1	10	03	028	052	Secondary flake	1		Black chert			1268
						Subtotal =	3					
3591.02	1	02	09		089	Shell			Discarded in field			
						Subtotal =	0					
3592.02	1	03	03		028	Spike			Discarded in field			
						Subtotal =	0					
3594.02	1	03	06	015	069	Bricks			Discarded in field			
						Subtotal =	0					
3596.01	1	03	06	015	069	Bricks			Discarded in field			
						Subtotal =	0					
3597.02	1	03	06	015	069	Brick	1		Large pebbles & cobble embedded, rather homemade			1269
						Subtotal =	1					
3598.01	1	03	06	015	069	Brick	2		Embedded w/shell & small pebbles			1270
						Subtotal =	2					
3600.01	1	03	06	015	069	Brick			Discarded in field			

Area 1 Database Inventory Catbriar and West Sites

CONTEXT	AREA	GP	CL	MPH	MAT	IDENTITY	COUNT	WEIGHT	COMMENTS	REFERENCE	RANGE	CAT#
						Subtotal =	0					
3601.01	1	01	02		078	Bottle glass	1		Pale green;Embossed: "...E/...D"			1271
3601.01	1	03	06	015	069	Brick			Discarded in field			
						Subtotal =	1					
3602.01	1	01	02	047	029	Bottle cap			Discarded in field			
3602.01	1	01	02		078	Bottle glass	1		Modern;Discarded in field			
						Subtotal =	1					
3602.02	1	98			128	Charcoal			Discarded in field			
						Subtotal =	0					
3603.01	1	09	11		008	Plastic			Discarded in field			
						Subtotal =	0					
3609.02	1	01	01		003	Pearlware	1					1272
3609.02	1	01	01		003	Redware	5		Spalls			1273
3609.02	1	03	06	015	069	Brick	2					1274
						Subtotal =	8					
3610.01	1	01	04	030	029	Foil			Discarded in field			
3610.01	1	09	11		008	Plastic			Discarded in field			
3610.01	1	98			095	Coal			Discarded in field			
						Subtotal =	0					
3615.01	1	01	02		078	Glass			Discarded in field			
						Subtotal =	0					
3616.02	1	01	01	031	004	Ironstone	1		Underglaze transfer print blue landscape exterior;Cup/bowl			1275
3616.02	1	01	02		078	Container glass	1		Brown			1276
3616.02	1	01	02		078	Container glass	1		Pale green			1277
						Subtotal =	3					
3617.02	1	01	01		004	Ironstone	1		Spall			1278
3617.02	1	01	01		078	Tableware glass	1		Base;Hobnailed interior			1279
3617.02	1	03	06	015	079	Brick	3					1280
						Subtotal =	5					
3618.02	1	01	01		004	Ironstone	2					1281
3618.02	1	01	02		078	Container glass	1		Olive green			1282
						Subtotal =	3					
3618.03	1	03	02		028	Nail	1		Rusted & corroded			1283
3618.03	1	03	06	015	069	Brick	2					1284
3618.03	1	10	03	028	051	Secondary flake	3		Jasper			1285
3618.03	1	10	03	028	052	Secondary flake	7		Light & dark grey cherts			1286
						Subtotal =	13					
3619.02	1	01	01		003	Slipware	1		Combed slipware;Buff paste;White slipped, combed brown slip	South 1977	1670-1795	1287
3619.02	1	01	01		003	Redware	1					1288
3619.02	1	01	01		004	Ironstone	1					1289
3619.02	1	01	02		078	Container glass	1		Olive green			1290
3619.02	1	02	09		089	Shell	1		Oyster;Discarded in lab			

Area 1 Database Inventory Catbriar and West Sites

CONTEXT	AREA	GP	CL	MPH	MAT	IDENTITY	COUNT	WEIGHT	COMMENTS	REFERENCE	RANGE	CAT#
3619.02	1	03	02		028	Nail	1		Rusted & corroded			1291
						Subtotal =	6					
3620.02	1	03	02		028	Nail	1		Rusted & corroded			1292
						Subtotal =	1					
3621.02	1	01	01		003	Redware	1		Trailed white slip under clear glaze;Unglazed base			1293
3621.02	1	01	01		003	Creamware	1		Spall;Whieldon ware?;Clouded mulberry	South 1977;Noel Hume 1969	1740-1770	1294
3621.02	1	01	01		003	Slipware	1		Dotware/Dotted slipware;Buff paste;Large manganese dots under clear glaze	Grigsby 1993:56	1700-1750	1295
3621.02	1	01	01		003	Creamware	4					1296
3621.02	1	01	02		078	Container glass	2		Olive green			1297
3621.02	1	02	09		089	Shell	1		Clam;Discarded in lab			
3621.02	1	03	06	015	069	Brick	2					1298
						Subtotal =	12					
3622.02	1	01	01	006	003	Creamware	1		Cup rim;Beaded band exterior			1299
3622.02	1	03	02		028	Nail	1		Rusted & corroded			1300
3622.02	1	10	03	028	051	Secondary flake	1		Jasper			1301
						Subtotal =	3					
3623.01	1	02	09		089	Shell	2		Oyster;Discarded in lab			
3623.01	1	03	01	001	078	Flat glass	1		Pale blue-green			1302
3623.01	1	04	03	019	078	Lighting glass	1		Clear			1303
						Subtotal =	4					
3623.02	1	10	03	032	051	Tested piece	1		Jasper			1304
						Subtotal =	1					
3624.02	1	03	06	015	069	Brick	1					1305
3624.02	1	08	01		062	Tobacco pipe	3		Bowl			1306
3624.02	1	10	03	028	051	Secondary flake	1		Jasper			1307
3624.02	1	10	03	028	052	Secondary flake	1		Black chert			1308
3624.02	1	98			112	Slag	1		Discarded in lab			0
						Subtotal =	7					
3624.03	1	01	01		003	Redware	2		Mend;Refined, incised exterior			1309
3624.03	1	10	03	028	051	Secondary flake	2		Jasper			1310
3624.03	1	98			112	Slag	4		Discarded in lab			
						Subtotal =	8					
3625.02	1	01	01		004	Ironstone	3		2 mend;Underglaze transfer print blue willow exterior			1311
3625.02	1	03	02		028	Nails	2		Rusted & corroded			1312
						Subtotal =	5					
3626.02	1	01	01		003	Earthenware	1		Spall			1313
3626.02	1	02	01	002	018	Teeth	1		Mammal molar, pig			1314
3626.02	1	02	09		089	Shell	3		Clam;Discarded in lab			
3626.02	1	02	09		089	Shell	3		Oyster;Discarded in lab			
3626.02	1	08	01		062	Tobacco pipe	1		Stem			1315
3626.02	1	10	02		126	Fire-cracked rock	1					1316
						Subtotal =	10					
3627.02	1	02	09		089	Shell	3		Clam;Discarded in lab			

Area 1 Database Inventory Catbriar and West Sites

CONTEXT	AREA	GP	CL	MPH	MAT	IDENTITY	COUNT	WEIGHT	COMMENTS	REFERENCE	RANGE	CAT#
3627.02	1	02	09		089	Shell	3		Oyster;Discarded in lab			
3627.02	1	03	06	015	069	Brick	2					1317
						Subtotal =	8					
3628.02	1	01	02		078	Container glass	1		Olive green			1318
3628.02	1	02	01		017	Bone	1		Mammal vertebra			1319
3628.02	1	02	09		089	Shell	6		Clam;Discarded in lab			
3628.02	1	02	09		089	Shell	52		Oyster;Discarded in lab			
3628.02	1	03	01	001	078	Flat glass	1		Blue green			1320
3628.02	1	03	06	015	069	Brick	1		Some pebbles embedded			1321
3628.02	1	03	06	015	069	Brick	13		Fragments			1322
3628.02	1	10	03	028	051	Secondary flake	1		Jasper			1323
3628.02	1	10	03	028	053	Secondary flake	1		Quartz			1324
						Subtotal =	77					
3628.03	1	02	09		089	Shell	4		Clam;Discarded in lab			
3628.03	1	02	09		089	Shell	18		Oyster;Discarded in lab			
3628.03	1	03	06	015	069	Brick	3					1325
3628.03	1	98			052	Chert	3		Waterworn			1326
						Subtotal =	28					
3629.02	1	01	01		003	Redware	1		Eroded			1327
3629.02	1	01	01		003	Yellowware	1		Rockingham glaze interior & exterior			1328
3629.02	1	01	02		078	Container glass	3		Olive green;burned			1329
3629.02	1	02	09		089	Shell	3		Clam;Discarded in lab			
3629.02	1	02	09		089	Shell	30		Oyster;Discarded in lab			
3629.02	1	03	02		028	Nail	4		Rusted & corroded			1330
3629.02	1	03	06	015	069	Brick	4					1331
3629.02	1	03	06		126	Construction material	1		Green glaze			1330
						Subtotal =	47					
3629.03	1	01	02		078	Container glass	1		Olive green;Burned			1332
3629.03	1	10	06	081	052	Biface fragment	1		Grey chert			1333
						Subtotal =	2					
3630.02	1	01	02		078	Container glass	5		Olive green			1334
3630.02	1	02			017	Bone	1					1335
3630.02	1	02	09		089	Shell	5		Oyster;Discarded in lab			
3630.02	1	03	06	015	069	Brick	4		Green glaze on 2			1336
3630.02	1	98			051	Jasper	1		Water worn			1337
						Subtotal =	16					
3631.02	1	01	02		078	Container glass	1		Olive green			1338
3631.02	1	01	02		078	Container glass	1		Clear;Molded			1339
3631.02	1	02	09		089	Shell	4		Oyster;Discarded in lab			
3631.02	1	03	06	015	069	Brick	1					1340
						Subtotal =	7					
3632.02	1	01	01		003	Earthenware	1		Slipped exterior;Eroded			1341
3632.02	1	02	09		089	Shell	6		Oyster;Discarded in lab			
3632.02	1	98			126	Rock	1		Discarded in lab			
						Subtotal =	8					
3633.02	1	02	09		089	Shell	27		Oyster;Discarded in lab			

Area 1 Database Inventory Catbriar and West Sites

CONTEXT	AREA	GP	CL	MPH	MAT	IDENTITY	COUNT	WEIGHT	COMMENTS	REFERENCE	RANGE	CAT#
3633.02	1	09	16		006	Tree bark	1		Discarded in lab			
3633.02	1	10	02		126	Fire-cracked rock	1					1342
						Subtotal =	29					
3634.02	1	10	03	028	052	Secondary flake	1		Grey chert			1343
						Subtotal =	1					
3635.02	1	01	02		078	Container glass	1		Olive green			1344
3635.02	1	10	02		126	Fire-cracked rock	1					1345
						Subtotal =	2					
3635.03	1	10	02		126	Fire-cracked rock	1					1346
						Subtotal =	1					
3636.01	1	01	02		078	Bottle glass			Modern;Discarded in field			
						Subtotal =	0					
3638.02	1	01	02		002	Stoneware	1		Grey paste;Unglazed interior;Bristol slipped exterior			1347
						Subtotal =	1					
3639.02	1	02	09		089	Shell			Discarded in field			
						Subtotal =	0					
Area 1 West Site												
3750.01	1	02	09		089	Shell	2		Oyster;Discarded in lab			
3750.01	1	03	02		028	Nail	1		Rusted & corroded			2229
3750.01	1	03	06	015	069	Brick			Discarded in field			
						Subtotal =	3					
3751.01	1	02			017	Bone	4					2230
3751.01	1	02	09		089	Shell	1		Oyster;Discarded in lab			
3751.01	1	03	02		028	Nails	2		Rusted & corroded			2231
						Subtotal =	7					
3752.02	1	02	09		089	Shell	4		Clam;Discarded in lab			
3752.02	1	02	09		089	Shell	6		Oyster;Discarded in lab			
3752.02	1	08	01		062	Tobacco pipe	1		Stem;Large & thick			2232
						Subtotal =	11					
3754.01	1	02	09		089	Shell	1		Clam;Discarded in lab			
3754.01	1	02	09		089	Shell	26		Oyster;Discarded in lab			
3754.01	1	03	06	015	069	Brick	1					2233
3754.01	1	10	03	028	052	Secondary flakes	2		Grey chert			2234
						Subtotal =	30					
3756.01	1	09	11		008	Plastic			Discarded in field			
						Subtotal =	0					
3757.01	1	01	02		078	Container glass	1		Olive green			2235
						Subtotal =	1					
3757.02	1	02	09		089	Shell	3		Clam			2236
						Subtotal =	3					

Area 1 Database Inventory Catbriar and West Sites

CONTEXT	AREA	GP	CL	MPH	MAT	IDENTITY	COUNT	WEIGHT	COMMENTS	REFERENCE	RANGE	CAT#
3758.02	1	10	03	028	052	Secondary flake	1		Black-brown chert			2237
						Subtotal =	1					
3759.02	1	01	01	031	002	Stoneware	1		White salt glazed;Cup/bowl base w/footring	South 1977	1720-1805	2238
3759.02	1	02	09		089	Shell	1		Oyster;Discarded in lab			
3759.02	1	03	02		028	Nail	1		Rusted & corroded			2239
						Subtotal =	3					
3759.03	1	10	03	028	052	Secondary flake	1		Black chert			2240
						Subtotal =	1					
3761.02	1	01	01		003	Redware	1		Jackfield glaze interior & exterior	South 1977	1740-1780	2241
3761.02	1	02	09		089	Shell	1		Oyster			
3761.02	1	03	06	015	069	Brick	1					2242
						Subtotal =	3					
3763.02	1	02	09		089	Shell			Discarded in field			
						Subtotal =	0					
3764.03	1	03	06	015	069	Brick			Discarded in field			
						Subtotal =	0					
3765.02	1	03	06	015	069	Brick	1					2243
3765.02	1	98			112	Slag	1					2244
							2					
3767.02	1	10	02		126	Fire-cracked rock	1					2245
						Subtotal =	1					
3769.02	1	03	06	015	069	Brick			Discarded in field			
						Subtotal =	0					
						TOTAL=	475					

AREA 1
EXCAVATION UNIT INVENTORY

Riverside Galleria, Area 1, Excavation Units

CONTEXT	AREA	GP	CL	MPH	MAT	IDENTITY	COUNT	WEIGHT	COMMENTS	REFERENCE	RANGE	CAT#
5001.01	1	01	02		078	Bottle glass			Modern;Discarded in field			
5001.01	1	02	09		089	Shell			Discarded in field			
5001.01	1	09	11		008	Plastic			Discarded in field			
5001.01	1	09	11		009	Rubber			Discarded in field			
5001.01	1	09	11		136	Metal			Discarded in field			
						Subtotal =	0					
5001.02	1	01	01		003	Redware	1		Spall;Manganese glaze			1948
5001.02	1	01	01		003	Redware	2		Spalls			1949
5001.02	1	01	01		004	Ironstone?	1		Spall			1950
5001.02	1	01	02		078	Bottle glass			Modern;Discarded in field			
5001.02	1	02	09		089	Shell	4		Clam			1951
5001.02	1	02	09		089	Shell	15		Oyster			1952
5001.02	1	03	06	015	069	Brick	1					1953
5001.02	1	10	03	028	052	Secondary flake	1		Heated to red			1954
						Subtotal =	25					
5001.03	1	01	01	001	004	Ironstone	1		Spall;Scalloped rim;Shell edged blue			1955
5001.03	1	02	09		089	Shell	6		Oyster			1957
5001.03	1	02	09		089	Shell	4		Clam			1956
5001.03	1	10	02	013	081	Pottery	1	8.0	Eastern Incised;Rim;Light brown;Incised exterior;Cord Wrapped Stick Notching;Dentates/Punctates	East River Tradition;Clason's Point;Early Contact	A.D. 1300-1600;A.D. 1525-1625	1958
5001.03	1	10	03	028	051	Secondary flake	1		Jasper			1960
5001.03	1	10	03	032	051	Tested piece	1		Jasper			1959
5001.03	1	10	03	028	052	Secondary flake	2		Grey chert			1961
						Subtotal =	16					
5001.04	1	02	09		089	Shell	15		Oyster			1963
5001.04	1	02	09		089	Shell	1		Clam			1962
5001.04	1	10	03	028	051	Secondary flakes	2		Jasper			1965
5001.04	1	10	03	028	052	Secondary flake	1		Grey chert			1966
5001.04	1	10	03	028	052	Secondary flake	1		Black chert			1967
5001.04	1	10	03	027	052	Primary flake	1		Chert			1964
						Subtotal =	21					
5001.05	1	02	09		089	Shell	8		Oyster			1968
5001.05	1	10	03	028	051	Secondary flakes	3		Jasper			1969
5001.05	1	10	03	028	052	Secondary flakes	4		Grey chert			1970
5001.05	1	10	03	028	052	Secondary flakes	2		Black chert			1971
						Subtotal =	17					
5001.06	1	10	02		126	Fire-cracked rock	7					1972
5001.06	1	10	03	028	052	Secondary flakes	3		Light brown chert			1973
5001.06	1	10	03	028	052	Secondary flakes	2		Light grey chert			1974
5001.06	1	10	03	028	052	Chunk	1		Grey chert			1975
5001.06	1	10	03	028	052	Secondary flakes	3		Black-grey chert			1977
5001.06	1	10	03	028	052	Secondary flakes	17		Grey chert			1976
5001.06	1	10	03	028	056	Secondary flakes	2		Chalcedony			1978
5001.06	1	10	07	081	052	Biface fragment	1		Light grey chert			1979
						Subtotal =	36					
5001.07	1	10	03	028	051	Secondary flakes	4		Jasper			1981
5001.07	1	10	03	028	052	Secondary flake	1		Heated chert			1987
5001.07	1	10	03	028	052	Chunk	1		Black-grey chert			1985

Riverside Galleria, Area 1, Excavation Units

CONTEXT	AREA	GP	CL	MPH	MAT	IDENTITY	COUNT	WEIGHT	COMMENTS	REFERENCE	RANGE	CAT#
5001.07	1	10	03	028	052	Secondary flakes	13		Black-grey chert			1984
5001.07	1	10	03	028	052	Secondary flake	1		Brown-grey chert			1988
5001.07	1	10	03	028	052	Secondary flake	1		Blue-grey chert			1982
5001.07	1	10	03	028	052	Secondary flake	1		Black chert			1986
5001.07	1	10	03	028	052	Secondary flakes	7		Grey chert			1983
5001.07	1	10	03	027	054	Primary flake	1		Light grey quartzite			1980
						Subtotal =	30					
5001.08	1	03	06	015	069	Brick fragment	1					1989
5001.08	1	10	03	028	052	Secondary flake	1		Tan chert			1990
5001.08	1	10	03	028	052	Secondary flake	1		Light grey chert			1991
5001.08	1	10	03	028	052	Secondary flakes	5		Black grey chert			1992
						Subtotal =	8					
5002.01	1	02	09		089	Shell	4		Clam			1993
5002.01	1	02	09		089	Shell	6		Oyster			1994
5002.01	1	03	02		028	Nails	5		Rusted & corroded			1995
						Subtotal =	15					
5002.02	1	01	01		003	Redware	1		Manganese glaze interior & exterior			1996
5002.02	1	01	01		003	Redware	1		Rim;Manganese glaze interior & exterior			1997
5002.02	1	02	09		089	Shell	10		Clam			1998
5002.02	1	02	09		089	Shell	29		Oyster			1999
5002.02	1	03	06	015	069	Brick?	2					2000
5002.02	1	10	02		126	Fire-cracked rock	28					2001
5002.02	1	10	03	028	052	Secondary flakes	2		Grey chert			2002
						Subtotal =	73					
5002.03	1	02	09		089	Shell	13		Oyster			2004
5002.03	1	02	09		089	Shell	6		Clam			2003
5002.03	1	03	06	015	069	Brick?	2					2005
5002.03	1	10	02		126	Fire-cracked rock	10					2006
5002.03	1	10	03	028	051	Secondary flake	1		Jasper			2007
5002.03	1	10	03	028	052	Secondary flakes	4		Black-grey chert			2008
						Subtotal =	36					
5002.04	1	02	09		089	Shell	1		Clam			2009
5002.04	1	10	02		126	Fire-cracked rock	12					2010
5002.04	1	10	03	032	051	Tested piece	1		Jasper			2011
						Subtotal =	14					
5005.01	1	01	01	031	003	Redware	1		Pink paste;Unglazed interior;Clear glaze exterior			2246
5005.01	1	01	02		078	Container glass	3		Clear			2247
5005.01	1	02	09		089	Shell	3		Oyster			2249
5005.01	1	02	09		089	Shell	1		Clam			2248
5005.01	1	03	06	015	069	Brick	1		w/green glaze			2250
5005.01	1	03	06	015	069	Brick	8		Fragments			2252
5005.01	1	03	06	015	069	Brick	2					2251
5005.01	1	09	11		008	Plastic	1		White			2254
5005.01	1	09	11		008	Plastic	1		Blue			2253
						Subtotal =	21					

Riverside Galleria, Area 1, Excavation Units

CONTEXT	AREA	GP	CL	MPH	MAT	IDENTITY	COUNT	WEIGHT	COMMENTS	REFERENCE	RANGE	CAT#
5005.02	1	01	01		003	Pearlware	2		Mend;Rim;Underglaze handpainted blue floral	South 1977	1780-1820	2255
5005.02	1	01	01		004	Ironstone	1		Spall			2256
5005.02	1	03	02		028	Nail	1		Rusted & corroded			2259
5005.02	1	03	06	015	069	Brick	2		Handmade			2257
5005.02	1	03	06	015	069	Brick	7		Fragments			2258
5005.02	1	08	01		062	Tobacco pipe	2		Stem fragment & bowl fragment			2260
5005.02	1	10	03	028	052	Secondary flake	1		Deepkill chert			2261
5005.02	1	10	03	029	056	Thinning flake	1		Clear chalcedony			2262
						Subtotal =	17					
5005.03	1	01	01		003	Redware	1		One side unglazed;Thick glassy glaze on other side			2263
5005.03	1	02			017	Bone	1					2267
5005.03	1	02	01	010	017	Teeth	1		Horse molar			2264
5005.03	1	02	01		017	Bone	1		Mammal, condyle			2265
5005.03	1	02	09		089	Shell	12		Oyster			2268
5005.03	1	02	09		089	Shell	3		Clam			2267
5005.03	1	03	02		028	Nails	3		Rusted & corroded			2272
5005.03	1	03	06	015	069	Brick	1		Fragment			2271
5005.03	1	03	06	015	069	Brick	3					2270
5005.03	1	03	06	015	069	Brick	1		Pinkish red;Cobbles eroded out			2269
5005.03	1	09	11		025	Miscellaneous hardware	1		Cupric			2273
5005.03	1	10	02		126	Fire-cracked rock	1					2274
5005.03	1	10	03	030	052	Core	1		Deepkill chert;Excellent quality			2275
5005.03	1	98			051	Rock	1		Water eroded jasper			2276
						Subtotal =	31					
5005.04	1	01	01		003	Redware	1		Base?;Pale pink paste;Clear glaze exterior			2277
5005.04	1	01	01		003	Redware	1		Clear glaze interior & exterior			2278
5005.04	1	01	01		003	Delftware	1		Pale salmon paste;White tin glaze exterior;Handpainted blue on white tin glaze interior	South 1977;FMNH 2016	1600-1802;1630-1790	2279
5005.04	1	01	02		078	Container glass	4		Olive green;Heavy encrustation			2281
5005.04	1	01	03		003	Yellowware	1		Rockingham glaze interior & exterior;Grooved exterior			2280
5005.04	1	02	01		017	Bone	1		Mammal			2282
5005.04	1	02	01		017	Bone	4		Mammal			2283
5005.04	1	02	02		017	Bone	1		Avian			2284
5005.04	1	02	09		089	Shell	2		Clam			2285
5005.04	1	02	09		089	Shell	22		Oyster			2286
5005.04	1	03	02		028	Nails	7		Rusted & corroded			2287
5005.04	1	03	06	015	069	Brick	1		Mistakes?			2288
5005.04	1	06	04	004	025	Button	1		Cupric;Domed w/shank			2289
5005.04	1	08	01		062	Tobacco pipe	4		Stems			2290
5005.04	1	09	11		025	Miscellaneous hardware	1		Cupric;w/2 holes			2291
5005.04	1	10	03	028	052	Chunks	5		Chert			2292
5005.04	1	10	03	028	052	Secondary flake	1		Deepkill chert;Excellent quality			2293
5005.04	1	10	03	028	052	Secondary flakes	9		Grey chert			2294
5005.04	1	10	03	028	052	Secondary flake	1		Grey-green chert			2295
5005.04	1	10	07	075	052	Retouched flake	1		Grey-green chert, agate like			2296
						Subtotal =	69					

Riverside Galleria, Area 1, Excavation Units

CONTEXT	AREA	GP	CL	MPH	MAT	IDENTITY	COUNT	WEIGHT	COMMENTS	REFERENCE	RANGE	CAT#
5005.05	1	10	02		126	Fire-cracked rock	6					2297
5005.05	1	10	03	028	052	Secondary flakes	3		Grey chert			2298
5005.05	1	10	07	083	052	Distolateral scraper	1		Grey chert			2299
						Subtotal =	10					
5005.06	1	01	01		003	North Devon Gravel Temper	1		Manganese glaze interior	Noel Hume 1970:133;Brown 1982:22;Watkins 1960	1635-1725	2300
5005.06	1	10	03	028	052	Secondary flakes	4		Grey chert			2301
5005.06	1	10	03	028	053	Secondary flake	1		Quartz			2302
						Subtotal =	6					
						TOTAL =	445					

AREA 5
SHOVEL TEST INVENTORY

Riverside Galleria, Area 5, Shovel Test Inventory

CONTEXT	AREA	GP	CL	MPH	MAT	IDENTITY	COUNT	WGT	COMMENTS	REFERENCE	RANGE	CAT#
1002	5	02	09		089	Shell	1		Whelk;1m W N155E170			1947
						Subtotal =	1					
3640.01	5	01	01		004	Ironstone	1					1353
3640.01	5	01	01	001	004	Ironstone	1		Plate rim;Shell edged blue			1350
3640.01	5	01	01	001	004	Ironstone	1		Plate rim			1351
3640.01	5	01	01	006	004	Ironstone	2		Mend;Cup handle;Molded leaf			1352
3640.01	5	01	02		002	Stoneware	1		Buff paste;Albany slipped interior;White slipped exterior			1349
3640.01	5	01	02		078	Bottle glass	2		Mend;Clear, thick;Near base			1356
3640.01	5	01	02		078	Bottle glass	1		Brown;Base			1354
3640.01	5	01	02		078	Container glass	2		Clear			1355
3640.01	5	01	02		078	Container glass	1		Solarized;Panel			1357
3640.01	5	03	02		028	Nail	1		Rusted & corroded			1358
3640.01	5	04	04	004	001	Porcelain	1		Bisque;Handpainted black mottled exterior			1348
						Subtotal =	14					
3641.02	5	01	01	031	003	Yellowware	1		Base;Clear glaze interior;Rockingham glaze exterior			1359
3641.02	5	01	01	001	004	Ironstone	1		Plate rim			1360
3641.02	5	01	02		078	Container glass	2		Clear			1363
3641.02	5	01	02		078	Container glass	2		Pale aqua			1362
3641.02	5	04	04	002	003	Flowerpot	2					1361
3641.02	5	10	03	028	052	Secondary flake	1		Grey chert			1364
3641.02	5	10	07	081	052	Biface fragment	1		Grey chert			1365
						Subtotal =	10					
3642.02	5	01	01		003	Redware	1		Unglazed base;Clear glaze interior			1366
3642.02	5	01	01		004	Ironstone	1					1367
3642.02	5	01	02		078	Container glass	1		Brown			1368
3642.02	5	01	02		078	Container glass	2		Deep aqua			1369
3642.02	5	01	02		078	Container glass	1		Pale aqua			1370
3642.02	5	01	02		078	Container glass	1		Clear;Neck band? lip?;Molded			1371
3642.02	5	02	09		089	Shell	1		Clam;Discarded in lab			
3642.02	5	03	02		028	Nail	1		Rusted & corroded			1372
						Subtotal =	9					
3643.02	5	01	01		003	Redware	2		Mend;Eroded			1373
3643.02	5	01	01	006	004	Ironstone	1		Cup rim;Blue annular exterior;White annular on blue interior			1374
3643.02	5	01	01	006	004	Ironstone	1		Cup rim;Floral decal polychrome exterior			1375
3643.02	5	01	01	007	004	Ironstone	1		Saucer rim			1376
3643.02	5	01	01		004	Ironstone	1					1377
3643.02	5	01	02		078	Container glass	1		Clear			1383
3643.02	5	01	02		078	Bottle glass	3		Pale green;Base-1			1379
3643.02	5	01	02		078	Container glass	1		Pale green			1380
3643.02	5	01	02		078	Bottle glass	14		Aqua;Base-1;Embossed letters on 4;"T.../...?...";"442...";"...P...";"...G.J.MI..."			1381
3643.02	5	01	02		078	Container glass	1		Slightly solarized			1382
3643.02	5	02	09		089	Shell	1		Clam;Discarded in lab			
3643.02	5	02	09		089	Shell	4		Oyster;Discarded in lab			
3643.02	5	03	01	001	078	Flat glass	2		Pale green			1384
3643.02	5	04	03	019	078	Lighting glass	2		Clear			1385
3643.02	5	04	04	002	003	Flowerpot	1					1378
3643.02	5	09	11		028	Miscellaneous hardware	1		Rusted & corroded			1386

CONTEXT	AREA	GP	CL	MPH	MAT	IDENTITY	COUNT	WGT	COMMENTS	REFERENCE	RANGE	CAT#
3643.02	5	98			112	Slag	1		Discarded in lab			
						Subtotal =	38					
3643.03	5	01	01		004	Porcelain	1		Base			1387
3643.03	5	01	01		004	Ironstone	2					1388
3643.03	5	01	02		078	Container glass	1		Brown			1389
3643.03	5	01	02		078	Bottle glass	1		Olive green;Lip & neck;Applied crown finish			1390
3643.03	5	01	02		078	Container glass	5		Pale green			1391
3643.03	5	01	02		078	Container glass	3		Pale aqua			1392
3643.03	5	01	02		078	Container glass	2		Clear			1393
3643.03	5	03	02		028	Nail	3		Rusted & corroded			1394
3643.03	5	03	06	015	069	Brick	3					1395
3643.03	5	04	03	019	078	Lighting glass	1		Clear			1396
3643.03	5	09	11		025	Miscellaneous hardware	1		Weird doodad;Tiny disc attached to arm;2 screws at base of arm			1397
						Subtotal =	23					
3644.02	5	01	01		004	Ironstone	12					1398
3644.02	5	01	02		078	Container glass	1		Clear			1399
3644.02	5	01	02		078	Container glass	1		Light blue;Mold seam			1400
3644.02	5	01	02		078	Container glass	3		Light green			1401
3644.02	5	03	01	001	078	Flat glass	1		Pale green			1402
3644.02	5	03	01	003	078	Plate glass	2		Pale green			1403
3644.02	5	03	06	015	069	Brick	1					1404
3644.02	5	04	04	002	003	Flowerpot	1					1405
3644.02	5	98			095	Coal	1		Discarded in lab			
						Subtotal =	23					
3645.02	5	01	01		001	Porcelain	1					1406
3645.02	5	01	01	001	003	Creamware	1		Plate rim			1407
3645.02	5	01	02		078	Container glass	1		Dark green			1408
3645.02	5	01	02		078	Container glass	1		Light green			1409
3645.02	5	01	02		078	Container glass	1		Clear			1410
3645.02	5	03	02		028	Nails	2		Rusted & corroded			1411
3645.02	5	03	06	015	069	Brick	1					1412
						Subtotal =	8					
3646.03	5	01	01		003	Yellowware	1		Base;Clear glaze interior & exterior			1413
3646.03	5	01	01	001	004	Ironstone	1		Plate rim;Underglaze transfer print blue geometric			1414
3646.03	5	01	01	007	004	Ironstone	4		Saucer;Scalloped rims-3;2 mend;Underglaze transfer print blue floral			1415
3646.03	5	01	01		004	Ironstone	4					1416
3646.03	5	01	02		078	Container glass	1		Clear			1417
3646.03	5	02	09		089	Shell	2		Clam;Discarded in lab			
3646.03	5	02	09		089	Shell	1		Oyster;Discarded in lab			
3646.03	5	03	01	001	078	Flat glass	2		Pale green			1418
3646.03	5	03	02		028	Nails	7		Rusted & corroded			1419
3646.03	5	03	03		028	Spike	1		Rusted & corroded			1420
3646.03	5	03	06	015	069	Brick	1					1421
						Subtotal =	25					
3647.01	5	01	02		078	Container glass	1		Clear			1422
3647.01	5	02	09		089	Shell	3		Oyster;Discarded in lab			
3647.01	5	03	02		028	Nail	1		Rusted & corroded			1423
3647.01	5	10	03	027	052	Primary flakes	2		Grey chert			1424

CONTEXT	AREA	GP	CL	MPH	MAT	IDENTITY	COUNT	WGT	COMMENTS	REFERENCE	RANGE	CAT#
3647.01	5	10	03	028	052	Secondary flake	1		Dark grey chert			1425
						Subtotal =	8					
3647.02	5	01	01		003	Redware	3		Spalls;Clear glaze			1426
						Subtotal =	3					
3648.02	5	01	01		003	Redware	1		Clear glaze interior & exterior			1427
3648.02	5	01	01		003	Redware	1		Manganese glaze interior & exterior			1428
3648.02	5	01	01		003	Yellowware	1		Clear glaze interior & exterior			1429
3648.02	5	01	01		003	Creamware	2		Spalls			1430
3648.02	5	01	01	001	004	Ironstone	1		Rim spall;Underglaze blue			1431
3648.02	5	01	01		004	Ironstone	1		Spall			1432
3648.02	5	01	02		078	Container glass	1		Brown			1433
3648.02	5	01	02		078	Container glass	2		Pale green			1434
3648.02	5	01	02		078	Container glass	1		Clear			1435
3648.02	5	02	09		089	Shell	7		Oyster;Discarded in lab			
3648.02	5	02	09		089	Shell	1		Clam;Discarded in lab			
3648.02	5	03	02		028	Nail	1		Rusted & corroded			1436
3648.02	5	03	05	021	003	Drainpipe	1					1437
3648.02	5	08	01		062	Tobacco pipe	1		Bowl			1438
						Subtotal =	22					
3649.01	5	01	02		078	Container glass	1		Olive green			1439
3649.01	5	02	09		089	Shell	1		Oyster;Discarded in lab			
						Subtotal =	2					
3649.03	5	01	01		003	Redware	1		Spall;Clear glaze			1440
3649.03	5	01	01	007	004	Ironstone	1		Saucer;Paneled rim;Underglaze transfer print blue floral			1441
3649.03	5	01	01		004	Ironstone	1		Spall			1442
3649.03	5	01	02	027	002	Stoneware	8		Crock;Buff paste;2 sets of mends;Bristol slipped interior & exterior;Unslipped exterior base;Blue lines;"...EW..."			1443
3649.03	5	01	02		078	Container glass	1		Olive green			1444
3649.03	5	01	02		078	Container glass	1		Light green			1445
3649.03	5	02	09		089	Shell	1		Oyster;Discarded in lab			
3649.03	5	03	06	015	069	Brick	1					1446
						Subtotal =	15					
3650.03	5	01	01		004	Ironstone	1		Spall;Underglaze transfer print mulberry landscape			1447
3650.03	5	01	01		004	Ironstone	1					1448
3650.03	5	01	01		017	Bone	1		Mammal rib			1453
3650.03	5	01	02		013	Container glass	1		Milk glass			1449
3650.03	5	01	02		078	Container glass	1		Olive green			1450
3650.03	5	01	02		078	Container glass	1		Clear;Chamfered corner			1452
3650.03	5	01	02		078	Container glass	1		Light aqua			1451
3650.03	5	02	09		089	Shell	3		Oyster;Discarded in lab			
3650.03	5	02	09		089	Shell	1		Clam;Discarded in lab			
3650.03	5	03	01	001	078	Flat glass	2		Light green			1454
3650.03	5	03	02		028	Nails	6		Rusted & corroded			1455
3650.03	5	03	06	015	069	Brick	1					1456
3650.03	5	04	03	019	078	Lighting glass	1		Clear			1457
3650.03	5	08	01		062	Tobacco pipe	1		Stem			1458
3650.03	5	10	07	081	052	Biface fragment	1		Grey chert			1459
3650.03	5	98			095	Coal	3		Discarded in lab			
3650.03	5	98			112	Slag	1		Discarded in lab			

CONTEXT	AREA	GP	CL	MPH	MAT	IDENTITY	COUNT	WGT	COMMENTS	REFERENCE	RANGE	CAT#
						Subtotal =	27					
3651.01	5	01	01	007	001	Porcelain	1		Saucer rim			1460
3651.01	5	01	01		001	Porcelain	1					1461
3651.01	5	01	01		003	Redware	1		One side slipped red;Clear glaze on opposite side			1462
3651.01	5	01	01	001	004	Ironstone	1		Plate base;Partial maker's mark stamped black: coat of arms, DIANA?			1463
3651.01	5	01	02		012	Container glass	1		Frosted pale aqua			1468
3651.01	5	01	02		078	Container glass	1		Olive green			1464
3651.01	5	01	02		078	Bottle glass	4		Pale aqua;Base-1			1466
3651.01	5	01	02		078	Container glass	1		Solarized			1467
3651.01	5	01	02		078	Container glass	6		Pale green			1465
3651.01	5	02	09		089	Shell	9		Oyster;Discarded in lab			
3651.01	5	03	01	001	078	Flat glass	1		Clear			1469
3651.01	5	03	02		028	Nails	3		Rusted & corroded			1516
3651.01	5	03	06	015	069	Brick	1					1471
3651.01	5	03	06	011	071	Concrete	1					1470
3651.01	5	04	03	019	078	Lighting glass	5		Clear			1472
3651.01	5	06	04	002	013	Button	1		4-hole milk glass			1473
3651.01	5	10	03	027	052	Primary flake	1		Dark grey chert			1474
3651.01	5	98			095	Coal	2					
						Subtotal =	41					
3652.02	5	01	02		078	Container glass	1		Clear			1475
3652.02	5	10	03	028	052	Secondary flake	1		Grey chert			1476
						Subtotal =	2					
3653.01	5	01	02		078	Container glass	1		Light green			1477
3653.01	5	02	09		089	Shell	2		Clam;Discarded in lab			
3653.01	5	03	02		028	Nails	2		Rusted & corroded			1478
						Subtotal =	5					
3653.03	5	01	01		003	Yellowware	1		Base;Clear glaze interior & exterior			1479
3653.03	5	01	01		003	Redware	1		Spall;Clear glaze			1480
3653.03	5	01	01		003	Redware	1		Spall;Manganese glaze			1481
3653.03	5	01	01		004	Ironstone	1		Underglaze transfer print blue floral			1482
3653.03	5	01	01		004	Ironstone	1		Underglaze transfer print blue interior & exterior			1483
3653.03	5	01	01		004	Ironstone	1					1484
3653.03	5	01	02		078	Container glass	1		Clear			1485
3653.03	5	02			017	Bone	1					1486
3653.03	5	02	09		089	Shell	5		Clam;Discarded in lab			
3653.03	5	02	09		089	Shell	5		Oyster;Discarded in lab			
3653.03	5	03	01	001	078	Flat glass	1		Pale green			1487
3653.03	5	03	01	001	078	Flat glass	1		Clear			1488
3653.03	5	03	02		028	Nail	1		Wire;Rusted			1489
3653.03	5	03	02		028	Nail	1		Cut;Rusted			1490
3653.03	5	03	02		028	Nails	4		Rusted & corroded			1491
3653.03	5	03	05	021	003	Drainpipe	1					1492
3653.03	5	98			051	Jasper	1		Waterworn			1493
						Subtotal =	28					
3653.04	5	02	09		089	Shell	10		Clam;Discarded in lab			
3653.04	5	02	09		089	Shell	2		Oyster;Discarded in lab			
3653.04	5	03	02		028	Nails	2		Rusted & corroded			1494
3653.04	5	08	01		062	Tobacco pipe	1		Stem			1495

CONTEXT	AREA	GP	CL	MPH	MAT	IDENTITY	COUNT	WGT	COMMENTS	REFERENCE	RANGE	CAT#
3653.04	5	10	07	081	051	Biface fragment	1		Jasper			1496
						Subtotal =	16					
3654.01	5	01	01	001	001	Porcelain	2		Plate base			1497
3654.01	5	01	01	007	001	Porcelain	1		Saucer rim			1498
3654.01	5	01	01		001	Porcelain	1					1499
3654.01	5	01	01		003	Redware	1		Eroded			1500
3654.01	5	01	01	031	003	Slipware	1		Buff paste;No glaze;Eroded slip interior;Black slipped exterior			1501
3654.01	5	01	01	001	004	Ironstone	1		Plate rim;Underglaze blue			1502
3654.01	5	01	01	006	004	Ironstone	1		Cup rim			1503
3654.01	5	01	01		004	Ironstone	1		Spall;Underglaze transfer print blue floral			1504
3654.01	5	01	01		004	Ironstone	3					1505
3654.01	5	01	01		013	Tableware glass	1		Milk glass;Scrolled handle			1506
3654.01	5	01	02		078	Container glass	2		Light green			1507
3654.01	5	01	02		078	Container glass	2		Light aqua			1508
3654.01	5	01	02		078	Container glass	2		Clear			1509
3654.01	5	01	02		078	Container glass	1		Pale green;Chamfered corner			1510
3654.01	5	02			017	Bone	1					1511
3654.01	5	02	09		089	Shell	30		Clam;Discarded in lab			
3654.01	5	02	09		089	Shell	27		Oyster;Discarded in lab			
3654.01	5	03	01	001	078	Flat glass	3		Light green			1512
3654.01	5	03	02		028	Nails	12		Rusted & corroded			1513
3654.01	5	03	06	015	069	Brick	1		Pale pink			1514
3654.01	5	09	03	025	001	Toy dinnerware	1		Porcelain saucer			1515
3654.01	5	09	11		008	Plastic	1		'"FIX-IT'/DUCTAPE INTERTAPE";Discarded in lab			
3654.01	5	98			095	Coal	2		Discarded in lab			
						Subtotal =	98					
3655.01	5	02	09		089	Shell	1		Clam;Discarded in lab			
3655.01	5	03	01	001	078	Flat glass	1		Pale green			1517
3655.01	5	98			112	Slag	1		Discarded in lab			
						Subtotal =	3					
3656.01	5	02	09		089	Shell	1		Clam			1518
						Subtotal =	1					
3656.03	5	01	01		003	Redware	3		Eroded;Clear glaze			1520
3656.03	5	01	01		003	Creamware	1		Spall			1524
3656.03	5	01	01		003	Slipware	1		Buff paste;Combed brown slip under clear glaze	South 1977	1670-1795	1521
3656.03	5	01	01		003	Slipware	1		Buff paste;Manganese glaze interior & exterior			1522
3656.03	5	01	01		003	Yellowware	2		Clear glaze			1523
3656.03	5	01	01		004	Ironstone	1		Spall;Underglaze handpainted floral (green leaves)			1528
3656.03	5	01	01	001	004	Ironstone	2		Plate rims			1525
3656.03	5	01	01	031	004	Ironstone	1		Rim			1526
3656.03	5	01	01	031	004	Ironstone	1		Rim			1527
3656.03	5	01	01		004	Ironstone	9		Spalls			1529
3656.03	5	01	02		002	Stoneware	1		Grey paste;Salt glazed interior & exterior;Blue & yellow decorated exterior			1530
3656.03	5	01	02		078	Container glass	1		Olive green			1531
3656.03	5	01	02		078	Container glass	1		Solarized			1532
3656.03	5	01	02		078	Container glass	2		Light blue			1533
3656.03	5	01	02		078	Container glass	1		Clear			1534
3656.03	5	01	02		078	Bottle glass	1		Clear;Shoulder;Paneled sides			1535
3656.03	5	01	04	029	001	Porcelain	1		Colander			1519

CONTEXT	AREA	GP	CL	MPH	MAT	IDENTITY	COUNT	WGT	COMMENTS	REFERENCE	RANGE	CAT#
3656.03	5	02	09		089	Shell	1		Clam;Discarded in lab			
3656.03	5	02	09		089	Shell	4		Oyster;Discarded in lab			
3656.03	5	03	01	001	078	Flat glass	2		Pale green			1536
3656.03	5	08	01		062	Tobacco pipe	1		Bowl			1537
3656.03	5	10	03	028	052	Secondary flakes	2		Grey chert			1538
3656.03	5	98			095	Coal	1		Discarded in lab			
3656.03	5	98			112	Slag	1		Discarded in lab			
						Subtotal =	42					
3657.03	5	01	01	001	004	Ironstone	2		Plate			1539
3657.03	5	03	06	015	069	Brick	1					1540
3657.03	5	98			095	Coal	2		Discarded in lab			
3657.03	5	98			112	Slag	1		Discarded in lab			
						Subtotal =	6					
3658.01	5	01	02		078	Container glass	1		Olive green			1541
3658.01	5	02	09		089	Shell	6		Oyster;Discarded in lab			
3658.01	5	03	06	015	069	Brick	2					1542
						Subtotal =	9					
3658.03	5	01	02		078	Container glass	1		Aqua			1543
3658.03	5	01	02		078	Container glass	1		Light green			1544
3658.03	5	01	02		078	Container glass	2		Clear			1545
3658.03	5	01	02		078	Container glass	1		Clear;Mold seam			1546
3658.03	5	02			017	Bone	16		Many sawed			1547
3658.03	5	02	09		089	Shell	6		Clam;Discarded in lab			
3658.03	5	02	09		089	Shell	10		Oyster;Discarded in lab			
3658.03	5	03	01	001	078	Flat glass	8		Pale green			1548
3658.03	5	03	02		028	Nails	4		Rusted & corroded			1549
3658.03	5	03	06	026	041	Construction material	1		Marble			1551
3658.03	5	04	03	019	078	Lighting glass	2		Clear			1550
3658.03	5	98			095	Coal	1		Discarded in lab			
						Subtotal =	53					
3658.04	5	01	01		003	Yellowware	1		Spall;Clear glaze			1552
3658.04	5	01	01	001	004	Ironstone	1		Plate rim;Shell edged green			1553
3658.04	5	01	01		004	Ironstone	1		Underglaze transfer print green floral			1554
3658.04	5	01	02		078	Container glass	1		Olive green			1555
3658.04	5	01	02		078	Container glass	1		Aqua			1556
3658.04	5	02	09		089	Shell	3		Oyster;Discarded in lab			
3658.04	5	98			126	Rock	3		Discarded in lab			
						Subtotal =	11					
3659.01	5	01	01		001	Porcelain	3					1557
3659.01	5	01	01	031	003	Redware	3		Holloware handle;Manganese glaze			1558
3659.01	5	01	01	028	003	Redware	1		Coggled pie plate rim;Trailed white slip under clear glaze			1559
3659.01	5	01	01		003	Redware	2		Trailed slip under clear glaze, eroded			1560
3659.01	5	01	01	031	003	Redware	1		Incised line exterior;Clear glaze interior & exterior			1561
3659.01	5	01	01		003	Redware	2		Clear glaze			1562
3659.01	5	01	01		003	Redware	2		Spalls			1563
3659.01	5	01	01		003	Redware?	1		Thin;Manganese glaze interior & exterior			1564
3659.01	5	01	01		003	Creamware	3					1565
3659.01	5	01	01	001	003	Pearlware	5		2 mend;Scalloped plate rim;Shell edged blue			1566
3659.01	5	01	01	001	003	Pearlware	1		Plate rim spall;Underglaze shell edged green			1567

CONTEXT	AREA	GP	CL	MPH	MAT	IDENTITY	COUNT	WGT	COMMENTS	REFERENCE	RANGE	CAT#
3659.01	5	01	01	001	004	Ironstone	4		Plate rim;2 mend;Embossed floral;Underglaze handpainted blue floral			1568
3659.01	5	01	01	001	004	Ironstone	4		Scalloped plate rim;2 mend;Underglaze transfer print midnight blue floral			1569
3659.01	5	01	01		004	Ironstone	1		Underglaze handpainted blue exterior			1570
3659.01	5	01	01		004	Ironstone	2		Underglaze blue exterior			1571
3659.01	5	01	01		004	Ironstone?	1		Underglaze blue exterior;Tan slip/glaze interior			1572
3659.01	5	01	01		004	Ironstone	1		Underglaze transfer print blue floral			1573
3659.01	5	01	01		004	Ironstone	3		Underglaze transfer print blue			1574
3659.01	5	01	01		004	Ironstone	1		Underglaze transfer print blue exterior			1575
3659.01	5	01	01	001	004	Ironstone	4		Plate rim-1;Underglaze transfer print red			1576
3659.01	5	01	01	031	004	Ironstone	6		Annularware;Rim-1;2 sets of mends			1577
3659.01	5	01	01		004	Ironstone	1		Underglaze transfer print blue floral			1578
3659.01	5	01	01	001	004	Ironstone	1		Plate rim			1579
3659.01	5	01	01	001	004	Ironstone	1		Plate rim			1580
3659.01	5	01	01	001	004	Ironstone	2		Plate base			1581
3659.01	5	01	01	001	004	Ironstone	2		Plate rim			1582
3659.01	5	01	01	001	004	Ironstone	1		Plate base			1583
3659.01	5	01	01	031	004	Ironstone	1		Hollowware base			1584
3659.01	5	01	01	031	004	Ironstone	1		Hollowware base			1585
3659.01	5	01	01		004	Ironstone	23					1586
3659.01	5	01	02		013	Container glass	1		Milk glass			1587
3659.01	5	01	02		078	Container glass	1		Olive green			1588
3659.01	5	01	02		078	Container glass	1		Emerald green			1589
3659.01	5	01	02		078	Container glass	2		Aqua;Base-1			1590
3659.01	5	02			017	Bone	4					1591
3659.01	5	02	01		017	Bone	1		Mammal			1633
3659.01	5	02	02		017	Bone	2		Bird			1592
3659.01	5	02	02		017	Bone	1		Bird			1593
3659.01	5	02	09		089	Shell	48		Clam;Discarded in lab			
3659.01	5	02	09		089	Shell	52		Oyster;Discarded in lab			
3659.01	5	02	09		089	Shell	9		Whelk			1594
3659.01	5	03	01	001	078	Flat glass	5		Green			1595
3659.01	5	03	01	001	078	Flat glass	9		Clear			1596
3659.01	5	03	02		028	Nails	4		Cut;Rusted			1597
3659.01	5	03	02		028	Nail	1		Rusted & corroded			1598
3659.01	5	03	06	015	069	Brick	2					1599
3659.01	5	06	04	002	013	Button	1		4-hole milk glass			1600
3659.01	5	06	04	009	025	Grommet	1		Eyelet			1601
3659.01	5	08	01		062	Tobacco pipe	1		Stem with embossed spur: circled I			1602
3659.01	5	09	11	011	028	Washer	1		Rusted & corroded			1603
						Subtotal =	231					
3660.01	5	01	01		003	Redware	1		Spall			1604
3660.01	5	01	01		003	Redware	1		Base;Clear glaze interior & exterior			1605
3660.01	5	01	01		003	Creamware	2					1606
3660.01	5	01	01		004	Ironstone	1		Underglaze transfer print midnight blue			1607
3660.01	5	01	01	001	004	Ironstone	1		Scalloped plate rim;Underglaze transfer print blue floral			1608
3660.01	5	01	01		004	Ironstone	1					1609
3660.01	5	02	09		089	Shell	5		Clam;Discarded in lab			
3660.01	5	02	09		089	Shell	4		Oyster;Discarded in lab			
3660.01	5	03	01	001	078	Flat glass	1		Green			1610
3660.01	5	03	02		028	Nails	3		Rusted & corroded			1611
3660.01	5	09	03	025	001	Toy dinnerware	1		Porcelain teapot or sugar bowl			1612
						Subtotal =	21					

CONTEXT	AREA	GP	CL	MPH	MAT	IDENTITY	COUNT	WGT	COMMENTS	REFERENCE	RANGE	CAT#
3661.01	5	01	01	001	001	Porcelain	1		Plate rim			1613
3661.01	5	01	01	001	004	Ironstone	1		Plate rim			1616
3661.01	5	01	01	001	004	Ironstone	1		Plate rim;Underglaze blue			1615
3661.01	5	01	02		078	Container glass	1		Clear;Cut notches			1618
3661.01	5	01	02		078	Container glass	2		Clear			1617
3661.01	5	02	09		089	Shell	2		Clam;Discarded in lab			
3661.01	5	02	09		089	Shell	4		Oyster;Discarded in lab			
3661.01	5	02	09		089	Shell	1		Whelk			1619
3661.01	5	03	01	001	078	Flat glass	3		Green			1620
3661.01	5	03	01	001	078	Flat glass	1		Clear			1621
3661.01	5	03	02		028	Nails	7		Rusted & corroded			1622
3661.01	5	03	06	015	069	Brick	1					1623
3661.01	5	04	04	002	003	Flowerpot	1					1614
3661.01	5	08	01		062	Tobacco pipe	1		Stem			1624
3661.01	5	10	02		126	Fire-cracked rock	1					1625
3661.01	5	98			095	Coal	2		Discarded in lab			
						Subtotal =	30					
3661.02	5	01	01		004	Ironstone	1		Embossed exterior			1626
3661.02	5	03	02		028	Nail	1		Rusted & corroded			1627
						Subtotal =	2					
3662.01	5	01	01		003	Redware	1		Clear glaze interior;Unglazed base			1628
3662.01	5	01	02		078	Container glass	1		Olive green			1629
3662.01	5	02	09		089	Shell	7		Clam;Discarded in lab			
3662.01	5	02	09		089	Shell	21		Oyster;Discarded in lab			
3662.01	5	03	01	001	078	Flat glass	2		Green			1630
3662.01	5	03	06	015	069	Brick	3					1631
						Subtotal =	35					
3662.02	5	02	09		089	Shell	1		Clam;Discarded in lab			
3662.02	5	02	09		089	Shell	11		Oyster;Discarded in lab			
3662.02	5	05	02		025	Shotgun shell	1		4 concentric circles/rings			1632
						Subtotal =	13					
3663.01	5	02	09		089	Shell	4		Clam;Discarded in lab			
3663.01	5	03	02		028	Nail	1		Rusted & corroded			1634
3663.01	5	03	06	015	069	Brick	2					1635
3663.01	5	10	03	028	051	Secondary flake	1		Jasper			1636
						Subtotal =	8					
3664.01	5	03	02		028	Nail	1		Rusted & corroded			1637
3664.01	5	03	06	015	069	Brick	2					1638
						Subtotal =	3					
3664.02	5	01	01		003	Redware	1		Manganese glaze interior & exterior			1639
3664.02	5	01	01		004	Ironstone	3		Spalls			1640
3664.02	5	01	02		078	Container glass	1		Clear			1641
3664.02	5	02	09		089	Shell	2		Oyster;Discarded in lab			
3664.02	5	03	01	001	078	Flat glass	2		Green			1642
3664.02	5	03	02		028	Nail	1		Cut;Rusted			1643
3664.02	5	03	06	015	069	Brick	2					1644
3664.02	5	03	06	015	069	Brick	1		Pale pink			1645
3664.02	5	09	11		028	Miscellaneous hardware	1		Rusted & corroded			1646

CONTEXT	AREA	GP	CL	MPH	MAT	IDENTITY	COUNT	WGT	COMMENTS	REFERENCE	RANGE	CAT#
3664.02	5	98			095	Coal	1		Discarded in lab			
						Subtotal =	15					
3665.01	5	01	01		004	Ironstone	1		Rim			1647
3665.01	5	01	01		004	Ironstone	1		Annularware;Spall			1648
3665.01	5	01	02		002	Stoneware	1		Red-grey paste;Brown slipped interior & exterior;Incised lines exterior;Salt glazed interior & exterior			1649
3665.01	5	02	09		089	Shell	5		Clam;Discarded in lab			
3665.01	5	02	09		089	Shell	5		Oyster;Discarded in lab			
						Subtotal =	13					
3665.03	5	01	01		003	Redware	1		Spall			1650
3665.03	5	01	01		003	Creamware	1					1651
3665.03	5	01	01		004	Ironstone	1		Underglaze handpainted polychrome floral			1652
3665.03	5	01	01		004	Ironstone	1		Spall			1653
3665.03	5	01	02		078	Bottle glass	1		Solarized;Embossed: "...NEW..."			1654
3665.03	5	02	09		089	Shell	28		Clam;Discarded in lab			
3665.03	5	02	09		089	Shell	33		Oyster;Discarded in lab			
3665.03	5	03	06	015	069	Brick	4					1655
						Subtotal =	70					
3666.01	5	02	09		089	Shell	2		Clam;Discarded in lab			
3666.01	5	02	09		089	Shell	1		Oyster;Discarded in lab			
3666.01	5	03	01	001	078	Flat glass	1		Clear			1656
3666.01	5	03	06	015	069	Brick	1					1657
3666.01	5	98			095	Coal	1		Discarded in lab			
						Subtotal =	6					
3667.01	5	01	02		078	Glass			Discarded in field, modern			
3667.01	5	03	06	015	069	Brick			Discarded in field			
						Subtotal =	0					
3668.01	5	03	06	015	069	Brick			Discarded in field			
						Subtotal =	0					
3668.03	5	01	01	001	001	Porcelain	4		Plate rims-3;2 mend			1658
3668.03	5	01	01		004	Ironstone	1		Base w/footring			1659
3668.03	5	01	01		004	Ironstone	1		Rim			1650
3668.03	5	01	01		004	Ironstone	1		Spall;Underglaze blue			1661
3668.03	5	01	01		004	Ironstone	3		Spalls			1662
3668.03	5	01	02		078	Container glass	2		Brown			1663
3668.03	5	01	02		078	Bottle glass	1		Clear;Embossed letters			1664
3668.03	5	01	02		078	Container glass	1		Clear			1665
3668.03	5	03	01	001	078	Flat glass	2		Blue-green			1666
3668.03	5	03	01	001	078	Flat glass	2		Pale green			1667
3668.03	5	03	01	003	078	Plate glass	1		Pale green			1668
3668.03	5	03	02		028	Nail	1		Cut;Rusted			1669
3668.03	5	03	02		028	Nail	1		Rusted & corroded			1670
3668.03	5	98			128	Charcoal	1		Discarded in lab			
						Subtotal =	22					
3669.01	5	03	06	015	069	Brick			Discarded in field			
						Subtotal =	0					
3669.03	5	01	01	001	004	Ironstone	2		Plate base;Mend;Underglaze transfer print grey landscape			1671

CONTEXT	AREA	GP	CL	MPH	MAT	IDENTITY	COUNT	WGT	COMMENTS	REFERENCE	RANGE	CAT#
3669.03	5	02	09		089	Shell	1		Oyster;Discarded in lab			
						Subtotal =	3					
3670.01	5	01	01		003	Redware	1		Manganese glaze interior & exterior			1672
3670.01	5	02	09		089	Shell	5		Oyster;Discarded in lab			
3670.01	5	03	06	015	069	Brick	2					1673
3670.01	5	08	01		062	Tobacco pipe	1		Stem			1674
3670.01	5	10	02		126	Fire-cracked rock	1					1675
						Subtotal =	10					
3670.02	5	01	01		003	Yellowware	1		Clear glaze interior;Unglazed base exterior			1676
3670.02	5	02	09		089	Shell	1		Clam;Discarded in lab			
3670.02	5	10	03	028	051	Secondary flake	1		Jasper			1677
						Subtotal =	3					
3671.01	5	02	09		089	Shell			Discarded in field			
						Subtotal =	0					
3672.01	5	03	01	001	078	Flat glass			Discarded in field			
						Subtotal =	0					
3672.02	5	03	01	001	078	Flat glass			Discarded in field			
						Subtotal =	0					
3674.01	5	01	01	001	004	Ironstone	6		Plate;Rims-2;Underglaze transfer print blue geometric			1678
3674.01	5	01	02		078	Bottle glass	1		Clear;Embossed: "...E..."			1679
3674.01	5	01	02		078	Container glass	1		Clear			1680
3674.01	5	02	09		089	Shell	5		Clam;Discarded in lab			
3674.01	5	02	09		089	Shell	4		Oyster;Discarded in lab			
3674.01	5	03	01	001	078	Flat glass	1		Green			1681
3674.01	5	03	01	001	078	Flat glass	1		Blue-green			1682
3674.01	5	03	01	001	078	Flat glass	1		Pale green			1683
3674.01	5	03	02		028	Nails	11		Rusted & corroded			1684
3674.01	5	03	06	015	069	Brick	1					1685
						Subtotal =	32					
3675.01	5	02	02		017	Bone	1		Bird			1686
3675.01	5	02	09		089	Shell	2		Clam;Discarded in lab			
3675.01	5	02	09		089	Shell	1		Oyster;Discarded in lab			
3675.01	5	03	02		020	Nails	3		Rusted & corroded			1687
3675.01	5	03	06	015	069	Brick	2					1689
3675.01	5	03	06	001	070	Mortar	3		Soft			1688
						Subtotal =	12					
3676.01	5	01	01	001	001	Porcelain	1		Plate base w/footring			1690
3676.01	5	01	01	031	003	Redware	2		Manganese glaze interior & exterior;Incised line exterior			1691
3676.01	5	01	01		004	Ironstone	1		Spall;Underglaze blue			1692
3676.01	5	01	01		004	Ironstone	2					1693
3676.01	5	01	02		078	Container glass	1		Clear			1694
3676.01	5	02	09		089	Shell	1		Oyster;Discarded in lab			
3676.01	5	03	06	015	069	Brick	1					1695
3676.01	5	04	03	019	078	Lighting glass	2		Clear			1696
						Subtotal =	11					

CONTEXT	AREA	GP	CL	MPH	MAT	IDENTITY	COUNT	WGT	COMMENTS	REFERENCE	RANGE	CAT#
3677.02	5	01	01		001	Porcelain	2		Rim-1			1697
3677.02	5	01	01	031	003	Redware	7		Manganese glaze interior & exterior			1698
3677.02	5	01	01		003	Redware	2		Manganese glaze interior & exterior			1699
3677.02	5	01	01		003	Redware	1		Spall;Mottled manganese glaze			1700
3677.02	5	01	01		003	Slipware	1		Buff paste;Combed brown slip under clear glaze	South 1977	1670-1795	1701
3677.02	5	01	01	001	003	Whieldon ware	1		Plate brim;Clouded brown-mulberry	South 1977;Noel Hume 1969	1740-1770	1702
3677.02	5	01	01		003	Creamware	5					1703
3677.02	5	01	01	031	003	Creamware	1		Foot ring			1704
3677.02	5	01	01		003	Pearlware	4		Footring - 1			1705
3677.02	5	01	01		003	Pearlware	1		Annular ware rim			1706
3677.02	5	01	01		003	Delftware	1		Light pink paste;Underglaze handpainted blue floral			1707
3677.02	5	01	02		002	Basaltware	1		Black paste stoneware;Light brown slipped interior			1708
3677.02	5	01	02		078	Container glass	3		Olive green			1709
3677.02	5	01	02		078	Container glass	1		Light blue			1710
3677.02	5	01	02		078	Container glass	2		Clear			1711
3677.02	5	02			017	Bone	1					1712
3677.02	5	02	09		089	Shell	9		Clam;Discarded in lab			
3677.02	5	02	09		089	Shell	2		Oyster;Discarded in lab			
3677.02	5	03	01	001	078	Flat glass	2		Green			1713
3677.02	5	03	02		028	Nail	1		Rusted & corroded			1714
3677.02	5	03	06	015	069	Brick	1					1715
3677.02	5	98			112	Slag	1		Discarded in lab			
						Subtotal =	50					
3678.03	5	02			017	Bone	1					1716
3678.03	5	03	06	015	069	Brick	2					1717
3678.03	5	09	11		028	Miscellaneous hardware	1		Rusted & corroded			1718
						Subtotal =	4					
3679.03	5	01	01	031	003	Creamware	1		Hollowware rim			1719
3679.03	5	02	09		089	Shell	1		Clam;Discarded in lab			
3679.03	5	03	03		028	Spike	1		Rusted & corroded			1720
						Subtotal =	3					
3680.02	5	02	09		089	Shell	3		Oyster			1721
						Subtotal =	3					
3680.03	5	01	01	031	003	Redware	1		Base?;Clear glaze interior & exterior			1722
3680.03	5	01	01	014	078	Tumbler	1		Clear;Paneled sides			1784
3680.03	5	02	09		089	Shell	4		Clam;Discarded in lab			
3680.03	5	02	09		089	Shell	7		Oyster;Discarded in lab			
3680.03	5	03	01	001	078	Flat glass	7		Blue-green			1723
3680.03	5	03	06	015	069	Brick	1					1725
3680.03	5	03	06	001	070	Mortar	4		Soft			1724
3680.03	5	98			095	Coal	1		Discarded in lab			
						Subtotal =	26					
3681.03	5	03	01	001	078	Flat glass	1		Blue-green			1726
3681.03	5	10	03	028	052	Secondary flake	1		Grey chert			1727
3681.03	5	10	03	028	054	Secondary flake	1		Grey quartzite			1728
						Subtotal =	3					
3681.04	5	01	01	031	001	Porcelain	1		Hollowware rim;Overglaze handpainted floral, eroded			1729

CONTEXT	AREA	GP	CL	MPH	MAT	IDENTITY	COUNT	WGT	COMMENTS	REFERENCE	RANGE	CAT#
3681.04	5	02	09		089	Shell	1		Clam;Discarded in lab			
3681.04	5	10	03	028	051	Secondary flake	1		Jasper			1730
3681.04	5	98			126	Rock	1		Discarded in lab			
						Subtotal =	4					
3682.01	5	01	02		013	Container glass	1		Milk glass			1731
3682.01	5	02	09		089	Shell			Discarded in field			
3682.01	5	03	02		028	Nails	2		Rusted & corroded			1732
3682.01	5	03	06	015	069	Brick			Discarded in field			
3682.01	5	10	03	028	054	Secondary flake	1		Quartzite			1733
3682.01	5	98			095	Coal			Discarded in field			
						Subtotal =	4					
3682.02	5	01	02	015	078	Jar	1		Clear;Snap top rim			1734
3682.02	5	02	09		089	Shell			Discarded in field			
3682.02	5	03	01	001	078	Flat glass	1		Pale green			1735
3682.02	5	03	06	015	069	Brick			Discarded in field			
						Subtotal =	2					
3683.01	5	01	01		001	Porcelain	1					1736
3683.01	5	01	02		078	Container glass	3		Olive green			1737
3683.01	5	01	02		078	Container glass	1		Light green			1738
3683.01	5	02	09		089	Shell	4		Clam;Discarded in lab			
3683.01	5	02	09		089	Shell	1		Oyster;Discarded in lab			
3683.01	5	03	01	001	078	Flat glass	2		Blue-green			1739
3683.01	5	03	01	001	078	Flat glass	1		Green			1740
3683.01	5	03	01	001	078	Flat glass	1		Light green			1741
3683.01	5	03	02		028	Nail	1		Wire;Rusted			1742
3683.01	5	03	06	015	069	Brick	2					1743
3683.01	5	06	04	002	013	Button	1		4-hole;Milk glass			1744
3683.01	5	10	02		126	Fire-cracked rock	4					1745
3683.01	5	10	03	027	052	Primary flake	1		Dark grey chert			1746
3683.01	5	10	03	028	052	Secondary flake	1		Grey chert			1747
3683.01	5	98			095	Coal	3		Discarded in lab			
						Subtotal =	27					
3683.02	5	10	02		126	Fire-cracked rock	2					1748
3683.02	5	10	03	028	052	Secondary flake	1		Grey chert			1749
3683.02	5	98			095	Coal			Discarded in field			
						Subtotal =	3					
3684.01	5	01	01		001	Porcelain	1					1750
3684.01	5	01	01		003	Redware	1		Rim;Clear glaze interior & exterior			1751
3684.01	5	01	01		003	Creamware	1					1752
3684.01	5	01	01	001	004	Ironstone	1		Plate base w/footring			1753
3684.01	5	01	01		004	Ironstone	1		Spall			1754
3684.01	5	01	02	047	029	Bottle cap	1		Rusted & corroded			1756
3684.01	5	01	02		078	Bottle glass	2		Light green;Embossed letters			1755
3684.01	5	02	09		089	Shell	3		Oyster;Discarded in lab			
3684.01	5	03	01	001	078	Flat glass	1		Blue-green			1757
3684.01	5	03	01	001	078	Flat glass	1		Green			1758
3684.01	5	03	02		028	Nails	23		Rusted & corroded			1759
3684.01	5	03	06	015	069	Brick	1		Agate			1760
3684.01	5	03	06	015	069	Brick	2					1761

CONTEXT	AREA	GP	CL	MPH	MAT	IDENTITY	COUNT	WGT	COMMENTS	REFERENCE	RANGE	CAT#
3684.01	5	04	03	019	078	Lighting glass	2		Clear;Rim-1			1762
3684.01	5	06	04	002	013	Button	1		4-hole;Milk glass			1763
3684.01	5	10	03	028	052	Secondary flake	1		Black chert			1764
3684.01	5	98			112	Slag	1		Discarded in lab			
						Subtotal =	44					
3684.02	5	01	01		004	Ironstone	1		Underglaze transfer print blue floral			1765
3684.02	5	03	01	001	078	Flat glass	1		Blue green			1766
						Subtotal =	2					
3685.02	5	03	06	015	069	Bricks			Discarded in field			
						Subtotal =	0					
3686.01	5	03	02		028	Nails	2		Rusted & corroded			1767
3686.01	5	03	06	015	069	Bricks			Discarded in field			
						Subtotal =	2					
3686.02	5	03	06	015	069	Bricks			Discarded in field			
						Subtotal =	0					
3687.03	5	01	01	031	004	Ironstone	1		Rim;Yellow line on rim;Underglaze transfer print blue interior			1768
3687.03	5	01	01	031	004	Ironstone	1		Spall;Annularware			1760
3687.03	5	01	01	004	004	Ironstone	1		Cup rim			1770
3687.03	5	01	01	014	078	Tumbler	1		Rim;Etched exterior			1771
3687.03	5	01	02		078	Container glass	1		Olive green			1772
3687.03	5	01	02		078	Container glass	5		Light green			1773
3687.03	5	02	09		089	Shell	1		Clam;Discarded in lab			
3687.03	5	03	01	001	078	Flat glass	2		Green			1774
3687.03	5	03	02		028	Nails	6		Rusted & corroded			1775
3687.03	5	98			112	Slag	1		Discarded in lab			
3687.03	5	98			126	Rock	1		Discarded in lab			
3687.03	5	98			128	Charcoal	1		Discarded in lab			
						Subtotal =	22					
3687.04	5	03	06	015	069	Brick			Discarded in field			
						Subtotal =	0					
3688.02	5	02	09		089	Shell	1		Clam;Discarded in lab			
3688.02	5	03	01	001	078	Flat glass	1		Green			1776
3688.02	5	03	06	015	069	Brick			Discarded in field			
3688.02	5	98			095	Coal			Discarded in field			
						Subtotal =	2					
3688.03	5	02	09		089	Shell			Discarded in field			
3688.03	5	03	06	015	069	Brick			Discarded in field			
						Subtotal =	0					
3689.01	5	01	02		078	Bottle glass			Modern;Discarded in field			
						Subtotal =	0					
3689.02	5	01	02		078	Bottle glass			Modern;Discarded in field			
3689.02	5	09	11		008	Plastic			Discarded in field			
						Subtotal =	0					

CONTEXT	AREA	GP	CL	MPH	MAT	IDENTITY	COUNT	WGT	COMMENTS	REFERENCE	RANGE	CAT#
3689.03	5	01	02		078	Container glass	1		Clear			1778
3689.03	5	03	01	001	078	Flat glass	1		Blue green			1779
3689.03	5	98			095	Coal			Discarded in field			
						Subtotal =	2					
3690.03	5	01	02		002	Stoneware	1		Grey paste;Decorated blue exterior;Salt glazed exterior			1780
3690.03	5	02			017	Bone	1					1782
3690.03	5	02	01		017	Bone	1		Mammal			1781
3690.03	5	02	09		089	Shell	8		Oyster;Discarded in lab			
3690.03	5	02	09		089	Shell	2		Clam;Discarded in lab			
3690.03	5	03	06	015	069	Brick	1		Green glazed			1783
						Subtotal =	14					
3691.02	5	01	01		001	Porcelain	1					1785
3691.02	5	01	01	001	003	Creamware	1		Rim spall			1786
3691.02	5	01	01	031	004	Ironstone	1		Underglaze transfer print blue interior & exterior			1787
3691.02	5	01	02		078	Container glass	1		Olive green			1788
3691.02	5	01	02		078	Container glass	1		Clear			1789
3691.02	5	03	01	001	078	Flat glass	1		Blue green			1790
3691.02	5	03	01	001	078	Flat glass	1		Light green			1791
3691.02	5	98			095	Coal	1		Discarded in lab			
3691.02	5	98			128	Charcoal			Discarded in field			
						Subtotal =	8					
3692.02	5	01	01	001	003	Creamware	1		Plate rim;Molded relief			1794
3692.02	5	01	01		003	Redware	1		Spall;Manganese glaze			1792
3692.02	5	01	01	001	003	Creamware	1		Spall;Plate base			1793
3692.02	5	01	01		003	Creamware?	1		Spall			1795
3692.02	5	01	02	047	029	Bottle cap	1		Rusted & corroded			1798
3692.02	5	01	02		078	Container glass	4		Brown			1796
3692.02	5	01	02		078	Container glass	4		Clear			1797
3692.02	5	02	00	9	089	Shell	1		Clam;Discarded in lab			
3692.02	5	03	01	001	078	Flat glass	1		Light blue-green			1799
3692.02	5	03	02		028	Nails	8		Rusted & corroded			1800
3692.02	5	98			095	Coal	1		Discarded in lab			
3692.02	5	98			128	Charcoal			Discarded in field			
						Subtotal =	24					
3693.01	5	01	01		004	Ironstone	1					1803
3693.01	5	01	01	031	004	Ironstone	1		Overglaze polychrome floral exterior, decal			1802
3693.01	5	01	01		004	Ironstone	4		Spalls			1801
3693.01	5	01	02		002	Stoneware	1		Grey paste;Albany slipped interior;Bristol slipped exterior;Indented exterior		1880-1920	1804
3693.01	5	01	02		078	Bottle glass	1		Lip?;Kelly green			1805
3693.01	5	01	02		078	Bottle glass	1		Clear;Embossed pattern exterior			1806
3693.01	5	01	02		078	Container glass	1		Clear			1807
3693.01	5	01	02		078	Container glass	1		Solarized			1808
3693.01	5	02	09		089	Shell	1		Clam;Discarded in lab			
3693.01	5	02	09		089	Shell	1		Oyster;Discarded in lab			
3693.01	5	03	01	001	078	Flat glass	1		Green			1809
3693.01	5	03	01	001	078	Flat glass	1		Light blue			1810
3693.01	5	03	02		028	Nails	3		Rusted & corroded			1811
3693.01	5	03	06	015	069	Brick	1					1812
3693.01	5	98			095	Coal	1		Discarded in lab			
						Subtotal =	20					

CONTEXT	AREA	GP	CL	MPH	MAT	IDENTITY	COUNT	WGT	COMMENTS	REFERENCE	RANGE	CAT#
3693.02	5	01	01		003	Redware	1		Manganese glaze interior & exterior			1813
3693.02	5	01	01		004	Ironstone	1		Rim spall;Underglaze transfer print blue interior			1814
3693.02	5	01	01	001	004	Ironstone	1		Plate rim			1815
3693.02	5	01	02		078	Container glass	1		Light green			1816
3693.02	5	02	09		089	Shell	2		Clam;Discarded in lab			
3693.02	5	02	09		089	Shell	1		Oyster;Discarded in lab			
3693.02	5	03	02		028	Nail	1		Rusted & corroded			1817
3693.02	5	04	03	019	078	Lighting glass	1		Clear			1818
						Subtotal =	9					
3694.01	5	01	01	038	003	Redware	1		Pie plate;Coggled rim;Clear glaze interior			1819
3694.01	5	01	01		004	Ironstone	1		Spall			1820
3694.01	5	01	02		002	Stoneware	1		Buff paste;Albany slipped interior & exterior;Grooved interior			1821
3694.01	5	01	02		002	Stoneware	1		Grey paste;Unglazed interior;Salt glazed exterior			1822
3694.01	5	02	09		089	Shell	3		Oyster;Discarded in lab			
3694.01	5	03	01	001	078	Flat glass	1		Blue-green			1823
3694.01	5	03	01	001	078	Flat glass	1		Light green			1824
3694.01	5	03	02		028	Nails	2		Rusted & corroded			1825
3694.01	5	03	06	015	069	Brick	1					1826
						Subtotal =	12					
3694.02	5	01	02		002	Stoneware	1		Rhenish Stoneware;Buff to grey paste;Unglazed interior;Incised lines exterior;Decorated in cobalt blue	South 1977	1650-1775	1827
						Subtotal =	1					
3695.01	5	01	01		003	Redware	2		Base-1;Manganese glaze interior			1828
3695.01	5	01	01	007	004	Ironstone	1		Saucer rim			1829
3695.01	5	01	01		004	Ironstone	1		Underglaze transfer print red floral			1830
3695.01	5	01	01		004	Ironstone	1		Spall;Underglaze transfer print blue floral			1831
3695.01	5	01	01		004	Ironstone	1					1832
3695.01	5	01	02		078	Stoneware	1		Grey paste;Unglazed interior;Salt glazed exterior			1833
3695.01	5	01	02		078	Container glass	1		Cobalt blue			1834
3695.01	5	01	02		078	Container glass	2		Clear			1835
3695.01	5	02	09		089	Shell	1		Clam;Discarded in lab			
3695.01	5	02	09		089	Shell	3		Whelk			1836
3695.01	5	03	01	001	078	Flat glass	1		Blue-green			1837
3695.01	5	03	02		028	Nail	1		Rusted & corroded			1838
3695.01	5	03	06	015	069	Brick	1					1839
						Subtotal =	17					
3695.02	5	10	02		126	Fire-cracked rock	2					1840
						Subtotal =	2					
3696.03	5	01	02		078	Container glass	1		Clear			1841
3696.03	5	03	06	015	069	Brick			Discarded in field			
3696.03	5	03	06	015	069	Brick	1		Green glaze			1842
3696.03	5	98			095	Coal			Discarded in field			
						Subtotal =	2					
3697.02	5	01	01		003	Creamware?	2		Spalls			1843
3697.02	5	01	01		004	Ironstone	5		Spalls-4			1844
3697.02	5	01	02		078	Bottle glass	1		Cobalt blue;Snap top lip & neck			1845
3697.02	5	03	01	001	078	Flat glass	4		Light green			1846

CONTEXT	AREA	GP	CL	MPH	MAT	IDENTITY	COUNT	WGT	COMMENTS	REFERENCE	RANGE	CAT#
3697.02	5	03	02		028	Nail	1		Rusted & corroded			1847
3697.02	5	03	06	015	069	Brick?	1					1848
3697.02	5	03	06	105	069	Brick	1					1849
3697.02	5	98			095	Coal	1		Discarded in lab			
3697.02	5	98			128	Charcoal			Discarded in field			
						Subtotal =	16					
3698.02	5	01	01		003	Redware	1		Manganese glaze interior & exterior			1850
3698.02	5	03	01	001	078	Flat glass	1		Clear			1851
3698.02	5	03	06	015	069	Brick?	1					1852
3698.02	5	03	06	015	069	Brick	1					1853
3698.02	5	10	03	028	052	Secondary flake	1		Grey chert			1854
						Subtotal =	5					
3699.01	5	03	03		028	Spike	1		Rusted			1855
						Subtotal =	1					
3699.02	5	01	01	007	001	Porcelain	1		Saucer rim			1856
3699.02	5	01	02		078	Bottle glass	1		Clear;Embossed letters			1857
3699.02	5	01	02		078	Container glass	1		Solarized			1858
3699.02	5	02	09		089	Shell	1		Clam;Discarded in lab			
3699.02	5	03	01	001	078	Flat glass	2		Green			1859
3699.02	5	03	02		028	Nail	1		Rusted & corroded			1860
						Subtotal =	7					
3700.01	5	03	06	015	069	Brick?	1					1861
3700.01	5	09	11		028	Miscellaneous hardware	1		Bar;Rusted & corroded			1862
3700.01	5	10	03	028	052	Secondary flakes	2		Grey chert			1863
						Subtotal =	4					
3701.01	5	01	01	031	003	Redware	1		Rim;Clear glaze			1864
3701.01	5	01	02		078	Container glass	1		Brown			1865
3701.01	5	01	02		078	Container glass	1		Light aqua			1866
3701.01	5	01	02		078	Bottle glass	1		Light green;Embossed emblem			1867
3701.01	5	01	02		078	Container glass	1		Pale green tint			1868
3701.01	5	02	09		089	Shell	1		Clam;Discarded in lab			
3701.01	5	03	02		028	Nail	1		Rusted & corroded			1870
3701.01	5	03	06	015	069	Brick?	1					1869
3701.01	5	98			095	Coal	1		Discarded in lab			
						Subtotal =	9					
3701.02	5	01	01	007	001	Porcelain	1		Saucer rim;Overglaze blue banded brim			1871
3701.02	5	01	01		001	Porcelain	1					1872
3701.02	5	01	01	031	003	Redware	1		Lip;Jackfield	South 1977	1740-1780	1873
3701.02	5	01	01	031	003	Redware	1		Unglazed interior;Manganese splotched clear glaze exterior;Embossed line & coggled exterior			1874
3701.02	5	01	01		003	Redware	1		Spall;Manganese glaze			1875
3701.02	5	01	01		003	Yellowware	1		Clear glaze interior & exterior			1876
3701.02	5	01	01		003	Yellowware	1		Base;Clear glaze interior & exterior			1877
3701.02	5	01	01		004	Ironstone	2		Annular ware			1878
3701.02	5	01	01		004	Ironstone	1		Underglaze transfer print blue			1879
3701.02	5	01	01		004	Ironstone	1		Rim;Annular ware			1880
3701.02	5	01	01	001	004	Ironstone	1		Plate rim;Victorian Majorica;Engobe aqua with brown rim;Embossed interior		1850-1890s	1881
3701.02	5	01	01	031	004	Ironstone	2		Victorian Majolica;Red glazed interior;Aqua glazed exterior;Embossed exterior		1850-1890s	1882

CONTEXT	AREA	GP	CL	MPH	MAT	IDENTITY	COUNT	WGT	COMMENTS	REFERENCE	RANGE	CAT#
3701.02	5	01	01	001	004	Ironstone	6		Mend;Plate;Maker's mark underglaze stamped black;Coat of arms: "S.P.Co. Ironstone China";Steubenville Pottery, Steubenville, Ohio, 1879-1959	DeBolt 1994:136	1880s	1883
3701.02	5	01	01	001	004	Ironstone	2		Mend;Plate base			1884
3701.02	5	01	01	007	004	Ironstone	2		Mend;Saucer base			1885
3701.02	5	01	01	004	004	Ironstone	1		Cup handle			1886
3701.02	5	01	01	031	004	Ironstone	1		Paneled exterior			1887
3701.02	5	01	01	004	004	Ironstone	1		Cup rim			1888
3701.02	5	01	01	004	004	Ironstone	1		Cup base			1889
3701.02	5	01	01	031	004	Ironstone	1		Hollowware base			1890
3701.02	5	01	01		004	Ironstone	2		Spalls			1891
3701.02	5	01	01		004	Ironstone	9					1892
3701.02	5	01	01		078	Tableware glass	3		Mend;Footed base			1893
3701.02	5	01	02	028	002	Stoneware	4		Nottingham Type;Bottle;Rim-1;Base-2;Grey paste;Brown slipped interior;Brown slip lustre exterior	South 1977	1700-1810	1894
3701.02	5	01	02		002	Stoneware	1		Base;Albany slipped interior			1895
3701.02	5	01	02		013	Container glass	1		Milk glass			1896
3701.02	5	01	02		078	Bottle glass	1		Green;Applied downtooled lip			1897
3701.02	5	01	02		078	Bottle glass	1		Pale aqua;Side panel embossed: "DRUGGIS..."			1898
3701.02	5	01	02		078	Bottle glass	1		Pale green tint;Side panel embossed: "...YORK..."			1899
3701.02	5	01	02		078	Container glass	1		Pale green tint;Corner			1900
3701.02	5	01	02		078	Container glass	3		Clear			1901
3701.02	5	01	02		078	Container glass	1		Pale green			1902
3701.02	5	01	02		078	Container glass	2		Pale aqua			1903
3701.02	5	02			017	Bone	2					1904
3701.02	5	02	09		089	Shell	1		Clam;Discarded in lab			
3701.02	5	02	09		089	Shell	1		Oyster;Discarded in lab			
3701.02	5	03	01	001	078	Flat glass	5		Light green			1905
3701.02	5	03	01	001	078	Flat glass	1		Pale green tint			1906
3701.02	5	03	02		028	Nails	13		Rusted & corroded			1907
3701.02	5	03	02		034	Nails	3		Lead			1908
3701.02	5	04	04	002	003	Flowerpot	1		Collar base			1909
3701.02	5	06	04	002	013	Buttons	2		Milk glass;4-hole;Different sizes			1910
3701.02	5	07	04	002	009	Comb	1		Black;Fine teeth on both sides			1911
3701.02	5	08	02		062	Tobacco pipe	3		Mend;Bowl			1912
3701.02	5	09	03	025	001	Toy dinnerware	1		Porcelain;Pitcher rim			1913
3701.02	5	98			128	Charcoal	3		Discarded in lab			
						Subtotal =	96					
3702.02	5	01	01		004	Ironstone	1		Underglaze transfer print blue			1914
3702.02	5	01	02		078	Container glass	1		Clear			1915
3702.02	5	02	09		089	Shell	1		Oyster;Discarded in lab			
3702.02	5	98			095	Coal	1		Discarded in lab			
						Subtotal =	4					
3703.02	5	01	01		004	Ironstone	1		Spall			1916
3703.02	5	02	09		089	Shell	1		Clam;Discarded in lab			
						Subtotal =	2					
3705.01	5	03	06	015	069	Brick			Discarded in field			
						Subtotal =	0					
3705.02	5	03	06	015	069	Brick			Discarded in field			
3705.02	5	98			128	Charcoal			Discarded in field			
						Subtotal =	0					

CONTEXT	AREA	GP	CL	MPH	MAT	IDENTITY	COUNT	WGT	COMMENTS	REFERENCE	RANGE	CAT#
3706.01	5	01	02		078	Bottle glass			Modern;Discarded in field			
3706.01	5	03	06	015	069	Brick			Discarded in field			
						Subtotal =	0					
3709.03	5	01	01	031	002	Stoneware	1		Scratch blue interior & exterior;Buff paste;White slipped interior & exterior;Salt glazed	South 1977	1715-1775	1919
3709.03	5	01	01		003	Yellowware	1		Base spall;Clear glaze			1917
3709.03	5	01	01		003	Yellowware	1		Rim;Clear glaze			1918
3709.03	5	03	02		028	Nails	2		Rusted & corroded			1920
3709.03	5	98			128	Charcoal	1		Discarded in lab			
						Subtotal =	6					
3710.02	5	01	01	031	002	Stoneware	1		White salt glazed	South 1977	1720-1805	1921
3710.02	5	01	01		004	Ironstone	1		Rim			1922
3710.02	5	01	02		078	Container glass	1		Olive green			1923
3710.02	5	01	02		078	Container glass	1		Clear			1925
						Subtotal =	4					
3710.03	5	03	01	001	078	Flat glass	1		Pale green			1925
						Subtotal =	1					
3711.01	5	03	06	015	069	Brick			Discarded in field			
3711.01	5	98			095	Coal			Discarded in field			
						Subtotal =	0					
3711.02	5	01	02		078	Bottle glass	2		Clear;Base			1926
3711.02	5	04	04	002	003	Flowerpot	1		Rim			1927
						Subtotal =	3					
3712.02	5	01	01	031	004	Ironstone	1		Rim			1928
3712.02	5	01	02		078	Bottle glass	1		Brown;Stippled exterior			1929
3712.02	5	02	09		089	Shell	3		Oyster;Discarded in lab			
						Subtotal =	5					
3713.01	5	01	02		078	Bottle glass	1		Pale green;Embossed: "...Enz Mar..."			1930
3713.01	5	10	02		126	Fire-cracked rock	1					1931
						Subtotal =	2					
3713.02	5	01	02		078	Container glass	1		Pale aqua			1932
3713.02	5	03	06	015	069	Brick	1					1933
						Subtotal =	2					
3714.02	5	01	01		004	Ironstone	2					1934
3714.02	5	01	02		078	Bottle glass	1		Clear;Embossed letters			1935
3714.02	5	06	04	002	013	Button	1		Milk glass;4-hole			1936
						Subtotal =	4					
3715.01	5	09	11		029	Aluminum			Discarded in field			
3715.01	5	98			095	Coal			Discarded in field			
						Subtotal =	0					
3716.02	5	01	01	031	002	Stoneware	1		White salt glazed	South 1977	1720-1805	1937
3716.02	5	01	02		078	Bottle glass	1		Pale green tint;Embossed: "...NG Co..."			1939
3716.02	5	01	02		078	Container glass	1		Brown			1938

CONTEXT	AREA	GP	CL	MPH	MAT	IDENTITY	COUNT	WGT	COMMENTS	REFERENCE	RANGE	CAT#
3716.02	5	03	02		028	Nail	1		Rusted & corroded			1940
						Subtotal =	4					
3717.01	5	03	06	015	069	Brick?	1					1941
						Subtotal =	1					
3717.02	5	01	01		003	Redware	1		Trailed white slip under clear glaze;Unglazed base			1942
3717.02	5	01	01		004	Ironstone	1		Spall			1943
3717.02	5	03	01	001	078	Flat glass	1		Pale blue green			1944
3717.02	5	07	04	023	004	Ironstone	1		Grooved rim;Shaving mug rim?			1945
						Subtotal =	4					
3718.01	5	01	02		078	Glass			Modern;Discarded in field			
						Subtotal =	0					
3718.02	5	01	02		078	Container glass	3		Grey green tint			1946
						Subtotal =	3					
3719.01	5	01	02		078	Container glass	1		Olive green			2126
						Subtotal =	1					
3719.02	5	01	02		078	Container glass	1		Olive green			2127
3719.02	5	01	02		078	Container glass	1		Clear			2128
3719.02	5	98			095	Coal	1		Discarded in lab			
						Subtotal =	3					
3720.01	5	01	01	031	003	Redware	1		Clear glaze;Incised squiggled lines exterior			2129
3720.01	5	01	01		004	Ironstone	1		Spall			2130
3720.01	5	01	02		078	Container glass	1		Pale aqua			2131
3720.01	5	01	02		078	Container glass	1		Clear			2132
3720.01	5	03	01	001	078	Flat glass	2		Pale green tint			2133
3720.01	5	03	02		028	Nails	2		Rusted & corroded			2134
3720.01	5	04	03	019	078	Lighting glass	1		Clear			2135
						Subtotal =	9					
3720.02	5	03	01	001	078	Flat glass	1		Pale aqua			2136
						Subtotal =	1					
3721.02	5	01	01		003	Pearlware	1		Underglaze handpainted polychrome floral	South 1977	1795-1815	2137
3721.02	5	01	01		004	Ironstone	2					2138
3721.02	5	01	02	047	028	Bottle cap	1		Rusted & corroded			2140
3721.02	5	01	02		078	Container glass	1		Clear;Paneled			2139
3721.02	5	01	02		078	Container glass	1		Brown			2211
3721.02	5	03	01	001	078	Flat glass	1		Pale green			2141
3721.02	5	03	02		028	Nails	6		Rusted & corroded			2142
						Subtotal =	13					
3721.03	5	01	02		078	Container glass	1		Light green			2213
3721.03	5	03	02		028	Nail	1		Rusted & corroded			2143
						Subtotal =	2					
3722.01	5	01	01		004	Ironstone	1					2144
3722.01	5	03	01	001	078	Flat glass	1		Pale green tint			2145
3722.01	5	03	02		028	Nails	2		Rusted & corroded			2146

CONTEXT	AREA	GP	CL	MPH	MAT	IDENTITY	COUNT	WGT	COMMENTS	REFERENCE	RANGE	CAT#
						Subtotal =	4					
3722.02	5	01	01		004	Ironstone?	1		Rim;Unglazed			2147
3722.02	5	03	01	001	078	Flat glass	1		Pale green			2148
3722.02	5	03	02		028	Nail	1		Rusted & corroded			2149
						Subtotal =	3					
3723.01	5	03	01	001	078	Flat glass	1		Blue-green			2150
3723.01	5	03	03		028	Spike	1		Rusted			2151
						Subtotal =	2					
3724.01	5	09	11		008	Plastic			Discarded in field			
						Subtotal =	0					
3724.03	5	01	01	001	004	Ironstone	1		Scalloped plate rim;Embossed leaf and shell;Underglaze handpainted blue			2153
3724.03	5	98			095	Coal			Discarded in field			
						Subtotal =	1					
3725.03	5	01	01		001	Porcelain	1		Underglaze handpainted blue floral exterior;Grooved interior			2152
3725.03	5	03	06	015	069	Brick			Discarded in field			
						Subtotal =	1					
3726.01	5	01	01		003	Redware	1		Clear glaze interior & exterior			2154
3726.01	5	01	01		004	Ironstone	1		Spall;Underglaze transfer print blue chinoiserie			2155
3726.01	5	02	09		089	Shell	2		Clam;Discarded in lab			
3726.01	5	02	09		089	Shell	2		Oyster;Discarded in lab			
3726.01	5	98			161	Hematite	1		Discarded in lab			
						Subtotal =	7					
3726.02	5	01	01	007	001	Porcelain	1		Saucer rim;Underglaze handpainted blue floral			2156
3726.02	5	01	01		003	Redware	1		Clear glaze interior & exterior			2157
3726.02	5	01	01		003	Redware	1		Clear glaze exterior;White slip under clear glaze interior			2158
3726.02	5	03	01	001	078	Flat glass	2		Blue-green			2159
3726.02	5	03	06	021	159	Paint chip	1		Robins egg blue			2160
3726.02	5	10	02		126	Fire-cracked rock	1					2161
3726.02	5	98			161	Hematite	1		Discarded in lab			
						Subtotal =	8					
3727.01	5	02	09		089	Shell			Discarded in field			
						Subtotal =	0					
3727.02	5	01	01	031	001	Porcelain	1		Chinese Export;Underglaze handpainted blue exterior			2162
3727.02	5	01	02		078	Bottle glass	1		Olive green			2164
3727.02	5	01	02	042	078	Glass lid	1		Pale green			2163
3727.02	5	02	09		089	Shell	1		Oyster;Discarded in lab			
3727.02	5	02	09		089	Shell	1		Oyster;Discarded in lab			
3727.02	5	03	01	001	078	Flat glass	1		Green			2165
3727.02	5	03	01	001	078	Flat glass	1		Clear			2166
3727.02	5	03	06	015	069	Brick	1					2167
3727.02	5	04	02	002	003	Flowerpot	1					2168
						Subtotal =	9					
3728.01	5	02	09		089	Shell			Discarded in field			

CONTEXT	AREA	GP	CL	MPH	MAT	IDENTITY	COUNT	WGT	COMMENTS	REFERENCE	RANGE	CAT#
3728.01	5	03	06	015	069	Brick			Discarded in field			
						Subtotal =	0					
3728.02	5	02	09		089	Shell			Discarded in field			
3728.02	5	03	02		028	Nails	2		Rusted			2169
3728.02	5	03	06	015	069	Brick			Discarded in field			
						Subtotal =	2					
3728.03	5	01	01	031	001	Porcelain	1		Chinese Export;Underglaze handpainted blue exterior			2170
3728.03	5	01	01	001	004	Ironstone	1		Plate rim spall			2171
3728.03	5	01	02		078	Container glass	1		Clear			2172
3728.03	5	02	09		089	Shell	2		Clam;Discarded in lab			
3728.03	5	02	09		089	Sehll	1		Oyster;Discarded in lab			
3728.03	5	03	02		028	Nails	3		Rusted & corroded			2173
3728.03	5	04	01		025	Furniture hardware?	1		Cupric;Axle/rod			2174
3728.03	5	98			128	Charcoal	1		Discarded in lab			
						Subtotal =	11					
3728.04	5	01	01		003	Redware	1		Manganese glaze interior & exterior			2175
3728.04	5	01	02		078	Container glass	1		Clear			2176
3728.04	5	02			017	Bone	1		Like suction caps along one side			2178
3728.04	5	02	01		017	Bone	1		Mammal			2177
3728.04	5	02	09		089	Shell	16		Oyster;Discarded in lab			
3728.04	5	02	09		089	Shell	7		Clam;Discarded in lab			
3728.04	5	03	01	001	078	Flat glass	8		Dark blue green			2179
3728.04	5	03	02		028	Nail	1		Rusted & corroded			2180
3728.04	5	10	02		126	Fire-cracked rock	1					2181
						Subtotal =	37					
3729.01	5	01	01	007	001	Porcelain	2		Mend;Saucer base			2182
3729.01	5	01	01	001	004	Ironstone	1		Plate rim			2183
3729.01	5	01	02		078	Bottle glass	1		Olive green;Base			2184
3729.01	5	02	09		089	Shell	3		Clam;Discarded in lab			
3729.01	5	02	09		089	Shell	3		Oyster;Discarded in lab			
3729.01	5	03	01	001	078	Flat glass	1		Blue green			2185
3729.01	5	03	01	001	078	Flat glass	1		Green			2186
3729.01	5	03	02		028	Nail	1		Rusted & corroded			2187
						Subtotal =	13					
3729.02	5	01	01	001	001	Porcelain	3		Mend;Plate rim;Embossed interior			2188
3729.02	5	01	01	031	003	Redware	2		Manganese glaze interior & exterior			2189
3729.02	5	01	01		003	Redware	2		Spalls;Clear glaze			2190
3729.02	5	01	01		003	Slipware	1		Clear glaze interior;Brown slipped eroded exterior under clear glaze	South 1977	1670-1795	2191
3729.02	5	01	01	031	003	Pearlware	2		Mend;Underglaze handpainted polychrome floral interior	South 1977	1795-1815	2192
3729.02	5	02	09		089	Shell	11		Oyster;Discarded in lab			
3729.02	5	03	01	001	078	Flat glass	2		Clear			2194
3729.02	5	03	01	001	078	Flat glass	3		Green			2193
3729.02	5	03	06	015	069	Brick	1					2195
						Subtotal =	27					
3729.03	5	01	02		078	Glass			Discarded in field			
						Subtotal =	0					
3730.02	5	01	02		078	Container glass	1		Brown			2196

CONTEXT	AREA	GP	CL	MPH	MAT	IDENTITY	COUNT	WGT	COMMENTS	REFERENCE	RANGE	CAT#
3730.02	5	02	09		089	Shell	1		Clam;Discarded in lab			
3730.02	5	02	09		089	Shell	3		Oyster;Discarded in lab			
3730.02	5	03	02		028	Nail	1		Rusted & corroded			2197
						Subtotal =	6					
3730.03	5	01	01		003	Creamware?	2		Mend;Jar rim?			2198
3730.03	5	01	01		004	Ironstone	1		Spall			2199
3730.03	5	01	01		004	Ironstone	1		Spall;Underglaze blue			2200
3730.03	5	01	02		078	Bottle glass	1		Olive green;Lip rim			2201
3730.03	5	02	09		089	Shell	1		Oyster;Discarded in lab			
3730.03	5	03	01	001	078	Flat glass	2		Blue-green			2202
3730.03	5	03	01	001	078	Flat glass	1		Green tint			2203
						Subtotal =	9					
3730.04	5	01	01		003	Redware	1		Spall;Clear glaze			2204
3730.04	5	01	02		002	Stoneware	1		Grey paste;Brown slipped interior;Yellowish salt glazed exterior			2205
3730.04	5	01	02		078	Bottle glass	2		Mend;Aqua;Embossed: :...7 FL. OUNCES..."			2206
3730.04	5	02			017	Bone	3					2207
3730.04	5	03	01	001	078	Flat glass	1		Green tint			2208
						Subtotal =	8					
3730.05	5	01	01	031	002	Stoneware	1		White salt glazed	South 1977	1720-1805	2209
						Subtotal =	1					
3731.01	5	03	01	001	078	Flat glass	1		Blue green			2210
						Subtotal =	1					
3731.02	5	02	01	010	017	Teeth	1		Horse molar (5 yrs?)			2212
						Subtotal =	1					
3731.03	5	02	09		089	Shell	2		Clam;Discarded in lab			
3731.03	5	03	01	001	078	Flat glass	1		Blue-green			2214
						Subtotal =	3					
3732.01	5	09	11		008	Plastic	1		Speckled blue-red exterior			2215
						Subtotal =	1					
3732.02	5	02	09		089	Shell			Discarded in field			
						Subtotal =	0					
3732.03	5	03	06	015	069	Brick			Discarded in field			
						Subtotal =	0					
3733.03	5	01	01		003	Yellowware	2		Spalls;Clear glaze			2216
3733.03	5	03	01	001	078	Flat glass	1		Green tint			2217
						Subtotal =	3					
3734.01	5	01	02		078	Bottle glass			Modern;Discarded in field			
3734.01	5	98			095	Coal			Discarded in field			
						Subtotal =	0					
3734.02	5	01	02		078	Bottle glass			Modern;Discarded in field			
3734.02	5	98			095	Coal			Discarded in field			
						Subtotal =	0					

CONTEXT	AREA	GP	CL	MPH	MAT	IDENTITY	COUNT	WGT	COMMENTS	REFERENCE	RANGE	CAT#
3735.01	5	03	03		028	Spike			Discarded in field			
						Subtotal =	0					
3736.01	5	01	02		078	Glass			Modern;Discarded in field			
3736.01	5	02	09		089	Shell			Discarded in field			
						Subtotal =	0					
3736.02	5	01	02		078	Glass			Modern;Discarded in field			
3736.02	5	02	09		089	Shell			Discarded in field			
3736.02	5	03	06	015	069	Brick			Discarded in field			
						Subtotal =	0					
3737.02	5	01	02		078	Bottle glass	1		Pale aqua tint;Flattened lip			2218
						Subtotal =	1					
3739.01	5	01	02		078	Bottle glass			Modern;Discarded in field			
3739.01	5	09	11		008	Plastic			Discarded in field			
						Subtotal =	0					
3739.02	5	01	01		003	Yellowware	1		Clear glaze interior & exterior			2219
						Subtotal =	1					
3743.01	5	01	02		078	Bottle glass	1		Clear;Embossed: "...BAY..."			2220
3743.01	5	03	06	015	069	Brick			Discarded in field			
						Subtotal =	1					
3744.01	5	01	01		004	Ironstone	1					2221
						Subtotal =	1					
3744.03	5	01	01	031	003	Agateware	1		Spall;Manganese glaze interior	South 1977	1740-1775	2222
3744.03	5	01	02		078	Container glass	1		Solarized			2223
3744.03	5	03	06	015	069	Brick	1					2224
						Subtotal =	3					
3745.01	5	03	06	015	069	Brick	1					2225
3745.01	5	04	03	036	078	Lamp shade/diffuser	1		Sandwich glass;Milk glass and emerald			2226
						Subtotal =	2					
3746.01	5	01	02		078	Bottle glass	1		Solarized;Mold seam			2227
						Subtotal =	1					
3747.01	5	01	01		004	Ironstone	1		Spall			2228
						Subtotal =	1					
3749.01	5	01	02		078	Bottle glass			Modern;Discarded in field			
						Subtotal =	0					
3788.02	5	03	01	001	078	Flat glass	1		Light green			1777
						Subtotal =	1					
3789.03	5	02	09		089	Shell			Discarded in field			
						Subtotal =	0					

CONTEXT	AREA	GP	CL	MPH	MAT	IDENTITY	COUNT	WGT	COMMENTS	REFERENCE	RANGE	CAT#
						TOTAL =	1777					

AREA 5
EXCAVATION UNIT INVENTORY

CONTEXT	AREA	GP	CL	MPH	MAT	IDENTITY	COUNT	WEIGHT	COMMENTS	REFERENCE	RANGE	CAT#
5003.01	5	01	02		078	Container glass	1		Clear			2012
5003.01	5	03	04	026	028	Door hinge	1		Rusted & corroded			2013
5003.01	5	03	06	015	069	Brick			Discarded in field			
						Subtotal =	2					
5003.02	5	01	01		001	Porcelain	1					2014
5003.02	5	01	01		004	Ironstone	1		Rim;Underglaze transfer print grey			2015
5003.02	5	01	01	001	004	Ironstone	1		Scalloped rim spall;Shell edged blue			2016
5003.02	5	01	01	031	004	Ironstone	1		Hollowware rim spall;Underglaze blue			2017
5003.02	5	01	01		004	Ironstone	1		Base;Maker's mark stamped black, partial			2018
5003.02	5	01	01		004	Ironstone	1		Spall;Underglaze transfer print grey floral			2019
5003.02	5	01	01		004	Ironstone	1		Spall			2020
5003.02	5	01	02		078	Container glass	1		Olive green			2021
5003.02	5	01	02		078	Bottle glass	1		Clear;Bottom of lip			2022
5003.02	5	01	02		078	Container glass	5		Clear			2024
5003.02	5	01	02		078	Bottle glass	1		Clear;String rim			2023
5003.02	5	02	09		089	Shell	7		Clam			2025
5003.02	5	03	01	001	078	Flat glass	4					2026
5003.02	5	03	02		028	Nails	5		Rusted & corroded			2027
5003.02	5	03	06	015	069	Brick	3					2029
5003.02	5	03	06	001	070	Mortar	1		Soft			2028
5003.02	5	07	05	006	078	Bead	1		Cylinder;Turquoise			2030
5003.02	5	10	03	028	051	Secondary flakes	3		Jasper			2031
5003.02	5	10	03	028	054	Secondary flake	1		Quartzite			2032
5003.02	5	98			095	Coal	3					2033
5003.02	5	98			128	Charcoal	1					2034
						Subtotal =	44					
5003.03	5	01	01		001	Porcelain	1					2035
5003.03	5	01	01	001	004	Ironstone	1		Plate rim			2036
5003.03	5	01	01	001	004	Ironstone	1		Plate rim;Shell edge			2037
5003.03	5	01	01		078	Tableware glass	1		Clear;Mitred			2038
5003.03	5	01	02		078	Bottle glass	2		Pale green;Base-1			2039
5003.03	5	02	09		089	Shell	1		Clam			2040
5003.03	5	02	09		089	Shell	2		Oyster			2041
5003.03	5	03	01	001	012	Flat glass	1		Frosted blue green			2045
5003.03	5	03	01	001	078	Flat glass	1		Pale aqua			2043
5003.03	5	03	01	001	078	Flat glass	1		Pale green			2044
5003.03	5	03	01	001	078	Flat glass	1		Clear			2042
5003.03	5	03	02		028	Nails	4		Rusted & corroded			2046
5003.03	5	03	06	015	069	Brick	3		1 brick has attempted sectioning, rather freehand style			2049
5003.03	5	03	06	001	070	Mortar	4		Soft			2047
5003.03	5	03	06	001	072	Mortar	4		Soft w/plaster			2048
5003.03	5	04	03	019	078	Lighting glass	1		Clear;Fly landed on it, somewhere in lab			2050
5003.03	5	04	04	003	001	Figurine?	1		Porcelain bisque;Molded exterior;Faded overglaze			2051
5003.03	5	98			128	Charcoal	1					2052
						Subtotal =	31					
5003.04	5	01	01		004	Ironstone	1		Spall			2053
5003.04	5	01	02	027	002	Stoneware	1		Grey paste;Rim;Unglazed interior;Salt glazed exterior			2054
5003.04	5	01	02		002	Stoneware	1		Grey paste;Salt glazed interior & exterior;Cobalt blue exterior			2055
5003.04	5	01	02		078	Container glass	1		Pale aqua			2056

CONTEXT	AREA	GP	CL	MPH	MAT	IDENTITY	COUNT	WEIGHT	COMMENTS	REFERENCE	RANGE	CAT#
5003.04	5	01	02		078	Container glass	1		Clear			2057
5003.04	5	02	09		089	Shell	2		Clam			2058
5003.04	5	03	01	001	078	Flat glass	1		Green			2059
5003.04	5	03	01	001	078	Flat glass	1		Pale aqua			2060
5003.04	5	03	01	001	078	Flat glass	2		Pale green			2061
5003.04	5	03	02		028	Nail	1		Rusted & corroded			2062
5003.04	5	03	06	015	069	Brick	1					2063
5003.04	5	09	11		028	Miscellaneous hardware	1		Triangular piece;Rusted & corroded			2064
5003.04	5	10	02		126	Fire-cracked rock	37					2065
5003.04	5	10	03	032	052	Tested piece	1		Heated red			2066
5003.04	5	98			095	Coal	2					2067
5003.04	5	98			128	Charcoal	1					2068
						Subtotal =	55					
5003.05	5	03	06	015	069	Brick	1					2069
5003.05	5	10	02		126	Fire-cracked rock	33					2070
						Subtotal =	34					
5003.06	5	10	02		126	Fire-cracked rock	6					2071
						Subtotal =	6					
5003.07	5	10	02		126	Fire-cracked rock	1					2072
5003.07	5	10	03	028	051	Secondary flake	1		Jasper			2073
						Subtotal =	2					
5004.01	5	01	01		003	Pearlware	1					2074
5004.01	5	01	01	031	003	Yellowware	1		Footed base;Clear glaze interior & exterior			2075
5004.01	5	01	02		078	Container glass	1		Brown			2076
5004.01	5	01	02		078	Container glass	1		Kelly green			2077
5004.01	5	01	02		078	Container glass	1		Clear			2078
5004.01	5	01	02		078	Container glass	1		Clear			2079
5004.01	5	02	09		089	Shell	11		Clam			2080
5004.01	5	02	09		089	Shell	6		Oyster			2081
5004.01	5	03	01	001	078	Flat glass	1		Pale green			2082
5004.01	5	03	06	015	069	Brick	2		Burned			2083
5004.01	5	09	11		028	Miscellaneous hardware	1		Rusted & corroded			2084
5004.01	5	98			095	Coal	1					2085
						Subtotal =	28					
5004.02	5	01	01	007	003	Pearlware	2		Mend;Rims;Saucer;Annular brown			2090
5004.02	5	01	01		003	Redware	1		Unglazed base;Clear glaze interior			2089
5004.02	5	01	01		003	Redware	1		Unglazed base;Manganese glaze interior			2086
5004.02	5	01	01		003	Redware	1		Unglazed base;Manganese glaze interior			2087
5004.02	5	01	01		003	Redware	1		Jackfield glaze interior & exterior	South 1977	1740-1780	2088
5004.02	5	01	01	001	004	Ironstone	2		Mend;Scalloped rim;Shell edged green			2091
5004.02	5	01	01		004	Ironstone	1					2095
5004.02	5	01	01		004	Ironstone	1		Underglaze transfer print blue exterior			2092
5004.02	5	01	01		004	Ironstone	1		Probable annular;Yellow, back & white bands interior & exterior			2093
5004.02	5	01	01		004	Ironstone	2		Mend			2094
5004.02	5	01	01		004	Ironstone	1		Spall			2096
5004.02	5	01	01		004	Ironstone	1					2097
5004.02	5	01	01	037	004	Ironstone	1		Lid;Underglaze blue			2098
5004.02	5	01	02		078	Container glass	1		Clear			2100
5004.02	5	01	02		078	Container glass	1		Solarized			2101

CONTEXT	AREA	GP	CL	MPH	MAT	IDENTITY	COUNT	WEIGHT	COMMENTS	REFERENCE	RANGE	CAT#
5004.02	5	01	02		078	Container glass	1		Pale aqua			2099
5004.02	5	02			017	Bone	1					2103
5004.02	5	02			017	Bone	1					2102
5004.02	5	02	09		089	Shell	2		Whelk			2106
5004.02	5	02	09		089	Shell	8		Oyster			2105
5004.02	5	02	09		089	Shell	14		Clam			2104
5004.02	5	03	01	001	078	Flat glass	1		Clear			2109
5004.02	5	03	01	001	078	Flat glass	1		Light green			2108
5004.02	5	03	01	001	078	Flat glass	2		Pale aqua			2107
5004.02	5	03	02		028	Nail	1		Rusted & corroded			2110
5004.02	5	03	06	015	069	Brick	1					2112
5004.02	5	03	06	015	069	Brick	2					2111
5004.02	5	04	03	019	078	Lighting glass	1		Clear			2113
5004.02	5	98			095	Coal	1					2114
						Subtotal =	55					
5004.03	5	01	01	001	004	Ironstone	1		Scalloped rim spall;Shell edged blue			2115
5004.03	5	01	01		078	Tableware glass	1		Clear;Rim			2116
5004.03	5	02	09		089	Shell	4		Clam			2117
5004.03	5	02	09		089	Shell	6		Oyster			2118
5004.03	5	03	01	001	078	Flat glass	1		Light green			2119
5004.03	5	03	01	001	078	Flat glass	1		Pale green			2120
5004.03	5	03	06	015	069	Brick	4					2121
5004.03	5	03	06	015	069	Brick	1					2122
5004.03	5	04	03	019	078	Lighting glass	1		Clear			2123
5004.03	5	98			052	Chert	1		Water worn			2124
5004.03	5	98			095	Coal	2					2125
						Subtotal =	23					
5004.04	5	02	09		089	Shell			Discarded in field			
5004.04	5	03	06	015	069	Brick			Discarded in field			
						Subtotal =	0					
5004.05	5	02	09		089	Shell			Discarded in field			
						Subtotal =	0					
						TOTAL =	280					

APPENDIX 3

NATIVE AMERICAN POTTERY DATABASE

Catalog Number:	638
Context:	3324.02
Type:	Clearview Stamped
Vessel Part:	Body
Exterior Surface:	Smoothed over Brushing with Dentate/Punctate
Exterior Color:	Buff/Tan
Interior Surface:	Smoothed over Brushing with Dentate/Punctate
Interior Color:	Buff/Tan
Temper:	Sand
Paste Texture:	Crumbly and Coarse
Paste Color:	Buff/Tan
Maximum Thickness:	6.0 mm.
Weight:	1.7 grams
Catalog Number:	651
Context:	3331.02
Type:	Unidentified
Vessel Part:	Body
Exterior Surface:	Plain
Exterior Color:	Dark Gray Brown
Interior Surface:	Eroded
Interior Color:	Dark Gray
Temper:	Sand
Paste Texture:	Compact and Coarse
Paste Color:	Dark Gray Brown/Brown
Maximum Thickness:	10.0 mm.
Weight:	1.8 grams
Catalog Number:	652
Context:	3331.02
Type:	East River Cordmarked
Vessel Part:	Body
Exterior Surface:	Cordmarked
Exterior Color:	Brown
Interior Surface:	Plain
Interior Color:	Dark Brown
Temper:	Sand
Paste Texture:	Compact and Coarse
Paste Color:	Dark Gray Brown
Maximum Thickness:	9.0 mm.
Weight:	1.3 grams
Catalog Number:	681
Context:	3343.02
Type:	East River Cordmarked
Vessel Part:	Body
Exterior Surface:	Smoothed over Cordmarked
Exterior Color:	Brown
Interior Surface:	Plain

Interior Color:	Dark Brown
Temper:	Grit
Paste Texture:	Compact and Coarse
Paste Color:	Dark Brown/Brown
Maximum Thickness:	10.0 mm.
Weight:	5.6 grams
Catalog Number:	705
Context:	3358.02
Type:	Clearview Stamped
Vessel Part:	Body
Exterior Surface:	Cordmarked with Trailed Oval Shaped Dentates/Punctates, slightly Smoothed Over
Exterior Color:	Dark Brown
Interior Surface:	Plain with Oval Shaped Dentates/Punctates
Interior Color:	Dark Brown
Temper:	Sand
Paste Texture:	Crumbly and Coarse
Paste Color:	Gray Black
Maximum Thickness:	6.0 mm.
Weight:	3.1 grams
Catalog Number:	706
Context:	3358.02
Type:	Clearview Stamped
Vessel Part:	Body
Exterior Surface:	Cordmarked with Trailed Oval Shaped Dentates/Punctates, slightly Smoothed
Exterior Color:	Brown
Interior Surface:	Plain with Trailed Oval Shaped Dentates/Punctates Brown
Interior Color:	Sand
Temper:	Crumbly and Coarse
Paste Texture:	Brown
Paste Color:	6.0 mm.
Maximum Thickness:	1.9 grams
Weight:	
Catalog Number:	707
Context:	3358.02
Type:	Bowmans Brook Stamped
Vessel Part:	Body
Exterior Surface:	Smoothed Over Cordmarked
Exterior Color:	Gray Brown
Interior Surface:	Cord Wrapped Stick on Plain
Interior Color:	Brown
Temper:	Sand/Grit
Paste Texture:	Compact and Coarse
Paste Color:	Dark Gray Black
Maximum Thickness:	6.0 mm.
Weight:	0.6 grams
Catalog Number:	725
Context:	3362.02
Type:	Windsor Brushed

Vessel Part:	Body
Exterior Surface:	Brushed
Exterior Color:	Brown
Interior Surface:	Eroded
Interior Color:	Dark Brown
Temper:	Sand/Grit
Paste Texture:	Crumbly and Coarse
Paste Color:	Dark Gray Black
Maximum Thickness:	6.0 mm.
Weight:	2.1 grams
Catalog Number:	726
Context:	3362.02
Type:	East River Cordmarked
Vessel Part:	Body
Exterior Surface:	Smoothed Over Cordmarked
Exterior Color:	Brown
Interior Surface:	Eroded
Interior Color:	Dark Gray
Temper:	Sand/Grit
Paste Texture:	Compact and Coarse
Paste Color:	Dark Gray Black
Maximum Thickness:	6.5 mm.
Weight:	2.9 grams
Catalog Number:	727
Context:	3362.02
Type:	East River Cordmarked
Vessel Part:	Body
Exterior Surface:	Smoothed Over Cordmarked
Exterior Color:	Brown
Interior Surface:	Eroded
Interior Color:	Gray Brown
Temper:	Sand/Grit
Paste Texture:	Compact and Coarse
Paste Color:	Gray Brown
Maximum Thickness:	N.A.
Weight:	0.3 grams
Catalog Number:	728
Context:	3362.02
Type:	Unidentified
Vessel Part:	Body
Exterior Surface:	Plain
Exterior Color:	Dark Gray Brown
Interior Surface:	Eroded
Interior Color:	Dark Gray Brown
Temper:	Sand
Paste Texture:	Compact and Coarse

Paste Color:	Dark Gray Brown
Maximum Thickness:	N.A.
Weight:	0.3 grams
Catalog Number:	747
Context:	3375.02
Type:	Bowmans Brook Stamped
Vessel Part:	Body
Exterior Surface:	Plain with Cord Wrapped Stick Impressions
Exterior Color:	Dark Gray Brown
Interior Surface:	Smoothed over Brushed with two Oval Shaped Dentates/Punctates and a Section Incised Line
Interior Color:	Dark Gray Brown
Temper:	Sand
Paste Texture:	Compact and Coarse
Paste Color:	Dark Gray Brown
Maximum Thickness:	8.8 mm.
Weight:	22.1 grams
Catalog Number:	748
Context:	3375.02
Type:	Clearview Stamped
Vessel Part:	Body
Exterior Surface:	Plain with Trailed Rectangular Shaped Dentates/Punctates and Incised Line
Exterior Color:	Dark Brown
Interior Surface:	Smoothed over Brushed
Interior Color:	Brown
Temper:	Sand
Paste Texture:	Crumbly and Coarse
Paste Color:	Brown/Dark Gray Brown
Maximum Thickness:	7.2 mm.
Weight:	11.5 grams
Catalog Number:	774
Context:	3384.02
Type:	East River Cordmarked
Vessel Part:	Body
Exterior Surface:	Smoothed Over Cordmarked
Exterior Color:	Brown/Dark Gray Brown
Interior Surface:	Plain
Interior Color:	Dark Gray Brown/Black
Temper:	Sand
Paste Texture:	Compact and Coarse
Paste Color:	Brown/Black
Maximum Thickness:	10.0 mm.
Weight:	15.6 grams
Catalog Number:	775
Context:	3384.02
Type:	Clearview Stamped
Vessel Part:	Body
Exterior Surface:	Plain with three Rows of Oval Shaped Dentates/Punctates
Exterior Color:	Brown

Interior Surface:	Plain with Dentates/Punctates
Interior Color:	Brown/Dark Brown
Temper:	Sand
Paste Texture:	Crumbly and Coarse
Paste Color:	Black\Dark Brown
Maximum Thickness:	7.75 mm.
Weight:	7.7 grams
Catalog Number:	776
Context:	3384.02
Type:	East River Cordmarked
Vessel Part:	Body
Exterior Surface:	Smoothed Over Cordmarked
Exterior Color:	Brown/Dark Gray Brown
Interior Surface:	Plain
Interior Color:	Dark Gray Brown/Black
Temper:	Sand
Paste Texture:	Compact and Coarse
Paste Color:	Brown/Black
Maximum Thickness:	10.0 mm.
Weight:	7.1 grams
Catalog Number:	777
Context:	3384.02
Type:	Clearview Stamped
Vessel Part:	Body
Exterior Surface:	Plain with two Rows of Trailed Rectangular Shaped Dentates/Punctates
Exterior Color:	Brown
Interior Surface:	Plain
Interior Color:	Dark Brown
Temper:	Sand/Grit
Paste Texture:	Crumbly and Coarse
Paste Color:	Black
Maximum Thickness:	8.1 mm.
Weight:	4.0 grams
Catalog Number:	778
Context:	3384.02
Type:	Clearview Stamped
Vessel Part:	Body
Exterior Surface:	Plain with two Rows of Trailed Rectangular Shaped Dentates/Punctates
Exterior Color:	Brown
Interior Surface:	Plain
Interior Color:	Dark Brown
Temper:	Sand/Grit
Paste Texture:	Crumbly and Coarse
Paste Color:	Black

Maximum Thickness:	8.1 mm.
Weight:	4.1 grams
Catalog Number:	779
Context:	3384.02
Type:	Clearview Stamped
Vessel Part:	Body
Exterior Surface:	Plain with two Rows of Trailed Rectangular Shaped Dentates/Punctates
Exterior Color:	Brown
Interior Surface:	Plain
Interior Color:	Dark Brown/Black
Temper:	Sand/Grit/Shell
Paste Texture:	Crumbly and Coarse
Paste Color:	Dark Brown/Black
Maximum Thickness:	8.1 mm.
Weight:	3.5 grams
Catalog Number:	780
Context:	3384.02
Type:	Clearview Stamped
Vessel Part:	Body
Exterior Surface:	Plain with one Trailed Rectangular Shaped Dentate/Punctate
Exterior Color:	Brown
Interior Surface:	Plain
Interior Color:	Dark Brown
Temper:	Sand/Grit/Shell
Paste Texture:	Crumbly and Coarse
Paste Color:	Dark Brown/Black
Maximum Thickness:	8.4 mm.
Weight:	2.9 grams
Catalog Number:	781
Context:	3384.02
Type:	Clearview Stamped
Vessel Part:	Body
Exterior Surface:	Plain with one Trailed Rectangular Shaped Dentate/Punctate
Exterior Color:	Dark Brown
Interior Surface:	Plain
Interior Color:	Black
Temper:	Sand/Grit/Shell
Paste Texture:	Crumbly and Coarse
Paste Color:	Black
Maximum Thickness:	8.4 mm.
Weight:	1.7 grams
Catalog Number:	782
Context:	3384.02
Type:	Clearview Stamped
Vessel Part:	Body
Exterior Surface:	Plain with two rows of five Rectangular Shaped Trailed Dentates/Punctates, and one row of one Trailed Rectangular Shaped Dentate/Punctate. Rows

Exterior Color:	oblique to each other.
Interior Surface:	Brown
Interior Color:	Plain
Temper:	Dark Brown
Paste Texture:	Sand/Grit
Paste Color:	Crumbly and Coarse
Maximum Thickness:	Dark Brown/Black
Weight:	8.5 mm. 3.1 grams
Catalog Number:	783
Context:	3384.02
Type:	Clearview Stamped
Vessel Part:	Body
Exterior Surface:	Plain with two Rows of Trailed Oval Shaped Dentates/Punctates
Exterior Color:	Dark Brown
Interior Surface:	Plain
Interior Color:	Dark Brown
Temper:	Grit/Sand/Shell
Paste Texture:	Crumbly and Coarse
Paste Color:	Black/Dark Brown
Maximum Thickness:	8.0 mm.
Weight:	1.9 grams
Catalog Number:	784
Context:	3384.02
Type:	Clearview Stamped
Vessel Part:	Body
Exterior Surface:	Plain with Trailed Rectangular Shaped Dentates/Punctates
Exterior Color:	Brown
Interior Surface:	Plain
Interior Color:	Dark Brown
Temper:	Sand/Grit
Paste Texture:	Crumbly and Coarse
Paste Color:	Black/Dark Brown
Maximum Thickness:	7.0 mm.
Weight:	1.4 grams
Catalog Number:	785
Context:	3384.02
Type:	Clearview Stamped
Vessel Part:	Body
Exterior Surface:	Plain with Trailed Rectangular Shaped Dentates/Punctates
Exterior Color:	Dark Brown
Interior Surface:	Plain
Interior Color:	Dark Brown

Temper:	Sand/Grit
Paste Texture:	Crumbly and Coarse
Paste Color:	Black/Dark Brown
Maximum Thickness:	8.2 mm.
Weight:	1.3 grams
Catalog Number:	786
Context:	3384.02
Type:	Clearview Stamped
Vessel Part:	Body
Exterior Surface:	Plain with Oval Shaped Dentates/Punctates
Exterior Color:	Brown
Interior Surface:	Plain
Interior Color:	Black
Temper:	Sand
Paste Texture:	Crumbly and Coarse
Paste Color:	Black\Dark Brown
Maximum Thickness:	6.0 mm.
Weight:	2.0 grams
Catalog Number:	787
Context:	3384.02
Type:	Bowmans Brook Incised
Vessel Part:	Body
Exterior Surface:	Plain with Incised Line
Exterior Color:	Brown
Interior Surface:	Plain
Interior Color:	Dark Gray Brown
Temper:	Grit
Paste Texture:	Compact and Coarse
Paste Color:	Dark Gray Brown
Maximum Thickness:	9.0 mm.
Weight:	5.5 grams
Catalog Number:	788
Context:	3384.02
Type:	Bowmans Brook Incised
Vessel Part:	Body
Exterior Surface:	Plain with Curvilinear Incised Line
Exterior Color:	Brown
Interior Surface:	Plain
Interior Color:	Dark Brown/Black
Temper:	Sand/Grit Some Shell
Paste Texture:	Compact and Coarse
Paste Color:	Dark Brown/Brown
Maximum Thickness:	8.0 mm.
Weight:	5.4 grams
Catalog Number:	789
Context:	3384.02
Type:	Bowmans Brook Incised
Vessel Part:	Body
Exterior Surface:	Plain with Curvilinear Incised Line
Exterior Color:	Brown
Interior Surface:	Plain

Interior Color:	Dark Brown
Temper:	Sand/Grit
Paste Texture:	Compact and Coarse
Paste Color:	Dark Brown/Brown
Maximum Thickness:	8.7 mm.
Weight:	1.1 grams
Catalog Number:	790
Context:	3384.02
Type:	Bowmans Brook Incised
Vessel Part:	Body
Exterior Surface:	Plain with Incised Line
Exterior Color:	Dark Brown
Interior Surface:	Plain
Interior Color:	Dark Brown
Temper:	Sand/Grit
Paste Texture:	Compact and Coarse
Paste Color:	Dark Brown/Black
Maximum Thickness:	7.2 mm.
Weight:	1.0 grams
Catalog Number:	791
Context:	3384.02
Type:	Bowmans Brook Incised
Vessel Part:	Body
Exterior Surface:	Plain with Incised Line
Exterior Color:	Brown
Interior Surface:	Plain
Interior Color:	Gray
Temper:	Sand/Grit
Paste Texture:	Compact and Coarse
Paste Color:	Dark Brown/Black
Maximum Thickness:	7.5 mm.
Weight:	0.9 grams
Catalog Number:	792
Context:	3384.02
Type:	Clearview Stamped
Vessel Part:	Body
Exterior Surface:	Plain with Trailed Oval Shaped Dentates/Punctates
Exterior Color:	Brown
Interior Surface:	Plain
Interior Color:	Dark Brown
Temper:	Sand/Grit
Paste Texture:	Crumbly and Coarse
Paste Color:	Black
Maximum Thickness:	8.0 mm.
Weight:	1.8 grams

Catalog Number:	793
Context:	3384.02
Type:	East River Cordmarked
Vessel Part:	Body
Exterior Surface:	Cordmarked
Exterior Color:	Brown
Interior Surface:	Plain
Interior Color:	Dark Gray
Temper:	Sand
Paste Texture:	Compact and Coarse
Paste Color:	Dark Gray/Black
Maximum Thickness:	7.0 mm.
Weight:	0.9 grams
Catalog Number:	794
Context:	3384.02
Type:	Unidentified
Vessel Part:	Body
Exterior Surface:	Plain
Exterior Color:	Brown
Interior Surface:	Plain
Interior Color:	Dark Brown
Temper:	Sand
Paste Texture:	Compact and Coarse
Paste Color:	Dark Brown/Black
Maximum Thickness:	8.0 mm.
Weight:	0.3 grams
Catalog Number:	795
Context:	3384.02
Type:	Clearview Stamped
Vessel Part:	Body
Exterior Surface:	Plain with Oval Shaped Dentates/Punctates
Exterior Color:	Dark Brown
Interior Surface:	Plain
Interior Color:	Dark Brown
Temper:	Sand
Paste Texture:	Crumbly and Coarse
Paste Color:	Black
Maximum Thickness:	6.8mm
Weight:	0.6 grams

Catalog Number:	796
Context:	3384.04
Type:	Unidentified
Vessel Part:	Body
Exterior Surface:	Plain
Exterior Color:	Brown
Interior Surface:	Eroded
Interior Color:	Gray
Temper:	Sand
Paste Texture:	Compact and Coarse
Paste Color:	Gray/Brown
Maximum Thickness:	N.A.
Weight:	0.4 grams
Catalog Number:	797
Context:	3384.02
Type:	Bowmans Brook Incised
Vessel Part:	Body
Exterior Surface:	Plain with Incised Line
Exterior Color:	Dark Brown
Interior Surface:	Eroded
Interior Color:	Brown
Temper:	Sand
Paste Texture:	Compact and Coarse
Paste Color:	Brown/Dark Brown
Maximum Thickness:	8.5mm
Weight:	0.7 grams
Catalog Number:	798
Context:	3384.02
Type:	Unidentified
Vessel Part:	Body
Exterior Surface:	Plain
Exterior Color:	Dark Brown
Interior Surface:	Plain
Interior Color:	Dark Brown
Temper:	Grit
Paste Texture:	Compact and Coarse
Paste Color:	Black
Maximum Thickness:	6.5mm
Weight:	1.8 grams
Catalog Number:	799
Context:	3384.02
Type:	Unidentified
Vessel Part:	Body
Exterior Surface:	Plain
Exterior Color:	Dark Brown
Interior Surface:	Plain

Interior Color:	Dark Brown
Temper:	Sand
Paste Texture:	Compact and Coarse
Paste Color:	Dark Gray Brown
Maximum Thickness:	7.75mm
Weight:	1.3 grams
Catalog Number:	800
Context:	3384.02
Type:	Unidentified
Vessel Part:	Body
Exterior Surface:	Plain
Exterior Color:	Brown
Interior Surface:	Plain
Interior Color:	Brown
Temper:	Sand
Paste Texture:	Compact and Coarse
Paste Color:	Dark Brown
Maximum Thickness:	7.20mm
Weight:	5.2 grams
Catalog Number:	836
Context:	3410.02
Type:	Unidentified
Vessel Part:	Body
Exterior Surface:	Plain
Exterior Color:	Black/Dark Brown
Interior Surface:	Eroded
Interior Color:	Black/Brown
Temper:	Sand
Paste Texture:	Compact and Coarse
Paste Color:	Black/Dark Brown
Maximum Thickness:	N.A.
Weight:	0.8 grams
Catalog Number:	929
Context:	3459.02
Type:	Unidentified
Vessel Part:	Body
Exterior Surface:	Plain
Exterior Color:	Black/Dark Brown
Interior Surface:	Eroded
Interior Color:	Black/Brown
Temper:	Sand/Shell
Paste Texture:	Crumbly and Coarse
Paste Color:	Black/Dark Brown
Maximum Thickness:	N.A.
Weight:	2.6 grams
Catalog Number:	1958
Context:	5001.03
Type:	Eastern Incised
Vessel Part:	Rim
Exterior Surface:	Plain
Exterior Color:	Brown

Interior Surface:	Plain with slight Cord Wrapped Stick Notching on Interior Lip
Interior Color:	Brown
Temper:	Sand/Shell
Paste Texture:	Compact and Coarse
Paste Color:	Dark Gray
Maximum Thickness:	9.2mm
Weight:	8.0 grams
Rim Decoration:	Row of Dentates/Punctuates extending 6.7 mm. from lip. Dentates/Punctates are Rectangular Shaped 4.0 mm. in size. Below them is a Zone of Horizontal Incised Lines extending to 12.2 mm below the Lip. Beneath that Zone is another Zone of Vertical Incised Lines that intersect and are oblique to the Horizontal Incised Lines and Extend to at least 22.4 mm. below the Rim.
Rim Shape:	Beveled to Interior
Lip Shape:	Flat
Lip Thickness:	7.7 mm.

APPENDIX 4
ARCHAEOLOGICAL SITE INVENTORY FORMS

APPENDIX 4A
REVISED PREHISTORIC ARCHAEOLOGICAL SITE INVENTORY FORM
AREA 1: THE CATBRIAR SITE

NEW YORK STATE PREHISTORIC ARCHAEOLOGICAL SITE INVENTORY FORM

NYS OFFICE OF PARKS, RECREATION & HISTORIC PRESERVATION
(518) 237-8643

Bernadette Castro
Commissioner

For Office Use Only--Site Identifier_____

Project Identifier 07PR04902 Date December, 2016

Your Name William Sandy, RPA Phone (201) 455-3555
Address Greenhouse Consultants Inc.
386 Broadway, Bayonne, NJ 07002

Organization (if any)
1.SITE IDENTIFIER(S) Catbriar Site
2. COUNTY Richmond One of the following: CITY Staten Island, New York City

3. PRESENT OWNER Robert Konig
Address 15 Wyckoff Place, Woodmere, NY 11590

DESSCRIPTION (check all appropriate categories):

Site

__Stray Find	___Cave/Rockshelter	___Workshop
__Pictograph	___Quarry	___Mound
__Burial	_x_ Shell Midden	___Village
__Surface Evidence	__x Camp	_x_ Material in plow zone
_x_ Material below plow zone	__x Buried evidence	__x Intact Occupation floor
__Single component	__x Evidence of features	___Stratified
	___Multicomponent	

Location

___Under cultivation	___Never cultivated	_x__Previously cultivated
___Pastureland	_x_ Woodland	___Floodplain
__ Upland		___ Sustaining erosion

Soil Drainage: excellent __x__ good ___ fair ___ poor___
Slope: flat ___ gentle _x__ moderate ___ steep ___
Distance to nearest water from site (approx.) 50 ft (15m)
Elevation: 12' to 18'

5. SITE INVESTIGATION (append additional sheets, if necessary):
Surface--date(s) na
___Site map (Submit with form)
___Collection

Subsurface--date(s) Oct. to Dec., 2008, July and Aug., 2013, March – May, 2016
Testing: shovel _x__ coring ___ other_____ unit size 35cm x 35cm
no. of units 319 (Submit plan of units with form)
Excavation: unit size 1m no. of units 2
Investigator __
William Sandy, Greenhouse Consultants

Manuscript or published report(s) (reference fully):
Greenhouse Consultants
2014 PHASE I CULTURAL RESOURCE SURVEY OF WATERFRONT COMMONS…RICHMOND COUNTY, STATEN ISLAND, NEW YORK.

2016 SUPPLEMENTAL ARCHAEOLOGICAL AND HISTORICAL INVESTIGATIONS OF RIVERSIDE GALLERIA……..STATEN ISLAND, NEW YORK. (

Present repository of materials GCI, Bayonne, NJ

6. COMPONENT(S) (cultural affiliation/dates):

Woodland (based on pottery).

7. LIST OF MATERIAL REMAINS (be specific as possible in identifying object and material):

Fire Cracked Rock (including hearth feature), argillite, chert, chalcedony and jasper debitage, and chopper. Clam and oyster shell. Pottery (sand temper, cordmarked, fabric impressed, cordmarked, incised, punctate)

If historic materials are evident, check here and fill out historic site form ____

8. MAP REFERENCES

USGS 7.5 Minute Series Quad. Name Arthur Kill, NJ/NY

UTM Coordinates _____

9. Photography

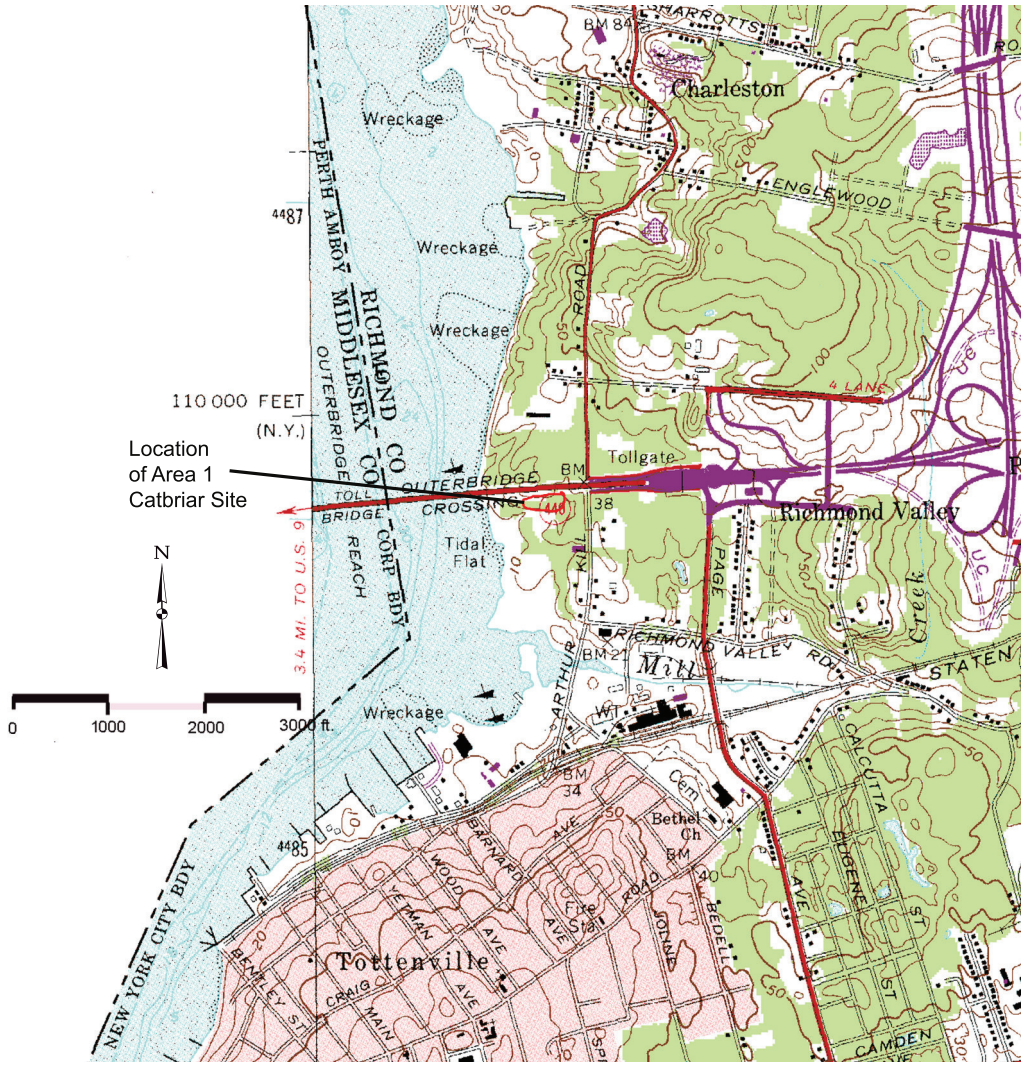

Figure 1-1Location of the Riverside Galleria project area on the USGS 7.5 minute Arthur Kill NJ/NY quadrangle, 1966, photorevised 1981.

APPENDIX 4B
PREHISTORIC ARCHAEOLOGICAL SITE INVENTORY FORM
AREA 1: WEST SITE

NEW YORK STATE PREHISTORIC ARCHAEOLOGICAL SITE INVENTORY FORM

NYS OFFICE OF PARKS, RECREATION & HISTORIC PRESERVATION
(518) 237-8643

Bernadette Castro
Commissioner

For Office Use Only--Site Identifier_____

Project Identifier 07PR04902 Date December, 2016

Your Name William Sandy, RPA Phone (201) 455-3555
Address Greenhouse Consultants Inc.
386 Broadway, Bayonne, NJ 07002

Organization (if any)
1. SITE IDENTIFIER(S) Area 1 West Site
2. COUNTY Richmond One of the following: CITY Staten Island, New York City

-

3. PRESENT OWNER Robert Konig
Address 15 Wyckoff Place, Woodmere, NY 11590

DESSCRIPTION (check all appropriate categories):

Site

__Stray Find	___Cave/Rockshelter	___Workshop
__Pictograph	___Quarry	___Mound
__Burial	__ Shell Midden	___Village
__Surface Evidence	_x_Camp	_x_Material in plow zone
_x_Material below plow zone	_x_Buried evidence	__Intact Occupation floor
__Single component	___Evidence of features	___Stratified
	___Multicomponent	

Location

___Under cultivation	___Never cultivated	_x__Previously cultivated
___Pastureland	_x_Woodland	___Floodplain
__ Upland		___ Sustaining erosion

Soil Drainage: excellent _x_ good ___ fair ___ poor___
Slope: flat ___ gentle _x_ moderate ___ steep ___
Distance to nearest water from site (approx.) 50 ft (15m)
Elevation: 8 to 12 ft

5. SITE INVESTIGATION (append additional sheets, if necessary):
Surface--date(s) na
_x_Site map (Submit with form)
___Collection

Subsurface--date(s) Dec., 2008 & April and June, 2016
Testing: shovel x coring ___ other_____ unit size 35cm x 35cm
no. of units 33 (Submit plan of units with form)
Excavation: unit size 1m no. of units 1
Investigator _
William Sandy, Greenhouse Consultants

Manuscript or published report(s) (reference fully):
Greenhouse Consultants
2014 PHASE I CULTURAL RESOURCE SURVEY OF WATERFRONT COMMONS…RICHMOND COUNTY, STATEN ISLAND, NEW YORK.

2016 SUPPLEMENTAL ARCHAEOLOGICAL AND HISTORICAL INVESTIGATIONS OF RIVERSIDE GALLERIA……..STATEN ISLAND, NEW YORK. (

Present repository of materials ___GCI Bayonne, NJ_

6. COMPONENT(S) (cultural affiliation/dates):

Unspecified Precontact.

7. LIST OF MATERIAL REMAINS (be specific as possible in identifying object and material):
Fire Cracked Rock, flakes and biface fragments of local gray chert,Deepkill chert, and chalcedony.

X If historic materials are evident, check here and fill out historic site form ____

8. MAP REFERENCES

USGS 7.5 Minute Series Quad. Name _____Arthur Kill, NJ/NY_____

UTM Coordinates _____

9. Photography



Figure 1-1Location of the Riverside Galleria project area on the USGS 7.5 minute Arthur Kill NJ/NY quadrangle, 1966, photorevised 1981.

APPENDIX 4C
HISTORIC ARCHAEOLOGICAL SITE INVENTORY FORM
AREA 1: WEST SITE

NEW YORK STATE HISTORIC ARCHAEOLOGICAL SITE INVENTORY FORM

For Office Use Only—Site Identifier_____

Project Identifier_____ Date June 20, 2016
Your Name William Sandy
Organization (if any) Greenhouse Consultants Inc.
Address 386 Broadway
Bayonne, NY 11598

1. Site Identifier(s) Area 1 West Site
2. County Richmond One of the following: City_Staten Island, New York City_____
Township ___
Incorporated Village_____

3. Present Owner____Robert Konig, Esq._____
Address_____15 Wyckoff Place_____
_____Woodmere, NY 11598
4. Site Description (check all appropriate categories):
Structure/site
Superstructure: complete__partial__collapsed__not evident X
Foundation: above__below_(ground level) not evident_X_
__Structural subdivisions apparent __Only surface traces visible
_ Buried traces detected
List construction materials (be as specific as possible):
Old brick on surface and in excavations.
Grounds
__Under Cultivation __Sustaining erosion _XWoodland __Upland
__Never Cultivated _XPreviously cultivated __Floodplain __Pastureland
Soil Drainage: excellent _X good __ fair __ poor __
Slope: flat__ gentle _X moderate __ steep __
Distance to nearest water from structure (approx.) 25 feet
Elevation: : __6 ft to 10 ft __(RESUME HERE
5. Site Investigation (append additional sheets, if neccessary):
Surface—date (s) _____
X_Site Map (Submit with form*)
__Collection
Subsurface—date(s) Dec. 2008 and April and June 2016
Testing: shovel_x coring___ other_____unit size 35 x35cm
no. of units __45___Submit plan of units with form*)
Excavation: unit size___1m x 1m____ no. of units __1_____
(Submit plan of units with form*)
* Submission should be 8 ½" x 11", if feasible

Investigator __William Sandy__
Manuscript of published report (s) (reference fully):
Greenhouse Consultants

2015 Phase 1 Archaeological and Historical Survey Waterfront Commons Block 7620, Lot 1, Block 7632, Lots 1,6, 50, 150, and 151, Richmond County, Staten Island, New York. 07OPR04902. Greenhouse Consultants, Bayonne.

2017 Supplemental Archaeological and Historical Investigations of Riverside Galleria (Formerly Waterfront Commons) Block 7620, Lot 1, Block 7632, Lots 1,6, 50, 150, and 151, and Richmond Valley Road Extension, Richmond County, Staten Island, New York. 07OPR04902. Greenhouse Consultants, Bayonne. DRAFT

Present repository of materials Greenhouse Consultants Inc., Bayonne, NJ

6. Site inventory:
   a. date constructed or occupation period c 18th & early 19th Century w/ possible 17th-Century component
   b. previous owners, if known : DuBois family?
   c. modifications, if known
   (append additional sheets, if necessary

(US Coast 1845; Butler 1853;

7. Site documentation (append additional sheets, if necessary):
   a. Historic map references
      1) Name Unlabeled Date 1845 Source US Coast
      Present location of original, if known _____
      2) Name Unlabeled Date 1853 Source Butler
      Present location of original, if known _____

   b. Representation in existing photography
      1) Photo date _____ Where located _____
      2) Photo date _____ Where located _____

   c. Primary and secondary source documentation (reference fully)

   d. Persons with memory of site:
      1) Name _____Address
      2) Name _____Address _____

8. List of material remains other than those used in construction (be as specific as possible in identifying object and material):

Kaolin smoking pipestems and bowl. Ceramics include: North Devon Gravel Temper ware, creamware, delftware, pearlware, Jackfield redware, slipware, white salt-glazed stoneware, and yelloware. Olive green container glass. Pig teeth, bone, clam and oyster shell.

If prehistoric materials are evident, check here and fill out prehistoric site form._X_

9. Map References: Map or maps showing exact location and extent of site must accompany this form and must be identified by source and date. Keep this submission to 8 12 x 11", if feasible.

USGS 7 ½ Minute Series Quad. Name Arthur Kill, NJ/NY

For Office Use Only—UTM Coordinates _____

10. Photography (optional for environmental impact survey):
Please submit a 5" x 7" black and white print (s) showing the current state of the site. Provide a label for the print (s) on a separate sheet.



Figure 1-1Location of the Riverside Galleria project area on the USGS 7.5 minute Arthur Kill NJ/NY quadrangle, 1966, photorevised 1981.

APPENDIX 4D
ARCHAEOLOGICAL SITE INVENTORY FORM
AREA 5 SITE

NEW YORK STATE PREHISTORIC ARCHAEOLOGICAL SITE INVENTORY FORM

NYS OFFICE OF PARKS, RECREATION & HISTORIC PRESERVATION
(518) 237-8643

Bernadette Castro
Commissioner

For Office Use Only--Site Identifier_____

Project Identifier 07PR04902 Date December, 2016

Your Name William Sandy, RPA Phone (201) 455-3555
Address Greenhouse Consultants Inc.
386 Broadway, Bayonne, NJ 07002

Organization (if any)
1SITE IDENTIFIER(S) Area 5 Site
2. COUNTY Richmond One of the following: CITY Staten Island, New York City

-

3. PRESENT OWNER Robert Konig
Address 15 Wyckoff Place, Woodmere, NY 11590

DESSCRIPTION (check all appropriate categories):

Site

__Stray Find	___Cave/Rockshelter	___Workshop
__Pictograph	___Quarry	___Mound
__Burial	__ Shell Midden	___Village
__Surface Evidence	_ x Camp	_ x Material in plow zone
_ x Material below plow zone	_ x Buried evidence	__Intact Occupation floor
__Single component	___Evidence of features	___Stratified
	___Multicomponent	

Location

___Under cultivation	___Never cultivated	_ x Previously cultivated
___Pastureland	_ x Woodland	___Floodplain
__ Upland		_ x Sustaining erosion

Soil Drainage: excellent _ x good ___ fair ___ poor___
Slope: flat ___ gentle _ x moderate ___ steep ___
Distance to nearest water from site (approx.) 50 ft (15m)
Elevation: 6 to 12 ft

5. SITE INVESTIGATION (append additional sheets, if necessary):
Surface--date(s) na
_ x Site map (Submit with form)
___Collection

Subsurface--date(s) Dec., 2008 & April and May, 2016
Testing: shovel x coring ___ other_____ unit size 35cm x 35cm
no. of units 162 (Submit plan of units with form)
Excavation: unit size 1m no. of units 2
Backhoe trenches: 2
Investigator _
William Sandy, Greenhouse Consultants

Manuscript or published report(s) (reference fully):
Greenhouse Consultants
2014 PHASE I CULTURAL RESOURCE SURVEY OF WATERFRONT COMMONS…RICHMOND COUNTY, STATEN ISLAND, NEW YORK.

2016 SUPPLEMENTAL ARCHAEOLOGICAL AND HISTORICAL INVESTIGATIONS OF RIVERSIDE GALLERIA……..STATEN ISLAND, NEW YORK. (

Present repository of materials _____GCI Bayonne, NJ_____

6. COMPONENT(S) (cultural affiliation/dates):

Unspecified Precontact.

7. LIST OF MATERIAL REMAINS (be specific as possible in identifying object and material):
Fire Cracked Rock, chert flakes and biface fragments.

X If historic materials are evident, check here and fill out historic site form ____

8. MAP REFERENCES

USGS 7.5 Minute Series Quad. Name _____Arthur Kill, NJ/NY_____

UTM Coordinates _____

9. Photography



Figure 1-1Location of the Riverside Galleria project area on the USGS 7.5 minute Arthur Kill NJ/NY quadrangle, 1966, photorevised 1981.

APPENDIX 4E
HISTORIC ARCHAEOLOGICAL SITE INVENTORY FORM
AREA 5 SITE

NEW YORK STATE HISTORIC ARCHAEOLOGICAL SITE INVENTORY FORM

For Office Use Only—Site Identifier_____

Project Identifier_____ Date January 9, 2017
Your Name William Sandy
Organization (if any) Greenhouse Consultants Inc.
386 Broadway
Bayonne, NY 11598

1. Site Identifier(s) Area 5 Site
2. County Richmond One of the following: City_Staten Island, New York City_____
Township ___
Incorporated Village_____

3. Present Owner____Robert Konig, Esq._____
Address_____15 Wyckoff Place_____
_____Woodmere, NY 11598

4. Site Description (check all appropriate categories):
Structure/site
Superstructure: complete__partial__collapsed__not evident X
Foundation: above__below_ (ground level) not evident_X_
__Structural subdivisions apparent __Only surface traces visible
_ Buried traces detected
List construction materials (be as specific as possible):
Unmarked bricks
Grounds
__Under Cultivation __Sustaining erosion _XWoodland __Upland
__Never Cultivated _XPreviously cultivated __Floodplain __Pastureland
Soil Drainage: excellent _X good __ fair __ poor __
Slope: flat__ gentle _X moderate __ steep __
Distance to nearest water from structure (approx.) 25 feet
Elevation: 6 ft to 12 ft
5. Site Investigation (append additional sheets, if neccessary):
Surface—date (s) ____
X_Site Map (Submit with form*)
__Collection
Subsurface—date(s) Dec., 2008 & April and May, 2016_____
Testing: shovel X__coring___ other_X_____unit size 40cm'
no. of units _162__Submit plan of units with form*)
Excavation: unit size__1m x 1m_____ no. of units ____2_____
(Submit plan of units with form*)
* Submission should be 8 ½" x 11", if feasible

Investigator __William Sandy____
Manuscript of published report (s) (reference fully):
Greenhouse Consultants
2015 Phase 1 Archaeological and Historical Survey Waterfront Commons Block 7620, Lot 1, Block 7632, Lots 1,6, 50, 150, and 151, Richmond County, Staten Island, New York. 07OPR04902. Greenhouse Consultants, Bayonne.
2017 Supplemental Archaeological and Historical Investigations of Riverside Galleria (Formerly Waterfront Commons) Block 7620, Lot 1, Block 7632, Lots 1,6, 50, 150, and 151, and Richmond Valley Road Extension, Richmond County, Staten Island, New York. 07OPR04902. Greenhouse Consultants, Bayonne. DRAFT

Present repository of materials Greenhouse Consultants Inc., Bayonne, NJ

6. Site inventory:
   a. date constructed or occupation period: pre 1853
   b. previous owners, if known

Mrs. Dissoway (Butler 1853), unlabeled (US Coast Survey 1866), Totten (Dribbs 1872), Mrs. Totten (Beers 1874), Mrs. S. Totten (Beers 1887), Mrs. Sallie A. Totten (*Standard Directory* 1893), Col. Starr (Robinson 1898), George H. Starr (Robinson 1907, Bromley 1917).

   c. modifications, if known

Site was impacted circa the 1920s when Outerbridge Crossing was built, and later when parking lots were built to the east.

7. Site documentation (append additional sheets, if necessary):
   a. Historic map references
      1) Name See 6. above Date 1853-1917 Source See 6 above
      Present location of original, if known _____
      2) Name Date Source
      Present location of original, if known _____

   b. Representation in existing photography
      1) Photo date _1920_____ Where located _SI Institute_____
      2) Photo date _____ Where located _____
   c. Primary and secondary source documentation (reference fully)

Shepherd, Barnett
2008 Tottenville: The Town the Oyster Built. Preservation League of Staten Island and the Tottenville Historical Society, Tottenville: page 36

1893 Standard Directory – Mrs Sallie A Totten
-

   d. Persons with memory of site:
      1) Name _____Address ___
      2) Name _____Address _____

8. List of material remains other than those used in construction (be as specific as possible in identifying object and material):
   Ceramics include: creamware, delftware, ironstone, pearlware, porcelain, redware, stoneware and yelloware.. Other finds include: cut and wire nails, window glass, brick, mortar, container glass, bone, teeth and large amounts of shell...

   If prehistoric materials are evident, check here and fill out prehistoric site form.X__

9. Map References: Map or maps showing exact location and extent of site must accompany this form and must be identified by source and date. Keep this submission to 8 12 x 11", if feasible.

   USGS 7 ½ Minute Series Quad. Name: Arthur Kill, NJ/NY

   For Office Use Only—UTM Coordinates _____

10. Photography (optional for environmental impact survey):
    Please submit a 5" x 7" black and white print (s) showing the current state of the site. Provide a label for the print (s) on a separate sheet.



Figure 1-1Location of the Riverside Galleria project area on the USGS 7.5 minute Arthur Kill NJ/NY quadrangle, 1966, photorevised 1981.

APPENDIX 5

STORMWATER AND STRUCTURAL BORINGS, 2016

Corporate Office
99 Morris Avenue
Suite 302
Springfield, NJ 07081

Jersey City Office
One Evertrust Plaza
Suite 901
Jersey City, NJ 07302

(O) 973.218.6561
(F) 732.412.9343
JZNengineering.com

July 22, 2016
File No. 21026-000

WF LIBERTY
250 West 55th Street
New York, New York 10019

Attention: Mr. Jay Valgor
Principal- Studio V Architecture

REGARDING: STORMWATER INFILTRATION INVESTIGATION REPORT
Proposed Riverside Gallery
Arthur Kill Road
Block 7620, Lot 1
Block 7632, Lots 1, 6, 50, 150 & 151
Borough of Staten Island, City & State of New York

Dear Mr. Valgor:

This letter summarizes the results of a stormwater infiltration investigation conducted on behalf of WF Liberty in support of the Proposed Riverside Gallery development. This work was undertaken in accordance with our proposal dated March 23, 2016 (last revised April 18, 2016) and your subsequent authorization on June 10, 2016.

PURPOSE AND SCOPE OF WORK

The purpose of this investigation was to investigate the percolation rates of the overburden soils at the site. Our proposed scope of work included the following:

- Accumulate and evaluate readily available data on subsurface soil conditions and groundwater levels at and near the site, from in-house data of previously performed borings, and geology maps;
- Conduct a program of subsurface explorations. The program included drilling 22 soil borings to depths up to 25 feet below the existing ground surface within the existing area;
- Conduct in-site percolation tests in accordance to *NYS Stormwater Management Design Manual-Appendix D*; and
- Prepare this letter report with our findings.

SITE BACKGROUND AND DISCUSSION

Existing Site Conditions

The site of the proposed Riverside Galleria is presently a landscape area located at Arthur Kill Road, Block 7620, Lot 1 & Block 7632, Lots 1, 6, 50, 150 & 151, in Staten Island, City & State of New York. The site is presently occupied by wetlands along the north and center of the property. The property borders with Arthur Kill Road and some neighboring properties along the eastern side. Richmond Valley Road borders the property to the south while Arthur Kill River borders to the west. The site is adjacent to the Outerbridge Crossing along the northern side. It should be noted that utilities may exist in the vicinity of the proposed Riverside Galleria.

The location of the project site is shown on the *Project Locus Map* included as Figure 1 in this report.

Report Datum

Topographic information was estimated based off of the referenced March 22, 2016 *Boring Plan W/Access*. Elevations in this survey plan are based off of the North American Vertical Datum of 1988 (NAVD 88). All depths in the report are referenced from top of the existing ground surface at the time of the field investigation.

SITE INVESTIGATION

Regional Geology Review

The subject site is located in the Coastal Plain Physiographic Province of Southeastern New York and is underlain by the Raritan Formation. Specifically, the Raritan Formation consist of crossbedded quartz sand, thick bedded clayey silt, and laminated clay and silt with trace amounts of gravel.

The information presented above was based on the review of published geological data as reported in the Bedrock Geologic Map of New York prepared by United State Geological Survey (USGS).

Surficial Soil Survey Review

The Soil Survey of Richmond County maps the subject site as having the following map units:

❖ BHBu	Boonton-Haledon complex, 0 to 8 percent slopes
❖ BtA	Boonton loam, 0 to 3 percent slopes
❖ BtB	Boonton loam, 3 to 8 percent slopes
❖ GbA	Greenbelt loam, 0 to 3 percent slopes
❖ GbB	Greenbelt loam, 3 to 8 percent slopes
❖ HHA	Haledon-Hasbrouck complex, 0 to 3 percent slopes, frequently ponded
❖ UGBl	Urban land-Greenbelt complex, 3 to 8 percent slopes, low impervious surface
❖ UtA	Urban land, till substratum, 0 to 3 percent slopes

A typical profile of the BHBu-Boonton-Haledon complex, 0 to 8 percent slopes consists of the following:

- Oe - 0 to 1 inches: moderately decomposed plant material
- A - 1 to 3 inches: loam
- BE - 3 to 26 inches: sandy loam
- Btx - 26 to 67 inches: gravelly sandy loam
- BC - 67 to 73 inches: gravelly fine sandy loam

A typical profile of the BtA-Boonton loam, 0 to 3 percent slopes consists of the following:

- Oe - 0 to 1 inches: moderately decomposed plant material
- A - 1 to 3 inches: loam
- BE - 3 to 26 inches: sandy loam
- Btx - 26 to 67 inches: gravelly sandy loam
- BC - 67 to 73 inches: gravelly fine sandy loam

A typical profile of the BtB-Boonton loam, 3 to 8 percent slopes consists of the following:

- Oe - 0 to 1 inches: moderately decomposed plant material
- A - 1 to 3 inches: loam
- BE - 3 to 26 inches: sandy loam
- Btx - 26 to 67 inches: gravelly sandy loam
- BC - 67 to 73 inches: gravelly fine sandy loam

A typical profile of the GbA-Greenbelt loam, 0 to 3 percent slopes consists of the following:

- A - 0 to 5 inches: loam
- Bw1 - 5 to 16 inches: loam
- Bw2 - 16 to 30 inches: loam
- C - 30 to 79 inches: sandy loam

A typical profile of the GbB-Greenbelt loam, 3 to 8 percent slopes consists of the following:

- A - 0 to 5 inches: loam
- Bw1 - 5 to 16 inches: loam
- Bw2 - 16 to 30 inches: loam
- C - 30 to 79 inches: sandy loam

A typical profile of HHA-Haledon-Hasbrouck complex, 0 to 3 percent slopes, frequently ponded consists of the following:

- Oe - 0 to 2 inches: moderately decomposed plant material
- A - 2 to 4 inches: loam
- BA - 4 to 10 inches: loam
- Bt1 - 10 to 16 inches: fine sandy loam
- Bt2 - 16 to 26 inches: fine sandy loam
- Btx - 26 to 63 Inches: fine sandy loam

A typical profile of UGBl-Urban land-Greenbelt complex, 3 to 8 percent slopes, low impervious surface consists of the following:

- Oe - 0 to 2 inches: moderately decomposed plant material
- A - 2 to 4 inches: loam
- BA - 4 to 10 inches: loam
- Bt1 - 10 to 16 inches: fine sandy loam
- Bt2 - 16 to 26 inches: fine sandy loam
- Btx - 26 to 63 inches: fine sandy loam

A typical profile of UtA-Urban land, till substratum, 0 to 3 percent slopes consists of the following:

- M - 0 to 15 inches: cemented material
- 2^C - 15 to 79 inches: gravelly sandy loam

The subject site is shown on a Soil Survey Map as Figure 3.

Field Exploration

Field exploration for this project was conducted by means of drilling 22 stormwater exploration borings for the purposes of estimating the infiltration rates for the proposed stormwater management system. The stormwater exploration borings (identified as SW-1 & SW-22) were drilled within the existing property

area. The locations of the borings are shown on the accompanying *Stormwater Boring Location Plan* included as Figure 2.

The stormwater exploration borings were drilled with a standard truck-mounted drill and a track-mounted drill by Allied Drilling, Inc. of Orangeburg, New York in the presence of a JZN Engineer between June 27 and July 13, 2016.

The field exploration program was monitored, planned, and logged by a JZN Engineer. The soil exploration locations were determined in the field by a JZN Engineer using GPS coordinates provided by Capital Environmental Consultants, Inc. and are presumed to be accurate within in few feet.

Depth to groundwater was estimated between elevations +/- Elev. +2.0 and +/- Elev. +10.0 at the boring locations. At each of the boring locations, infiltration test were performed at different depths at each boring location. Following the percolation test, drilling was advanced to a depth of up to boring termination depths that ranged between 10 and 25 feet below the existing ground surface elevation at the time of the investigation.

A. Subsurface Conditions

Details of the subsurface materials encountered are presented on the Soil Exploration Records presented in Appendix A of this report. The stratification lines designating the interface between soil types on the boring log represent approximate boundaries. The transition between materials may be gradual, and one or more strata may be absent at specific locations. In general, the subsurface soils conditions are consistent with the regional geology of the area. The soil exploration borings revealed the following generalized strata in order of increasing depth below ground surface:

Surface Cover: The soil exploration borings were drilled in landscape areas and asphaltic pavement areas.

Stratum I – Existing Fill Materials (NYC Class 7): Existing fill materials were encountered at boring locations SW-1, through SW-2 and SW-17 through SW-22 and extended to depths that ranged between approximately two and 5.5 feet below the existing ground surface at the time of the investigation. Generally the existing fill materials consisted of a mixture of medium to fine sand with varying amounts of silt, clay debris and gravel.

Stratum II – Organic Deposits (USCS- OL, Pt, NYC Class 6): Underlying Stratum I materials, or below the surface cover, or as an interment layer within Stratum III, very soft organic fibrous peat and

organic silt with varying amounts of gravel were encountered to depths that ranged between approximately four and 14 feet below the existing ground surface. These materials were encountered at boring locations SW-4, SW-6, SW-10, SW-12 and SW-13.

Stratum III – Sand Deposits (USCS- SP, SM, SC, NYC Class 6, 3a, 3b): Underlying Stratum I, II, or below the surface cover, medium dense to very dense, medium to fine sand with varying amounts of silt, clay and gravel were encountered to the soil exploration termination depth that ranged between approximately 10 to 25 feet below the existing ground surface at the time of the investigation.

B. Groundwater Conditions

Groundwater conditions were encountered within elevations +/- Elev. 2.0 and +/- Elev. +10.0 feet at the boring locations. It was observed that water table gradually raised toward Arthur Kill Road.

Groundwater observations in completed test borings do not necessarily represent the true, stabilized groundwater conditions. It should be noted that fluctuations in the level of groundwater may occur due to variations in season, rainfall, snow melt, surface infiltration, temperature, construction activities, pumping of dewatering systems, leakage from utilities, and other factors not evident at the time measurements were made and reported herein. As a result, water levels observed during and after construction may vary from those observed in the test borings during drilling.

INFILTRATION TEST RESULTS

Results of the infiltration test are presented in Table 1 below. Note that infiltration rates may vary depending on location. Detailed results are shown in Table 1 below.

Table 1: Infiltration Test Results

Boring Location	Approximate Ground Surface Elevation	Approximate Groundwater Table Elevation	Approximate Infiltration Test Elevation	Infiltration Rate
SW-1	22 feet	10 feet	16 feet	17.33 in/hr
SW-2	19 feet	10 feet	13 feet	28.76 in/hr
SW-3	12 feet	6 feet	6 feet	21.8 in/hr
SW-4	10 feet	6 feet	2 feet	19.24 in/hr

Table 1: Infiltration Test Results (Continued)				
Boring Location	Approximate Ground Surface Elevation	Approximate Groundwater Table Elevation	Approximate Infiltration Test Elevation	Infiltration Rate
SW-5	16 feet	4 feet	8 feet	2.54 in/hr
SW-6	8 feet	4 feet	2 feet	4.55 in/hr
SW-7	10 feet	3 feet	6 feet	0.16 in/hr
SW-8	16 feet	5 feet	8 feet	5.60 in/hr
SW-9	18 feet	6 feet	12 feet	2.49 in/hr
SW-10	8 feet	5 feet	2 feet	0.39 in/hr
SW-11	8 feet	4 feet	4 feet	10.6 in/hr
SW-12	8 feet	4 feet	2 feet	3.85 in/hr
SW-13	8 feet	4.5 feet	2 feet	5.93 in/hr
SW-14	11 feet	7 feet	7 feet	0.13 in/hr
SW-15	13 feet	--	9 feet	0.75 in/hr
SW-16	15 feet	--	11 feet	3.71 in/hr
SW-17	15 feet	--	5 feet	1.98 in/hr
SW-18	15 feet	3 feet	7 feet	1.45 in/hr
SW-19	16 feet	--	12 feet	0 in/hr
SW-20	23 feet	--	20 feet	25.47 in/hr
SW-21	29 feet	7.5 feet	23 feet	1.0 in/hr
SW-22	29 feet	7.5 feet	21 feet	1.63 in/hr

We recommend that the designer uses half the value of the reported infiltration rates for the design of the stormwater management infiltrate purposes.

LIMITATIONS

This report was prepared exclusively and solely for the purposes of this study. The analyses and findings contained in this report are only applicable to the proposed project site and shall not be used for other purposes. The analyses were performed using generally accepted engineering practice using assumptions based on engineering judgment and experience with similar studies. Although the analyses and investigation attempt to model actual conditions, the accuracy of the results are limited by the generalized assumptions and the limited nature of the supplemental test pit investigation.

We appreciate the opportunity to work with you on this project. Please contact us if you wish to discuss this report or any aspect of the project.

Sincerely,
JZN ENGINEERING, PC.

Nejm E. Jundi, P.E.
President

Enclosures

FIGURES

FIGURE 1: **PROJECT SITE LOCUS**
FIGURE 2: **STORMWATER MANAGEMENT BORING LOCATION PLAN**
FIGURE 3: **SOIL SURVEY MAP**



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GOOGLE MAPS 2016

JZN ENGINEERING

PROJECT SITE LOCUS

PROPOSED RIVERSIDE RETAIL & ENTERTAINMENT DEVELOPMENT
STATEN ISLAND, CITY & STATE OF NEW YORK
21026-000

FIGURE 1


RICHMOND VALLEY ROAD
ARTHUR KILL ROAD
OUTERBRIDGE CROSSING
NOT INCLUDED
BLOCK 7620
BLOCK 7632
BLOCK 7626
BLOCK 7632
Tax Lot 150
Tax Lot 1
Tax Lot 151
Tax Lot 24
Tax Lot 50
Land Now or Formerly of Daniel W. Dissoway
Land Now or Formerly of Rutgers Distributors
1 STORY MASONRY # 4849
NYSDEC TIDAL WETLAND LINE CONFIRMED BY GEORGE STADNIK ON MARCH 17, 2009
FLAGS LOCATED ON APRIL 22, 2003 SHOWN THUS WERE PLACED BY CARPENTER ENVIRONMENTAL ASSOCIATES, INC. (A1 THROUGH A12)
FLAGS LOCATED ON NOVEMBER 16, 2006 SHOWN THUS WERE PLACED BY CARPENTER ENVIRONMENTAL ASSOCIATES, INC. (A13 AND A14)
POSSIBLE DETERMINATION OF THE WESTERLY LINE OF A GRANT OF LAND UNDER WATER DESCRIBED IN LIBER 419 DEED PAGE 36
APPROX. STREAM CHANNEL 40' ± WIDE WITH BANKS
3'-4' WIDE
5'-6' WIDE
15" RCP PIPE FOUND INV. 6.2
CONTOUR 10.00' NGVD 29 8.90' NAVD 88
EPHEMERAL STREAM (AS PER USACE)
IRREGULAR RECORD SHORELINE
Stake Set 10/27/06
Stake
Stake
No C.C.O.
Not Open Not Traveled
S 00° 58' 29" E
S 05° 24' 00" E
S 00°58'29"W 414.31'
N00°58'29"W 424.27'
S 89° 43' 47" W
N 89° 43' 47" W
N 85°52'09" E
S 01° 15' 35" E
N 04°
S 89° 43' 37" E
S 88° 13' 49" W
S 03° 33' 00" W
S 04° 53' 00" W
S 05°28'56"E 65.40'
S00°29'38"E 10.00'
N 88°12'50" E 100.00'
S 88° 12' 50" W 100.00'
S 86° 49' 00" W 4.00'
N 16° 16' 40" W 79.45'
N 24° 04' 02" E 55.14'
N 01° 38' 34" W 10.27'
N 25° 36' 59" E 124.41'
N 17° 00' 09" E 72.46'
N 03° 11' 08" W 97.10'
N 07° 52' 54" W 68.19'
N 05° 36' 15" W 42.28'
N 17° 19' 13" W
S 58° 30' W
S 86° 17' 27" E 895.44'
S 84°36'32" E 62.27' MAP
S 84°36'32" E 64.30' SURVEY
S 83° 47' 37" E 267.56' SURVEY & DEED
S 83° 47' 37" E 267.56' TAX MAP
S 88° 14' 00" E 267.75' SURVEY & DEED
S 88° 14' 00" E 267.75' TAX MAP
S 87° 03' 48" E 10.00' SURVEY & DEED
S 87° 03' 48" E 10.00' TAX MAP
S 87° 03' 48" E 105.21' SURVEY & DEED
S 87° 03' 48" E 105.21' TAX MAP
S 87° 03' 48" E 105.64' SURVEY
S 87° 03' 48" E 105.64' TAX MAP
S 89°40'15" E 124.80'
S 89°40'15" E 124.80'
S 89°40'15" E 124.80'

APPENDIX A

SOIL EXPLORATION LOGS: SW-1 THROUGH SW-22

JZN Engineering, PC.

TEST BORING LOG

Boring No. SW-1 **Page** 1 of 1

Project Name	Proposed Riverside Retail & Entertainment Development	**Project No.**	21026-000
Client	WF Liberty	**Representative**	W. Guevara
Project Location	Arthur Kill Road, Block 7620, Lot 1; Block 7632, Lots 1, 6, 50, 150 & 151	**Contractor**	Allied Drilling, Inc.
	Borough of Staten Island, City & State of New York	**Driller**	T. Martin
Boring Location	Southeastern Corner of Property	**Date Started**	07/05/2016
Ground Surface Elev.	+/- 22.0 Feet **Datum** NAVD 88	**Date Finished**	07/05/2016

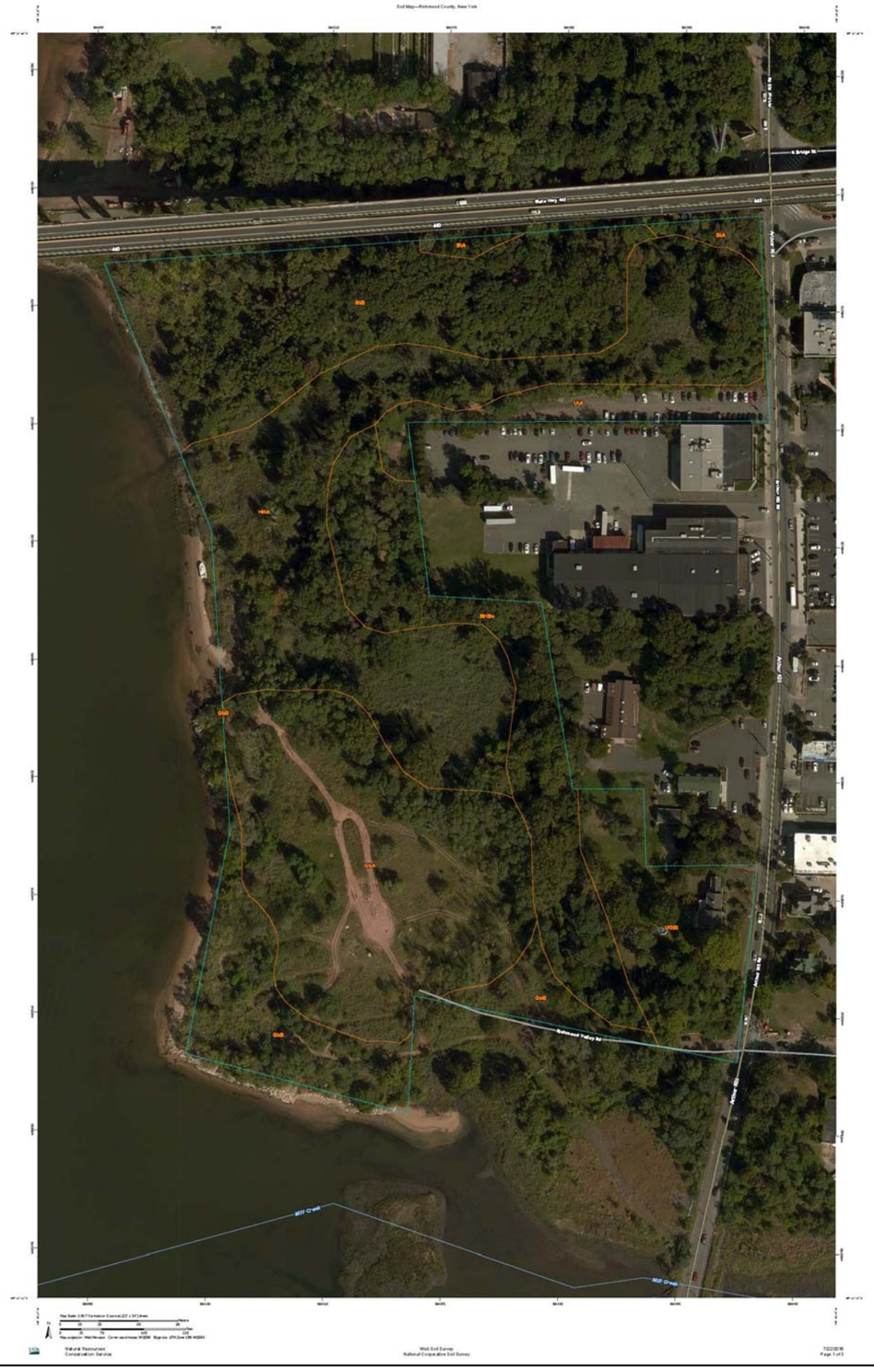
Item	Casing	Sampler	Core Barrel	Rig Type
Type	F. J.	SS	--	Truck
Inside Diameter (in)	4.00	1.4	--	CME-45
Hammer Weight (lb)	--	140		**Drill Mud**
Hammer Fall (in)	--	30		Water
Hammer Type	--	Donut		

Water Level Data

Date	Time	Bottom of Casing (ft)	Bottom of Boring (ft)	Water (ft)	Cave In (ft)
07/05/16	2:30 PM	6.0	12.0	12.0	--

Depth (ft)	Sample No. & Rec. (in)	Sample Depth (ft)	Sampler Blows per 6 inches	USCS Symbol	Visual Classification	Remarks
0	S-1 12 in.	0 - 2 ft	16 6 29 19	Fill NYC Class 7	Fill: Brown fine sand, little silt, some fine to coarse gravel, some debris, dry Debris: Brick, concrete, asphalt	300 lb hammer used from 6" to 2'
	S-2 16 in.	2 - 4 ft	14 10 10 14	Fill NYC Class 7	Fill: Same as Sample S-1, dry	
5	S-3 15 in.	4 - 6 ft	8 8 5 5	Fill NYC Class 7 SM NYC Class 6	Fill: Brown fine sand, some silt, little debris, trace of fine gravel, moist +/- 5.5' Reddish brown fine SAND, and Silt, loose, moist	
	S-4 4 in.	6 - 8 ft	17 13 21 36	SM NYC Class 3a	Reddish brown medium to fine SAND, and Silt, some fine Gravel, very dense, moist	
10	S-5 10 in.	8 - 10 ft	23 14 19 21	SM NYC Class 3a	Reddish brown medium to fine SAND, and Silt, some fine to coarse Gravel, very dense, moist	300 lb hammer used from 8.5' to 14'
	S-6 16 in.	10 - 12 ft	16 9 16 13	SM NYC Class 3a	Reddish brown medium to fine SAND, and Clayey Silt, some fine to coarse Gravel, very dense, moist to wet	
	S-7 17 in.	12 - 14 ft	8 16 14 14	SM NYC Class 3a	Reddish brown medium to fine SAND, and Silt, some fine to coarse Gravel, very dense, wet +/- 14.0'	
15					Boring SW-1 Terminated +/-14 Feet Below The Existing Ground Surface	

Summary	Overburden (Linear ft)	14	Rock Cored (Linear ft)	--	No. of Samples 7



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NOTES

SOIL SURVEY MAP OBTAINED FROM UNITED STATES DEPARTMENT OF AGRICULTURE'S NATURAL RESOURCES CONSERVATION SERVICE (NRCS).

Map Unit Legend

Richmond County, New York (NY085)			
Map Unit Symbol	**Map Unit Name**	**Acres in AOI**	**Percent of AOI**
BHBu	Boonton-Haledon complex, 0 to 8 percent slopes	2.6	11.7%
BtA	Boonton loam, 0 to 3 percent slopes	0.3	1.2%
BtB	Boonton loam, 3 to 8 percent slopes	4.2	18.7%
GbA	Greenbelt loam, 0 to 3 percent slopes	4.8	21.3%
GbB	Greenbelt loam, 3 to 8 percent slopes	1.9	8.6%
HHA	Haledon-Hasbrouck complex, 0 to 3 percent slopes, frequently ponded	6.0	26.5%
UGBl	Urban land-Greenbelt complex, 3 to 8 percent slopes, low impervious surface	1.8	8.2%
UtA	Urban land, till substratum, 0 to 3 percent slopes	0.9	3.9%
Totals for Area of Interest		**22.6**	**100.0%**

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PROPOSED RIVERSIDE GALLERIA
BOROUGH OF STATEN ISLAND
CITY & STATE OF NEW YORK

SOIL SURVEY MAP

SCALE: NOT TO SCALE

FIGURE 3

JZN Engineering, PC.

TEST BORING LOG

Boring No. SW-2 **Page** 1 of 1

Project Name	Proposed Riverside Retail & Entertainment Development	**Project No.**	21026-000
Client	WF Liberty	**Representative**	W. Guevara
Project Location	Arthur Kill Road, Block 7620, Lot 1; Block 7632, Lots 1, 6, 50, 150 & 151	**Contractor**	Allied Drilling, Inc.
	Borough of Staten Island, City & State of New York	**Driller**	T. Martin
Boring Location	Southern Side of Property	**Date Started**	07/05/2016
Ground Surface Elev.	+/- 19.0 Feet **Datum** NAVD 88	**Date Finished**	07/05/2016

Item	Casing	Sampler	Core Barrel	Rig Type
Type	F. J.	SS	--	Truck
Inside Diameter (in)	4.00	1.4	--	CME-45
Hammer Weight (lb)	--	140		**Drill Mud**
Hammer Fall (in)	--	30		Water
Hammer Type	--	Donut		

Water Level Data

Date	Time	Bottom of Casing (ft)	Bottom of Boring (ft)	Water (ft)	Cave In (ft)
07/05/16	3:15 PM	6.0	10.0	9.0	--
07/07/16	2:40 PM	--	--	8.0	9.0

Depth (ft)	Sample No. & Rec. (in)	Sample Depth (ft)	Sampler Blows per 6 inches	USCS Symbol	Visual Classification	Remarks
0					Vegetation	
	S-1 13 in.	0 - 2 ft	16 30 16 14	Fill NYC Class 7	Fill: Brown medium to fine sand, trace of Silt, some debris, dry Debris: Brick, concrete, roots, wood	300 lb hammer used from 1' to 6'
	S-2 16 in.	2 - 4 ft	23 15 10	Fill NYC Class 7	Fill: Reddish brown sand, and silt, little debris, dry Debris: Brick +/- 4.0'	
5	S-3 14 in.	4 - 6 ft	8 8 36 31	SM NYC Class 3a	Reddish brown medium to fine SAND, and Silt, some fine to coarse Gravel, dense, moist	
	S-4 18 in.	6 - 8 ft	34 27 40 64	SM NYC Class 3a	Brown and black medium to fine SAND, little Silt, little fine Gravel, very dense, moist	
	S-5 14 in.	8 - 10 ft	86 13 12 9	SP-SM NYC Class 3a	Brown and black medium to fine SAND, some Silt, some fine to coarse Gravel, very dense, wet	300 lb hammer used from 8.5' to 14'
10	S-6 11 in.	10 - 12 ft	12 11 13 13	SP-SM NYC Class 3a	Reddish brown medium to fine SAND, some Silt, little fine to coarse Gravel, very dense, wet to moist	
	S-7 10 in.	12 - 14 ft	10 11 8 12	SM NYC Class 3a	Reddish brown medium to fine SAND, and Silt, little fine to coarse Gravel, very dense, wet +/- 14.0'	
15					Boring SW-2 Terminated +/-14 Feet Below The Existing Ground Surface	

Summary	Overburden (Linear ft)	14	Rock Cored (Linear ft)	--	No. of Samples 7

JZN Engineering, PC.

TEST BORING LOG

Boring No. SW-3 **Page** 1 of 1

Project Name	Proposed Riverside Retail & Entertainment Development	**Project No.**	21026-000
Client	WF Liberty	**Representative**	W. Guevara
Project Location	Arthur Kill Road, Block 7620, Lot 1; Block 7632, Lots 1, 6, 50, 150 & 151	**Contractor**	Allied Drilling, Inc.
	Borough of Staten Island, City & State of New York	**Driller**	T. Martin
Boring Location	Southern Side of Property	**Date Started**	07/05/2016
Ground Surface Elev.	+/- 12.0 Feet **Datum** NAVD 88	**Date Finished**	07/05/2016

Item	Casing	Sampler	Core Barrel	Rig Type
Type	F. J.	SS	--	Truck
Inside Diameter (in)	4.00	1.4	--	CME-45
Hammer Weight (lb)	--	140		**Drill Mud**
Hammer Fall (in)	--	30		Water
Hammer Type	--	Donut		

Water Level Data

Date	Time	Bottom of Casing (ft)	Bottom of Boring (ft)	Water (ft)	Cave In (ft)
07/06/16	10:32 AM	6.0	8.0	6.0	--
07/07/16	7:00 AM	--	--	NE	5.0

Depth (ft)	Sample No. & Rec. (in)	Sample Depth (ft)	Sampler Blows per 6 inches	USCS Symbol	Visual Classification	Remarks
0						
	S-1 12 in.	0 - 2 ft	13 38 21 15	SM NYC Class 3a	Reddish brown medium to fine SAND, and Silt, some fine to coarse Gravel, very dense, dry	
	S-2 3 in.	2 - 4 ft	33 54/3" 13 9	SM NYC Class 3a	Reddish brown medium to fine SAND, some Silt, some fine to coarse Gravel, very dense, moist	300 lb hammer used from 2.75' to 6'
5	S-3 13 in.	4 - 6 ft	9 6 12 21	SP-SM NYC Class 3a	Brown and dark gray medium to fine SAND, some Silt, some fine to coarse Gravel, very dense, moist	
	S-4 12 in.	6 - 8 ft	26 27 18 18	SM NYC Class 3a	Brown and reddish brown medium to fine SAND, some Silt, trace of fine Gravel, dense, wet	
	S-5 15 in.	8 - 10 ft	16 14 20 14	SM NYC Class 3a	Tannish brown medium to fine SAND, little Silt, trace of fine Gravel, dense, wet	
10	S-6 16 in.	10 - 12 ft	18 14 22 19	SM NYC Class 3a	Tan medium to fine SAND, little Silt, dense, wet	
	S-7 8 in.	12 - 14 ft	10 10 12 15	SM NYC Class 3b	Tan and white medium to fine SAND, and Clayey Silt, little fine to coarse Gravel medium dense, wet +/- 14.0'	
15					Boring SW-3 Terminated +/-14 Feet Below The Existing Ground Surface	

Summary	Overburden (Linear ft)	14	Rock Cored (Linear ft)	--	No. of Samples 7

JZN Engineering, PC.	TEST BORING LOG	Boring No. SW-4 Page 1 of 1

Project Name	Proposed Riverside Retail & Entertainment Development	**Project No.**	21026-000
Client	WF Liberty	**Representative**	W. Guevara
Project Location	Arthur Kill Road, Block 7620, Lot 1; Block 7632, Lots 1, 6, 50, 150 & 151	**Contractor**	Allied Drilling, Inc.
	Borough of Staten Island, City & State of New York	**Driller**	T. Martin
Boring Location	Southern Side of Property	**Date Started**	07/06/2016
Ground Surface Elev.	+/- 10.0 Feet **Datum** NAVD 88	**Date Finished**	07/06/2016

Item	Casing	Sampler	Core Barrel	Rig Type
Type	F. J.	SS	--	Truck
Inside Diameter (in)	4.00	1.4	--	CME-45
Hammer Weight (lb)	--	140		**Drill Mud**
Hammer Fall (in)	--	30		Water
Hammer Type	--	Donut		

Water Level Data					
Date	**Time**	**Bottom of Casing (ft)**	**Bottom of Boring (ft)**	**Water (ft)**	**Cave In (ft)**
07/06/16	9:10 AM	--	6.0	4.0	--
07/07/16	4:05 PM	--	--	4.2	5.5

Depth (ft)	Sample No. & Rec. (in)	Sample Depth (ft)	Sampler Blows per 6 inches	USCS Symbol	Visual Classification	Remarks
0					Vegetation	
	S-1 2 in.	0 - 2 ft	40 44 24 12	SM NYC Class 3a	Reddish brown medium to fine SAND, some Silt, some fine to coarse Gravel, very dense, dry	
	S-2 0 in.	2 - 4 ft	11 6 5 3	N. R.	No Recovery, Gravel in Split Spoon Sampler Tip	
5	S-3 0 in.	4 - 6 ft	8 6 7 14	N. R.	No Recovery, Gravel in Split Spoon Sampler Tip	
	S-4 3 in.	6 - 8 ft	27 15 10 5	SM NYC Class 3b	Brown medium to fine SAND, trace of Silt, trace of fine Gravel, medium dense, wet +/- 8.0'	
	S-5 12 in.	8 - 10 ft	5 3 2 2	Pt NYC Class 6	Black PEAT, very soft, wet qu= 0.125 TSF +/- 10.0'	
10	S-6 3 in.	10 - 12 ft	2 13 19 20	GP NYC Class 3a	Brown fine GRAVEL, and medium to fine Sand, little Silt, dense, wet +/- 12.0'	
	S-7 23 in.	12 - 14 ft	24 38 40 37	SM NYC Class 3a	Brown and tan medium to fine SAND, little Silt, very dense, wet +/- 14.0'	
					Boring SW-4 Terminated +/-14 Feet Below The Existing Ground Surface	
15						

Summary	Overburden (Linear ft)	14	Rock Cored (Linear ft)	--	No. of Samples	7

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TEST BORING LOG

Boring No. SW-5 **Page** 1 of 1

Project Name	Proposed Riverside Retail & Entertainment Development	**Project No.**	21026-000
Client	WF Liberty	**Representative**	W. Guevara
Project Location	Arthur Kill Road, Block 7620, Lot 1; Block 7632, Lots 1, 6, 50, 150 & 151	**Contractor**	Allied Drilling, Inc.
	Borough of Staten Island, City & State of New York	**Driller**	T. Martin
Boring Location	Southern Side of Property	**Date Started**	07/07/2016
Ground Surface Elev.	+/- 16.0 Feet **Datum** NAVD 88	**Date Finished**	07/07/2016

Item	Casing	Sampler	Core Barrel	Rig Type
Type	F. J.	SS	--	Truck
Inside Diameter (in)	4.00	1.4	--	CME-45
Hammer Weight (lb)	--	140		**Drill Mud**
Hammer Fall (in)	--	30		Water
Hammer Type	--	Donut		

Water Level Data

Date	Time	Bottom of Casing (ft)	Bottom of Boring (ft)	Water (ft)	Cave In (ft)
07/07/16	10:20 AM	8.0	12.0	12.0	--
07/08/16	7:00 AM	--	--	--	5.0

Depth (ft)	Sample No. & Rec. (in)	Sample Depth (ft)	Sampler Blows per 6 inches	USCS Symbol	Visual Classification	Remarks
0					Vegetation	
	S-1 14 in.	0 - 2 ft	2 6 21 23	SM NYC Class 3b	Reddish brown medium to fine SAND, and Silt, trace of fine Gravel, medium dense, dry (trace of roots)	
	S-2 14 in.	2 - 4 ft	26 32 27 32	SM NYC Class 3a	Reddish brown medium to fine SAND, and Silt, little fine to coarse Gravel, very dense, dry (trace of roots)	
5	S-3 12 in.	4 - 6 ft	16 43 22 25	SM NYC Class 3a	Same as Sample S-2, very dense, dry	
	S-4 10 in.	6 - 8 ft	14 14 10 12	SM NYC Class 3b	Reddish brown medium to fine SAND, and Silt, little fine Gravel, medium dense moist	
	S-5 0 in.	8 - 10 ft	2 3 2 4	N. R.	No Recovery	
10	S-6 6 in.	10 - 12 ft	2 3 2 3	SM NYC Class 6	Reddish brown medium to fine SAND, and Silt, trace of fine Gravel, loose, moist to wet	
	S-7 13 in.	12 - 14 ft	2 2 3 15	SM NYC Class 6	Reddish brown medium to fine SAND, and Clayey Silt, little fine Gravel, loose, wet +/- 14.0'	
15					Boring SW-5 Terminated +/-14 Feet Below The Existing Ground Surface	

Summary	Overburden (Linear ft)	14	Rock Cored (Linear ft)	--	No. of Samples 7

JZN Engineering, PC.	TEST BORING LOG	Boring No. SW-6 Page 1 of 1

Project Name	Proposed Riverside Retail & Entertainment Development	**Project No.**	21026-000
Client	WF Liberty	**Representative**	W. Guevara
Project Location	Arthur Kill Road, Block 7620, Lot 1; Block 7632, Lots 1, 6, 50, 150 & 151	**Contractor**	Allied Drilling, Inc.
	Borough of Staten Island, City & State of New York	**Driller**	T. Martin
Boring Location	Southern Side of Property	**Date Started**	07/06/2016
Ground Surface Elev.	+/- 8.0 Feet **Datum** NAVD 88	**Date Finished**	07/06/2016

Item	Casing	Sampler	Core Barrel	Rig Type
Type	F. J.	SS	--	Truck
Inside Diameter (in)	4.00	1.4	--	CME-45
Hammer Weight (lb)	--	140		**Drill Mud**
Hammer Fall (in)	--	30		Water
Hammer Type	--	Donut		

Water Level Data

Date	Time	Bottom of Casing (ft)	Bottom of Boring (ft)	Water (ft)	Cave In (ft)
07/06/16	12:20 PM	--	6.0	4.0	--
07/07/16	7:10 AM	--	--	4.0	4.5

Depth (ft)	Sample No. & Rec. (in)	Sample Depth (ft)	Sampler Blows per 6 inches	USCS Symbol	Visual Classification	Remarks
0						
	S-1 16 in.	0 - 2 ft	2 3 6 6	SM NYC Class 6	Black and brown medium to fine SAND, some Silt, loose, dry (little roots)	
	S-2 9 in.	2 - 4 ft	9 27 20 11	SM NYC Class 3a	Reddish brown fine SAND, and Silt, little fine to coarse Gravel, dense, moist	
5	S-3 15 in.	4 - 6 ft	5 7 14 20	SM NYC Class 3b	Brown and black fine SAND, and Silt, medium dense, wet	
	S-4 19 in.	6 - 8 ft	13 21 19 8	SM NYC Class 3a	Tannish brown medium to fine SAND, some Clayey Silt, dense, wet	
	S-5 16 in.	8 - 10 ft	12 16 10 10	SM NYC Class 3b	Tan medium to fine SAND, some Silt, trace of fine to coarse Gravel, medium dense, wet +/- 11.0'	
10	S-6 24 in.	10 - 12 ft	3 4 6 5	Pt NYC Class 6	Gray PEAT, very soft, wet qu= 0.125 TSF to 0.28 TSF	
	S-7 12 in.	12 - 14 ft	2 2 4 3	Pt NYC Class 6	Brownish Gray Peat, very soft, wet qu= 0.28 TSF +/- 14.0'	
15					Boring SW-6 Terminated +/-14 Feet Below The Existing Ground Surface	

Summary	Overburden (Linear ft)	14	Rock Cored (Linear ft)	--	No. of Samples	7

JZN Engineering, PC.

TEST BORING LOG

Boring No. SW-7 **Page** 1 of 1

Project Name	Proposed Riverside Retail & Entertainment Development	**Project No.**	21026-000
Client	WF Liberty	**Representative**	W. Guevara
Project Location	Arthur Kill Road, Block 7620, Lot 1; Block 7632, Lots 1, 6, 50, 150 & 151	**Contractor**	Allied Drilling, Inc.
	Borough of Staten Island, City & State of New York	**Driller**	V. Alvanez
Boring Location	Southwestern Corner of Property	**Date Started**	07/11/2016
Ground Surface Elev.	+/- 10.0 Feet **Datum** NAVD 88	**Date Finished**	07/11/2016

Item	Casing	Sampler	Core Barrel	Rig Type
Type	F. J.	SS	--	Track
Inside Diameter (in)	4.00	1.4	--	Mounted
Hammer Weight (lb)	--	140		**Drill Mud**
Hammer Fall (in)	--	30		Water
Hammer Type	--	Safety		

Water Level Data

Date	Time	Bottom of Casing (ft)	Bottom of Boring (ft)	Water (ft)	Cave In (ft)
07/11/16	4:15 PM	4.0	8.0	7.0	--

Depth (ft)	Sample No. & Rec. (in)	Sample Depth (ft)	Sampler Blows per 6 inches	USCS Symbol	Visual Classification	Remarks
0						
	S-1 20 in.	0 - 2 ft	15 12 11 18	SM NYC Class 3b	Reddish brown fine SAND, and Silt, little fine to coarse Gravel, medium dense, dry	
	S-2 11 in.	2 - 4 ft	10 20 19 13	SM NYC Class 3b	Reddish brown fine SAND, and Silt, little fine to coarse Gravel, medium dense, dry	
5	S-3 13 in.	4 - 6 ft	9 14 10 9	SM NYC Class 3b	Reddish brown medium to fine SAND, and Silt, little fine to coarse, Gravel, medium dense, moist (trace of fibers)	
	S-4 12 in.	6 - 8 ft	16 12 12 16	SM NYC Class 3b	Tan medium to fine SAND, little Silt, trace of fine Gravel, medium dense, wet	
	S-5 10 in.	8 - 10 ft	11 9 9 10	SM NYC Class 3b	Tan and gray medium to fine SAND, and Silt, trace of fine Gravel, medium dense, wet +/- 10.0'	
10					Boring SW-7 Terminated +/-10 Feet Below The Existing Ground Surface	
15						

Summary	Overburden (Linear ft)	10	Rock Cored (Linear ft)	--	No. of Samples	5

JZN Engineering, PC.

TEST BORING LOG

Boring No. SW-8 **Page** 1 of 1

Project Name	Proposed Riverside Retail & Entertainment Development	**Project No.**	21026-000
Client	WF Liberty	**Representative**	W. Guevara
Project Location	Arthur Kill Road, Block 7620, Lot 1; Block 7632, Lots 1, 6, 50, 150 & 151	**Contractor**	Allied Drilling, Inc.
	Borough of Staten Island, City & State of New York	**Driller**	O. Moran
Boring Location	Middle of Property.	**Date Started**	07/08/2016
Ground Surface Elev.	+/- 16.0 Feet **Datum** NAVD 88	**Date Finished**	07/08/2016

Item	Casing	Sampler	Core Barrel	Rig Type
Type	F. J.	SS	--	Track
Inside Diameter (in)	4.00	1.4	--	Mounted
Hammer Weight (lb)	--	140		**Drill Mud**
Hammer Fall (in)	--	30		Water
Hammer Type	--	Safety		

Water Level Data

Date	Time	Bottom of Casing (ft)	Bottom of Boring (ft)	Water (ft)	Cave In (ft)
07/08/16	1:00 PM	8.0	12.0	11.0	--

Depth (ft)	Sample No. & Rec. (in)	Sample Depth (ft)	Sampler Blows per 6 inches	USCS Symbol	Visual Classification	Remarks
0						
	S-1 20 in.	0 - 2 ft	4 8 15 13	SM NYC Class 3b	Reddish brown fine SAND, and Silt, some fine to coarse Gravel, medium dense, dry (some roots)	
	S-2 12 in.	2 - 4 ft	1 10 7 6	SM NYC Class 3b	Reddish brown medium to fine SAND, and Silt, little fine to coarse Gravel, medium dense, dry	
5	S-3 13 in.	4 - 6 ft	7 6 5 6	SM NYC Class 3b	Reddish brown medium to fine SAND, and Silt, little fine to coarse Gravel, medium dense, moist (trace of roots)	
	S-4 9 in.	6 - 8 ft	4 10 8 7	SM NYC Class 3b	Reddish brown medium to fine SAND, and Silt, trace of fine Gravel, medium dense, moist	
	S-5 3 in.	8 - 10 ft	5 6 7 7	SM NYC Class 3b	Reddish brown medium to fine SAND, and Silt, little fine Gravel, medium dense moist	
10	S-6 17 in.	10 - 12 ft	6 6 8 10	SM NYC Class 3b	Reddish brown, gray and tan medium to fine SAND, and Silt, medium dense, we	
	S-7 4 in.	12 - 14 ft	14 11 7 14	SP-SM NYC Class 3b	Reddish brown medium to fine SAND, and Silt, medium dense, wet +/- 14.0'	
15					Boring SW-8 Terminated +/-14 Feet Below The Existing Ground Surface	

Summary	Overburden (Linear ft)	14	Rock Cored (Linear ft)	--	No. of Samples 7

JZN Engineering, PC.

TEST BORING LOG

Boring No. SW-9 **Page** 1 of 1

Project Name	Proposed Riverside Retail & Entertainment Development	**Project No.**	21026-000
Client	WF Liberty	**Representative**	W. Guevara
Project Location	Arthur Kill Road, Block 7620, Lot 1; Block 7632, Lots 1, 6, 50, 150 & 151	**Contractor**	Allied Drilling, Inc.
	Borough of Staten Island, City & State of New York	**Driller**	T. Martin/ O. Moran
Boring Location	Middle of Property	**Date Started**	07/07/2016
Ground Surface Elev.	+/- 18.0 Feet **Datum** NAVD 88	**Date Finished**	07/08/2016

Item	Casing	Sampler	Core Barrel	Rig Type
Type	F. J.	SS	--	Truck
Inside Diameter (in)	4.00	1.4	--	CME-45
Hammer Weight (lb)	--	140		**Drill Mud**
Hammer Fall (in)	--	30		Water
Hammer Type	--	Donut		

Water Level Data

Date	Time	Bottom of Casing (ft)	Bottom of Boring (ft)	Water (ft)	Cave In (ft)
07/05/16	2:30 PM	6.0	12.0	12.0	--

Depth (ft)	Sample No. & Rec. (in)	Sample Depth (ft)	Sampler Blows per 6 inches	USCS Symbol	Visual Classification	Remarks
0						
	S-1 17 in.	0 - 2 ft	4 10 24 19	SM NYC Class 3a	Reddish brown medium to fine SAND, and Silt, little fine Gravel, dense, dry (trace roots)	
	S-2 16 in.	2 - 4 ft	22 26 20 28	SM NYC Class 3a	Reddish brown and tan medium to fine SAND, and Silt, little fine to coarse Gravel, dense, dry	
5	S-3 9 in.	4 - 6 ft	16 14 9 9	SM NYC Class 3b	Reddish brown medium to fine SAND, and Silt, trace of fine Gravel, medium dense, moist to wet	
	S-4 9 in.	6 - 8 ft	12 4 4 2	SM NYC Class 6	Reddish brown medium to fine SAND, and Silt, loose, wet	
	S-5 2 in.	8 - 10 ft	3 5 3 5	SM NYC Class 6	Reddish brown medium to fine SAND, and Silt, loose, wet	
10	S-6 10 in.	10 - 12 ft	3 5 5 7	SM NYC Class 3b	Reddish brown medium to fine SAND, and Clayey Silt, trace of fine Gravel, medium dense, wet	
	S-7 10 in.	12 - 14 ft	4 4 4 5	SM NYC Class 6	Reddish brown medium to fine SAND, and Clayey Silt, trace of fine Gravel, loose, wet	
15	S-8 11 in.	14 - 16 ft	3 5 5 7	SM NYC Class 6	Reddish brown to black medium to fine SAND, and Clayey Silt, trace of coarse Gravel, medium dense, wet +/- 16.0'	
					Boring SW-9 Terminated +/-16 Feet Below The Existing Ground Surface	
20						

Summary	Overburden (Linear ft)	16	Rock Cored (Linear ft)	--	No. of Samples 8

JZN Engineering, PC.	TEST BORING LOG	Boring No. SW-10 Page 1 of 1

Project Name	Proposed Riverside Retail & Entertainment Development	**Project No.**	21026-000
Client	WF Liberty	**Representative**	W. Guevara
Project Location	Arthur Kill Road, Block 7620, Lot 1; Block 7632, Lots 1, 6, 50, 150 & 151	**Contractor**	Allied Drilling, Inc.
	Borough of Staten Island, City & State of New York	**Driller**	V. Alvanez
Boring Location	Middle of Property	**Date Started**	07/12/2016
Ground Surface Elev.	+/- 8.0 Feet **Datum** NAVD 88	**Date Finished**	07/12/2016

Item	Casing	Sampler	Core Barrel	Rig Type
Type	F. J.	SS	--	Track
Inside Diameter (in)	4.00	1.4	--	Mounted
Hammer Weight (lb)	--	140		**Drill Mud**
Hammer Fall (in)	--	30		Water
Hammer Type	--	Safety		

Water Level Data					
Date	**Time**	**Bottom of Casing (ft)**	**Bottom of Boring (ft)**	**Water (ft)**	**Cave In (ft)**
07/12/16	8:30 AM	--	6.0	4.0	--

Depth (ft)	Sample No. & Rec. (in)	Sample Depth (ft)	Sampler Blows per 6 inches	USCS Symbol	Visual Classification	Remarks
0						
	S-1 13 in.	0 - 2 ft	2 4 2 2	SM NYC Class 6	Gray and reddish brown fine SAND, and Clayey Silt, loose, dry to moist (little roots)	
	S-2 21 in.	2 - 4 ft	2 2 2 2	SM-OL NYC Class 6	Tan and gray fine SAND, and Silt, very loose, moist to wet (some roots)	
					+/- 4.0'	
5	S-3 17 in.	4 - 6 ft	3 2 2 4	Pt NYC Class 6	Brown, black and gray PEAT, some Sand, very soft, wet	
					+/- 6.0'	
	S-4 9 in.	6 - 8 ft	6 6 4 8	SM NYC Class 3b	Tan medium to fine SAND, little Silt, medium dense, wet	
	S-5 12 in.	8 - 10 ft	11 20 20 18	SM NYC Class 3b	Tan to reddish brown medium to fine SAND, some Silt, dense, wet	
10	S-6 20 in.	10 - 12 ft	15 21 25 18	SM NYC Class 3a	Tan and reddish brown medium to fine SAND, some Silt, trace of fine to coarse Gravel, dense, wet	
	S-7 22 in.	12 - 14 ft	8 11 14 16	SM NYC Class 3b	Tan and reddish brown medium to fine SAND, some Silt, medium dense, wet	
					+/- 14.0'	
					Boring SW-10 Terminated +/-14 Feet Below The Existing Ground Surface	
15						

Summary	Overburden (Linear ft)	14	Rock Cored (Linear ft)	--	No. of Samples	7

JZN Engineering, PC.

TEST BORING LOG

Boring No. SW-11 **Page** 1 of 1

Project Name	Proposed Riverside Retail & Entertainment Development	**Project No.**	21026-000
Client	WF Liberty	**Representative**	W. Guevara
Project Location	Arthur Kill Road, Block 7620, Lot 1; Block 7632, Lots 1, 6, 50, 150 & 151	**Contractor**	Allied Drilling, Inc.
	Borough of Staten Island, City & State of New York	**Driller**	V. Alvanez
Boring Location	Middle of Property	**Date Started**	07/12/2016
Ground Surface Elev.	+/- 8.0 Feet **Datum** NAVD 88	**Date Finished**	07/12/2016

Item	Casing	Sampler	Core Barrel	Rig Type
Type	F. J.	SS	--	Track
Inside Diameter (in)	4.00	1.4	--	Mounted
Hammer Weight (lb)	--	140		**Drill Mud**
Hammer Fall (in)	--	30		Water
Hammer Type	--	Safety		

Water Level Data

Date	Time	Bottom of Casing (ft)	Bottom of Boring (ft)	Water (ft)	Cave In (ft)
07/12/16	9:30 AM	--	4.0	4.0	--

Depth (ft)	Sample No. & Rec. (in)	Sample Depth (ft)	Sampler Blows per 6 inches	USCS Symbol	Visual Classification	Remarks
0						
	S-1 11 in.	0 - 2 ft	7 2 2 1	SM NYC Class 6	Tan medium to fine SAND, little Silt, very loose, moist	
	S-2 18 in.	2 - 4 ft	2 4 4 4	SM NYC Class 6	Tan and gray fine SAND, some Clayey Silt, loose, moist to wet (trace of roots and fibers)	
5	S-3 21 in.	4 - 6 ft	4 4 3 4	SM NYC Class 6	Tan medium to fine SAND, little Silt, loose, wet	
	S-4 13 in.	6 - 8 ft	2 2 3 3	SM NYC Class 6	Tan medium to fine SAND, little Silt, wet (trace of roots)	
	S-5 21 in.	8 - 10 ft	6 9 15 14	SM NYC Class 3b	Tan medium to fine SAND, little Silt, medium dense, wet	
10	S-6 24 in.	10 - 12 ft	10 13 24 12	SM NYC Class 3b	Tan medium to fine SAND, little Silt, trace of coarse Gravel, dense, wet	
	S-7 24 in.	12 - 14 ft	17 26 24 23	SM NYC Class 3b	Tan to reddish brown medium to fine SAND, some Silt, trace of fine Gravel, dense, wet (trace of roots) +/- 14.0'	
15					Boring SW-11 Terminated +/-14 Feet Below The Existing Ground Surface	

Summary	Overburden (Linear ft) 14	Rock Cored (Linear ft) --	No. of Samples 7

JZN Engineering, PC.

TEST BORING LOG

Boring No. SW-12 **Page** 1 of 1

Project Name	Proposed Riverside Retail & Entertainment Development	**Project No.**	21026-000
Client	WF Liberty	**Representative**	W. Guevara
Project Location	Arthur Kill Road, Block 7620, Lot 1; Block 7632, Lots 1, 6, 50, 150 & 151	**Contractor**	Allied Drilling, Inc.
	Borough of Staten Island, City & State of New York	**Driller**	V. Alvanez
Boring Location	Southeastern Corner of Property	**Date Started**	07/12/2016
Ground Surface Elev.	+/- 8.0 Feet **Datum** NAVD 88	**Date Finished**	07/12/2016

Item	Casing	Sampler	Core Barrel	Rig Type
Type	F. J.	SS	--	Track
Inside Diameter (in)	4.00	1.4	--	Mounted
Hammer Weight (lb)	--	140		**Drill Mud**
Hammer Fall (in)	--	30		Water
Hammer Type	--	Safety		

Water Level Data

Date	Time	Bottom of Casing (ft)	Bottom of Boring (ft)	Water (ft)	Cave In (ft)
07/12/16	12:30 PM	--	6.0	4.0	--

Depth (ft)	Sample No. & Rec. (in)	Sample Depth (ft)	Sampler Blows per 6 inches	USCS Symbol	Visual Classification	Remarks
0	S-1 9 in.	0 - 2 ft	6 9 6 4	SM NYC Class 3b	Brown medium to fine SAND, little Silt, medium dense, dry (some wood)	
	S-2 11 in.	2 - 4 ft	5 4 5 6	SM NYC Class 6	Tan and gray fine SAND, some Clayey Silt, loose, moist to wet (trace of roots and fibers)	
5	S-3 13 in.	4 - 6 ft	7 7 4 5	SM NYC Class 3b	Tan medium to fine SAND, little Silt, medium dense, wet	
	S-4 11 in.	6 - 8 ft	3 6 11 6	SM NYC Class 3b	Tan medium to fine SAND, little Silt, medium dense, wet	
	S-5 21 in.	8 - 10 ft	5 16 18 20	SM NYC Class 3a	Tan medium to fine SAND, little Silt, dense, wet	
10	S-6 21 in.	10 - 12 ft	7 14 19 19	SM NYC Class 3a	Tan medium to fine SAND, little Silt, dense, wet	
	S-7 24 in.	12 - 14 ft	17 25 32 36	SM NYC Class 3a	Tan medium to fine SAND, little Silt, very dense, wet +/- 14.0'	
15					Boring SW-12 Terminated +/-14 Feet Below The Existing Ground Surface	

Summary	Overburden (Linear ft)	14	Rock Cored (Linear ft)	--	No. of Samples	7

JZN Engineering, PC.

TEST BORING LOG

Boring No. SW-13 **Page** 1 of 1

Project Name	Proposed Riverside Retail & Entertainment Development	**Project No.**	21026-000
Client	WF Liberty	**Representative**	W. Guevara
Project Location	Arthur Kill Road, Block 7620, Lot 1; Block 7632, Lots 1, 6, 50, 150 & 151	**Contractor**	Allied Drilling, Inc.
	Borough of Staten Island, City & State of New York	**Driller**	V. Alvanez
Boring Location	Eastern Side of Property	**Date Started**	07/13/2016
Ground Surface Elev.	+/- 8.0 Feet **Datum** NAVD 88	**Date Finished**	07/12/2016

Item	Casing	Sampler	Core Barrel	Rig Type
Type	F. J.	SS	--	Track
Inside Diameter (in)	4.00	1.4	--	Mounted
Hammer Weight (lb)	--	140		**Drill Mud**
Hammer Fall (in)	--	30		Water
Hammer Type	--	Safety		

Water Level Data

Date	Time	Bottom of Casing (ft)	Bottom of Boring (ft)	Water (ft)	Cave In (ft)
07/12/16	2:36 PM	--	4.0	3.5	--

Depth (ft)	Sample No. & Rec. (in)	Sample Depth (ft)	Sampler Blows per 6 inches	USCS Symbol	Visual Classification	Remarks
0	S-1 3 in.	0 - 2 ft	1 1 1 1	SM NYC Class 6	Brown medium to fine SAND, and Silt, very loose, dry (trace of roots) +/- 2.0'	
	S-2 1 in.	2 - 4 ft	1 1 1 1	Pt NYC Class 6	Gray PEAT, very soft, wet	
5	S-3 23 in.	4 - 6 ft	2 2 3 5	Pt NYC Class 6	Gray PEAT, very soft, wet qu= 0.06 TSF +/- 6.0'	
	S-4 12 in.	6 - 8 ft	3 7 6 10	SM NYC Class 3b	Tan fine SAND, and Silt, medium dense, wet (trace of fibers)	
	S-5 24 in.	8 - 10 ft	10 14 9 9	SM NYC Class 3b	Tan to reddish brown fine SAND, and Silt, medium dense, wet	
10	S-6 24 in.	10 - 12 ft	14 16 15 11	SM NYC Class 3a	Reddish brown and tan medium to fine SAND, and Silt, little fine Gravel, dense, wet	
	S-7 24 in.	12 - 14 ft	4 6 6 6	SM NYC Class 3b	Tan and reddish brown medium to fine SAND, and Silt, little fine to coarse Gravel, medium dense, wet +/- 14.0'	
15					Boring SW-13 Terminated +/-14 Feet Below The Existing Ground Surface	

Summary	Overburden (Linear ft) 14	Rock Cored (Linear ft) --	No. of Samples 7

JZN Engineering, PC.

TEST BORING LOG

Boring No. SW-14 **Page** 1 of 1

Project Name	Proposed Riverside Retail & Entertainment Development	**Project No.**	21026-000
Client	WF Liberty	**Representative**	W. Guevara
Project Location	Arthur Kill Road, Block 7620, Lot 1; Block 7632, Lots 1, 6, 50, 150 & 151	**Contractor**	Allied Drilling, Inc.
	Borough of Staten Island, City & State of New York	**Driller**	V. Alvanez
Boring Location	Eastern Side of Property	**Date Started**	07/13/2016
Ground Surface Elev.	+/- 11.0 Feet **Datum** NAVD 88	**Date Finished**	07/13/2016

Item	Casing	Sampler	Core Barrel	Rig Type	Water Level Data					
					Date	Time	Bottom of Casing (ft)	Bottom of Boring (ft)	Water (ft)	Cave In (ft)
Type	F. J.	SS	--	Track Mounted						
Inside Diameter (in)	4.00	1.4	--							
Hammer Weight (lb)	--	140		**Drill Mud**	07/13/16	1:00 PM	--	4.0	4.0	--
Hammer Fall (in)	--	30		Water						
Hammer Type	--	Safety								

Depth (ft)	Sample No. & Rec. (in)	Sample Depth (ft)	Sampler Blows per 6 inches	USCS Symbol	Visual Classification	Remarks
0						
	S-1 13 in.	0 - 2 ft	1 1 2 3	SM NYC Class 6	Tannish brown medium to fine SAND, little Silt, very loose, moist (some roots)	
	S-2 12 in.	2 - 4 ft	4 4 3 6	SM NYC Class 6	Tan medium to fine SAND, little Silt, loose, moist	
5	S-3 13 in.	4 - 6 ft	10 12 12 15	SM NYC Class 3b	Tan medium to fine SAND, little Silt, medium dense, wet	Wet samples due to test
	S-4 13 in.	6 - 8 ft	6 5 6 12	SM NYC Class 3b	Tan to gray fine SAND, and Silt, medium dense, wet	
	S-5 16 in.	8 - 10 ft	14 10 9 9	SM NYC Class 3b	Tan to gray to reddish brown fine SAND, and Silt, trace of fine to coarse Gravel, medium dense, wet (trace of roots)	
10	S-6 17 in.	10 - 12 ft	5 9 17 14	SM NYC Class 3b	Reddish brown fine SAND, and Silt, little fine to coarse Gravel, medium dense, wet	
	S-7 12 in.	12 - 14 ft	6 13 17 27	SM NYC Class 3b	Reddish brown medium to fine SAND, and Silt, little fine to coarse Gravel, medium dense, wet +/- 14.0'	
15					Boring SW-14 Terminated +/-14 Feet Below The Existing Ground Surface	

Summary	Overburden (Linear ft) 14	Rock Cored (Linear ft) --	No. of Samples 7

JZN Engineering, PC.	TEST BORING LOG	Boring No. SW-15 Page 1 of 1

Project Name	Proposed Riverside Retail & Entertainment Development	**Project No.**	21026-000
Client	WF Liberty	**Representative**	W. Guevara
Project Location	Arthur Kill Road, Block 7620, Lot 1; Block 7632, Lots 1, 6, 50, 150 & 151	**Contractor**	Allied Drilling, Inc.
	Borough of Staten Island, City & State of New York	**Driller**	V. Alvanez
Boring Location	Eastern Side of Property	**Date Started**	07/13/2016
Ground Surface Elev.	+/- 14.0 Feet **Datum** NAVD 88	**Date Finished**	07/13/2016

Item	Casing	Sampler	Core Barrel	Rig Type
Type	F. J.	SS	--	Track
Inside Diameter (in)	4.00	1.4	--	Mounted
Hammer Weight (lb)	--	140		**Drill Mud**
Hammer Fall (in)	--	30		Water
Hammer Type	--	Safety		

Water Level Data					
Date	**Time**	**Bottom of Casing (ft)**	**Bottom of Boring (ft)**	**Water (ft)**	**Cave In (ft)**

Depth (ft)	Sample No. & Rec. (in)	Sample Depth (ft)	Sampler Blows per 6 inches	USCS Symbol	Visual Classification	Remarks
0						
	S-1 12 in.	0 - 2 ft	2 2 2 2	SM NYC Class 6	Tan medium to fine SAND, little Silt, very loose, moist (trace or roots)	
	S-2 13 in.	2 - 4 ft	4 4 5 9	SM NYC Class 6	Same as Sample S-1, loose, wet	Wet samples due to test
5	S-3 15 in.	4 - 6 ft	16 10 11 9	SM NYC Class 3b	Tan to gray medium to fine SAND, little Silt, medium dense, wet	
	S-4 23 in.	6 - 8 ft	6 10 11 11	SM NYC Class 3b	Tan medium to fine SAND, little Silt, medium dense, wet	
	S-5 24 in.	8 - 10 ft	7 7 6 5	SM NYC Class 3b	Light tan fine SAND, some Silt, medium dense, wet	
10	S-6 24 in.	10 - 12 ft	10 14 21 21	SM NYC Class 3a	Tan to reddish brown fine SAND, some Silt, trace of fine Gravel, dense, wet	
	S-7 20 in.	12 - 14 ft	5 10 21 32	SM NYC Class 3a	Tan and reddish brown medium to fine SAND, some Silt, dense, wet +/- 14.0'	
15					Boring SW-15 Terminated +/-14 Feet Below The Existing Ground Surface	

Summary	Overburden (Linear ft)	14	Rock Cored (Linear ft)	--	No. of Samples	7

JZN Engineering, PC.	TEST BORING LOG	Boring No. SW-16 Page 1 of 1

Project Name	Proposed Riverside Retail & Entertainment Development	**Project No.**	21026-000
Client	WF Liberty	**Representative**	W. Guevara
Project Location	Arthur Kill Road, Block 7620, Lot 1; Block 7632, Lots 1, 6, 50, 150 & 151	**Contractor**	Allied Drilling, Inc.
	Borough of Staten Island, City & State of New York	**Driller**	V. Alvanez
Boring Location	Eastern Side of Property	**Date Started**	07/13/2016
Ground Surface Elev.	+/- 15.0 Feet **Datum** NAVD 88	**Date Finished**	07/13/2016

Item	Casing	Sampler	Core Barrel	Rig Type
Type	F. J.	SS	--	Track
Inside Diameter (in)	4.00	1.4	--	Mounted
Hammer Weight (lb)	--	140		**Drill Mud**
Hammer Fall (in)	--	30		Water
Hammer Type	--	Safety		

Water Level Data					
Date	**Time**	**Bottom of Casing (ft)**	**Bottom of Boring (ft)**	**Water (ft)**	**Cave In (ft)**

Depth (ft)	Sample No. & Rec. (in)	Sample Depth (ft)	Sampler Blows per 6 inches	USCS Symbol	Visual Classification	Remarks
0						
	S-1 18 in.	0 - 2 ft	2 2 2 3	SM NYC Class 6	Brown and tan fine SAND, little Silt, very loose, moist (trace of roots)	
	S-2 20 in.	2 - 4 ft	2 3 4 4	SM NYC Class 6	Brown to tan fine SAND, little Silt, loose, moist to wet (trace of roots)	Wet samples due to test
5	S-3 13 in.	4 - 6 ft	7 7 11 13	SM NYC Class 3b	Tan fine SAND, little Silt, medium dense, wet (trace of roots)	
	S-4 24 in.	6 - 8 ft	5 8 13 15	SM NYC Class 3b	Tan fine SAND, little Silt, medium dense, wet	
	S-5 24 in.	8 - 10 ft	10 12 13 14	SM NYC Class 3b	Tan fine SAND, little Silt, medium dense, wet (trace of roots)	
10	S-6 24 in.	10 - 12 ft	12 18 25 9	SM NYC Class 3a	Tan to reddish brown medium to fine SAND, little Silt, dense, wet (trace of roots)	
	S-7 24 in.	12 - 14 ft	14 14 14 14	SM NYC Class 3b	Tan and reddish brown medium to fine SAND, some Silt, trace of fine to coarse Gravel, medium dense, wet +/- 14.0'	
15					Boring SW-16 Terminated +/-14 Feet Below The Existing Ground Surface	

Summary	Overburden (Linear ft) 14	Rock Cored (Linear ft) --	No. of Samples 7

JZN Engineering, PC.

TEST BORING LOG

Boring No. SW-17 **Page** 1 of 1

Project Name	Proposed Riverside Retail & Entertainment Development	**Project No.**	21026-000
Client	WF Liberty	**Representative**	W. Guevara
Project Location	Arthur Kill Road, Block 7620, Lot 1; Block 7632, Lots 1, 6, 50, 150 & 151	**Contractor**	Allied Drilling, Inc.
	Borough of Staten Island, City & State of New York	**Driller**	T. Martin
Boring Location	Northwestern Side of Property	**Date Started**	06/29/2016
Ground Surface Elev.	+/- 15.0 Feet **Datum** NAVD 88	**Date Finished**	06/29/2016

Item	Casing	Sampler	Core Barrel	Rig Type
Type	F. J.	SS	--	Truck
Inside Diameter (in)	4.00	1.4	--	CME-45
Hammer Weight (lb)	--	140		**Drill Mud**
Hammer Fall (in)	--	30		Water
Hammer Type	--	Donut		

Water Level Data

Date	Time	Bottom of Casing (ft)	Bottom of Boring (ft)	Water (ft)	Cave In (ft)

Depth (ft)	Sample No. & Rec. (in)	Sample Depth (ft)	Sampler Blows per 6 inches	USCS Symbol	Visual Classification	Remarks
0					Soil and Vegetation	
	S-1 13 in.	0 - 2 ft	36 8 8 14	Fill NYC Class 7	Fill: Black and tan medium to fine sand, little silt, little debris, dry Debris: Wood, concrete +/- 2.0'	
	S-2 18 in.	2 - 4 ft	9 7 16 14	SM NYC Class 3b	Reddish brown medium to fine SAND, and Silt, trace of fine Gravel, medium de wet	Wet samples due to perched water
5	S-3 24 in.	4 - 6 ft	13 13 27 19	SM NYC Class 3a	Tan and reddish brown medium to fine SAND, and Silt, dense, wet	
	S-4 24 in.	6 - 8 ft	15 17 28 27	SM NYC Class 3a	Reddish brown medium to fine SAND, and Silt, trace of fine Gravel, dense, wet	
	S-5 4 in.	8 - 10 ft	24 19 21 16	SM NYC Class 3a	Reddish brown medium to fine SAND, and Silt, trace of fine Gravel, dense, wet	
10	S-6 12 in.	10 - 12 ft	14 10 12 8	SM NYC Class 3b	Reddish brown medium to fine SAND, and Silt, little fine to coarse Gravel, medi dense, wet	
	S-7 13 in.	12 - 14 ft	15 13 14 14	SM NYC Class 3b	Reddish brown and tan medium to fine SAND, and Clayey Silt, little fine to coar Gravel, medium dense, wet +/- 14.0'	
15					Boring SW-17 Terminated +/-14 Feet Below The Existing Ground Surface	

Summary	Overburden (Linear ft)	14	Rock Cored (Linear ft)	--	No. of Samples 7

JZN Engineering, PC.

TEST BORING LOG

Boring No. SW-18 **Page** 1 of 1

Project Name	Proposed Riverside Retail & Entertainment Development	**Project No.**	21026-000
Client	WF Liberty	**Representative**	W. Guevara
Project Location	Arthur Kill Road, Block 7620, Lot 1; Block 7632, Lots 1, 6, 50, 150 & 151	**Contractor**	Allied Drilling, Inc.
	Borough of Staten Island, City & State of New York	**Driller**	T. Martin
Boring Location	Northwestern Side of Property	**Date Started**	06/29/2016
Ground Surface Elev.	+/- 15.0 Feet **Datum** NAVD 88	**Date Finished**	06/29/2016

Item	Casing	Sampler	Core Barrel	Rig Type
Type	F. J.	SS	--	Truck
Inside Diameter (in)	4.00	1.4	--	CME-45
Hammer Weight (lb)	--	140		**Drill Mud**
Hammer Fall (in)	--	30		Water
Hammer Type	--	Donut		

Water Level Data

Date	Time	Bottom of Casing (ft)	Bottom of Boring (ft)	Water (ft)	Cave In (ft)
06/29/16	12:00 PM	--	14.0	12.0	--

Depth (ft)	Sample No. & Rec. (in)	Sample Depth (ft)	Sampler Blows per 6 inches	USCS Symbol	Visual Classification	Remarks
0	S-1 18 in.	0 - 2 ft	24 21 8 4	Fill NYC Class 7	Fill: Black and tan medium to fine sand, trace of silt, little debris, dry Debris: Roots, asphalt	
	S-2 14 in.	2 - 4 ft	3 4 5 20	Fill NYC Class 7	Fill: Tan and reddish brown sand, some silt, moist +/- 2.0'	
5	S-3 12 in.	4 - 6 ft	14 22 31 27	SM NYC Class 3a	Tan and reddish brown SAND, some Silt, very dense, moist	
	S-4 14 in.	6 - 8 ft	37 33 30 19	SM NYC Class 3a	Reddish brown medium to fine SAND, and Silt, little fine to coarse Gravel, very dense, moist	
	S-5 22 in.	8 - 10 ft	9 10 10 14	SM NYC Class 3b	Reddish brown medium to fine SAND, and Silt, trace of fine to coarse Gravel, medium dense, moist	
10	S-6 0 in.	10 - 12 ft	14 14 17 30	N. R.	No Recovery	
	S-7 15 in.	12 - 14 ft	8 5 25 20	SM-SP NYC Class 3b	Reddish brown medium to fine SAND, little Silt, little fine Gravel, medium dense, wet +/- 14.0'	
15					Boring SW-18 Terminated +/-14 Feet Below The Existing Ground Surface	

Summary	Overburden (Linear ft)	14	Rock Cored (Linear ft)	--	No. of Samples 7

JZN Engineering, PC.

TEST BORING LOG

Boring No. SW-19 **Page** 1 of 1

Project Name	Proposed Riverside Retail & Entertainment Development	**Project No.**	21026-000
Client	WF Liberty	**Representative**	W. Guevara
Project Location	Arthur Kill Road, Block 7620, Lot 1; Block 7632, Lots 1, 6, 50, 150 & 151	**Contractor**	Allied Drilling, Inc.
	Borough of Staten Island, City & State of New York	**Driller**	T. Martin
Boring Location	Northwestern Side of Property	**Date Started**	06/28/2016
Ground Surface Elev.	+/- 16.0 Feet **Datum** NAVD 88	**Date Finished**	06/29/2016

Item	Casing	Sampler	Core Barrel	Rig Type
Type	F. J.	SS	--	Truck
Inside Diameter (in)	4.00	1.4	--	CME-45
Hammer Weight (lb)	--	140		**Drill Mud**
Hammer Fall (in)	--	30		Water
Hammer Type	--	Donut		

Water Level Data

Date	Time	Bottom of Casing (ft)	Bottom of Boring (ft)	Water (ft)	Cave In (ft)

Depth (ft)	Sample No. & Rec. (in)	Sample Depth (ft)	Sampler Blows per 6 inches	USCS Symbol	Visual Classification	Remarks
0						
	S-1 19 in.	0 - 2 ft	6 23 19 15	Fill NYC Class 7 SM NYC Class 3b	Fill: Brown and black medium to fine SAND, little Silt, little fine Gravel, dry +/- 1.5'	
	S-2 24 in.	2 - 4 ft	15 31 28 34	SM NYC Class 3a	Reddish brown fine SAND, and Silt, trace of fine Gravel, dry, very dense, dry	
5	S-3 0 in.	4 - 6 ft	23 21 23 31	N. R.	No Recovery	
	S-4 6 in.	6 - 8 ft	21 26 25 18	SP-SM NYC Class 3a	Reddish brown medium to fine SAND, little Silt, little fine Gravel, very dense, wet	Wet samples due to test
	S-5 20 in.	8 - 10 ft	14 15 18 28	SM NYC Class 3a	Reddish brown medium to fine SAND, and Silt, trace of fine Gravel, dense, wet	
10	S-6 9 in.	10 - 12 ft	17 35 52 30	SM NYC Class 3a	Reddish brown medium to fine SAND, and Silt, little fine Gravel, very dense, wet	
	S-7 22 in.	12 - 14 ft	18 17 39 60	SP-SM NYC Class 3a	Reddish brown fine to coarse SAND, little Silt, trace of fine to coarse Gravel, very dense, wet	
	S-8 3 in.	14 - 14.9 ft	50 70/5"	SP-SM NYC Class 3a	Same as Sample S-7, very dense, wet (rock on spoon's tip) +/- 14.9'	
15					Boring SW-19 Terminated +/-14.9 Feet Below The Existing Ground Surface	

Summary	Overburden (Linear ft)	15	Rock Cored (Linear ft)	--	No. of Samples 8

JZN Engineering, PC.

TEST BORING LOG

Boring No. SW-20 **Page** 1 of 1

Project Name	Proposed Riverside Retail & Entertainment Development	**Project No.**	21026-000
Client	WF Liberty	**Representative**	W. Guevara
Project Location	Arthur Kill Road, Block 7620, Lot 1; Block 7632, Lots 1, 6, 50, 150 & 151	**Contractor**	Allied Drilling, Inc.
	Borough of Staten Island, City & State of New York	**Driller**	T. Martin
Boring Location	Southeastern Corner of Property	**Date Started**	06/28/2016
Ground Surface Elev.	+/- 23.0 Feet **Datum** NAVD 88	**Date Finished**	06/28/2016

Item	Casing	Sampler	Core Barrel	Rig Type
Type	F. J.	SS	--	Truck
Inside Diameter (in)	4.00	1.4	--	CME-45
Hammer Weight (lb)	--	140		**Drill Mud**
Hammer Fall (in)	--	30		Water
Hammer Type	--	Donut		

Water Level Data

Date	Time	Bottom of Casing (ft)	Bottom of Boring (ft)	Water (ft)	Cave In (ft)

Depth (ft)	Sample No. & Rec. (in)	Sample Depth (ft)	Sampler Blows per 6 inches	USCS Symbol	Visual Classification	Remarks
0					Asphaltic Pavement	
	S-1 13 in.	0 - 2 ft	30 19 10 7	Fill NYC Class 7	Fill: Dark gray medium to fine sand, some silt, and deris, dry Debris: Asphalt, brick, concrete	
	S-2 19 in.	2 - 4 ft	20 11 11 9	Fill NYC Class 7	Fill: Brown medium to fine sand, some silt, little deris, dry Debris: Brick, wood +/- 3.5'	
5	S-3 12 in.	4 - 6 ft	10 9 8 10	SM NYC Class 3b	Tannish brown fine SAND, little Silt, medium dense, moist (trace of roots)	
	S-4 19 in.	6 - 8 ft	2 1 1 1	SM NYC Class 6	Tannish brown fine SAND, little Silt, very loose, wet (trace of roots)	Wet samples due to test
	S-5 20 in.	8 - 10 ft	4 7 15 21	SM NYC Class 3b	Reddish brown medium to fine SAND, and Silt, little fine Gravel, medium dense, wet	
10	S-6 20 in.	10 - 12 ft	20 21 22 43	SM NYC Class 3a	Same as Sample S-5, very dense, wet	
	S-7 24 in.	12 - 14 ft	28 31 40 38	SM NYC Class 3a	Light brown and reddish brown medium to fine SAND, little Silt, very dense, wet	
15	S-8 15 in.	14 - 15.5 ft	10 12 14	SM NYC Class 3b	Reddish brown medium to fine SAND, some Silt, trace of fine Gravel, wet +/- 15.5'	
					Boring SW-20 Terminated +/-15.5 Feet Below The Existing Ground Surface	

Summary	Overburden (Linear ft)	15.5	Rock Cored (Linear ft)	--	No. of Samples 8

JZN Engineering, PC.

TEST BORING LOG

Boring No. SW-21 **Page** 1 of 1

Project Name	Proposed Riverside Retail & Entertainment Development	**Project No.**	21026-000
Client	WF Liberty	**Representative**	W. Guevara
Project Location	Arthur Kill Road, Block 7620, Lot 1; Block 7632, Lots 1, 6, 50, 150 & 151	**Contractor**	Allied Drilling, Inc.
	Borough of Staten Island, City & State of New York	**Driller**	T. Martin
Boring Location	Front Yard of House	**Date Started**	07/01/2016
Ground Surface Elev.	+/- 29.0 Feet **Datum** NAVD 88	**Date Finished**	07/05/2016

Item	Casing	Sampler	Core Barrel	Rig Type
Type	F. J.	SS	--	Truck
Inside Diameter (in)	4.00	1.4	--	CME-45
Hammer Weight (lb)	--	140		**Drill Mud**
Hammer Fall (in)	--	30		Water
Hammer Type	--	Donut		

Water Level Data

Date	Time	Bottom of Casing (ft)	Bottom of Boring (ft)	Water (ft)	Cave In (ft)
07/01/16	3:00 PM	--	--	21.5	--

Depth (ft)	Sample No. & Rec. (in)	Sample Depth (ft)	Sampler Blows per 6 inches	USCS Symbol	Visual Classification	Remarks
0						
	S-1 7 in.	0 - 2 ft	1 4 4 4	Fill NYC Class 7	Fill: Brown to tan medium to fine sand, trace of silt, trace of debris, dry to moist Debris: Roots +/- 2.0'	
	S-2 21 in.	2 - 4 ft	3 2 8 12	SM NYC Class 3b	Tan to reddish brown medium to fine SAND, and Clayey Silt, medium dense, moist	
5	S-3 17 in.	4 - 6 ft	21 32 40 32	SM NYC Class 3a	Reddish brown medium to fine SAND, and Silt, trace of fine Gravel, very dense, moist	
	S-4 4 in.	6 - 8 ft	9 14 20 25	SM NYC Class 3a	Reddish brown medium to fine SAND, and Silt, trace of fine Gravel, dense, wet	Wet samples due to perched water
	S-5 5 in.	8 - 10 ft	15 24 21 23	SM NYC Class 3a	Reddish brown medium to fine SAND, and Silt, little fine to coarse Gravel, dense, wet	
10	S-6 12 in.	10 - 12 ft	28 35 46 46	SM NYC Class 3a	Same as Sample S-5, very dense, wet	
	S-7 18 in.	12 - 14 ft	30 22 32 29	SP-SM NYC Class 3a	Reddish brown medium to fine SAND, and Silt, little fine to coarse Gravel, very dense, wet	
15						
	S-8 10 in.	15 - 17 ft	15 21 31 33	SM NYC Class 3a	Reddish brown medium to fine SAND, and Clayey Silt, little fine to coarse Gravel, very dense, wet	
20	S-9 16 in.	20 - 22 ft	14 18 31 33	SM NYC Class 3a	Reddish brown medium to fine SAND, and Clayey Silt, some fine to coarse Gravel, very dense, wet	
	S-10 13 in.	23- 25 ft	11 21 32 33	SM NYC Class 3a	Reddish brown medium to fine SAND, and Clayey Silt, some fine to coarse Gravel, very dense, wet +/- 25.0'	
25					Boring SW-21 Terminated +/-25.0 Feet Below The Existing Ground Surface	

Summary	Overburden (Linear ft)	25	Rock Cored (Linear ft)	--	No. of Samples 10

JZN Engineering, PC.

TEST BORING LOG

Boring No. SW-22 **Page** 1 of 1

Project Name	Proposed Riverside Retail & Entertainment Development	**Project No.**	21026-000
Client	WF Liberty	**Representative**	W. Guevara
Project Location	Arthur Kill Road, Block 7620, Lot 1; Block 7632, Lots 1, 6, 50, 150 & 151	**Contractor**	Allied Drilling, Inc.
	Borough of Staten Island, City & State of New York	**Driller**	T. Martin
Boring Location	Front Yard of House	**Date Started**	07/05/2016
Ground Surface Elev.	+/- 29.0 Feet **Datum** NAVD 88	**Date Finished**	07/05/2016

Item	Casing	Sampler	Core Barrel	Rig Type
Type	F. J.	SS	--	Truck
Inside Diameter (in)	4.00	1.4	--	CME-45
Hammer Weight (lb)	--	140		**Drill Mud**
Hammer Fall (in)	--	30		Water
Hammer Type	--	Donut		

Water Level Data

Date	Time	Bottom of Casing (ft)	Bottom of Boring (ft)	Water (ft)	Cave In (ft)
07/05/16	11:20 AM	--	--	21.5	--

Depth (ft)	Sample No. & Rec. (in)	Sample Depth (ft)	Sampler Blows per 6 inches	USCS Symbol	Visual Classification	Remarks
0						
	S-1 16 in.	0 - 2 ft	1 2 2 2	Fill NYC Class 7	Fill: Black and tan medium to fine sand, trace of silt, little debris, dry Debris: Brick, asphalt, roots +/- 2.0'	
	S-2 21 in.	2 - 4 ft	4 6 9 3	SM NYC Class 3b	Tan medium to fine SAND, and Silt, trace of coarse Gravel, medium dense, dry	
5	S-3 23 in.	4 - 6 ft	9 28 15 34	SM NYC Class 3a	Reddish brown and white medium to fine SAND, and Silt, trace of fine Gravel, dense, dry to moist	
	S-4 21 in.	6 - 8 ft	50 33 38 53	SM NYC Class 3a	Tan and reddish brown medium to fine SAND, and Silt, little fine to coarse Gravel, very dense, moist	
	S-5 18 in.	8 - 10 ft	15 13 20 16	SM NYC Class 3a	Reddish brown medium to fine SAND, and Silt, trace of fine to coarse Gravel, dense, moist to wet	
10	S-6 15 in.	10 - 12 ft	13 16 32 25	SM NYC Class 3a	Reddish brown medium to fine SAND, and Silt, little fine to coarse Gravel, dense, moist	
	S-7 5 in.	12 - 14 ft	20 22 19 20	SM NYC Class 3a	Reddish brown medium to fine SAND, and Silt, trace of fine to coarse Gravel, dense, wet	
15						
	S-8 10 in.	15 - 17 ft	17 19 33 35	SM NYC Class 3a	Reddish brown medium to fine SAND, and Clayey Silt, little fine to coarse Gravel, very dense, wet	
20	S-9 16 in.	20 - 22 ft	14 19 33 34	SM NYC Class 3a	Reddish brown medium to fine SAND, and Clayey Silt, some fine to coarse Gravel, very dense, wet	
	S-10 13 in.	23- 25 ft	16 21 22 36	SM NYC Class 3a	Reddish brown medium to fine SAND, and Clayey Silt, some fine to coarse Gravel, very dense, wet +/- 25.0'	
25					Boring SW-22 Terminated +/-25.0 Feet Below The Existing Ground Surface	

Summary	Overburden (Linear ft)	25	Rock Cored (Linear ft)	--	No. of Samples 10

REPORT OF PRELIMINARY GEOTECHNICAL DUE DILIGENCE INVESTIGATION

PROPOSED RIVERSIDE RETAIL & ENTERTAINMENT DEVELOPMENT
BLOCK 7620; LOT 1
BLOCK 7632; LOTS 1, 6, 50, 150, & 151
BOROUGH OF STATEN ISLAND
NEW YORK CITY, NEW YORK

BY

JZN ENGINEERING, PC.
SPRINGFIELD, NEW JERSEY

PREPARED FOR

WF LIBERTY
NEW YORK, NEW YORK

File No. 21026-000 **July 2016**

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July 22, 2016
File No. 21026-000

WF LIBERTY
250 West 55th Street
New York, New York 10019

Attention: Mr. Jay Valgor
Principal- Studio V Architecture

REGARDING: REPORT OF PRELIMINARY GEOTECHNICAL DUE DILIGENCE INVESTIGATION
Proposed Riverside Retail & Entertainment Development
Arthur Kill Road
Block 7620; Lot 1
Block 7632; Lots 1, 6, 50, 150 & 151
Borough of Staten Island, City & State of New York

Dear Mr. Valgor:

JZN Engineering, PC. (JZN) is pleased to submit this letter report summarizing our preliminary geotechnical due diligence investigation and findings for the Proposed Riverside Retail & Entertainment Development to be constructed at Arthur Kill Road in the Borough of Staten Island, New York City, New York. This work was undertaken in accordance with our proposal dated March 23, 2016 (last revised April 18, 2016) and your subsequent on authorization on June 10, 2016.

The recommendations presented in this report, should be considered preliminary in nature and should not be used for final design. Additional soils investigation, and geotechnical engineering analysis would be required to formulate a final design recommendations.

INTRODUCTION

General

The letter report was prepared to preliminary investigate the subsurface conditions at the site as it pertains to the proposed development. Our scope of services included performing a limited subsurface exploration program, making preliminary geotechnical engineering evaluations and preparing this letter report.

This investigation was performed based on limited subsurface investigation program. As such, a more comprehensive geotechnical investigation is required to better characterize the subsurface conditions. We request that when further civil, structural, and/or architectural information is developed by the project

team, that we be notified and our recommendations be reviewed by our office. If any changes are to be made from our review, we shall revise our report.

This letter report was prepared based on the information provided to us by our client including the following documents:

- A March 22, 2016 *Boring Location Plan* prepared by Capital Environmental Consultants, Inc.
- A March 22, 2016 *Boring Plan W/Access* prepared by Capital Environmental Consultants, Inc.
- An undated set of conceptual architectural plans (5 sheets) prepared by Studio V Architecture; and
- An undated *Request for Proposal for Geotechnical Service* written by Studio V Architecture.

Existing Site Conditions

The site of the proposed Riverside Galleria is located at Arthur Kill Road, Block 7620, Lot 1 & Block 7632, Lots 1, 6, 50, 150 & 151, in Staten Island, City & State of New York.

The subject site consists of a 21 acres waterfront property along Arthur Kill road. Presently, the site is an undeveloped, heavily vegetated and wood parcel. Portion of the existing parcel is manmade wet land area. The property is bordered by Arthur Kill Road and some neighboring properties to the east; Richmond Valley Road to the south Outerbridge Crossing to the north; and Arthur Kill to the west. The location of the project site is shown on the *Project Locus Map* included as Figure 1 in this report.

Report Datum

Topographic information was estimated based of the referenced March 22, 2016 *Boring Plan W/Access*. Elevations in this survey plan are based on the North American Vertical Datum of 1988 (NAVD 88). All depths in the report are referenced from top of the existing ground surface at the time of the field investigation.

Proposed Development

Presently, we understand that the project is still in the conceptual design phase. The proposed Riverside Galleria development will include the construction of a retail center, with restaurants, theater/ family entertainment space, parking garages and landscape areas.

Specifically, at this time, we understand that the proposed development will include the construction of a new retail and entertainment complex. The complex will consist of 450,000 square feet (approx.) of commercial space, with an additional approximately 525,000 square feet of parking garage. The parking garage will be situated below Arthur Kill Road elevation.

The lowest parking garage finished floor elevation is proposed to be +/- Elev. -8 feet which is approximately 23 feet below the Arthur Kill Road surface elevation.

PRELIMINARY GEOTECHNICAL INVESTIGATION

Regional Geology Review

The subject site is located in the Coastal Plain Physiographic Province of Southeastern New York and is underlain by the Raritan Formation. Specifically, the Raritan Formation consist of crossbedded quartz sand, thick bedded clayey silt, and laminated clay and silt with trace amounts of gravel.

The information presented above was based on the review of published geological data as reported in the Bedrock Geologic Map of New York prepared by United State Geological Survey (USGS).

Field Exploration

Field exploration for this project was conducted by means of drilling eight soil exploration borings. The soil exploration borings (identified as ST-15, ST-26, ST-37, ST-46, ST-49/49A, ST-53, ST-59 and ST-63) were drilled within the proposed Riverside Galleria footprint to a depth of approximately 50 feet below the existing ground surface. The locations of the soil exploration borings are shown on the accompanying *Boring Location Plan* included as Figure 2, and records of the soil exploration logs are provided in Appendix A.

The soil exploration borings were drilled with a standard truck-mounted drill rig or a track mounted drill rig using 4.0 inch inside diameter flush jointed casings in general accordance to ASTM D5783. Soil samples were obtained by the Standard Penetration Test (SPT) method in general accordance to ASTM D1586 with a 1-3/8-inch inside diameter (I.D.) split spoon sampler driven by a 140 pound hammer free-falling 30 inches. Blows for each six-inches of penetration were recorded on the soil exploration boring logs. Unconfined compressive strength was measured for cohesive soil using a pocket penetrometer (ASTM WK27337). Depth to groundwater was estimated from visual observation of moisture content of split spoon soil samples. The soil matrix was classified in accordance to Unified Classification System (USCS).

The field exploration program was monitored, planned, and logged by a JZN Engineer. The soil exploration locations were determined in the field by a JZN Engineer using GPS coordinates provided by Capital Environmental Consultants, Inc. and are presumed to be accurate within in few feet.

The soil exploration boring was drilled by Allied Drilling, Inc. of Orangeburg, New York in the presence of a JZN Engineer between June 27 and July 13, 2016. The soil borings were backfilled to the surface with soil cutting generated from the investigation from the bottom up.

The soil exploration logs and related information depict subsurface conditions only at the specific exploration locations and at the particular time designated on the logs. Subsurface conditions at other locations may differ from conditions occurring at the soil exploration locations. Also, the passage of time may result in a change in the subsurface conditions at these soil exploration locations.

Subsurface Conditions

Details of the subsurface materials encountered are presented on the Soil Exploration Records presented in Appendix A of this report. The stratification lines designating the interface between soil types on the boring log represent approximate boundaries. The transition between materials may be gradual, and one or more strata may be absent at specific locations. In general, the subsurface soils conditions are consistent with the regional geology of the area. The soil exploration borings revealed the following generalized strata in order of increasing depth below ground surface:

Surface Cover: The soil exploration borings were drilled in landscape area and asphaltic pavement.

Stratum I – Existing Fill Materials (NYC Class 7): Existing fill materials were encountered and extended to depths of approximately two to three feet below the existing ground surface. These materials were encountered at two locations (ST-15 and ST-63). Generally, the existing fill materials consisted of a mixture of medium to fine sand with varying amounts of gravel, silt, and debris (roots, asphalt, and concrete).

Stratum II –Organic Deposits (USCS- Pt, NYC Class 6): A layer of very soft organic fibrous peat (USCS- Pt) was encountered at soil boring locations ST-37, ST-46, SW-4, SW-6, SW-10, and SW-13. The organic deposits were encountered to depths that ranged between approximately six and 18.5 feet below the existing ground surface elevation, corresponding to elevations that ranged between approximately +/- Elev. 2 and +/- Elev. -6.5. This layer was encountered at the surface at boring location ST-37 and is expected to be encountered anywhere onsite where a wet land exists.

Stratum III – Glacial Deposits *(USCS- SM, SC, SP, ML and CL)*: Underlying the organic and/or fill deposits, glacial deposits were encountered to the soil exploration boring termination depth of approximately 50 feet below the existing ground surface. The glacial deposits consisted of two different substrata as the following:

Stratum IIIA – Upper Glacial Deposits (USCS- SM, SC and SP, NYC Class 6, 3a, 3b): Underlying the organic and/or fill deposits, a layer of reddish-brown, tan, and grey medium to fine sand with varying amounts of silt, clay and gravel was encountered to depths of approximately 39 to 50 feet below the existing ground surface.

Stratum IIIB – Lower Glacial Deposits (USCS- ML and CL, NYC Class 4b, 5a, 5b): Underlying Stratum IIIA, a layer of grey stiff to very stiff silt and silty clay with varying amounts of sand and gravel was generally encountered to the boring termination depth of approximately 50 feet below the existing ground surface. Unconfined compressive strengths were tested via penetrometer testing, revealing that these soils were stiff to very stiff.

Groundwater Conditions

Within the preliminary structural borings performed, groundwater conditions were encountered at depths that ranged between 2 and 21.5 feet beneath the ground surface. These depths corresponded to NAVD 88 elevations ranging from +/- Elev. +2.0 to +/- Elev. +10.0 Feet. Based on our understanding of the proposed construction, we anticipate that dewatering requirements will be extensive.

Groundwater observations in completed test borings do not necessarily represent the true, stabilized groundwater conditions. It should be noted that fluctuations in the level of groundwater may occur due to variations in season, rainfall, snow melt, surface infiltration, temperature, construction activities, pumping of dewatering systems, leakage from utilities, and other factors not evident at the time measurements were made and reported herein. As a result, water levels observed during and after construction may vary from those observed in the test borings during drilling.

100-Year Flood

The majority of the site of proposed development is located in "Zone X", according to the flood insurance rate map included as Figures 3 and published by the Federal Emergency Management Agency (FEMA). ZONE X is defined as ""Areas of 0.2% annual chance flood' areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood".

The peripheral boundaries of the site with Arthur Kill (river) was mapped within "Zone AE". ZONE AE has a determined based flood elevation of Elev. + 9.0 feet referenced to the National Geodetic Vertical Datum of 1929.

A copy of the reference flood insurance rate map along with the definition of the zones is provided as Figure 3.

PRELIMINARY GEOTECHNICAL CONSIDERATIONS

The existing fill materials and soft organic deposits encountered at the site are expected to result in irregular shallow foundation support, which typically lead to excessive total and/or differential settlement. However, presumed that the proposed Building Elevation 0.0 is approximately at NAVD 88 Elevation +/- Elev. -8, the foundations will bear at an elevation lower than the presence of the organic stratum, and thus we preliminarily recommend that the proposed building may be supported on conventional shallow foundations bearing on suitable Stratum III natural materials. The Stratum III three materials preliminary can be assigned an allowable bearing capacity of six kips per square feet (ksf) with a factor of safety of 2.0. Ultimately, however, the extent of the organic stratum across the entire site should be further investigated during the full geotechnical investigation, and a final full assessment, including a recommended bearing capacities of shallow foundations shall be made then.

Also given our presumption of the Building Elevation 0.0 correlated to the NAVD 88 Elevation, we presume that the lowest building slab will be located more than 10 feet below the closest water table level. As such, uplift forces on the lowest building slab will have to be counteracted with tie-down anchors. Note that the design of such anchors is beyond the scope of this report and in order to design such elements, a further investigation with borings extended to further depths will be required.

Earthwork

The soil materials encountered during construction will include exiting fill and natural soil deposits. We anticipate that soil excavation can be accomplished using conventional earth-moving equipment.

Due to the presence of shallow groundwater, temporary cut slope below the groundwater table will be difficult to maintain if excavated steeper than about 2H:1V, and protected from erosion due to surface water and freeze/ thaw. Some sloughing and raveling should be anticipated in such temporary earth slopes. Temporary excavation slopes should be constructed to comply with all OSHA and other applicable state and local regulations.

The site should be sealed on a daily basis using a smooth drum roller at the completion of each workday or if rainfall is imminent, work areas should be graded and smooth-wheel rolled to permit runoff of rainfall.

Foundation Alternatives

Deep Foundations Alternative

Preliminarily, we recommend that a deep foundation alternative can best consist of drilled caissons. Driven timber and steel piles have been evaluated as potential deep foundation options. However,

timber piles are likely to refuse and broom within the minimum 10 feet Building Code embedment on the very dense soils; while steel piles are also likely to refuse at depths with high variability such as at less than 10 feet or on the underlying stiff glacial till layer as present in some of the borings where group of piles may generate high excess pore water pressures.

Recommendations of caisson axial and uplift capacities can be estimated upon execution of the full geotechnical investigation covering more areas of the site and covering deeper depths where the foundations may be socketed. The size of the caisson and soil/rock socket length will depend on the required loads. Axial capacities on the order of 100 to 200 tons may be achieved if required

Lowest Building Floor Slab

Based on our limited investigation data and review of the above referenced documents, the design of the lowest building slab should be a pressure structural slab directly reinforced by the foundations or by a series of foundation supported grade beams. We recommend that the slab be placed on a minimum of 18-inches of compacted crushed stone with a geotextile fabric for the prevention of fines migration and with an underdrain system. We also recommend that a vapor barrier in accordance to ACI 302 with a minimum thickness of 10 mils be used on top of the crushed stone.

Waterproofing Considerations

Based on our understanding of the proposed development, we recommend a permanent, perimeter foundation drain and underslab drain system be designed and constructed.

The permanent, perimeter foundation drain should be constructed along all below-grade walls. The drain system is intended to collect and drain any infiltrating surface or seepage water which might otherwise become trapped against below-grade walls and seep into the structure or exert hydrostatic pressures on the walls. Alternatively, the foundation walls may be designed for water pressure acting over their entire height below finish grade.

In addition, since the lowest building slab will be below the groundwater table, we recommend an underslab drainage system below the lowest building slab level to prevent leakage though the floor slab into the basement.

The perimeter foundation drain system should consist of a perforated drainpipes positioned at the exterior base of the foundation walls, well-draining backfill against the below-grade walls and below upper slab levels, waterstops at construction joints, and damp-proofing of the exterior of foundation walls. The drain pipe should consist of continuous, perforated PVC or corrugated HDPE drain pipe completely surrounded

by a zone of Drainage Fill (3/4-in. crushed stone), which is in turn completely surrounded by a non-woven filter fabric such as Mirafi 140N or equivalent. Perforations in the drainpipe should be positioned downward. Backfill within two feet laterally of the exterior walls above the drainpipe and drainage fill should consist of Compacted Granular Fill.

Pipe inverts should be positioned at an elevation between the footing bearing grade and six inches below the level of the underside of the adjacent interior floor slab, pitching to discharge points at a slope of at least 0.5 percent. Cleanouts should be installed in the systems to facilitate maintenance.

The underslab drainage system should consist of a grid of perforated drain pipes positioned at the mid-height of a layer of Drainage Fill with discharge outlets through the perimeter foundation wall. The grid configuration should be established when exterior grading is finalized. The underslab drainage system should consist of a layer of ¾ -inch crushed stone Drainage Fill beneath the slab placed on a non-woven filter fabric such as Mirafi 140N or equivalent. Drainage pipes, consisting perforated PVC or corrugated HDPE, should be bedded at the mid-height of locally thickened zones of Drainage Fill.

The drain system should be designed and constructed to provide redundant flow paths from each point in the system to a minimum of two discharge points. If feasible, discharge out of the system may be drained by gravity into the site stormwater system. The drain system should be designed to prevent backflow from the site stormwater system into the foundation drains. Otherwise, if discharge cannot be facilitated by gravity, water should be directed to a sump pit and pumped to discharge inverts. Given the usage of the proposed building, pumps should be equipped with an emergency power supply (battery or generator).

Damp-proofing of below-grade foundation walls and a vapor barrier below the basement floor slab is recommended. Waterstops or “keys” should be provided at construction joints in below-grade walls, and between such walls and footings. To limit surface water infiltration into portions of the perimeter foundation drain system located alongside backfilled below-grade walls, it is recommended the upper twelve inches of backfill within approximately 10 feet of the building limits consist of topsoil or other soil having relatively low permeability, or pavement. In general, the ground surface immediately around the building should be sloped downward away from the structure to direct the surface runoff away from the structure.

Dewatering

As mentioned above, the preliminary structural borings revealed groundwater conditions at depths that ranged between elevations ranging between approximately +/- Elev. 2 and +/- Elev. 10.

Based on our understanding of the proposed development, we anticipate that dewatering requirements will be extensive. To allow for construction below groundwater, we recommend that the best dewatering method consist of a well-point system with a series of peripheral suction pumps.

Utilities

Depending on the final lowest building slab elevation, consideration for the building and site utilities construction should be taken.

Building Utilities

- If the proposed lowest building slab elevation will ultimately fall within the existing organic layer +/- Elev. -6.5, the organic peat is not overexcavated, and a deep foundation system is used, we recommend that the utilities under the building slab should be hanged from the slab in order to limit the differential settlement which may cause cracking if deep foundation option is selected. Utilities should be located above foundation bearing levels or the foundation influence zones. The hanging detail should be designed to withstand pressure from soil above the utilities assuming the soil will settle in the future.

  Hanging of the utilities moves the point at which utilities are subjected to a potential differential movement from underneath the building to the edge and outside of the building. The utility lines will need to be designed to withstand a differential movement between the outside and inside of the building footprint.

- If the proposed lowest building slab elevation will ultimately fall below the organic layer +/- Elev. -6.5, the organic peat is overexcavated, we recommend that the utilities under the building slab be soil-supported (with suitable bedding), bearing on either approved granular imported fills or natural sandy soils that are stable under proof-compaction. Flexible and mechanical utility connections should be used with utilities outside the building area. If obstructions and/or oversized soil particles (i.e. cobbles) are encountered, it should be removed to at least 12 inches below the utility invert elevations in order to reduce the potential for damage to utility conduits and pipes.

Site Utilities

- If the site grading result in no increase in elevation, then buried site utilities may be soil-supported (with suitable bedding), bearing on either approved granular imported fills or natural sandy soils that are stable under proof-compaction. Flexible and mechanical utility connections should be used with utilities outside the building area. If obstructions and/or oversized soil

particles (i.e. cobbles) are encountered, it should be removed to at least 12 inches below the utility invert elevations in order to reduce the potential for damage to utility conduits and pipes.

- If the site grading result in increase in elevation, then buried site utilities within the areas where organic soils were encountered, these utilities should be supported on deep foundation elements that is being below the organic soil strata. Flexible and mechanical utility connections should be used with utilities outside the building area.

Soil Reusability

The existing natural sand soils directly underlying the existing ground surface may be suitable for re-use as backfill material for the proposed structural slab. These materials should be evaluated to be free or organic content and high fines content. Any materials to subject to be reused shall be evaluated for testing and analysis prior to its use. The placement of all backfilling should be monitored by a qualified Geotechnical Engineer.

Excavation and Shoring

Due to the presences of shallow groundwater, overexcavation at the site will require the use of temporary excavation support system depending on the purpose of the excavation (i.e. requires personal presence inside the excavation) and the use of temporary dewatering systems if the excavation extends below the groundwater table.

Overexcavation of the unsuitable existing fill materials and river deposits to allow for the construction of shallow foundations and slab-on-grade would require deep excavations that extended below the groundwater levels.

Generally, the site near surface soils encountered during the investigation (landfill refuse) are consistent with Type C Soil Conditions as defined by 29 CFR Part 1926 (OSHA) which require a maximum unbraced excavation angle of 2H:1V. However, this safe angle will require slopes that extend beyond the property line, as such considerations for temporary shoring system should be considered. Actual conditions encountered during construction should be evaluated by a competent person (as defined by OSHA) to ensure that safe excavation methods and/or shoring and bracing requirements are implemented. The shoring system should be designed taking into account the following parameters:

- Allow for safe entry into the excavated area;
- Allow for dry conditions during construction;
- Protect the bearing soils from heaving or softening; and
- Protect adjacent structures, utilities, and public roadways

Seismic Design

Based on the limited available subsurface information and a review of the site regional geology, preliminarily we anticipate that Site Class "D" in accordance with the NYCBC- 2014 may be assigned and is applicable for the project. Upon the execution of the full geotechnical investigation with borings extended to further depths, a final assessment of an appropriate seismic site class shall be made.

Based on the site soil profiles obtained from this preliminary investigation, the depths to groundwater, and the presumed depth of excavation to Building +/- Elev. -8 feet, we estimate that the potential for liquefaction is low to moderate. A final assessment for liquefaction potential shall be performed upon execution of a more comprehensive investigation covering more areas of the site.

ADDITIONAL GEOTECHNICAL INVESTIGATION

As the design of this project progresses, a more comprehensive, development specific geotechnical investigation including additional soil borings should be completed to confirm these preliminary findings, provide more detailed development specific recommendations for design and satisfy the requirements of the NYCBC-2014. Based on the referenced *Boring Location Plan W/ Access*, an additional 55 structural soil exploration borings will be required. We recommend that at least have the borings be drilled to bedrock or 100 feet below existing grade. Additional, groundwater monitoring wells should be installed throughout the site and groundwater levels should be recorded for extended period of time to allow for more accurate assessment of the groundwater table elevation.

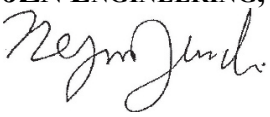
LIMITATION

The recommendations contained in this report represent our best professional judgment based on preliminary soils conditions encountered in the limited number of test borings performed for this study, and the structural and grading design criteria described in the report. Variations in the types of structures and design grading may change from the criteria assumed in preparation of the report. JZN should be advised of changes in the design criteria so that an evaluation can be made to determine if design recommendations should be revised. Conditions may be encountered during construction beyond and between borings that vary from the conditions reported herein. We recommend that foundation construction, earthwork and subgrade preparation be observed by a qualified Geotechnical Engineer or technician familiar with the anticipated conditions and the basis of the foundation design recommendations. Any variations encountered should be brought to our attention so that their effect on the recommendations presented herein can be reevaluated and modified if necessary. Our work has been performed in accordance with current standards of practice for geotechnical engineering for buildings based on the conditions encountered in the explorations. No other warranty is made, either expressed or implied.

CLOSURE

We appreciate the opportunity to work with you on this project. Please contact us if you wish to discuss this report or any aspect of the project.

Sincerely,
JZN ENGINEERING, PC.



Nejm E. Jundi, P.E.
President

Enclosures

FIGURES

FIGURE 1: PROJECT SITE LOCUS
FIGURE 2: SOIL EXPLORATION LOCATION PLAN
FIGURE 3: FEMA FLOOD MAP



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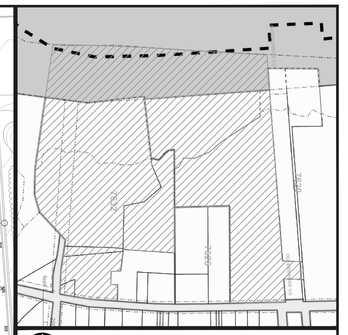
GOOGLE MAPS 2016

JZN ENGINEERING

PROJECT SITE LOCUS

PROPOSED RIVERSIDE RETAIL & ENTERTAINMENT DEVELOPMENT
STATEN ISLAND, CITY & STATE OF NEW YORK
21026-000

FIGURE 1



VICINITY MAP
N.T.S.

THE STATE OF NEW YORK REQUIRES NOTIFICATION BY EXCAVATORS, DESIGNERS, OR ANY PERSON PREPARING TO DISTURB THE EARTH'S SURFACE ANYWHERE IN THE STATE.

PREPARED BY:

JZN ENGINEERING

99 MORRIS AVENUE, SUITE 302
SPRINGFIELD P: (973) 218-6561
NEW JERSEY 08880 F: (732) 412-9343

NO.	DATE	BY	DESCRIPTION	APPROVED

REVISIONS

PROJECT NAME:
PROPOSED RIVERSIDE RETAIL & ENTERTAINMENT DEVELOPMENT
BLOCK 7620, LOT 1; Block 7632, LOTS 1, 6, 50, 150 & 151.
BOROUGH OF STATEN ISLAND, CITY & STATE OF NEW YORK

DRAWING TITLE:
BORING LOCATION PLAN

SEAL & SIGNATURE

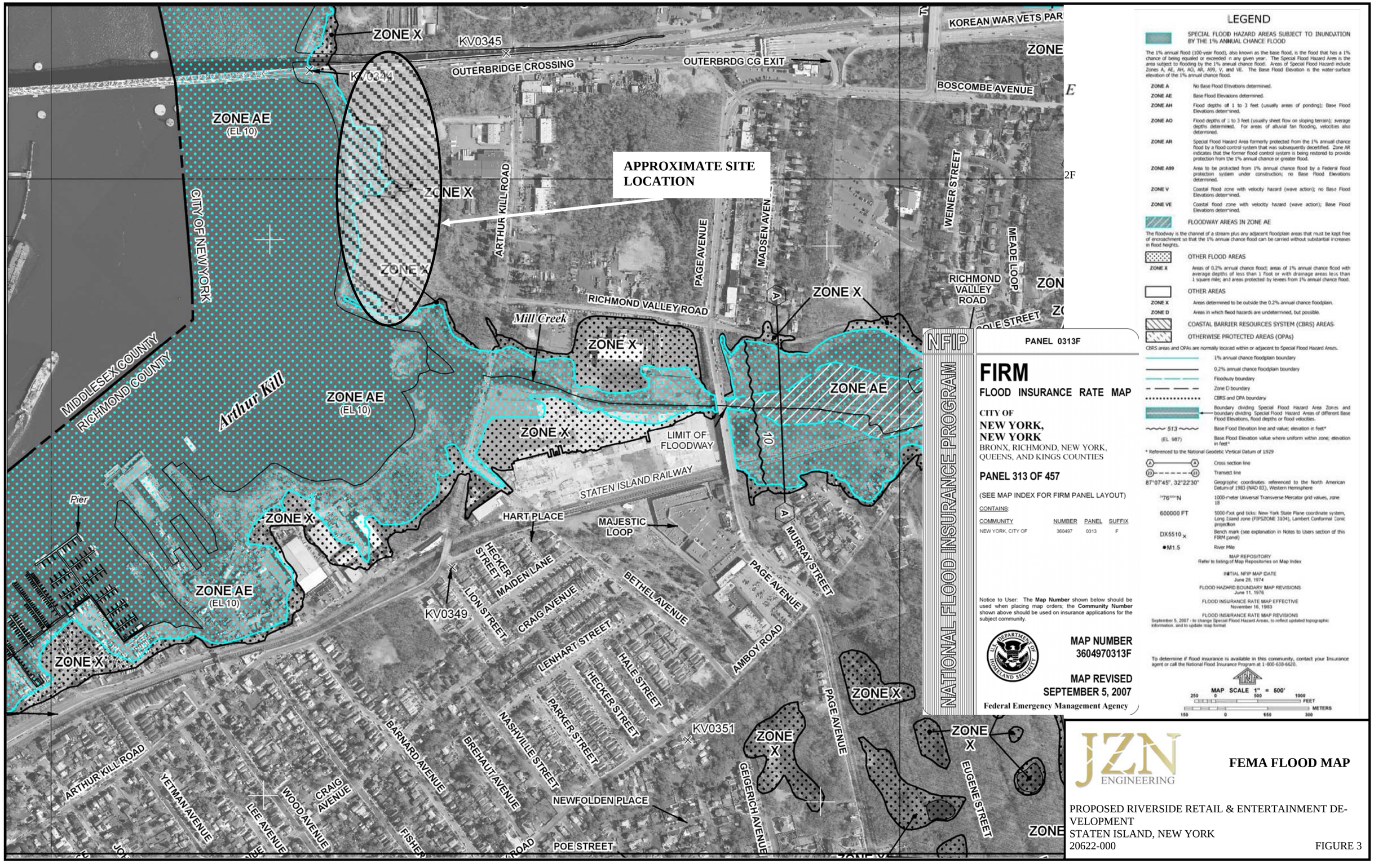
NOT VALID UNTIL SEALED

NEJM E. JUNDI DATE
NEW YORK STATE PROFESSIONAL ENGINEER #083095

ALTERATION OR ADDITION TO THIS DOCUMENT EXCEPT BY A LICENSED PROFESSIONAL ENGINEER IS A VIOLATION OF SECTION 7209, SUB-DIVISION 2, OF THE NEW YORK STATE EDUCATION LAW.

DATE:	07/18/16
SCALE:	1":50'
PROJECT No:	21026-000
DRAWING BY:	WG
CHK BY:	GR
APPROVED BY:	NEJ
DWG No:	B-001.00
CAD FILE No:	21026000
PAGE No:	1 of 1

C.C.O. 4/11/83 40' – 60' AS IN USE PUBLIC ROADWAY



NFIP NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0313F

FIRM

FLOOD INSURANCE RATE MAP

CITY OF
NEW YORK, NEW YORK
BRONX, RICHMOND, NEW YORK, QUEENS, AND KINGS COUNTIES

PANEL 313 OF 457

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
NEW YORK, CITY OF	360497	0313	F

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
3604970313F

MAP REVISED
SEPTEMBER 5, 2007

Federal Emergency Management Agency

LEGEND

SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

ZONE A	No Base Flood Elevations determined.
ZONE AE	Base Flood Elevations determined.
ZONE AH	Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.
ZONE AO	Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
ZONE AR	Special Flood Hazard Area formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.
ZONE A99	Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.
ZONE V	Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.
ZONE VE	Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

ZONE X	Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

OTHER AREAS

ZONE X	Areas determined to be outside the 0.2% annual chance floodplain.
ZONE D	Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

	1% annual chance floodplain boundary
	0.2% annual chance floodplain boundary
	Floodway boundary
	Zone D boundary
	CBRS and OPA boundary
	Boundary dividing Special Flood Hazard Area Zones and boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or flood velocities.
513	Base Flood Elevation line and value; elevation in feet*
(EL 987)	Base Flood Elevation value where uniform within zone; elevation in feet*

* Referenced to the National Geodetic Vertical Datum of 1929

A — A	Cross section line
23 — 23	Transect line
87°07'45", 32°22'30"	Geographic coordinates referenced to the North American Datum of 1983 (NAD 83), Western Hemisphere
4276000mN	1000-meter Universal Transverse Mercator grid values, zone 18
600000 FT	5000-foot grid ticks: New York State Plane coordinate system, Long Island zone (FIPSZONE 3104), Lambert Conformal Conic projection
DX5510 ×	Bench mark (see explanation in Notes to Users section of this FIRM panel)
M1.5	River Mile

MAP REPOSITORY
Refer to listing of Map Repositories on Map Index

INITIAL NFIP MAP DATE
June 28, 1974

FLOOD HAZARD BOUNDARY MAP REVISIONS
June 11, 1976

FLOOD INSURANCE RATE MAP EFFECTIVE
November 16, 1983

FLOOD INSURANCE RATE MAP REVISIONS
September 5, 2007 - to change Special Flood Hazard Areas, to reflect updated topographic information, and to update map format

To determine if flood insurance is available in this community, contact your Insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

MAP SCALE 1" = 500'
250 0 500 1000 FEET
150 0 150 300 METERS

JZN ENGINEERING

FEMA FLOOD MAP

PROPOSED RIVERSIDE RETAIL & ENTERTAINMENT DEVELOPMENT
STATEN ISLAND, NEW YORK
20622-000

FIGURE 3

APPENDIX A

SOIL EXPLORATION RECORDS

SOIL EXPLORATION BORINGS: ST-15, 26, 37, 46, 49, 53, 59, & 63

JZN Engineering, PC.

TEST BORING LOG

Boring No. ST-15 **Page** 1 of 2

Project Name	Proposed Riverside Retail & Entertainment Development	**Project No.**	21026-000
Client	WF Liberty	**Representative**	W. Guevara
Project Location	Arthur Kill Road, Block 7620, Lot 1; Block 7632, Lots 1, 6, 50, 150 & 151	**Contractor**	Allied Drilling, Inc.
	Borough of Staten Island, City & State of New York	**Driller**	T. Martin
Boring Location	Back of Block 7632; Lot 6	**Date Started**	07/01/2016
Ground Surface Elev.	+/- 13.0 Feet **Datum** NAVD 88	**Date Finished**	07/01/2016

Item	Casing	Sampler	Core Barrel	Rig Type
Type	F. J.	SS	--	Truck
Inside Diameter (in)	4.00	1.4	--	CME-45
Hammer Weight (lb)	--	140		**Drill Mud**
Hammer Fall (in)	--	30		Water
Hammer Type	--	Donut		EZ-Mud

Water Level Data

Date	Time	Bottom of Casing (ft)	Bottom of Boring (ft)	Water (ft)	Cave In (ft)
07/01/16	11:20 AM	4.0	10.0	8.0	--
07/01/16	2:20 PM	4.0	50.0	9.0	--

Depth (ft)	Sample No. & Rec. (in)	Sample Depth (ft)	Sampler Blows per 6 inches	USCS Symbol	Visual Classification	Remarks
0	S-1 9 in.	0 - 2 ft	2 3 4 3	Fill NYC Class 7	Fill: Brown medium to fine sand, little fine gravel, trace of debris, dry Debris: Roots +/-2.0'	
	S-2 20 in.	2 - 4 ft	3 4 3 3	SM NYC Class 6	Tan medium to fine SAND, some Silt, loose, moist (trace of roots)	
5	S-3 21 in.	4 - 6 ft	16 18 45 78	SM NYC Class 3a	Reddish brown SAND, and Silt, trace of fine to coarse Gravel, very dense, moist	
	S-4 0 in.	6 - 8 ft	100/0"	N. R.	No Recovery	Drilled from 6' to 8' due to obstruction
	S-5 20 in.	8 - 10 ft	9 8 12 16	SM-SC NYC Class 3b	Reddish brown medium to fine SAND, and Clayey Silt, little fine Gravel, medium dense, wet	
10						
15	S-6 10 in.	15 - 17 ft	14 22 32 34	SM NYC Class 3a	Reddish brown medium to fine SAND, and Clayey Silt, little fine to coarse Gravel, very dense, wet	
						Roller Bit Chatter at 17'
20	S-7 16 in.	20 - 22 ft	12 17 35 36	SM NYC Class 3a	Reddish brown medium to fine SAND, and Clayey Silt, some fine to coarse Gravel, very dense, wet	
						Roller Bit Chatter at 22' to 25'
25						

Summary	Overburden (Linear ft)	50	Rock Cored (Linear ft)	--	No. of Samples 13

JZN Engineering, PC.	TEST BORING LOG	Boring No. ST-15 Page 2 of 2

Project Name Proposed Riverside Retail & Entertainment Development — **Project No.** 21026-000

Depth (ft)	Sample No. & Rec. (in)	Sample Depth (ft)	Sampler Blows per 6 inches	USCS Symbol	Visual Classification	Remarks
25	S-8 17 in.	25 - 27 ft	12 21 27 21	SP-SM NYC Class 3a	Reddish brown medium to fine SAND, and Clayey Silt, little fine Gravel, dense wet	
30	S-9 15 in.	30 - 32 ft	14 22 42 60	SM NYC Class 3a	Reddish brown medium to fine SAND, and Clayey Silt, trace of fine to coarse Gravel, very dense, wet	
35	S-10 15 in.	35 - 37 ft	26 21 20 19	SP-SM NYC Class 3a	Reddish brown medium to fine SAND, and Clayey Silt, little fine to coarse gravel, dense, wet	Roller Bit Chatter at 38' to 40'
40	S-11 13 in.	40 - 42 ft	24 35 25 29	SP-SM NYC Class 3a	Reddish brown fine to coarse SAND, little Silt, little fine to coarse gravel, very dense, wet	Roller Bit Chatter at 42' to 44' Due to Possible Cobbles
45	S-12 0 in.	45 - 47 ft	12 12 20 33	N. R.	No Recovery	
					+/- 47.5'	
	S-13 20 in.	48 - 50 ft	32 22 25 34	ML NYC Class 5a	Gray SILT, very stiff, wet qu= 2.5 to 3 TSF	
50					+/- 50.0' Boring ST-15 Terminated +/- 50 Feet Below The Existing Ground Surface	
55						

Summary	Overburden (Linear ft) 50	Rock Cored (Linear ft) --	No. of Samples 13

JZN Engineering, PC.

TEST BORING LOG

Boring No. ST-26 **Page** 1 of 2

Project Name	Proposed Riverside Retail & Entertainment Development	**Project No.**	21026-000
Client	WF Liberty	**Representative**	W. Guevara
Project Location	Arthur Kill Road, Block 7620, Lot 1; Block 7632, Lots 1, 6, 50, 150 & 151	**Contractor**	Allied Drilling, Inc.
	Borough of Staten Island, City & State of New York	**Driller**	T. Martin
Boring Location	Southern Section of Property	**Date Started**	06/27/2016
Ground Surface Elev.	+/- 20.0 Feet **Datum** NAVD 88	**Date Finished**	06/27/2016

Item	Casing	Sampler	Core Barrel	Rig Type
Type	F. J.	SS	--	Truck
Inside Diameter (in)	4.00	1.4	--	CME-45
Hammer Weight (lb)	--	140		**Drill Mud**
Hammer Fall (in)	--	30		Water
Hammer Type	--	Donut		EZ-Mud

Water Level Data

Date	Time	Bottom of Casing (ft)	Bottom of Boring (ft)	Water (ft)	Cave In (ft)
06/27/16	1:30 PM	4.0	17.0	15.0	--
07/07/16	8:30 AM	--	--	15.0	--

Depth (ft)	Sample No. & Rec. (in)	Sample Depth (ft)	Sampler Blows per 6 inches	USCS Symbol	Visual Classification	Remarks
0	S-1 12 in.	0 - 0.9 ft	29 100/5"	SM NYC Class 3a	Reddish brown medium to fine SAND, and Silt, very dense, dry	
	S-2 10 in.	2 - 4 ft	32 29 39 56	SM NYC Class 3a	Reddish brown medium to fine SAND, and Silt, some fine to coarse Gravel, very dense, dry	
5	S-3 16 in.	4 - 6 ft	10 9 6 5	SM NYC Class 3b	Reddish brown medium to fine SAND, some Silt, trace of fine Gravel, medium dense, dry	
	S-4 14 in.	6 - 8 ft	5 14 21 13	SM NYC Class 3a	Reddish brown medium to fine SAND, and Silt, dense, dry	
	S-5 2 in.	8 - 10 ft	9 11 14 8	SM NYC Class 3b	Reddish brown medium to fine SAND, and Silt, trace of fine Gravel, medium dense, dry	
10	S-6 0 in.	10 - 12 ft	6 5 5 5	N. R.	No Recovery	
15	S-7 12 in.	15 - 17 ft	13 11 13 13	SP NYC Class 3b	Dark gray medium to fine SAND, trace of fine to coarse Gravel, trace of Silt, medium dense, wet	
20	S-8 15 in.	20 - 22 ft	15 17 26 41	SP NYC Class 3a	Dark gray to tannish brown medium to fine SAND, dense, wet	
25						

Summary	Overburden (Linear ft)	50	Rock Cored (Linear ft)	--	No. of Samples 14

JZN Engineering, PC.	TEST BORING LOG	Boring No. ST-26 Page 2 of 2
Project Name Proposed Riverside Retail & Entertainment Development		**Project No.** 21026-000

Depth (ft)	Sample No. & Rec. (in)	Sample Depth (ft)	Sampler Blows per 6 inches	USCS Symbol	Visual Classification	Remarks
25	S-9 12 in.	25 - 27 ft	9 11 11 10	SP-SM NYC Class 3b	Tan medium to fine SAND, little Silt, trace of fine Gravel, medium dense, wet	
30	S-10 18 in.	30 - 32 ft	13 13 11 18	SP-SM NYC Class 3b	Reddish brown medium to fine SAND, little Silt, trace of fine Gravel, medium dense, wet	
35	S-11 19 in.	35 - 37 ft	16 17 22 21	SP-SM NYC Class 3a	Reddish brown coarse to fine SAND, little Silt, trace of fine Gravel, dense, wet	
40	S-12 19 in.	40 - 42 ft	13 21 46 50	SM NYC Class 3a	Reddish brown medium to fine SAND, and Silt, some fine Gravel, very dense, wet	
45	S-13 9 in.	45 - 47 ft	16 28 25 17	SM NYC Class 3a	Reddish brown medium to fine SAND, and Silt, little fine Gravel, very dense, wet	
	S-14 0 in.	48 - 50 ft	16 12 15 23	N. R.	No Recovery +/- 50.0'	
50					Boring ST-26 Terminated +/- 50 Feet Below The Existing Ground Surface	
55						

Summary	Overburden (Linear ft) 50	Rock Cored (Linear ft) --	No. of Samples 14

JZN Engineering, PC.

TEST BORING LOG

Boring No. ST-37 **Page** 1 of 2

Project Name	Proposed Riverside Retail & Entertainment Development	**Project No.**	21026-000
Client	WF Liberty	**Representative**	W. Guevara
Project Location	Arthur Kill Road, Block 7620, Lot 1; Block 7632, Lots 1, 6, 50, 150 & 151	**Contractor**	Allied Drilling, Inc.
	Borough of Staten Island, City & State of New York	**Driller**	V. Alvanez
Boring Location	Middle of Property. Block 7620; Lot 50	**Date Started**	07/13/2016
Ground Surface Elev.	+/- 8.5 Feet **Datum** NAVD 88	**Date Finished**	07/13/2016

Item	Casing	Sampler	Core Barrel	Rig Type
Type	F. J.	SS	--	Track
Inside Diameter (in)	4.00	1.4	--	Mounted
Hammer Weight (lb)	--	140		**Drill Mud**
Hammer Fall (in)	--	30		Water
Hammer Type	--	Safety		EZ-Mud

Water Level Data

Date	Time	Bottom of Casing (ft)	Bottom of Boring (ft)	Water (ft)	Cave In (ft)
07/13/16	8:10 AM	--	2.0	2.0	--
07/13/16	11:36 AM	--	50.0	2.0	--

Depth (ft)	Sample No. & Rec. (in)	Sample Depth (ft)	Sampler Blows per 6 inches	USCS Symbol	Visual Classification	Remarks
0	S-1 23 in.	0 - 2 ft	1 1 1 1	Pt NYC Class 6	Tannish gray PEAT, very soft, moist to wet qu= 0.09 TSF	
5	S-2 24 in.	5- 7 ft	W.O.R W.O.R. W.O.H W.O.H.	Pt NYC Class 6	Tannish gray PEAT, very soft, moist to wet qu= 0.09 TSF	
					+/- 8.5'	
10	S-3 10 in.	10- 12 ft	5 9 8 11	SM NYC Class 3b	Tan and reddish brown medium to fine SAND, and Clayey Silt, little fine Gravel, medium dense, wet	
15	S-4 14 in.	15 - 17 ft	5 8 11 17	SM NYC Class 3b	Tan and reddish brown medium to fine SAND, and Clayey Silt, little fine Gravel, medium dense, wet	Roller Bit Chatter at 15' due to Possible Cobbles
20	S-5 17 in.	20 - 22 ft	10 17 30 44	SM NYC Class 3a	Reddish brown medium to fine SAND, and Silt, little fine to coarse Gravel, dense, wet	
25						

Summary	Overburden (Linear ft)	50	Rock Cored (Linear ft)	--	No. of Samples	11

JZN Engineering, PC.	TEST BORING LOG	Boring No. ST-37 Page 2 of 2

Project Name Proposed Riverside Retail & Entertainment Development | **Project No.** 21026-000

Depth (ft)	Sample No. & Rec. (in)	Sample Depth (ft)	Sampler Blows per 6 inches	USCS Symbol	Visual Classification	Remarks
25	S-6 19 in.	25- 27 ft	14 16 18 21	SM NYC Class 3a	Reddish brown medium to fine SAND, and Silt, some fine to coarse Gravel, dense, wet	
30	S-7 19 in.	30 - 32 ft	13 15 21 28	SM NYC Class 3a	Reddish brown medium to fine SAND, and Silt, some fine to coarse Gravel, dense, wet	
35	S-8 19 in.	35- 37 ft	12 18 18 24	SM NYC Class 3a	Reddish brown medium to fine SAND, and Silt, some fine to coarse Gravel, dense, wet	
40	S-9 19 in.	40 - 42 ft	12 13 13 31	ML NYC Class 5b	+/- 40.0' Gray SILT, trace of medium to fine Sand, trace of fine Gravel, stiff, wet qu= 1.25 to 2 TSF	
45	S-10 18 in.	45- 47 ft	12 18 19 22	ML NYC Class 5a	Gray SILT, little Clay, very stiff, wet qu= 2.5 TSF	
50	S-11 18 in.	48 - 50 ft	11 16 21 21	ML NYC Class 5a	Gray SILT, little Clay, very stiff, wet qu= 2.5 TSF	
55					Boring ST-37 Terminated +/- 50 Feet Below The Existing Ground Surface	

Summary	Overburden (Linear ft) 50	Rock Cored (Linear ft) --	No. of Samples 11

JZN Engineering, PC.	TEST BORING LOG	Boring No. ST-46 Page 1 of 2

Project Name	Proposed Riverside Retail & Entertainment Development	**Project No.**	21026-000
Client	WF Liberty	**Representative**	W. Guevara
Project Location	Arthur Kill Road, Block 7620, Lot 1; Block 7632, Lots 1, 6, 50, 150 & 151	**Contractor**	Allied Drilling, Inc.
	Borough of Staten Island, City & State of New York	**Driller**	V. Alvanez
Boring Location	Southwestern Corner of Property. Block 7632; Lot 150	**Date Started**	07/11/2016
Ground Surface Elev.	+/- 12.0 Feet **Datum** NAVD 88	**Date Finished**	07/11/2016

Item	Casing	Sampler	Core Barrel	Rig Type
Type	F. J.	SS	--	Track
Inside Diameter (in)	4.00	1.4	--	Mounted
Hammer Weight (lb)	--	140		**Drill Mud**
Hammer Fall (in)	--	30		Water
Hammer Type	--	Safety		Quick Gel

Water Level Data					
Date	**Time**	**Bottom of Casing (ft)**	**Bottom of Boring (ft)**	**Water (ft)**	**Cave In (ft)**
07/11/16	10:45 AM	--	8.0	6.0	--
07/11/16	3:45 PM	--	50.0	9.0	--
07/12/16	7:10 AM	--	--	9.0	--

Depth (ft)	Sample No. & Rec. (in)	Sample Depth (ft)	Sampler Blows per 6 inches	USCS Symbol	Visual Classification	Remarks
0	S-1 18 in.	0 - 2 ft	4 6 7 7	SM NYC Class 6	Reddish brown meidum to fine SAND, and Silt, little fine to coarse Gravel, medium, dense, dry (little roots and twigs)	
	S-2 13 in.	2 - 4 ft	5 11 11 6	SM NYC Class 3b	Reddish brown medium to fine SAND, and Silt, trace of fine Gravel, medium dense, dry (trace of roots)	
5	S-3 18 in.	4 - 6 ft	7 8 6 6	SM NYC Class 3b	Reddish brown and gray fine SAND, and Silt, trace of fine Gravel, trace of clay, medium dense, moist (little roots)	
	S-4 14 in.	6 - 8 ft	3 6 6 4	SM NYC Class 3b	Brown fine SAND, and Clayey Silt, trace of fine Gravel, meidum dense, wet	
	S-5 24 in.	8 - 10 ft	5 3 8 9	SM NYC Class 3b	Brown and gray fine SAND, and Silt, little Clay, little fine Gravel, medium dense, wet	
10					+/- 11.0'	
15	S-6 17 in.	15 - 17 ft	1 3 2 4	Pt NYC Class 6	Gray PEAT, soft, wet qu= 0.28 TSF	
					+/- 18.5'	
20	S-7 11 in.	20 - 22 ft	4 7 8 9	SM NYC Class 3b	Gray meidum to fine SAND, little Silt, medium dense, wet	
25						

Summary	Overburden (Linear ft)	50	Rock Cored (Linear ft)	--	No. of Samples	12

JZN Engineering, PC.	TEST BORING LOG	Boring No. ST-46
		Page 2 of 2
Project Name Proposed Riverside Retail & Entertainment Development		**Project No.** 21026-000

Depth (ft)	Sample No. & Rec. (in)	Sample Depth (ft)	Sampler Blows per 6 inches	USCS Symbol	Visual Classification	Remarks
25	S-8 11 in.	25 - 26.7 ft	10 22 26 50/2"	SM NYC Class 3a	Tan medium to fine SAND, little Silt, dense, wet	
30	S-9 14 in.	30 - 32 ft	15 10 12 15	SM NYC Class 3b	Reddish brown medium to fine SAND, and Silt, little fine Gravel, medium dense, wet	
35	S-10 12 in.	35 - 37 ft	12 9 12 14	SM-SP NYC Class 3b	Reddish brown medium to fine SAND, and Silt, some fine Gravel, dense, wet	Roller Bit Chatter at 37' to 40' Due to Possible Cobbles
40	S-11 12 in.	40 - 42 ft	9 20 27 31	SM NYC Class 3a	Reddish brown medium to fine SAND, and Silt, some fine Gravel, dense, wet	
45					+/- 46.0'	
50	S-12 24 in.	48 - 50 ft	6 13 14 19	ML NYC Class 5b	Gray SILT, trace of Clay, stiff, wet qu= 2 TSF +/- 50.0'	
55					Boring ST-46 Terminated +/- 50 Feet Below The Existing Ground Surface	

Summary	Overburden (Linear ft) 50	Rock Cored (Linear ft) --	No. of Samples 12

JZN Engineering, PC.	TEST BORING LOG	Boring No. ST-49/49A Page 1 of 2

Project Name	Proposed Riverside Retail & Entertainment Development	**Project No.**	21026-000
Client	WF Liberty	**Representative**	W. Guevara
Project Location	Arthur Kill Road, Block 7620, Lot 1; Block 7632, Lots 1, 6, 50, 150 & 151	**Contractor**	Allied Drilling, Inc.
	Borough of Staten Island, City & State of New York	**Driller**	T. Martin/ O. Moran
Boring Location	Middle of Property Block 7632; Lot 150	**Date Started**	06/27/2016
Ground Surface Elev.	+/- 18.0 Feet **Datum** NAVD 88	**Date Finished**	07/08/2016

Item	Casing	Sampler	Core Barrel	Rig Type
Type	F. J.	SS	--	Truck CME-45
Inside Diameter (in)	4.00	1.4	--	Track Mounted
Hammer Weight (lb)	--	140		**Drill Mud**
Hammer Fall (in)	--	30		Water
Hammer Type	--	Donut- Safe		EZ-Mud

Water Level Data					
Date	**Time**	**Bottom of Casing (ft)**	**Bottom of Boring (ft)**	**Water (ft)**	**Cave In (ft)**
06/27/16	10:05 AM	4.0	12.0	11.0	--
07/08/16	5:45 PM	13.0	50.0	10.0	--
07/11/16	7:15 AM	13.0	--	14.0	--

Depth (ft)	Sample No. & Rec. (in)	Sample Depth (ft)	Sampler Blows per 6 inches	USCS Symbol	Visual Classification	Remarks
0	S-1 16 in.	0 - 1.7 ft	15 26 48 80/2"	SM NYC Class 3a	Brown medium to fine SAND, some Silt, trace of fine Gravel, very dense, dry	300 lb hammer used to advance last 4" of Sample 1
	S-2 8 in.	2 - 4 ft	99 70 30 17	SM NYC Class 3a	Brown medium to fine SAND, some Silt, very dense, moist	
5	S-3 10 in.	4 - 6 ft	8 4 4 3	SM NYC Class 6	Brown medium to fine SAND, some Silt, trace of fine Gravel, loose, moist	
	S-4 16 in.	6 - 8 ft	2 3 3 5	SM NYC Class 6	Brown medium to fine SAND, and Silt, little fine Gravel, trace of Clay, loose, moist	
	S-5 9 in.	8 - 10 ft	13 3 4 3	SM NYC Class 6	Brown medium to fine SAND, and Silt, little coarse Gravel, loose, moist	
10	S-6 10 in.	10 - 12 ft	1 5 11 8	SP-SM NYC Class 3b	Brown and tan medium to fine SAND, medium dense, wet	Roller Bit Refusal at 13' due to Possible Boulder. Boring offset to ST-49A
15	S-7 15 in.	15 - 17 ft	10 10 16 28	SM NYC Class 3b	Gray and tan medium to fine SAND, and Silt, medium dense, wet	
20	S-8 13 in.	20 - 22 ft	8 10 11 11	SM NYC Class 3b	Tan medium to fine SAND, little Silt, medium dense, wet	
25						

Summary	Overburden (Linear ft)	50	Rock Cored (Linear ft)	--	No. of Samples	11

JZN Engineering, PC.	TEST BORING LOG	Boring No.	ST-49/49A
		Page	2 of 2
Project Name	Proposed Riverside Retail & Entertainment Development	**Project No.**	21026-000

Depth (ft)	Sample No. & Rec. (in)	Sample Depth (ft)	Sampler Blows per 6 inches	USCS Symbol	Visual Classification	Remarks
25						
30	S-9 20 in.	30 - 32 ft	12 16 20 23	SM NYC Class 3a	Reddish brown and tan medium to fine SAND, and Silt, trace of fine Gravel, dense, wet	
35						
40	S-10 2 in.	40 - 42 ft	15 30 30 59	SM NYC Class 3a	Reddish brown medium to fine SAND, and Silt, some fine Gravel, very dense, wet	
45						
50	S-11 24 in.	48 - 50 ft	12 13 15 19	SM NYC Class 3b	Same as Sample S-10, dense, wet +/- 50.0'	
55					Boring ST-49/49A Terminated +/- 50 Feet Below The Existing Ground Surface	

Summary	Overburden (Linear ft)	50	Rock Cored (Linear ft)	--	No. of Samples	11

JZN Engineering, PC.	TEST BORING LOG	Boring No. ST-53 Page 1 of 2

Project Name	Proposed Riverside Retail & Entertainment Development	**Project No.**	21026-000
Client	WF Liberty	**Representative**	W. Guevara
Project Location	Arthur Kill Road, Block 7620, Lot 1; Block 7632, Lots 1, 6, 50, 150 & 151	**Contractor**	Allied Drilling, Inc.
	Borough of Staten Island, City & State of New York	**Driller**	T. Martin
Boring Location	Eastern Side of Property. Block 7620; Lot 1	**Date Started**	06/29/2016
Ground Surface Elev.	+/- 11.0 Feet **Datum** NAVD 88	**Date Finished**	06/30/2016

Item	Casing	Sampler	Core Barrel	Rig Type
Type	F. J.	SS	--	Truck
Inside Diameter (in)	4.00	1.4	--	CME-45
Hammer Weight (lb)	--	140		**Drill Mud**
Hammer Fall (in)	--	30		Water
Hammer Type	--	Donut		EZ-Mud

Water Level Data					
Date	**Time**	**Bottom of Casing (ft)**	**Bottom of Boring (ft)**	**Water (ft)**	**Cave In (ft)**

Depth (ft)	Sample No. & Rec. (in)	Sample Depth (ft)	Sampler Blows per 6 inches	USCS Symbol	Visual Classification	Remarks
0						
	S-1 15 in.	0 - 2 ft	2 7 6 4	SM NYC Class	Tan fine SAND, little Silt, trace of fine Gravel, medium dense, dry	
	S-2 14 in.	2 - 4 ft	5 5 8 10	SM NYC Class	Tan medium to fine SAND, little Silt, medium dense, dry	
5	S-3 20 in.	4 - 6 ft	9 8 10 10	SM-SC NYC Class	Tan and reddish brown medium to fine SAND, and Clayey Silt, trace of fine Gravel, medium dense, moist (trace of roots)	
	S-4 18 in.	6 - 8 ft	23 27 15 19	SM NYC Class	Tan and reddish brown medium fine SAND, and Clayey Silt, dense, moist (trace of roots)	
	S-5 20 in.	8 - 10 ft	38 33 24 34	SM NYC Class	Tan and reddish brown meidum to fine SAND, and Clayey Silt, little fine to coarse, Gravel, very dense, moist	
10						Roller Bit Chatter from 10' to 15'
15	S-6 0 in.	15 - 17 ft	6 9 13 16	N. R.	No Recovery	
						Roller Bit Chatter at 18'
20	S-7 23 in.	20 - 22 ft	10 15 22 22	SM NYC Class 3a	Reddish brown medium to fine SAND, and Clayey Silt, little fine to coarse Gravel, dense, wet	
25						

Summary	Overburden (Linear ft)	50	Rock Cored (Linear ft)	--	No. of Samples	13

JZN Engineering, PC.	TEST BORING LOG	Boring No. ST-53
		Page 2 of 2
Project Name Proposed Riverside Retail & Entertainment Development		**Project No.** 21026-000

Depth (ft)	Sample No. & Rec. (in)	Sample Depth (ft)	Sampler Blows per 6 inches	USCS Symbol	Visual Classification	Remarks
25	S-8 2 in.	25 - 27 ft	14 9 6 7	SM NYC Class 3b	Reddish brown medium to fine SAND, and Silt, little coarse Gravel, medium dense, wet (coarse gravel in spoon's tip)	
30	S-9 19 in.	30 - 32 ft	11 10 11 10	SP-SM NYC Class 3b	Reddish brown medium to coarse SAND, little Silt, little fine to coarse Gravel, medium dense, wet	
35	S-10 11 in.	35 - 37 ft	12 9 9 12	SP-SM NYC Class 3b	Reddish brown medium to fine SAND, little Silt, little fine to coarse Gravel, medium dense, wet	
40	S-11 6 in.	40 - 42 ft	6 9 11 8	SP-SM NYC Class 3b	Reddish brown fine to coarse SAND, little Silt, little fine Gravel, medium dense, wet	
					+/- 44.0'	Roller Bit Chatter between 43' and 44'
45	S-12 15 in.	45 - 47 ft	11 18 25 21	ML NYC Class 5a	Dark gray SILT, very Stiff, moist qu= 1.5 TSF to 3.5 TSF	
	S-13 18 in.	48 - 50 ft	11 8 12 14	CL-ML NYC Class 5a	Dark gray to light gray SILTY CLAY, trace of fine Gravel, stiff, moist qu= 1.0 TSF to 2 TSF	
50					+/- 50.0' Boring ST-53 Terminated +/- 50 Feet Below The Existing Ground Surface	
55						

Summary	Overburden (Linear ft) 50	Rock Cored (Linear ft) --	No. of Samples 13

JZN Engineering, PC.

TEST BORING LOG

Boring No. ST-59 **Page** 1 of 2

Project Name	Proposed Riverside Retail & Entertainment Development	**Project No.**	21026-000
Client	WF Liberty	**Representative**	W. Guevara
Project Location	Arthur Kill Road, Block 7620, Lot 1; Block 7632, Lots 1, 6, 50, 150 & 151	**Contractor**	Allied Drilling, Inc.
	Borough of Staten Island, City & State of New York	**Driller**	T. Martin
Boring Location	Northwestern Side of Property. Block 7620; Lot 150	**Date Started**	06/30/2016
Ground Surface Elev.	+/- 8.0 Feet **Datum** NAVD 88	**Date Finished**	07/01/2016

Item	Casing	Sampler	Core Barrel	Rig Type
Type	F. J.	SS	--	Truck
Inside Diameter (in)	4.00	1.4	--	CME-45
Hammer Weight (lb)	--	140		**Drill Mud**
Hammer Fall (in)	--	30		Water
Hammer Type	--	Donut		EZ-Mud

Water Level Data

Date	Time	Bottom of Casing (ft)	Bottom of Boring (ft)	Water (ft)	Cave In (ft)
06/30/16	1:30 PM	4.0	8.0	8.0	--
07/01/16	9:10 AM	--	50.0	6.0	--

Depth (ft)	Sample No. & Rec. (in)	Sample Depth (ft)	Sampler Blows per 6 inches	USCS Symbol	Visual Classification	Remarks
0	S-1 16 in.	0 - 2 ft	2 4 4 5	SM NYC Class 6	Tan medium to fine SAND, little Silt, loose, moist (trace of roots)	
	S-2 10 in.	2 - 4 ft	3 5 7 10	SM NYC Class 3b	Tan medium to fine SAND, trace of Silt, medium dense, moist (trace of roots)	
5	S-3 19 in.	4 - 6 ft	8 7 19 45	SM NYC Class 3b	Tan to reddish brown SAND, little Clayey Silt, trace of fine Gravel, medium dense, moist	
	S-4 17 in.	6 - 8 ft	27 36 45 35	SM NYC Class 3a	Tan and reddish brown SAND, and Clayey Silt, trace of fine to coarse Gravel, very dense, moist	
10	S-5 18 in.	8 - 10 ft	14 23 15 19	SM NYC Class 3a	Reddish brown medium to fine SAND, and Silt, little fine to coarse Gravel, dense, wet	
15	S-6 18 in.	15 - 17 ft	5 9 9 18	SM NYC Class 3b	Reddish brown medium to fine SAND, and Clayey Silt, trace of fine Gravel, medium dense, wet	
20	S-7 14 in.	20 - 22 ft	10 7 7 7	SP-SM NYC Class 3b	Brown medium to fine SAND, little Silt, medium dense, wet	
25						

Summary	Overburden (Linear ft)	50	Rock Cored (Linear ft)	--	No. of Samples 13

JZN Engineering, PC.	TEST BORING LOG	Boring No. ST-59 Page 2 of 2

Project Name Proposed Riverside Retail & Entertainment Development — **Project No.** 21026-000

Depth (ft)	Sample No. & Rec. (in)	Sample Depth (ft)	Sampler Blows per 6 inches	USCS Symbol	Visual Classification	Remarks
25						
	S-8 10 in.	25 - 27 ft	11 10 10 10	SP-SM NYC Class 3b	Reddish brown fine to coarse SAND, little Silt, little fine to coarse Gravel, medium dense, wet	
30						
	S-9 10 in.	30 - 32 ft	15 12 10 10	SP-SM NYC Class 3b	Reddish brown fine to coarse SAND, little Silt, little fine to coarse, Gravel, medium dense, wet	
35						
	S-10 11 in.	35 - 37 ft	14 13 16 8	SP-SM NYC Class 3b	Same as Sample S-9, medium dense, wet	
					+/- 39.0'	
40						
	S-11 15 in.	40 - 42 ft	10 15 23 23	ML NYC Class 5a	Dark gray SILT, very stiff, moist to dry qu= 2 TSF to 3 TSF	
45						
	S-12 20 in.	45 - 47 ft	22 22 21 30	CL-ML NYC Class 5a	Dark gray to black SILTY CLAY, trace of fine Gravel, stiff to very stiff, wet qu= 1 TSF to 2.75 TSF	
	S-13 24 in.	48 - 50 ft	10 22 27 28	ML NYC Class 5a	Gray SILT, stiff to very stiff, wet qu= 2 TSF to 2.5 TSF	
					+/-50.0'	
50					Boring ST-59 Terminated +/- 50 Feet Below The Existing Ground Surface	
55						

Summary	Overburden (Linear ft) 50	Rock Cored (Linear ft) --	No. of Samples 13

JZN Engineering, PC.	TEST BORING LOG	Boring No. ST-63 Page 1 of 2

Project Name	Proposed Riverside Retail & Entertainment Development	**Project No.**	21026-000
Client	WF Liberty	**Representative**	W. Guevara
Project Location	Arthur Kill Road, Block 7620, Lot 1; Block 7632, Lots 1, 6, 50, 150 & 151	**Contractor**	Allied Drilling, Inc.
	Borough of Staten Island, City & State of New York	**Driller**	T. Martin
Boring Location	Northeastern Side of Property.	**Date Started**	06/28/2016
Ground Surface Elev.	+/- 28.0 Feet **Datum** NAVD 88	**Date Finished**	06/28/2016

Item	Casing	Sampler	Core Barrel	Rig Type
Type	F. J.	SS	--	Truck
Inside Diameter (in)	4.00	1.4	--	CME-45
Hammer Weight (lb)	--	140		**Drill Mud**
Hammer Fall (in)	--	30		Water
Hammer Type	--	Donut		EZ-Mud

Water Level Data					
Date	**Time**	**Bottom of Casing (ft)**	**Bottom of Boring (ft)**	**Water (ft)**	**Cave In (ft)**
06/28/16	11:00 AM	4.0	22.0	20.0	--

Depth (ft)	Sample No. & Rec. (in)	Sample Depth (ft)	Sampler Blows per 6 inches	USCS Symbol	Visual Classification	Remarks
0					Asphaltic Pavement	
	S-1 23 in.	0 - 2 ft	21 10 10 9	Fill NYC Class 7	Fill: Reddish brown medium to fine sand, some silt, little debris, dry Debris: Asphalt, concrete, roots	
	S-2 19 in.	2 - 4 ft	8 7 8 29	Fill NYC Class 7 SM NYC Class 3b	Fill: Same as Sample S-1, dry +/- 3.0' Reddish brown medium to fine SAND, some Clayey Silt, medium dense, dry	
5	S-3 20 in.	4 - 6 ft	36 30 25 30	SM NYC Class 3a	Reddish brown medium to fine SAND, little Silt, little fine Gravel, very dense, dry	
	S-4 20 in.	6 - 8 ft	23 35 45 60	SM NYC Class 3a	Reddish brown medium to fine SAND, some Silt, little fine Gravel, very dense, dry	
	S-5 19 in.	8 - 10 ft	35 34 36 45	SM NYC Class 3a	Tan and reddish brown medium to fine SAND, some Silt, little fine Gravel, very dense, dry	
10						
15	S-6 15 in.	15 - 16.3 ft	19 15 75/4"	SM NYC Class 3a	Reddish brown medium to fine SAND, some Silt, little fine to coarse Gravel, very dense, moist	
20	S-7 13 in.	20 - 22 ft	21 15 15 14	SP-SM NYC Class 3b	Reddish brown medium to fine SAND, little Silt, trace of fine Gravel, medium dense, wet	
25						

Summary	Overburden (Linear ft)	50	Rock Cored (Linear ft)	--	No. of Samples	13

JZN Engineering, PC.	TEST BORING LOG	Boring No. ST-63 Page 2 of 2
Project Name Proposed Riverside Retail & Entertainment Development		**Project No.** 21026-000

Depth (ft)	Sample No. & Rec. (in)	Sample Depth (ft)	Sampler Blows per 6 inches	USCS Symbol	Visual Classification	Remarks
25	S-8 19 in.	25 - 27 ft	13 23 30 27	SP-SM NYC Class 3a	Reddish brown medium to fine SAND, some Silt, little fine to coarse, Gravel, very dense, wet	
30	S-9 20 in.	30 - 32 ft	32 32 29 33	SP-SM NYC Class 3a	Reddish brown medium to fine SAND, some Silt, trace of fine Gravel, very dense, wet	
35	S-10 17 in.	35 - 37 ft	17 16 20 18	SP-SM NYC Class 3a	Tan and brown medium to fine SAND, trace of Silt, trace of fine Gravel, dense, wet	
40	S-11 13 in.	40 - 42 ft	13 13 12 15	SP NYC Class 3b	Brown medium to fine SAND, trace of Silt, medium dense, wet	
45	S-12 12 in.	45 - 47 ft	16 15 12 13	SP NYC Class 3b	Brown medium to fine SAND, trace of Silt, some fine Gravel, medium dense, wet	
	S-13 13 in.	48 - 50 ft	23 28 27 18	SP NYC Class 3a	Reddish brown fine to coarse SAND, trace of Silt, some fine Gravel, very dense, wet +/- 50.0'	
50					Boring ST-63 Terminated +/- 50 Feet Below The Existing Ground Surface	
55						

Summary	Overburden (Linear ft) 50	Rock Cored (Linear ft) --	No. of Samples 13

Riverside Galleria

STATEN ISLAND, NEW YORK

Subsurface (Phase II) Investigation Report

CEQR Number: 09DCP018R

AKRF Project Number: 11715

Prepared for:

WF Liberty, LLC
15 Wyckoff Place
Woodmere, NY 11598

Prepared by:

AKRF

440 Park Avenue South
New York, NY 10016
212-696-0670

SEPTEMBER 2016

NORTH BRIDGE STREET

OUTERBRIDGE CROSSING

SOUTH BRIDGE STREET

BOSCOMBE AVENUE

ARTHUR KILL

ARTHUR KILL ROAD

SB/SV/MW-1

SB-8

SB-7

SB/SV/MW-3

SB-6

SB/SV/MW-2

SB-5

SB/SV/MW-4

TP-1

TP-2

TP-5

TP-4

TP-3

TP-6

Metallic Anomaly #1
(Abandoned Auxiliary Fuel Tank)

Metallic Anomaly #2

Metallic Anomaly #3

Metallic Anomaly #4

Metallic Anomaly #5

Metallic Anomaly #6

Legend

- Project Site Boundary
- Approximate Area of Historic Filling Activity
- Test Pit Location
- Soil Boring Location
- Soil Boring/Soil Vapor/Groundwater Location
- Anomaly Location
- Utility Line
- Proposed Building Footprint

Notes:

1. Proposed redevelopment plan is overlayed onto May 2015 Aerial Photo from ESRI World Imagery

2. Metallic Anomaly locations based on geophysical survey from Delta Geophysics Inc. June 2016

0 100 200 400

Feet

AKRF
Environmental Consultants
440 Park Avenue South, New York, N.Y. 10016

Riverside Galleria
Staten Island, New York

SAMPLE LOCATIONS

DATE
9/16/2016

PROJECT No.
11715

FIGURE
2

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APPENDIX D

SOIL BORING LOGS

SOIL BORING LOG

Riverside Galleria

AKRF Project Number: 11715

Boring No. **SB-1**

Sheet 1 **of** 1

AKRF
440 Park Avenue South, New York, NY
Phone (212) 696-0670 Fax (212) 726-0942

Drilling Method:	**Geoprobe**
Sampling Method:	**5' Macrocore**
Driller :	AARCO
Sampler:	J. Pensky / S. Grens

Drilling

Start Time	8:35	**Finish Time**	9:10
Date	8/8/2016		
Weather:	85°F, sunny/humid		

Depth (feet)	Recovery (Inches)	Surface Condition: Gravel	Odor	Moisture	PID/LEL	NAPL	Samples Collected for Lab Analysis
1	48	Top 12": Brown SAND, some m-c Gravel, little Silt, trace Brick (FILL)	ND	ND	ND/ND	ND	SB-1 (0-2'); VOC grab at 1' bgs
2		Middle 6": BRICK (FILL)	ND	ND	ND/ND	ND	
3							
4		Bottom 30": Brown SAND, some Silt, m-c Gravel, little Brick (FILL)	ND	ND	ND/ND	ND	
5							
6	54						SB-1 (8-10'); VOC grab at 9' bgs
7		Top 46": Brown SAND, some m-c Gravel, little Asphalt, trace Coal ash, Brick (FILL)	ND	ND	ND/ND	ND	
8							
9							
10		Bottom 8": Red/Brown CLAY.	ND	Moist	ND/ND	ND	
11	55	Red/Brown CLAY, little Cobbles.	ND	Wet	ND/ND	ND	
12							
13							
14							
15							
16	60	Red/Brown CLAY, some f-m Gravel, little Cobbles.	ND	Wet	ND/ND	ND	
17							
18							
19							
20							

Notes: End of boring at 20 feet below ground surface.

Groundwater encountered at 10 feet below ground surface.

PID = photoionization detector

ND = Not Detected

SOIL BORING LOG

Riverside Galleria

AKRF Project Number: 11715

Boring No. **SB-2**

Sheet 1 **of** 1

AKRF
440 Park Avenue South, New York, NY
Phone (212) 696-0670 Fax (212) 726-0942

Drilling Method:	**Geoprobe**
Sampling Method:	**5' Macrocore**
Driller :	AARCO
Sampler:	J. Pensky / S. Grens

Drilling

Start Time	10:50	**Finish Time**	11:10
Date	8/8/2016		
Weather:	85°F, sunny/humid		

Depth (feet)	Recovery (Inches)	Surface Condition: Top Soil	Odor	Moisture	PID/LEL	NAPL	Samples Collected for Lab Analysis
1	54	Top 28": Red/Brown SAND and SILT, some fine Gravel, trace Brick (FILL).	ND	ND	ND/ND	ND	SB-2 (0-2'); VOC grab at 1' bgs
2							
3		Bottom 26": Red/Brown SAND and SILT, some f Gravel (FILL).	ND	ND	ND/ND	ND	
4							
5							
6	48	Top 10": Red/Brown SAND and SILT, some fine Gravel (FILL).	ND	ND	ND/ND	ND	SB-2 (7-9'); VOC grab at 8' bgs
7							
8		Bottom 28": Brown f-m SAND, trace Silt, fine Gravel (FILL).	ND	Wet @ 9' bgs	ND/ND	ND	
9							
10							
11	52	Red/Brown CLAY, little f-m Gravel, Cobbles.	ND	Wet	ND/ND	ND	
12							
13							
14							
15							
16	42	Red/Brown CLAY, little f-m Gravel, Cobbles.	ND	Wet	ND/ND	ND	
17							
18							
19							
20							

Notes: End of boring at 20 feet below ground surface.

Groundwater encountered at 9 feet below ground surface.

PID = photoionization detector

ND = Not Detected

SOIL BORING LOG

Riverside Galleria

AKRF Project Number: 11715

Boring No. SB-3

Sheet 1 of 1

AKRF
440 Park Avenue South, New York, NY
Phone (212) 696-0670 Fax (212) 726-0942

Drilling Method:	Geoprobe
Sampling Method:	5' Macrocore
Driller :	AARCO
Sampler:	J. Pensky / S. Grens

Drilling

Start Time	12:45	Finish Time	13:10
Date	8/8/2016		
Weather:	85°F, sunny/humid		

Depth (feet)	Recovery (Inches)	Surface Condition: Topsoil	Odor	Moisture	PID/LEL	NAPL	Samples Collected for Lab Analysis
1 2 3 4 5	50	Red/Brown SILT and SAND, f-m Gravel, trace Organics (Roots) (FILL).	ND	ND	ND/ND	ND	
6 7 8 9 10	48	Red/Brown SILT and SAND, f-m Gravel, trace Organics (Roots) (FILL).	ND	ND	ND/ND	ND	SB-3 (13-15'); Grab at 14' bgs
11 12 13 14 15	52	Top 37": Red/Brown SILT and SAND, f-m Gravel, trace Organics (Roots) (FILL). Middle 6": Brown fine SAND. Bottom 9": Dark Grey coarse SAND, trace Silt.	ND	ND	ND/ND	ND	
16 17 18 19 20	60	Top 52": Dark Grey coarse SAND, some Clay, trace Silt. Bottom 8": Brown fine SAND, trace Silt.	ND	Wet	ND/ND	ND	
21 22 23 24 25	48	Brown coarse SAND, trace Silt.	ND	Wet	ND/ND	ND	
26 27 28 29 30	42	Brown coarse SAND, trace Silt.	ND	Wet	ND/ND	ND	

Notes: Boring moved ~20' west of proposed location due to accessibility issues. Elevation is 10' higher than proposed boring location - boring extended to 30 feet below ground surface. Groundwater encountered at 15' bgs.

PID = photoionization detector ND = Not Detected

SOIL BORING LOG

Riverside Galleria

AKRF Project Number: 11715

Boring No. SB-4

Sheet 1 of 1

AKRF
440 Park Avenue South, New York, NY
Phone (212) 696-0670 Fax (212) 726-0942

Drilling Method:	Geoprobe
Sampling Method:	5' Macrocore
Driller :	AARCO
Sampler:	J. Pensky / S. Grens

Drilling

Start Time	14:20	Finish Time	14:45
Date	8/8/2016		
Weather:	85°F, sunny/humid		

Depth (feet)	Recovery (Inches)	Surface Condition: Gravel	Odor	Moisture	PID/LEL	NAPL	Samples Collected for Lab Analysis
1	36	Top 24": Brown SAND, some Asphalt, Brick, m-c Gravel, little Silt (FILL).	ND	ND	ND/ND	ND	SB-4 (0-2'); VOC grab at 1' bgs
2							
3							
4		Bottom 12": Red/Brown CLAY, little fine Gravel.	ND	ND	ND/ND	ND	
5							
6	40	Brown/Red CLAY, little fine Gravel.	ND	ND	ND/ND	ND	
7							
8			ND	ND	ND/ND	ND	
9							
10							
11	60	Top 12": Red/Brown CLAY, little fine Gravel.	ND	ND	ND/ND	ND	
12		Middle 6": Red/Brown CLAY, some Brown Sand, m-c Gravel.	ND	ND	ND/ND	ND	
13							
14		Bottom 42": Red/Brown CLAY, little fine Gravel.	ND	ND	ND/ND	ND	SB-4 (13-15'); VOC Grab @ 14' bgs
15							
16	56	Top 40": Red/Brown CLAY, little fine Gravel.	ND	Wet	ND/ND	ND	
17							
18							
19		Bottom 16": Red/Brown coarse SAND, some Silt.	ND	Wet	ND/ND	ND	
20							

Notes: End of boring at 20 feet below ground surface.

Groundwater encountered at 15 feet below ground surface.

PID = photoionization detector

ND = Not Detected

SOIL BORING LOG

Riverside Galleria

AKRF Project Number: 11715

Boring No. SB-5

Sheet 1 of 1

AKRF
440 Park Avenue South, New York, NY
Phone (212) 696-0670 Fax (212) 726-0942

Drilling Method:	Geoprobe
Sampling Method:	5' Macrocore
Driller :	AARCO
Sampler:	J. Pensky / S. Grens

Drilling

Start Time	10:10	Finish Time	10:20
Date	8/8/2016		
Weather:	85°F, sunny/humid		

Depth (feet)	Recovery (Inches)	Surface Condition: Gravel	Odor	Moisture	PID/LEL	NAPL	Samples Collected for Lab Analysis
1 – 5	40	Brown SAND, some m-c Gravel, little Asphalt, Brick (FILL).	ND	ND	ND/ND	ND	SB-5 (0-2'); VOC grab at 1' bgs
6 – 8	44	Top 24": Brown SAND, some m-c Gravel, little Asphalt, Brick (FILL).	ND	ND	ND/ND	ND	SB-5 (6-8'); VOC Grab at 7' bgs
9 – 10		Bottom 20": Brown SAND, some Silt.	ND	Wet @ 8' bgs	ND/ND	ND	
11 – 13	54	Top 24": Brown SAND, some Silt.	ND	Wet	ND/ND	ND	
14 – 15		Bottom 30": Red/Brown CLAY, little Cobbles.	ND	Wet	ND/ND	ND	
16 – 20	48	Red/Brown CLAY, little Cobbles.	ND	Wet	ND/ND	ND	

Notes: End of boring at 20 feet below ground surface.

Groundwater encountered at 8 feet below ground surface.

PID = photoionization detector

ND = Not Detected

SOIL BORING LOG

Riverside Galleria

AKRF Project Number: 11715

Boring No. SB-6

Sheet 1 of 1

AKRF
440 Park Avenue South, New York, NY
Phone (212) 696-0670 Fax (212) 726-0942

Drilling Method:	Geoprobe
Sampling Method:	5' Macrocore
Driller :	AARCO
Sampler:	J. Pensky / S. Grens

Drilling

Start Time	12:00	Finish Time	12:25
Date	8/8/2016		
Weather:	85°F, sunny/humid		

Depth (feet)	Recovery (Inches)	Surface Condition: Gravel	Odor	Moisture	PID/LEL	NAPL	Samples Collected for Lab Analysis
1 – 5	52	Red/Brown SILT and SAND, some fine Gravel.	ND	ND	ND/ND	ND	SB-6 (0-2'); VOC grab at 1' bgs
6 – 10	56	Red/Brown SILT and SAND, some fine Gravel.	ND	ND	ND/ND	ND	
11	53	Top 16": Red/Brown SILT and SAND, some fine Gravel.	ND	Moist	ND/ND	ND	SB-6 (10-12'); VOC grab at 11' bgs
13		Middle 24": Grey/Black coarse SAND, trace Silt, Organics.	ND	Wet	ND/ND	ND	
15		Bottom 13": Brown coarse SAND, little Silt, trace fine Gravel.	ND	Wet	ND/ND	ND	
16 – 19	50	Top 42": Brown coarse SAND, little Silt, trace fine Gravel.	ND	Wet	ND/ND	ND	
20		Bottom 8": Red/Brown CLAY, trace Silt.	ND	Wet	ND/ND	ND	

Notes: End of boring at 20 feet below ground surface.

Groundwater encountered at 12 feet below ground surface.

PID = photoionization detector

ND = Not Detected

SOIL BORING LOG

Riverside Galleria

AKRF Project Number: 11715

Boring No. **SB-7**

Sheet 1 **of** 1

AKRF
440 Park Avenue South, New York, NY
Phone (212) 696-0670 Fax (212) 726-0942

Drilling Method:	**Geoprobe**
Sampling Method:	**5' Macrocore**
Driller :	AARCO
Sampler:	J. Pensky / S. Grens

Drilling

Start Time	16:05	**Finish Time**	16:30
Date	8/8/2016		
Weather:	85°F, sunny/humid		

Depth (feet)	Recovery (Inches)	Surface Condition: Gravel	Odor	Moisture	PID/LEL	NAPL	Samples Collected for Lab Analysis
1–5	42	Top 30": Brown SAND, some m-c Gravel, little Silt, trace Brick (FILL).	ND	ND	ND/ND	ND	
		Bottom 12": Red/Brown CLAY, some f-m Gravel.	ND	ND	ND/ND	ND	
6–10	60	Red/Brown CLAY, some fine Gravel.	ND	Moist	ND/ND	ND	SB-7 (8-10'); VOC grab at 9' bgs
11–15	54	Red/Brown CLAY, some fine Gravel.	ND	Wet	ND/ND	ND	
16–20							

Notes: End of boring at 15 feet below ground surface.

Groundwater encountered at 10 feet below ground surface.

PID = photoionization detector

ND = Not Detected

SOIL BORING LOG

Riverside Galleria

AKRF Project Number: 11715

Boring No. SB-8

Sheet 1 of 1

AKRF
440 Park Avenue South, New York, NY
Phone (212) 696-0670 Fax (212) 726-0942

Drilling Method:	Geoprobe
Sampling Method:	5' Macrocore
Driller :	AARCO
Sampler:	J. Pensky / S. Grens

Drilling

Start Time	15:44	Finish Time	16:00
Date	8/8/2016		
Weather:	85°F, sunny/humid		

Depth (feet)	Recovery (Inches)	Surface Condition: Gravel	Odor	Moisture	PID/LEL	NAPL	Samples Collected for Lab Analysis
1–5	36	Top 24": Brown SAND, little Silt (FILL). Bottom 12": Brown SAND, some Brick (FILL).	ND ND	ND ND	ND/ND ND/ND	ND ND	
6–10	36	Top 24": Brown Sand, some m-c Gravel, little Silt, Brick (FILL). Bottom 12: Red/Brown CLAY, some f-m Gravel.	ND ND	ND ND	ND/ND ND/ND	ND ND	
11–15	42	Red/Brown CLAY, little f-m Gravel.	ND	Moist	ND/ND	ND	
16–20	60	Red/Brown CLAY, little f-m Gravel.	ND	Wet @ 19' bgs	ND/ND	ND	SB-8 (17-19'); VOC grab at 18' bgs

Notes: End of boring at 20 feet below ground surface.

Groundwater encountered at 19 feet below ground surface.

PID = photoionization detector

ND = Not Detected

AKRF, Inc.

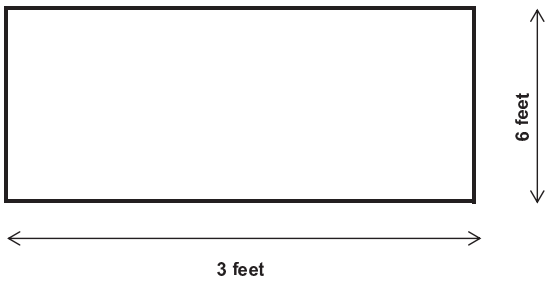
Environmental Consultants

Test Pit Log

Test Pit No:	Job Number: 11715	Client: WF Liberty, LLC	Test Pit Dimensions	
TP-1	Site: Riverside Galleria	Weather: 88°F, sunny	Width:	6
	Location: New York, NY	Sampler: J. Pensky / S. Grens	Length:	3
	Equipment: Komatsu WB156 PS Excavator	Date: 8/9/16	Total Depth:	14

Depth (ft.)	SOIL DESCRIPTION	PID/LEL	Moisture	Odor	NAPL	Samples Collected
1	Brown SAND and SILT, some Clay, little Cobbles, m-c Gravel (FILL).	ND/ND	ND	ND	ND	
2						
3						
4						
5	Brown SILT, some Clay, Sand, little Cobbles, m-c Gravel (FILL).	ND/ND	ND	ND	ND	
6						
7						
8						
9	Brown SILT, some Clay, Sand, little Cobbles, m-c Gravel (FILL).	ND/ND	ND	ND	ND	TP-1 (10-12')
10						
11						
12						
13	Brown fine SAND.	ND/ND	ND	ND	ND	
14						
15						
16						

Drawing of Test Pit Orientation:



Notes: End of test pit at 14' below grade. Groundwater not encountered.

NAPL = Non-Aqueous Phase Liquid / ND = Not Detected / NA = Not Applicable / PID = Photoionization Detector / ppm = Parts per Million

AKRF, Inc.

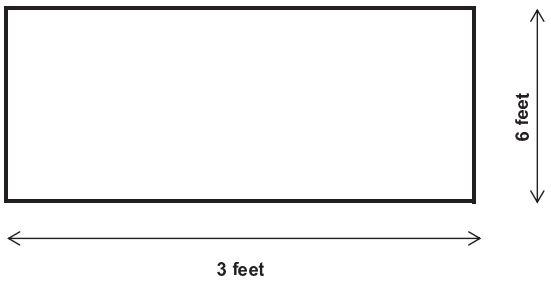
Environmental Consultants

Test Pit Log

Test Pit No:	Job Number: 11715	Client: WF Liberty, LLC	Test Pit Dimensions	
TP-2	Site: Riverside Galleria	Weather: 88°F, sunny	Width:	6
	Location: New York, NY	Sampler: J. Pensky / S. Grens	Length:	3
	Equipment: Komatsu WB156 PS Excavator	Date: 8/9/16	Total Depth:	12

Depth (ft.)	SOIL DESCRIPTION	PID/LEL	Moisture	Odor	NAPL	Samples Collected
1	Brown SAND and SILT, some Clay, little Cobbles, m-c Gravel (FILL).	ND/ND	ND	ND	ND	
2						
3						
4						
5	Brown SAND and SILT, some Clay, little Cobbles, m-c Gravel (FILL).	ND/ND	ND	ND	ND	TP-2 (6-8')
6						
7						
8						
9	Red/Brown CLAY, little Cobbles.	ND/ND	ND	ND	ND	
10						
11						
12						
13						
14						
15						
16						

Drawing of Test Pit Orientation:



Notes: End of test pit at 12' below grade. Groundwater not encountered.

NAPL = Non-Aqueous Phase Liquid / ND = Not Detected / NA = Not Applicable / PID = Photoionization Detector / ppm = Parts per Million

AKRF, Inc.

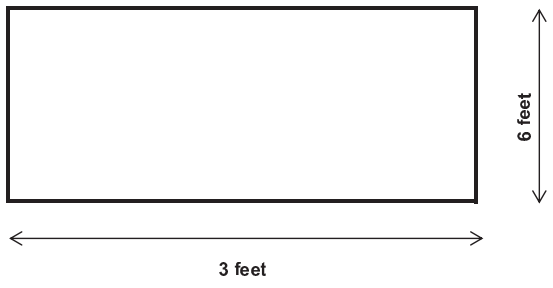
Environmental Consultants

Test Pit Log

Test Pit No:	Job Number: 11715	Client: WF Liberty, LLC	Test Pit Dimensions	
TP-3	Site: Riverside Galleria	Weather: 88°F, sunny	Width:	6
	Location: New York, NY	Sampler: J. Pensky / S. Grens	Length:	3
	Equipment: Komatsu WB156 PS Excavator	Date: 8/9/16	Total Depth:	12

Depth (ft.)	SOIL DESCRIPTION	PID/LEL	Moisture	Odor	NAPL	Samples Collected
1	Brown SAND and SILT, some Clay, little Cobbles, m-c Gravel (FILL).	ND/ND	ND	ND	ND	
2						
3						
4						
5	Brown SILT, some Clay, Sand, little Cobbles, m-c Gravel (FILL).	ND/ND	ND	ND	ND	
6						
7						
8						
9	Brown SILT and SAND, some Clay, little Cobbles, m-c Gravel (FILL).	ND/ND	ND	ND	ND	TP-3 (8-10')
10						
11	Red/Brown CLAY, little Cobbles.	ND/ND	ND	ND	ND	
12						
13						
14						
15						
16						

Drawing of Test Pit Orientation:



Notes: End of test pit at 12' below grade. Groundwater not encountered.

NAPL = Non-Aqueous Phase Liquid / ND = Not Detected / NA = Not Applicable / PID = Photoionization Detector / ppm = Parts per Million

AKRF, Inc.

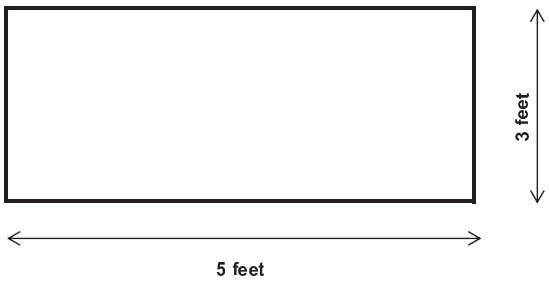
Environmental Consultants

Test Pit Log

Test Pit No:	Job Number: 11715	Client: WF Liberty, LLC	Test Pit Dimensions	
TP-4	Site: Riverside Galleria	Weather: 88°F, sunny	Width:	5
	Location: New York, NY	Sampler: J. Pensky / S. Grens	Length:	3
	Equipment: Komatsu WB156 PS Excavator	Date: 8/9/16	Total Depth:	10

Depth (ft.)	SOIL DESCRIPTION	PID/LEL	Moisture	Odor	NAPL	Samples Collected
1	Brown SAND and SILT, some Clay, little Cobbles, m-c Gravel (FILL).	ND/ND	ND	ND	ND	
2						
3						
4						
5	Brown SILT, some Clay, Sand, little Cobbles, m-c Gravel, trace Brick (FILL).	ND/ND	ND	ND	ND	TP-4 (6-8')
6						
7						
8						
9	Red/Brown CLAY, little Cobbles.	ND/ND	ND	ND	ND	
10						
11						
12						
13						
14						
15						
16						

Drawing of Test Pit Orientation:



Notes: End of test pit at 12' below grade. Groundwater not encountered.

NAPL = Non-Aqueous Phase Liquid / ND = Not Detected / NA = Not Applicable / PID = Photoionization Detector / ppm = Parts per Million

AKRF, Inc.

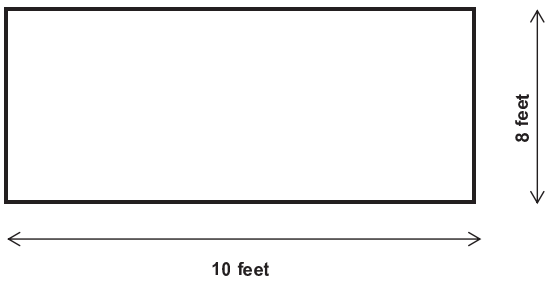
Environmental Consultants

Test Pit Log

Test Pit No:	Job Number: 11715	Client: WF Liberty, LLC	Test Pit Dimensions	
TP-5	Site: Riverside Galleria	Weather: 88°F, sunny	Width:	8
	Location: New York, NY	Sampler: J. Pensky / S. Grens	Length:	10
	Equipment: Komatsu WB156 PS Excavator	Date: 8/9/16	Total Depth:	14

Depth (ft.)	SOIL DESCRIPTION	PID/LEL	Moisture	Odor	NAPL	Samples Collected
1	Brown SAND and SILT, some Clay, little Cobbles (FILL).	ND/ND	ND	ND	ND	
2						
3	Brown SAND and SILT, some Brick, Metal, little Cobbles (FILL). Possible oil/water separator tank.	ND/ND	ND	ND	ND	TP-5 (3-5')
4						
5						
6	Black/Gray m-c SAND, some Silt, m-c Gravel, trace Wood, Brick (FILL).	ND/ND	ND	ND	ND	
7						
8						
9	Brown SILT and SAND, some Clay, Concrete, little Cobbles (FILL).	ND/ND	ND	ND	ND	
10						
11						
12						
13	Red/Brown CLAY, some fine Sand, Silt, little Cobbles.	ND/ND	Moist	ND	ND	
14						
15						
16						

Drawing of Test Pit Orientation:



Notes: Possible oil/water separator tank encountered at ~3' below grade - sample taken underneath tank following removal. End of test pit at 14' below grade. Groundwater not encountered.

NAPL = Non-Aqueous Phase Liquid / ND = Not Detected / NA = Not Applicable / PID = Photoionization Detector / ppm = Parts per Million

AKRF, Inc.

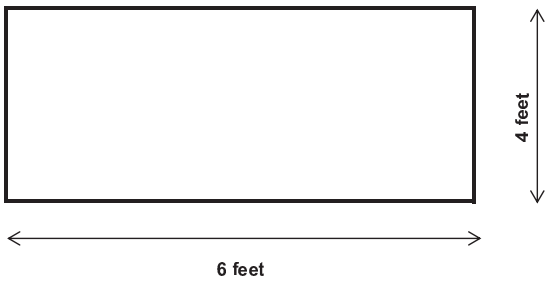
Environmental Consultants

Test Pit Log

Test Pit No:	Job Number: 11715	Client: WF Liberty, LLC	Test Pit Dimensions	
TP-6	Site: Riverside Galleria	Weather: 88°F, sunny	Width:	4
	Location: New York, NY	Sampler: J. Pensky / S. Grens	Length:	6
	Equipment: Komatsu WB156 PS Excavator	Date: 8/9/16	Total Depth:	12

Depth (ft.)	SOIL DESCRIPTION	PID/LEL	Moisture	Odor	NAPL	Samples Collected
1	Brown SAND and SILT, some Clay, m-c Gravel, little Cobbles (FILL).	ND/ND	ND	ND	ND	
2						
3						
4						
5	Brown SAND and SILT, some Clay, little Cobbles, m-c Gravel (FILL).	ND/ND	ND	ND	ND	
6						
7						
8						
9	Brown SAND and SILT, some Clay, m-c Gravel, little Cobbles (FILL).	ND/ND	ND	ND	ND	TP-6 (10-12')
10						
11	Red/Brown CLAY, some m-c Gravel, little Cobbles.	ND/ND	ND	ND	ND	
12						
13						
14						
15						
16						

Drawing of Test Pit Orientation:



Notes: End of test pit at 12' below grade. Groundwater not encountered.

NAPL = Non-Aqueous Phase Liquid / ND = Not Detected / NA = Not Applicable / PID = Photoionization Detector / ppm = Parts per Million

APPENDIX 6

SHPO/LPC CORRESPONDENCE

Landmarks Preservation Commission

1 Centre Street
9th Floor North
New York, NY 10007

Voice (212)-669-7700
Fax (212)-669-7960
http://nyc.gov/landmarks

ARCHAEOLOGY

Project number: DEPARTMENT OF CITY PLANNING / 09DCP018R
Project: WATERFRONT COMMONS/ Riverside Galleria
Date received: 3/6/2017

Comments: as indicated below. Properties that are individually LPC designated or in LPC historic districts require permits from the LPC Preservation department. Properties that are S/NR listed or S/NR eligible require consultation with SHPO if there are State or Federal permits or funding required as part of the action.

This document only contains Archaeological review findings. If your request also requires Architecture review, the findings from that review will come in a separate document.

Comments:

The LPC is in receipt of the draft, "Supplemental Phase 1B and Phase 2 Archaeological Investigations of Riverside Galleria Block 7620 Lot 1, Block 7632 Lots 1, 6, 50, 150, and 151, and Richmond Valley Road Extension, Lots 100 and 110, Richmond County, Staten Island, New York," prepared by Greenhouse and dated January 2017.

This report should be revised as follows:

(1) In general, the report makes many conclusions about the potential impact of the proposed construction work but does not include sufficient documentation about that work. Therefore, it is unclear how these conclusions were reached and whether all aspects of the construction were considered (i.e. utility line placement, regrading, construction staging areas, truck routes into the site etc).

(2) The profiles should be revised to include depths.

(3) The presentation of the "Catbriar Site" should include the relevant graphics in the discussion of the site. However, we concur that the site is significant and that either the project should be redesigned to avoid impacting it or mitigation is needed.

(4) A construction protection plan is needed for "Area 1 West Site" to ensure that it will not be impacted by construction work OR the site should be mitigated.

(5) We do not concur that Area 2 has been sufficiently tested and recommend further testing in other sections of Area 2 to better represent the area as a whole.

Landmarks Preservation Commission

1 Centre Street
9th Floor North
New York, NY 10007

Voice (212)-669-7700
Fax (212)-669-7960
http://nyc.gov/landmarks

(6) We concur that further archaeology is needed in Area 5 if the project cannot be redesigned to avoid impacting this area.

(7) What are the research questions for the 20th century cistern that is proposed for documentation in Area 7?

(8) What is the curation plan for the archaeological collection?

The LPC is also in receipt of the Historic Resource Chapter dated March 15, 2017 prepared by AKRF. Pertaining to archaeological resources, the text should be revised to remove the findings of the archaeological report and to instead note that the report will be revised as recommended by LPC and NYSHPO and that the applicant will complete additional archaeology and mitigation, including project redesign, in consultation with the LPC and NY SHPO.



3/15/2017

SIGNATURE DATE

Amanda Sutphin, Director of Archaeology

Cc: NYSHPO

File Name: 31028_FSO_ALS_03152017.doc

NEW YORK STATE OF OPPORTUNITY. | Parks, Recreation, and Historic Preservation

ANDREW M. CUOMO
Governor

ROSE HARVEY
Commissioner

March 16, 2017

Mr. Stephan Ryba
Chief, Eastern Section, Regulatory Branch
NY District U.S. Army Corps of Engineers
26 Federal Plaza, Room 1937
New York, NY 10278

Re: USACE
Waterfront Commons, aka Riverside Galleria
Borough of Staten Island, Richmond County, NY
07PR04902

Dear Mr. Ryba:

Thank you for requesting the comments of the New York State Historic Preservation Office (SHPO). We have reviewed the submitted materials in accordance with Section 106 of the National Historic Preservation Act of 1966. These comments are those of the SHPO and relate only to Historic/Cultural resources.

SHPO has reviewed the latest submission for this project – *Supplemental Phase 1B and Phase 2 Archaeological and Historical Investigations of Riverside Galleria (Formerly Waterfront Commons), Block 7620, Lot 1, Block 7632, Lots 1, 6, 50, 150, and 151, and Richmond Valley Road Extension, Lots 100 And 110, Richmond County, Staten Island, New York* (Greenhouse Consultants Incorporated, January 2017). We have the following comments on this report.

We recommend the inclusion of a plan that shows the current project design and limits of all proposed ground-disturbing activities.

Area 1 -
We recommend that the Catbriar Site (08501.003358) is eligible for listing on the National Register of Historic Places and that the proposed project, as currently designed, will have an adverse effect on this site. Therefore, we recommend that the site be avoided by project redesign. If that is not feasible, options for mitigation should be explored.

Detailed information regarding the Catbriar Site should be uploaded into the supplemental information tabs in the CRIS electronic site form. The full report should not be uploaded as an attachment to the site record.

The report states that the Area 1 West Site (08501.003696) is located outside of the currently defined APE (as shown on Figure 1-2 of the report). Although not formally evaluated, there is sufficient information to indicate that this site is likely to be National Register eligible. Based on Figure 1-3, it appears that the archaeological site immediately borders the Area 5 portion of the APE. Based on this, SHPO recommends that a construction protection plan be developed to avoid inadvertent disturbance of the site. We request an update of the site information, including both precontact and historic data, in the CRIS electronic site form.

Area 2 –
This is a large area described as being covered with a thick layer of fill. This office previously recommended that testing be undertaken to determine whether potentially culture-bearing deposits are located within the Area of Potential Effects (APE). The current report indicates that two backhoe trenches were dug to examine the area's stratigraphy. Both trenches were placed near the southeastern margin of Area 2. We request additional information regarding the representativeness of these trenches for the area as a whole.

Area 3 –
The report states that due to revisions to the project area there will be no impacts to Area 3. A comparison of Figure 1-2 and 1-3 still appears to show Area 3 to be within the APE. We request additional information to confirm that there will be no project-related ground disturbance in Area 3.

Area 4 –
Based on the information provided, we concur that no further work is needed in Area 4.

Area 5 –
Investigation of this area has resulted in the identification of the Dissosway Totten Starr Site (08501.003697), which contains both precontact and historic components. Based on the information provided, we recommend that the site is eligible for listing on the National Register of Historic Places and that the proposed project, as currently designed, will have an adverse effect on this site. Therefore, we recommend that the site be avoided by project redesign. If that is not feasible, options for mitigation should be explored.

Detailed information regarding the Dissosway Totten Starr Site, including both the precontact and historic components, should be uploaded into the supplemental information tabs in the CRIS electronic site form.

Area 6 –
We previously recommended that no further work is needed in this area.

Area 7 –
Please elaborate regarding the research questions that may be addressed by investigation of the 20th Century cistern.

Please provide copies of Native American consultation documents for this project.

An effect recommendation for the project as a whole will be provided once all necessary information has been received.

If you have any questions please don't hesitate to contact me.

Sincerely,



Philip A. Perazio, Historic Preservation Program Analyst - Archaeology Unit
Phone: 518-268-2175
e-mail: philip.perazio@parks.ny.gov via e-mail only

cc: Amanda Sutphin, Daniel Pagano, and Gina Santucci, LPC
Kim Bell Hosea, Carpenter Environmental
Paula Crowley, Greenhouse Consultants

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ANDREW M. CUOMO
Governor

ROSE HARVEY
Commissioner

March 29, 2017

Mr. Stephan Ryba
Chief, Eastern Section, Regulatory Branch
NY District U.S. Army Corps of Engineers
26 Federal Plaza, Room 1937
New York, NY 10278

Re: USACE
Waterfront Commons, aka Riverside Galleria
Borough of Staten Island, Richmond County, NY
07PR04902

Dear Mr. Ryba:

Thank you for requesting the comments of the New York State Historic Preservation Office (SHPO). We have reviewed the submitted materials in accordance with Section 106 of the National Historic Preservation Act of 1966. These comments are those of the SHPO and relate only to Historic/Cultural resources.

We have reviewed the memorandum with additional information regarding Area 2 (Crowley and Sandy, 21 March 2017). In order to clearly understand the area's stratigraphy, this office requests that a series of cross sections be constructed using the geotechnical test results in order to illustrate the horizontal and vertical variation of the fill and natural strata.

If you have any questions please don't hesitate to contact me.

Sincerely,

Philip A. Perazio, Historic Preservation Program Analyst - Archaeology Unit
Phone: 518-268-2175
e-mail: philip.perazio@parks.ny.gov via e-mail only

cc: Lisa Blake, NYC Planning
Paula Crowley, Greenhouse Consultants
Kim Bell Hosea, Carpenter Environmental
Jessica MacLean, Daniel Pagano, Gina Santucci, and Amanda Sutphin, LPC

MEMORANDUM

DATE: April 14, 2017

TO: Philip A. Perazio
Historic Preservation Program Analyst, Archaeology Unit
Office of Parks, Recreation and Historic Preservation
P.O. Box 189 Waterford, New York 12188-0189

Amanda Sutphin
Director of Archaeology
Landmarks Preservation Commission
1 Centre Street, 9th Floor North
New York, New York 10007

FROM: Paula Crowley
William Sandy
Greenhouse Consultants Incorporated

SUBJECT: 07PR04902, Riverside Galleria, aka Waterfront Commons, Staten Island, Richmond County, New York, Areas 2 and 3, Supplemental Information, Revised

The memorandums received from the SHPO (March 16, 2017) and LPC (March 15, 2017) offices requested further clarification on the archaeological fieldwork conducted in Area 2 and the representativeness of the two trenches excavated in 2013 and 2016 for Area 2. The SHPO office also requested further clarification on Area 3. Subsequent comments by the SHPO office, received March 29, 2017, requested clarification of the borings by submitting a cross-section.

The Greenhouse 2015 report (pp.54-55, Appendix 6) discussed the borings conducted previously:

> **Area 2**
> Through the analysis of boring data, GCI has attempted to determine depth of fill, and analyzing the proposed plans to see if they will impact potentially intact buried stratum. Extensive deep fill appears only in the southern part of the project area, designated Areas 2 and 3. Although there are clearly localized areas of fill in the northern and central portions of the project area, they do not appear as large, deep, or as extensive as in Areas 2 and 3. With a few exceptions, most of the testing in Areas 1, 4, 5, and 7 reached culturally sterile subsoil.
>
> A local informant stated that deep fill was deposited in Area 2 during the construction of Route 440. Two independent sets of borings were completed in Areas 2 and 3. A series of 7 borings (B1 to B7) were completed (see Appendix 6), at intervals of about 150 feet along the proposed location of the west end of Richmond Valley Road. Near Arthur Kill Road, fill was 2.5 feet deep in Boring B1. Boring B2 had 9 feet of fill, B3 had 6.5 feet of fill. B4 had 8 feet of fill over silty peat. In B5 there was 13 to 16 feet of fill, which extended below the water table. Borings B6 and B7 had 8 feet of fill over peat. This fill continued below the water table. Because of deep fill continuing below the water table, testing anywhere west of B4 is not recommended.

The second set of borings covered the property to the north of the Richmond Valley Road tests. In Areas 2 and 3, there were 8 borings completed, B4, B12, B16, B24, B31, B32, B33, and B34 (Mechanics Drilling Corp. 2009). B4 showed a profile with 17 feet of fill; this is about 1 foot below the water table. The 13 feet of fill in B12 also extended below the water table. There was also 13 feet of fill in B13, it extended to about the water table. Boring B15 showed 20 feet of fill, there was 14 to 18 feet of fill in B16, and 16 to 20 feet in B21. B24 had 18 feet of fill extending below the water table. The 15 feet of fill in B31 extended to the water table. B32 and B33 had 19 feet of fill, B34 had 16 feet; all 3 had fill extending below the water.

This information along with the Richmond Topographic Bureau (1913) and the APE (2016) maps were studied in relation to the site plans of 2016. Plans for Backhoe Trench 3 Extension were made with the January 2016 site plans showing that a utility trench in Area 2 would have the greatest depth. Figure 3-1 (Greenhouse 2017) shows the base slab of the parking garage at an elevation of 7-8 ft.

During the summer of 2016, borings were completed for the stormwater drainage and structural placement. The two boring maps and the two reports are attached. Stormwater Borings 1-7 were placed within Areas 2 and 3. SW borings 1-6 terminated at 14 feet and SW7 terminated at 10 feet. Moist conditions were present by two feet in SW3 and 6. In Borings SW1, 2, and 7, moist conditions were present by 4 feet. Moist conditions were found by six feet in SW4 and 5. Wet conditions were encountered by 4 feet in SW6, and by six feet in SW3 and 7. SW2 encountered moist conditions by 8 feet and SW1 and 5 encountered wet conditions by 10 feet. Two Structural Boring logs are included in the report that are pertinent to Areas 2 and 3: 26 and 46. Both terminate at 50 feet. Structural Boring 46 encountered wet conditions by six feet and SB26 encountered that condition at 15 feet.

Figure A from Capital Environmental Consultants Inc., illustrates the profile cross-section of the 2009 borings in Areas 2 and 3. Extensive fill increases from east to west.

Figure B from Capital Environmental Consultants Inc., illustrates the profile cross-section of the 2016 borings in Areas 2 and 3. The contractor conducting the borings used Chapter 18 of the New York City Building Code to identify soils. That document does not analyze the boring components in terms of fill and natural soil.

A comparison was made of the elevation of locations of the borings on the 2016 and the 1913 maps and are shown in the following table:

Elevation in feet above sea level		
Boring	1913 Richmond Topo	2016 Current Conditions
SW3	2-4 ft, closer to 4 ft	12-14 ft
SW4	2-4 ft	10 ft
SW5	0-2 ft	16 ft

SW6	0-2 ft, 1913 shoreline	14-16 ft
SW7	appx. 100 ft west of shoreline	4 ft
SB26	2-4 ft., in mill pond	20 ft
SB46	in marsh	12 ft

A pair of borings from 2009 and 2016 were selected for comparative purposes. B-4 and SW4 have nearly an identical location along the Richmond Valley Road extension. Their profiles are shown below in the following table:

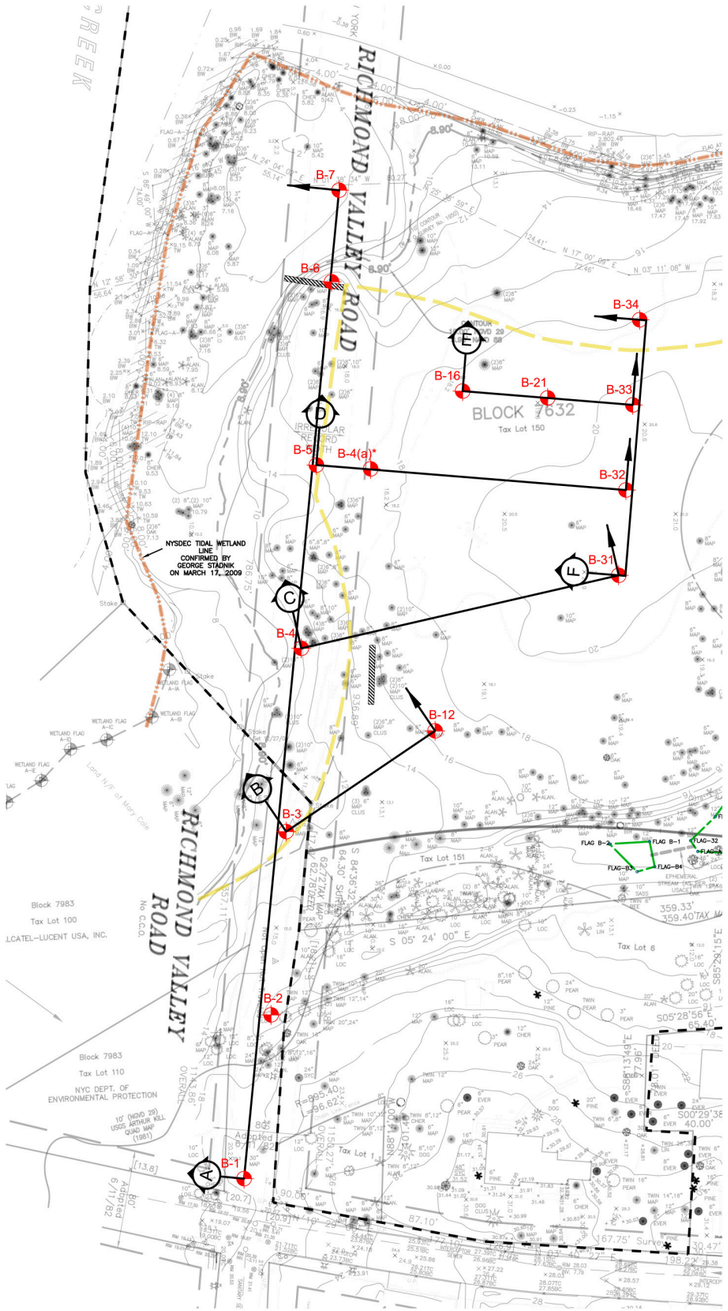
2009, B-4, GS = 8.61 ft		2016, SW-4, GS = +/- 10.0 t	
1-2 ft	FILL, silty sands, rock fragments, roots	0-2 ft	Medium-fine sand, some silt, gravel, very dense, dry
3-8 ft	FILL, silty sands, gravel, rock, concrete, roots	2-4 ft	No recovery
		4-6 ft	No recovery, gravel in split spoon sampler tip
		6-8 ft	Medium-fine sand, trace of silt, fine gravel, medium dense, wet
8-13 ft	Silty peat	8-10 ft	Peat, very soft, wet
13-18 ft	Poorly graded sands, medium-fine sand, trace silt	10-12 ft	Fine gravel, medium-fine sand, little silt, dense, wet
18-23 ft	Clays, sandy clay, trace of gravel, rock	12-14 ft	Medium-fine sand, little silt, very dense, set

The 2009 boring identifies up to eight feet of fill, consisting of silty sands with rock fragments, concrete, gravel and roots before encountering peat between 8 to 13 feet. The 2016 boring found medium to fine sand with some silt and gravel before finding peat at 8-10 feet. Medium to fine sand with some silt was found below the peat. The depth of the fill identified in the 2009 boring corresponds to the difference between the 1913 Richmond Topo and the 2016 current conditions map elevations. Based upon examination of Figures 3-8 and 3-9 (Raber, Greenhouse 2016) of the 1948 and 1954 aerial photos of the project area, and area approximately 550 feet by 600 feet was covered with fill. If twelve feet of fill covered the area, approximately 3,600,000 cubit feet were brought to the project area. If 18 feet of fill was brought in, approximately 5,400,00 cubit feet is the extent of coverage.

Testing of Area 2 was limited by many constraints, and GCI tested the vicinity with the highest potential. East of Trench 3 and Trench 3 Extension the vicinity was disturbed by excavation for the Staten Island Rapid Transit spur. West of the two trenches was an artificial pond. To the northwest was an extensive marsh under deep fill. The entire area was likely disturbed when the pond was filled and then the area blanketed with deep fill.

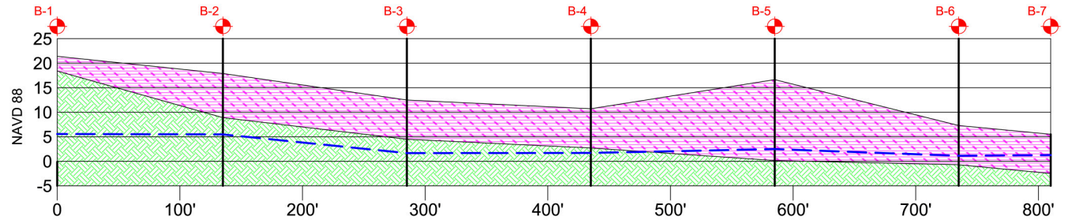
In short, GCI believes that the placement of Backhoe Trench 3 and Backhoe Trench 3 Extension were made for the optimal opportunity to find the original soil surface. The extensive marsh to the west and the Cole-Dissosway man-made pond, along with fill from the construction of Route 440, and the depth of impacts proposed for construction of the project made this the most likely area within Areas 2 and 3 that would yield information.

The soil, stormwater and structural borings have shown an interesting development during the past 100 years. The elevation of the land was 2 to 3 feet above sea level in 1913. Up to 17 to 18 feet of fill was added during the twentieth century. Yet the water table has risen at the same time to where moist soil is encountered at 2 to 6 feet below surface and wet conditions are usually found two feet below those figures. And these wet conditions were occurring during a time of drought. The elevated water may be due to a number of factors, including the paving of the adjacent area, causing more runoff. The nature of the fill may be another factor, acting as a giant sponge, absorbing the abundant runoff. Since the depth of the impacts for the project should be 7 to 8 feet, and twentieth century fill can be up to 17 to 18 feet in extent, combined with the rising water table, GCI feels that the project will not have any impact at any potential cultural resources at these greater depths.



*B-4(a) represents sample B-4 from the 2009 sampling event

Note: Boring elevations for the 2008/2009 sampling events were in the Staten Island Richmond vertical datum. Elevations were converted to the NAVD88 vertical datum .



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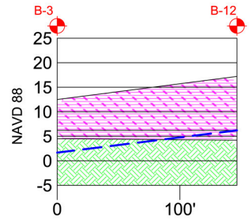

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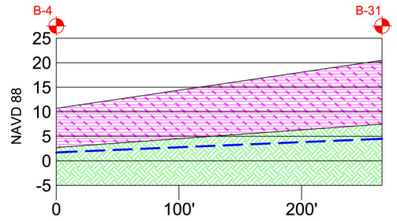

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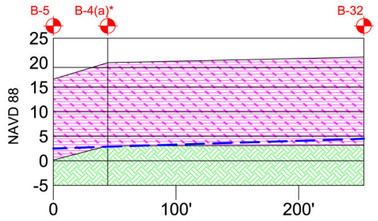
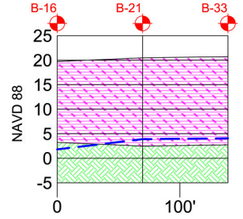


*B-4(a) represents sample B-4 from the 2009 sampling event

SECTION D



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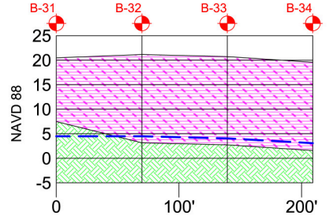


SECTION F

FILL

SOIL

GROUNDWATER TABLE

PROPERTY LINE

CEA NYSDEC TIDAL WETLAND LINE

JOINT NYSDEC TIDAL WETLAND ADJACENT AREA/USGS 10' CONTOUR LINE

ACOE FRESHWATER WETLAND LINE

SW1 BORING LOCATION

ARCHEOLOGICAL TRENCHES

SURVEY LEGEND

WATER MANHOLE
ELECTRIC MANHOLE
SANITARY MANHOLE
TELEPHONE MANHOLE
CATCH BASIN
WATER VALVE
GAS VALVE
POST SIGN
FIRE HYDRANT
WOOD UTILITY POLE
LIGHT POLE
GAS MAIN MANHOLE
UTILITY MANHOLE

PROPERTY LINE (ROW)
EASEMENT LINES
FENCE
MAJOR CONTOUR LINE
INTERMEDIATE CONTOUR LINE
SPOT ELEVATION
FLAGGED WETLAND BOUNDARY
NYSDEC 1974 TIDAL WETLAND LINE
10' CONTOUR (NGVD 29) AS PER USGS ARTHUR KILL QUAD MAP (1981)
WATER MAIN
OVERHEAD UTILITY LINES
UNDERGROUND UTILITY LINES
SEWER LINES
GAS MAINS

SURVEY LEGEND

UTILITY POLE
GAS VALVE
WATER VALVE
HYDRANT
WATER SHUT OFF
CATCH BASIN
GUY WIRE
MAN HOLE
MAN HOLE (SANITARY)
MAN HOLE (STORM)
MAN HOLE (TELEPHONE)
MAN HOLE (ELECTRIC)
MAN HOLE (WATER)
GAS LINE MARKER
LIGHT POLE

CONCRETE COLUMN
VAULT
SIGN
POST
BASIN
CENTERLINE
FIRE ALARM
MONUMENT
OIL FILL
TELEPHONE
GRATE (ROUND)
GRATE (SQUARE)
GUY WIRE CONNECTION
JUNCTION BOX
MAIL BOX

VENT
WELL
WATER METER
GAS FILL
GAS METER
GAS PUMP
STAKE
BOLLARD
WETLANDS FLAG

WATER MAIN
OVERHEAD UTILITY LINES
UNDERGROUND UTILITY LINES
SEWER LINES
GAS MAINS

HORIZONTAL GRAPHIC SCALE

60 0 30 60 120 240

(IN FEET)
1 inch = 60 ft.

Figure A: 2009 Borings

CAPITAL ENVIRONMENTAL CONSULTANTS, INC.

RIVERSIDE GALLERIA
BLOCK 7620, LOT 1
BLOCK 7632, LOTS 1, 6, 50, 150 & 151
STATEN ISLAND, NEW YORK

NO.	DATE	REVISION
1	9/7/16	REFERENCES: Survey, Rogers Surveying, Staten Island, NY; Topographical, Dwg. File 23815-MAP03, 9/7/16

GEOLOGIC CROSS SECTIONS
2008/2009

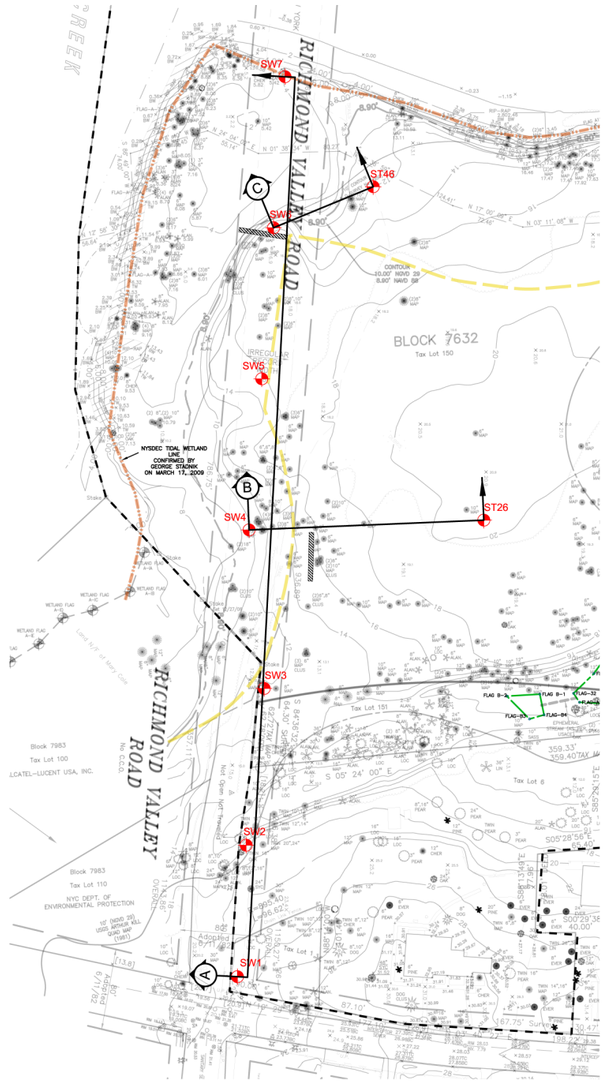
Date
4/10/2017

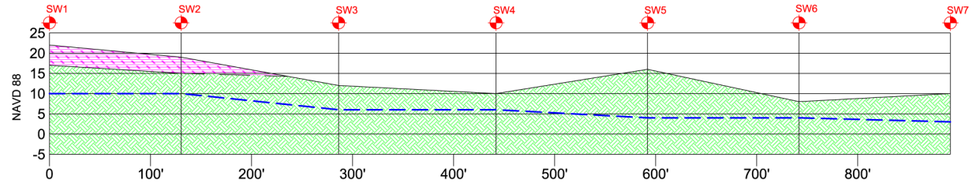
Scale
AS NOTED

Sheet No.

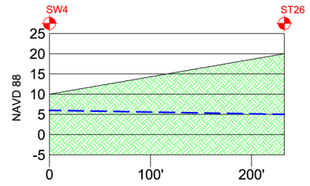
File No.
16001_Borings

Sheet Reference No.
SCT2





SECTION A



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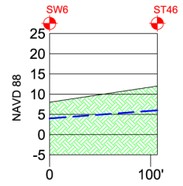
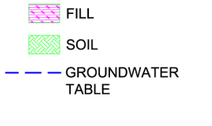


SECTION C



PROPERTY LINE

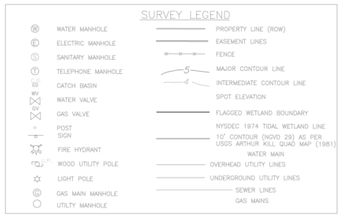
CEA NYSDEC TIDAL WETLAND LINE

JOINT NYSDEC TIDAL WETLAND ADJACENT AREA/USGS 10' CONTOUR LINE

ACOE FRESHWATER WETLAND LINE

SW1 BORING LOCATION

ARCHEOLOGICAL TRENCHES





HORIZONTAL GRAPHIC SCALE

60 0 30 60 120 240

(IN FEET)
1 inch = 60 ft.

RIVERSIDE GALLERIA

Date 4/

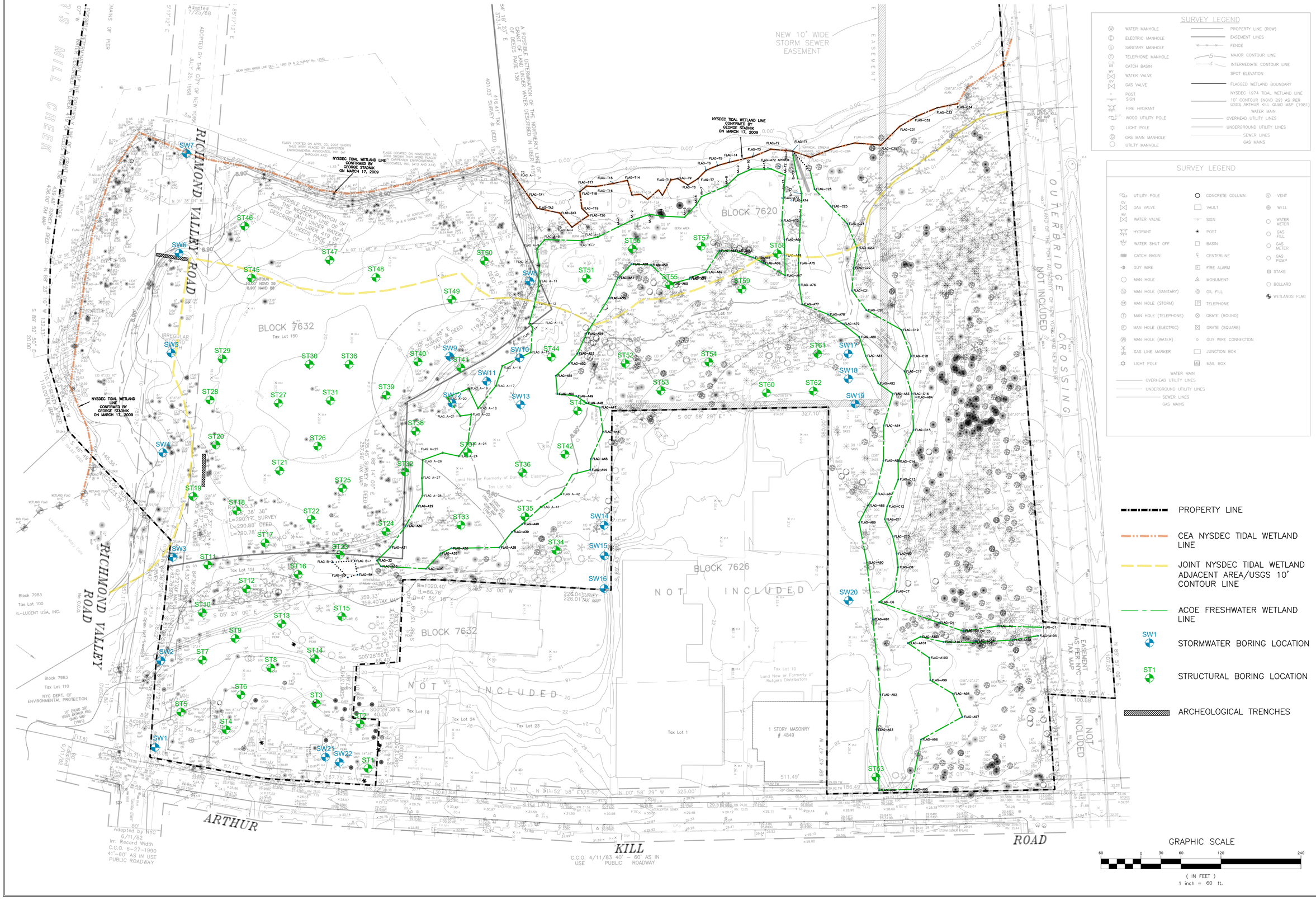
Scale AS

Sheet

File N 160

Sheet

Figure B: 2016 Borings



CAPITAL ENVIRONMENTAL CONSULTANTS, INC.

RIVERSIDE GALLERIA

BLOCK 7620, LOT 1
BLOCK 7632, LOTS 1, 6, 50, 150 & 151
STATEN ISLAND, NEW YORK

No.	DATE	REVISION	BY

REFERENCES: Survey: Rogers Surveying, Staten Island, NY, South Richmond Topographical, Dwg. File 29816-NAVD88, 9/17/15

BORING LOCATION PLAN

Date: 3/22/2016
Scale:
Sheet No.:
File No.: 16001_Borings
Sheet Reference No.: BP

Landmarks Preservation Commission

1 Centre Street
9th Floor North
New York, NY 10007

Voice (212)-669-7700
Fax (212)-669-7960
http://nyc.gov/landmarks

ARCHAEOLOGY

Project number: DEPARTMENT OF CITY PLANNING / 09DCP018R
Project: WATERFRONT COMMONS
Date received: 4/20/2017

Comments: as indicated below. Properties that are individually LPC designated or in LPC historic districts require permits from the LPC Preservation department. Properties that are S/NR listed or S/NR eligible require consultation with SHPO if there are State or Federal permits or funding required as part of the action.

This document only contains Archaeological review findings. If your request also requires Architecture review, the findings from that review will come in a separate document.

Comments: The LPC is in receipt of the, "Memorandum for Riverside Galleria, aka Waterfront Commons, Staten Island, New York, Areas 2 and 3, Supplemental Information, Revised." prepared by Greenhouse Consultants and dated April 14, 2017 which was prepared in part in response to our comments of March 15, 2017. Based on this additional information, we no longer recommend that additional areas of Area 2 be tested, but the other revisions we, and the NYSHPO recommended, remain to be completed.



4/28/2017

SIGNATURE DATE
Amanda Sutphin, Director of Archaeology

File Name: 31028_FSO_ALS_04282017.doc

NEW YORK STATE OF OPPORTUNITY. | Parks, Recreation, and Historic Preservation

ANDREW M. CUOMO
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May 01, 2017

Mr. Stephan Ryba
Chief, Eastern Section, Regulatory Branch
NY District U.S. Army Corps of Engineers
26 Federal Plaza, Room 1937
New York, NY 10278

Re: USACE
Waterfront Commons, aka Riverside Galleria
Borough of Staten Island, Richmond County, NY
07PR04902

Dear Mr. Ryba:

Thank you for requesting the comments of the New York State Historic Preservation Office (SHPO). We have reviewed the submitted materials in accordance with Section 106 of the National Historic Preservation Act of 1966. These comments are those of the SHPO and relate only to Historic/Cultural resources.

SHPO has reviewed the latest submission for this project – *07PR04902, Riverside Galleria, aka Waterfront Commons, Staten Island, Richmond County, New York, Areas 2 and 3, Supplemental Information, Revised* (Greenhouse Consultants, 14 April 2017.

Based on the information provided, this office has no further archaeological concerns regarding the Area 2 and Area 3 portions of the project's APE. Comments on other portions of the APE have been provided in our letter dated 16 March 2017.

If you have any questions please don't hesitate to contact me.

Sincerely,

Philip A. Perazio, Historic Preservation Program Analyst - Archaeology Unit
Phone: 518-268-2175
e-mail: philip.perazio@parks.ny.gov via e-mail only

cc: Amanda Sutphin, Daniel Pagano, Gina Santucci, and Jessica MacLean, LPC
Greg Fleischer, Capital Environmental
Lisa Blake, NYC Planning
Paula Crowley, Greenhouse Consultants

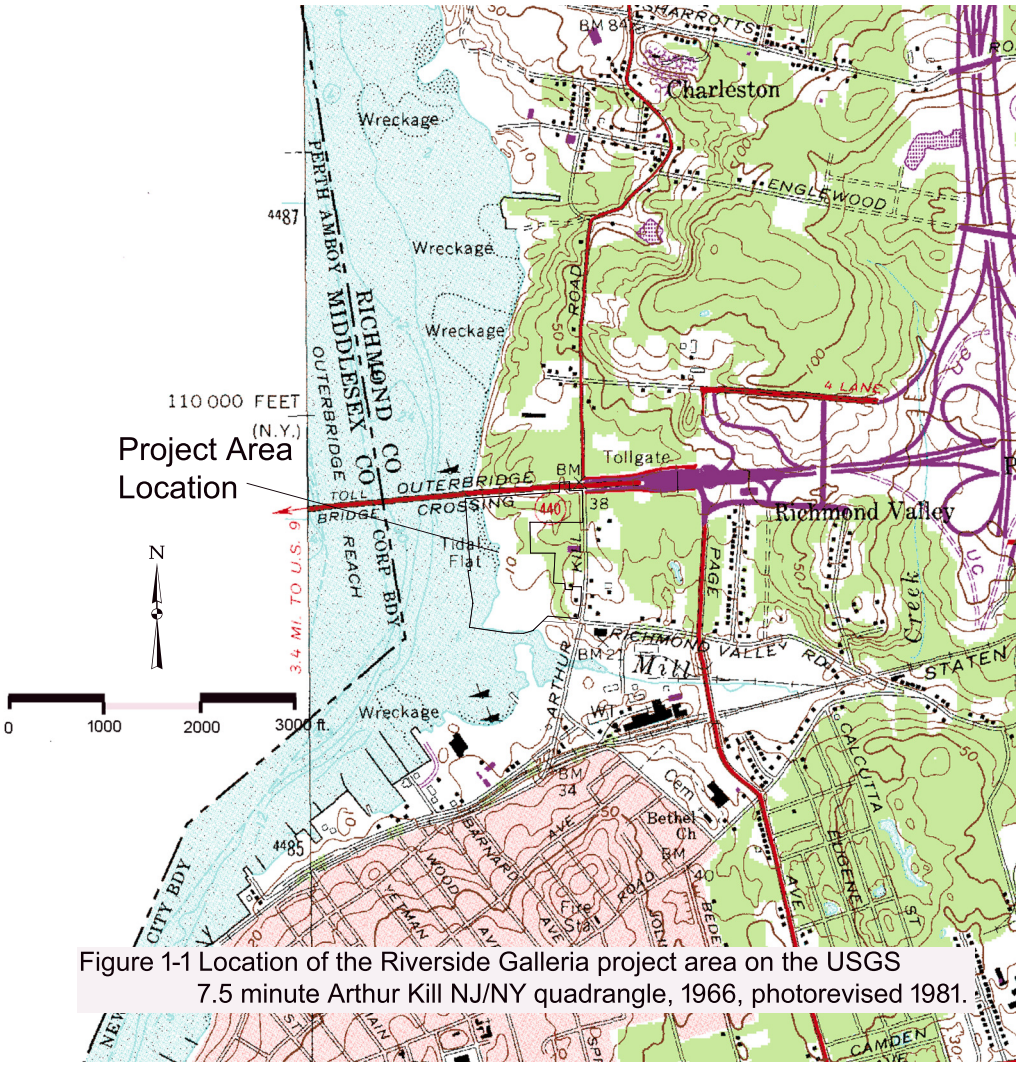

Figure 1-1 Location of the Riverside Galleria project area on the USGS 7.5 minute Arthur Kill NJ/NY quadrangle, 1966, photorevised 1981.

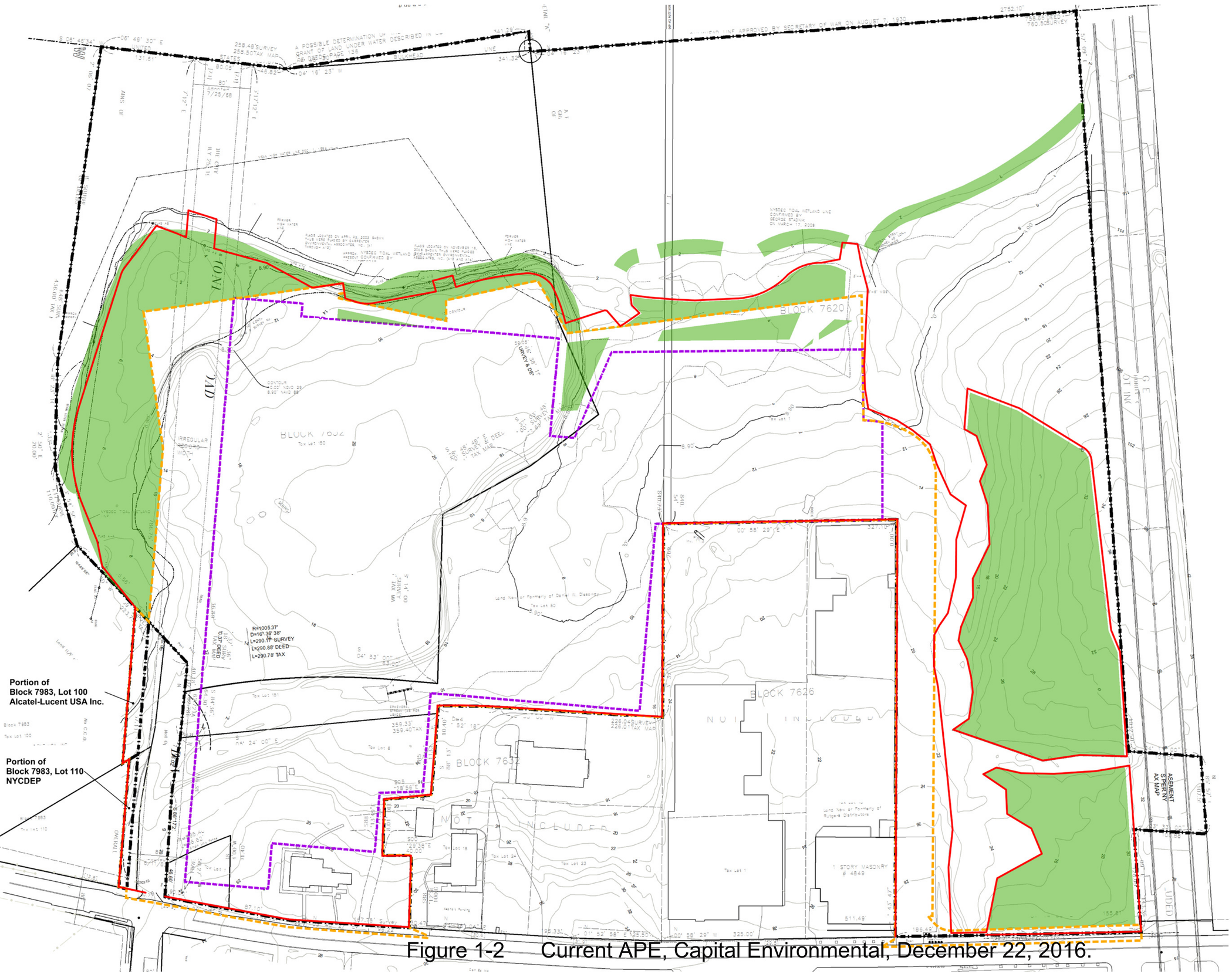

Figure 1-2 Current APE, Capital Environmental, December 22, 2016.

"UNAUTHORIZED ALTERATION OR ADDITION TO THIS SURVEY NOT BEARING A LICENSED LAND SURVEYOR'S SEAL IS A VIOLATION OF SECTION 7209 SUBDIVISION 2 OF THE NEW YORK STATE EDUCATION LAW."

"ONLY COPIES FROM THE ORIGINAL OF THIS SURVEY MARKED WITH AN ORIGINAL OF THE LAND SURVEYOR'S IMPRESSION SEAL SHALL BE CONSIDERED TO BE VALID TRUE COPIES."

"CERTIFICATIONS INDICATED HEREON SIGNIFY THAT THIS SURVEY WAS PREPARED IN ACCORDANCE WITH THE EXISTING CODE OF PRACTICE FOR LAND SURVEYORS ADOPTED BY THE NEW YORK STATE ASSOCIATION OF PROFESSIONAL LAND SURVEYORS."

"SAID CERTIFICATIONS SHALL RUN ONLY TO THE PERSON FOR WHOM THE SURVEY IS PREPARED AND, ON HIS BEHALF TO THE TITLE COMPANY, GOVERNMENTAL AGENCY OR LENDING INSTITUTION LISTED HEREON AND TO THE ASSIGNEES OF THE LENDING INSTITUTION. CERTIFICATIONS ARE NOT TRANSFERABLE TO ADDITIONAL INSTITUTIONS OR SUBSEQUENT OWNERS."

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ALL RIGHTS RESERVED

IT IS A VIOLATION OF THE LAW FOR ANY PERSON, UNLESS ACTING UNDER THE DIRECTION OF THE LICENSED LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY.

IF AN ITEM BEARING THE PROFESSIONAL SEAL OF THE LICENSED LAND SURVEYOR IS ALTERED, THE ALTERING LAND SURVEYOR SHALL AFFIX TO HIS ITEM HIS SEAL AND THE NOTATION "ALTERED BY" FOLLOWED BY HIS SIGNATURE AND THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

P:\ Richmond Valley Rd 29498 NAVD 88\images\VICINITY.jpg

SITE

KEY MAP

SETBACK REQUIREMENTS NOTES: (YARD REGULATIONS)

For this zoning district, which is M3-1 south of RVR and M1-1 north of RVR the following apply:

Front Yard Setback: None Required

Side Yard: 0' or 8' minimum if a side yard is provided

Rear Yard: 0' – If a building is 2 stories high or if one story and more than 23' above curb level than 20' minimum rear yard is required

Building Height: 2 stories or 30' above street line, above this height there is a building envelope or any exposure plane at a 1:1 slope

Floor Space Restrictions: None

Source of information: NYC Zoning Resolution

LEGEND

- WATER MANHOLE
- ELECTRIC MANHOLE
- SANITARY MANHOLE
- TELEPHONE MANHOLE
- CATCH BASIN
- WATER VALVE
- GAS VALVE
- POST SIGN
- FIRE HYDRANT
- WOOD UTILITY POLE
- LIGHT POLE
- GAS MAIN MANHOLE
- UTILITY MANHOLE
- PROPERTY LINE (ROW)
- EASEMENT LINES
- FENCE
- MAJOR CONTOUR LINE
- INTERMEDIATE CONTOUR LINE
- SPOT ELEVATION
- FLAGGED WETLAND BOUNDARY
- NYSDEC 1974 TIDAL WETLAND LINE
- 10' CONTOUR (NGVD 29) AS PER USGS ARTHUR KILL QUAD MAP (1981)
- WATER MAIN
- OVERHEAD UTILITY LINES
- UNDERGROUND UTILITY LINES
- SEWER LINES
- GAS MAINS

L E G E N D

- UTILITY POLE
- GAS VALVE
- WATER VALVE
- HYDRANT
- WATER SHUT OFF
- CATCH BASIN
- GUY WIRE
- MAN HOLE
- MAN HOLE (SANITARY)
- MAN HOLE (STORM)
- MAN HOLE (TELEPHONE)
- MAN HOLE (ELECTRIC)
- MAN HOLE (WATER)
- GAS LINE MARKER
- LIGHT POLE
- CONCRETE COLUMN
- VAULT
- SIGN
- POST
- BASIN
- CENTERLINE
- FIRE ALARM
- MONUMENT
- OIL FILL
- TELEPHONE
- GRATE (ROUND)
- GRATE (SQUARE)
- GUY WIRE CONNECTION
- JUNCTION BOX
- MAIL BOX
- VENT
- WELL
- WATER METER
- GAS FILL
- GAS METER
- GAS PUMP
- STAKE
- BOLLARD
- WETLANDS FLAG
- WATER MAIN
- OVERHEAD UTILITY LINES
- UNDERGROUND UTILITY LINES
- SEWER LINES
- GAS MAINS

NOTE:

THE INFORMATION DEPICTED ON THIS MAP REPRESENTS THE RESULTS OF SURVEYS MADE ON THE DATES INDICATED AND CAN ONLY BE CONSIDERED AS INDICATING THE GENERAL CONDITIONS EXISTING AT THAT TIME.

UTILITY NOTE:

THE UNDERGROUND UTILITY INFORMATION SHOWN HEREON IS ONE OF SEVERAL POSSIBLE INTERPRETATIONS OF THE RECORD/DATA AS PROVIDED BY THE RESPECTIVE UTILITY COMPANIES. ROGERS SURVEYING,PLLC ASSUMES NO RESPONSIBILITY FOR THE ACTUAL LOCATION, SIZE, AND DEPTH OF ANY UTILITY LINES.THE LOCATION AND DEPTH OF ALL UNDERGROUND UTILITIES MUST BE VERIFIED WITH THE RESPECTIVE UTILITY PRIOR TO ANY DESIGN AND CONSTRUCTION OR EXCAVATION.

Map of Survey
Richmond Valley
February 23, 2006
Tax Lots 1, 6, 50, 150, 151 / 1
Tax Block 7632 / 7620
Filed Map Lots
Filed Map Block
Filed Map
Deed Reel 4791 Page 104
Borough of Staten Island
County of Richmond
New York, NY

DATUM NOTE:

COORDINATES AND BEARINGS SHOWN ARE REFERENCED TO THE BOROUGH OF STATEN ISLAND, AS ESTABLISHED BY THE U.S. COAST & GEODETIC SURVEY (BOGART SYSTEM).

ELEVATIONS SHOWN ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88).

ZONING & FLOOD HAZARD NOTE:

Subject Lots lie in Manufacturing Zone "M-1"

The subject property is located on Flood Insurance Rate Map (FIRM) Panel 313 of 456, community Panel No. 3604970313F, Flood Insurance Rate Map, City of New York, Richmond County, bearing an effective date of September 5, 2007.

A portion of this lot lies within an area called "Other Flood Areas" as defined by the Federal Emergency Management Agency as Zone X described as: "Areas of 0.2% annual chance flood, areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood" on the above mentioned Panel. (Hatched Area)

A portion of this lot lies within an area called "Special Flood Hazard Areas" as defined by the Federal Emergency Management Agency as Zone AE with Base Flood Elevation Determined as 10.00' NGVD 1929 or 6.81' RHW Datum described as: "The 1% annual chance flood (100–year flood), also known as the base flood, is the flood that has a 1% chance of being equalled or exceeded in any given year. The Special Flood hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood hazard includes Zones A, AE, AH, AO, AR, A99, V and VE. The Base Flood Elevation is the water–surface elevation of the 1% annual chance flood."

The remaining area of the lot is located in an area Zone X which are "Areas determined to be outside the 0.2% annual chance floodplain" on the above mentioned Panel 0313F.

GRAPHIC SCALE

50 0 25 50 100 200

(IN FEET)
1 inch = 50 ft.

LOT AREAS:

TAX LOT 1 BLOCK 7632 = 6,615 SF (0.15 ACRES)

TAX LOT 6 BLOCK 7632 = 81,721 SF (1.88 ACRES)

TAX LOT 150 BLOCK 7632 = 524,325 SF (12.04 ACRES)

TAX LOTS 50 AND 151 IN BLOCK 7632 AND TAX LOT 1 BLOCK 7620 = 820,167 SF (18.82 ACRES)

TOTAL AREA ALL LOTS: 1,432,828 SF (32.89 ACRES)

TOTAL LANDS UNDERWATER FROM 2.09' CONTOUR: 391,156 SF (8.98 ACRES)
TOTAL UPLAND AREA: 1,041,672 SF (23.91 ACRES)

NAVD 88

REVISIONS	JOB #	DATE	FB. / PG.
UPDATED TOPOGRAPHIC SURVEY	41387	6/01/16	983/74–20
ADDITIONAL MAPPING	29498	9/17/15	944/14
UPDATED TOPOGRAPHIC SURVEY	29498	8/12/15	940/07
UPDATED TOPOGRAPHIC SURVEY	29498	8/8/15	934/74–76,78
ADD TAX LOT 24		2/24/15	
REVISED AREA NOTE		2/24/15	
NAVD 88 CONVERSION		10/31/14	
UPDATED SURVEY AND WETLAND FLAGS LOCATED	37589	9/19/13	878/7,881/15
UPDATED SURVEY	36921	4/05/13	863/27–28
UPDATED TOPOGRAPHIC SURVEY	36921	4/05/13	863/27–28
BURIED PIPE LOCATION	35338	5/27/11	809/29
10' CONTOUR ADDED FROM PRIOR SURVEY		6/14/10	
REVISION: LINE TYPE FRESHWATER WETLAND LINE		5/4/09	
USGS 10' CONTOUR NGVD 29 ADDED		4/14/09	
NYSDEC TIDAL WETLANDS LINES ADDED		4/13/09	
EXTENSION OF MHW ADDED		2/5/09	
PROPOSED SUBDIVISION DIMENSIONS		10/27/08	
MISCELLANOUS REVISIONS		10/14/08	
GAS MAIN ADDED		8/08/08	
BENCHMARK NOTE ADDED	31546	10/17/07	PRINT
UPDATE SEWER INFO	31546	9/19/07	PRINT
REVISION: UNDERWATER/UPLAND AREAS	31546	7/25/07	PRINTS

REVISIONS	JOB #	DATE	FB. / PG.
ADDITIONAL MAPPING		1/1/07	
ADDITIONAL MAPPING		12/27/06	PRINT
10' TOPOG. CRVDS PLOTTED		11/13/06	30061
SEWER INFORMATION		9/06/06	PRINT
REVISION: GORE AREA REMOVED		8/30/06	
REVISION: DATUM NOTES		8/18/06	
ADDED TBM ON ARTHUR KILL RD.		8/10/06	PRINT

Arthur Kill Road
Richmond Valley Road
Staten Island, New York

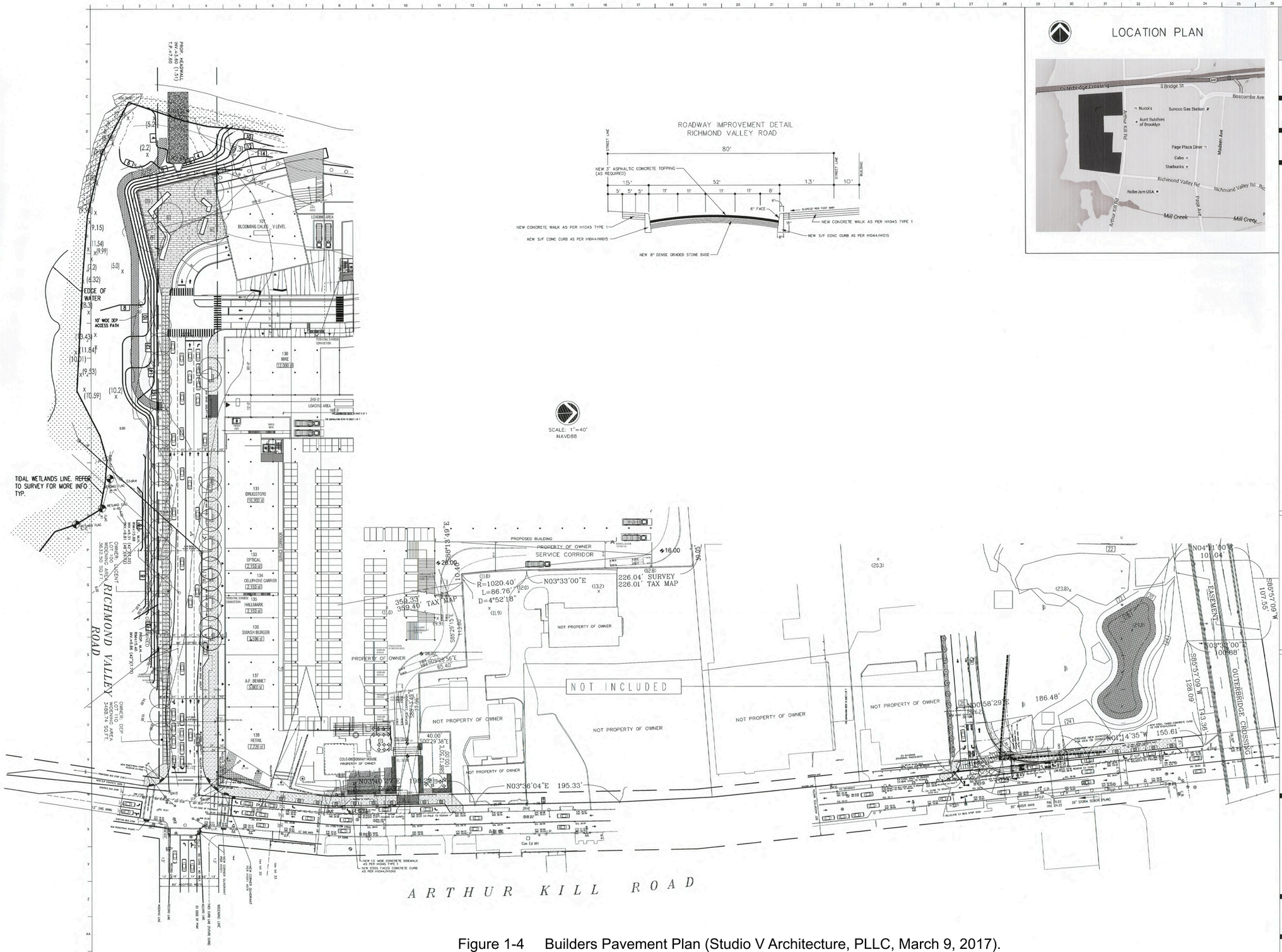
Drafted by: RL	Date : 2/26/06
Checked by: DD	Scale : 1" = 50'
Dwg. File: 29816–NAVD88	Job No. : 29498
Disk No. P:\	F.B./Pg. VARIOUS

ROGERS SURVEYING, PLLC
1632 Richmond Terrace
Staten Island, N.Y. 10310
(718) 447-7311
www.rogerssurveying.net

SOUTH RICHMOND TOPOGRAPHICAL

G001.

Figure 1-3 Site Plan showing Archaeological Test Areas (Capital Environmental December 7, 2016)


ROADWAY IMPROVEMENT DETAIL
RICHMOND VALLEY ROAD
80'
STREET LINE
STREET LINE
BUILDING
NEW 3" ASPHALTIC CONCRETE TOPPING (AS REQUIRED)
15'
52'
13'
10'
5' 5' 5' 11' 11' 11' 11' 8'
6" FACE
6"
SLOPE 1/2" PER FOOT MAX
NEW CONCRETE WALK AS PER H1045 TYPE 1
NEW S/F CONC CURB AS PER H1044/H1015
NEW CONCRETE WALK AS PER H1045 TYPE 1
NEW S/F CONC CURB AS PER H1044/H1015
8"
NEW 8" DENSE GRADED STONE BASE
SCALE: 1"=40'
NAVD88
LOCATION PLAN
Outerbridge Crossing
S Bridge St
Boscombe Ave
Nucci's
Sunoco Gas Station
Aunt Butchies of Brooklyn
Arthur Kill Rd
Page Plaza Diner
Cabo
Starbucks
Madden Ave
Richmond Valley Rd
Richmond Valley Rd
RollerJam USA
Page Ave
Mill Creek
Mill Creek
TIDAL WETLANDS LINE. REFER TO SURVEY FOR MORE INFO TYP.
EDGE OF WATER
10' WIDE DEP ACCESS PATH
101 BLOOMING DALES 1 LEVEL
LOADING AREA
130 MIKE 12,000 sf
131 DRUGSTORE 10,200 sf
LOADING AREA
133 OPTICAL 2,150 sf
134 CELLPHONE CARRIER 2,150 sf
135 HALLMARK 2,150 sf
136 SMASH BURGER 1,596 sf
137 A.F. BENNET 5,000 sf
138 RETAIL 7,250 sf
OWNER: DEP LOT 110 TAX MAP 3 SECT. 1
OWNER: LACENT WORKING AREA 3632.50 SQ FT.
RICHMOND VALLEY ROAD
PROPOSED BUILDING
PROPERTY OF OWNER
SERVICE CORRIDOR
N88°18'49"E
16.00
28.00
R=1020.40'
L=86.76'
D=4°52'18"
N03°33'00"E
226.04' SURVEY
226.01' TAX MAP
359.33
359.40' TAX MAP
S85°29'15"E
PROPERTY OF OWNER
N88°30'56"E
65.40'
NOT PROPERTY OF OWNER
NOT INCLUDED
NOT PROPERTY OF OWNER
NOT PROPERTY OF OWNER
NOT PROPERTY OF OWNER
COLE-DIEBOLD-BRAY HOUSE PROPERTY OF OWNER
N03°40'27"E
195.23'
N03°36'04"E
195.33'
S88°17'30"E
200.00'
40.00'
S00°29'38"E
NEW 13' WIDE CONCRETE SIDEWALK AS PER H1045 TYPE 1
NEW STEEL FACED CONCRETE CURB AS PER H1044/H1010
ARTHUR KILL ROAD
N04°11'00"E
101.04'
S85°57'09"W
107.55'
EASEMENT
N03°33'00"E
100.88'
S85°57'09"W
128.09'
143.36'
OUTERBRIDGE CROSSING
N00°56'29"E
186.48'
N01°14'35"W
155.61'
NEW STEEL FACED CONCRETE CURB AS PER H1044/H1010
REMOVE NEW HANDRAIL FOR NEW CB CONSTRUCTION
30" WATER MAIN
RIM 24.22
30" STORM SEWER (PLAN)
EX BUILDING (NUMBER NOT KNOWN)
EX BUILDING (NUMBER NOT KNOWN)
EX BUILDING (NUMBER NOT KNOWN)
EX BUILDING (NUMBER NOT KNOWN)
RELOCATE EX BUS STOP SIGN
EX BUILDING (NUMBER NOT KNOWN)
EX BUILDING (NUMBER NOT KNOWN)
EX BUILDING (NUMBER NOT KNOWN)
EX BUILDING (NUMBER NOT KNOWN)

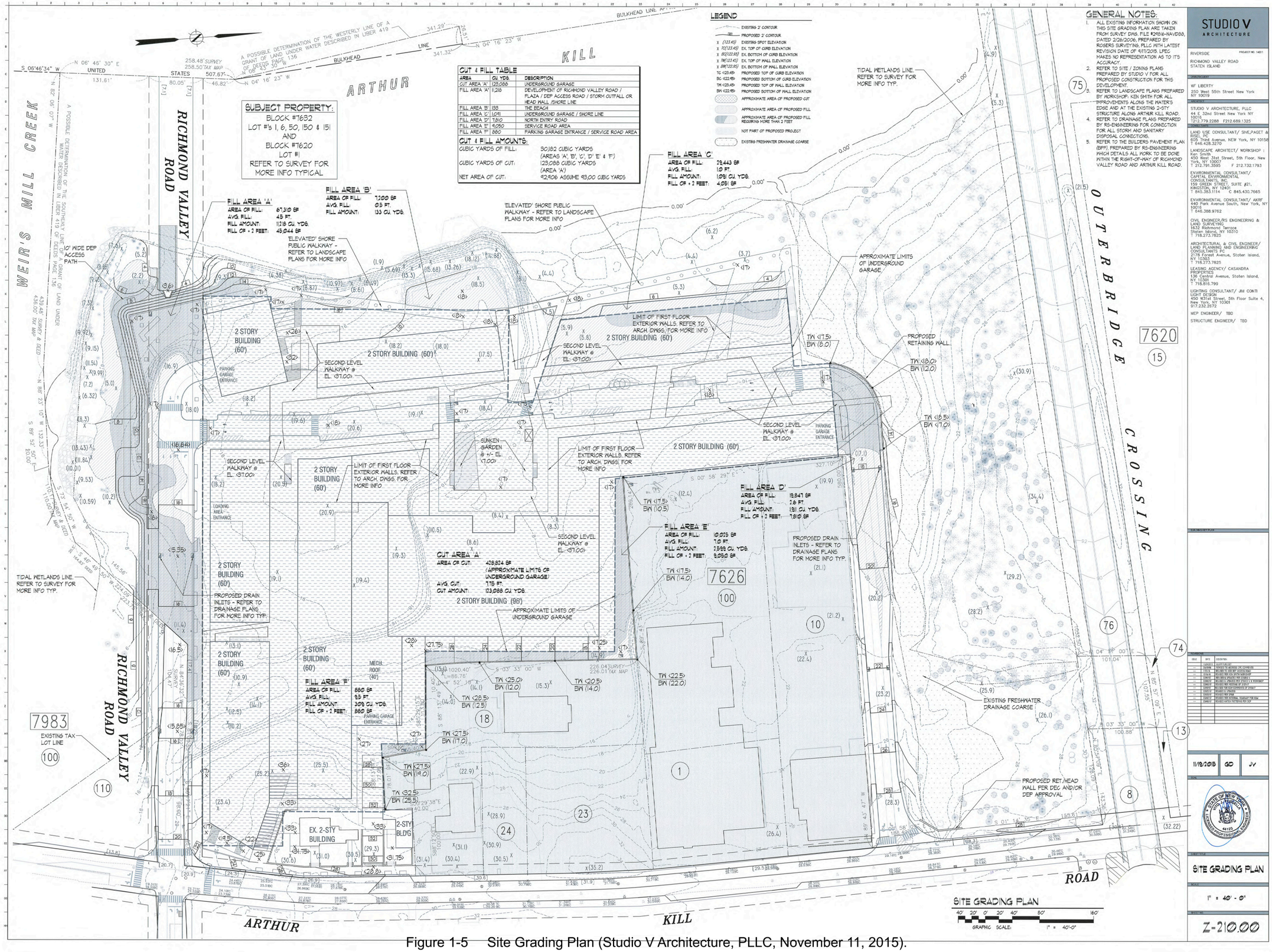


Figure 1-5 Site Grading Plan (Studio V Architecture, PLLC, November 11, 2015).

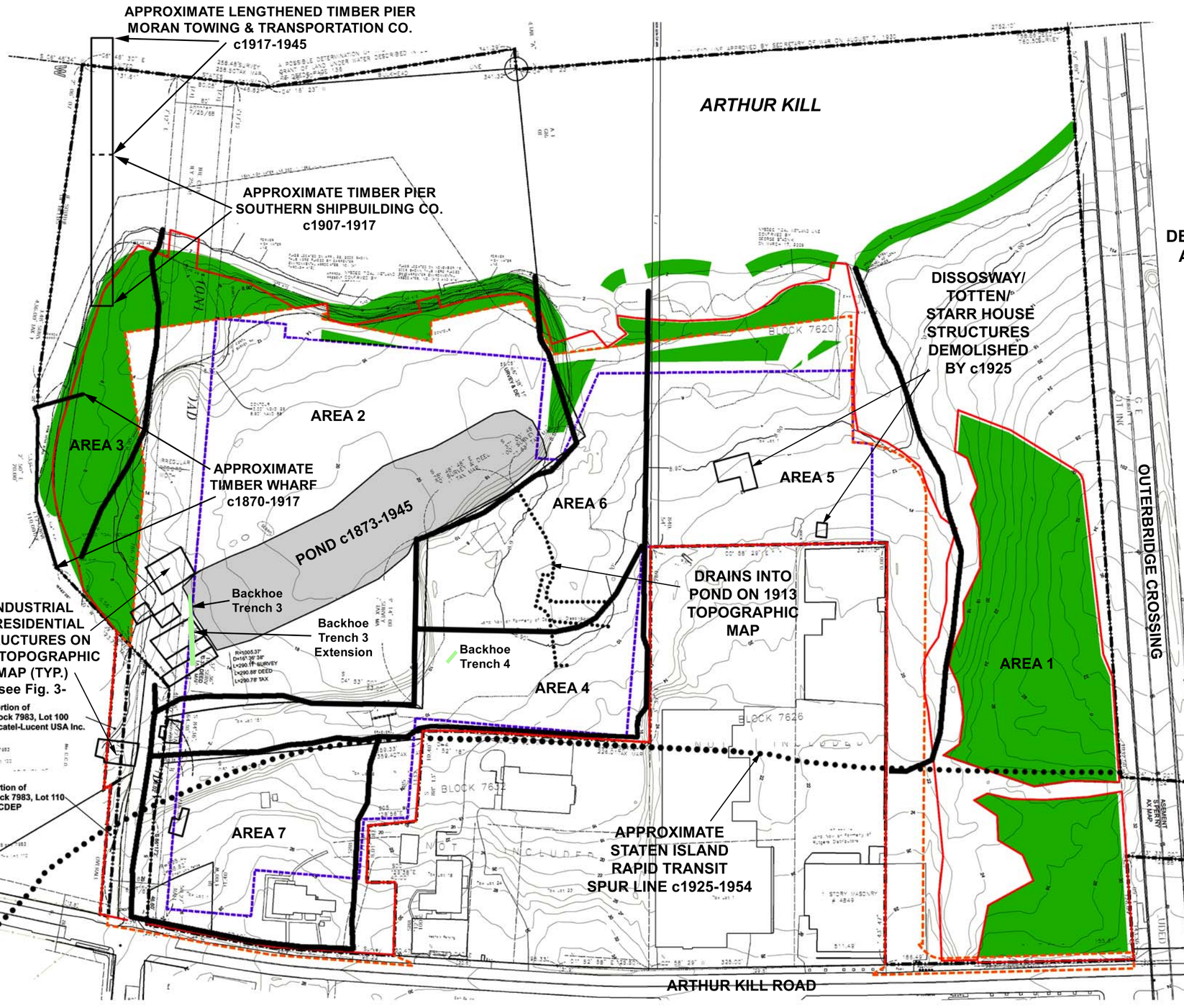


Figure 3-1. PROPOSED PROJECT LIMITS, ARCHAEOLOGICAL WORK AREAS, DEMOLISHED ABOVEGROUND STRUCTURES AND FEATURES, AND BACKHOE TRENCHES BT3. BT3 EXTENSION, AND BT4
base image: Capital Environmental Consultants, Inc. 2016
demolished structures: Borough of Richmond 1913;
New York City Bureau of Engineering 1924;
Historic Aerials by NETROnline 1940, 1947

50 0 25 50 100 200 FEET

Legend

- LOD/APE Line
- Lot Lines
- Development Outline
- Mitigation Area
- Limit of Underground Garage Line Base Slab at El. 7'
- Archaeological Work Area
- Backhoe Trench

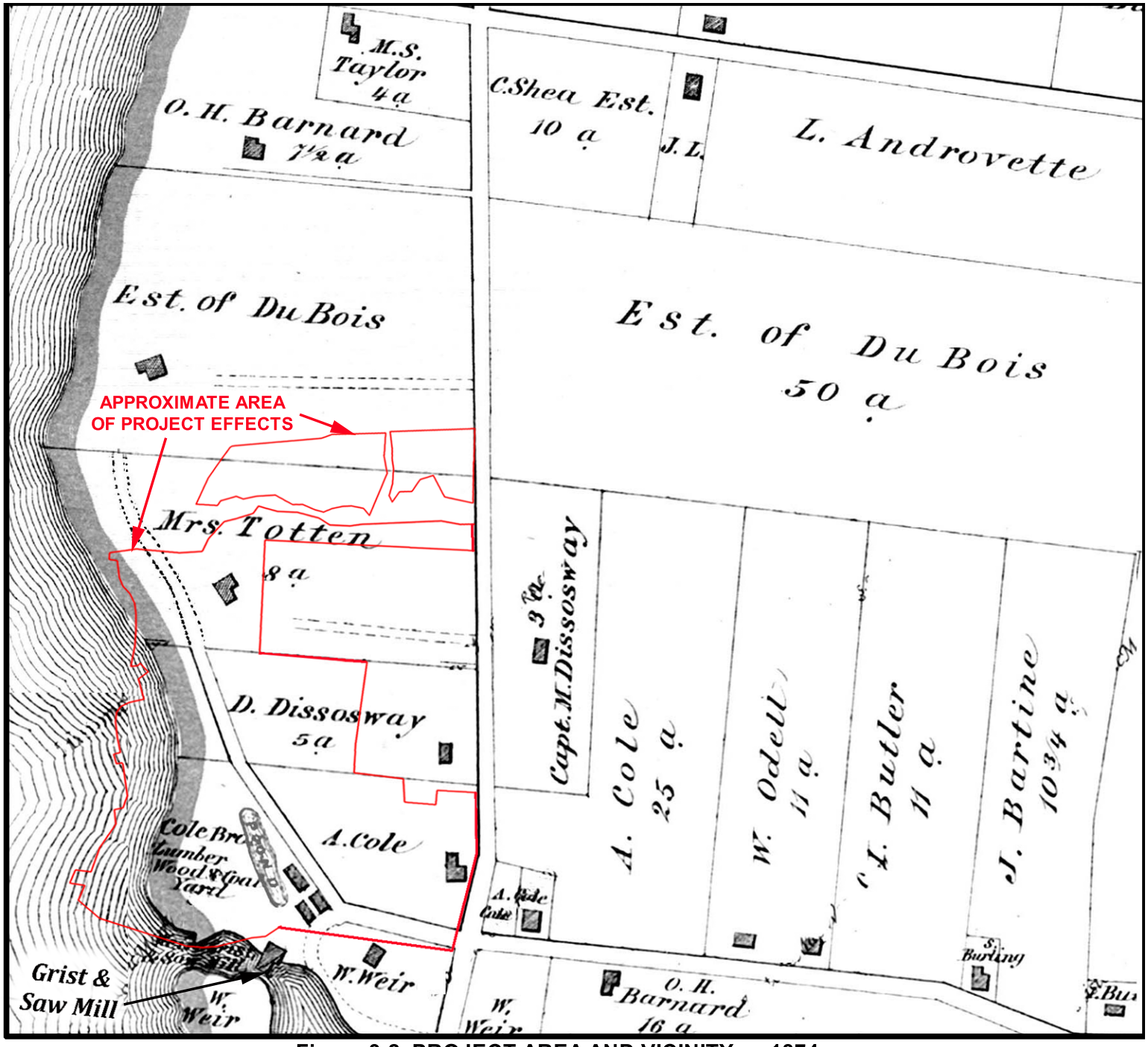


Figure 3-2. PROJECT AREA AND VICINITY ca.1874
base image: Beers 1874
not to scale

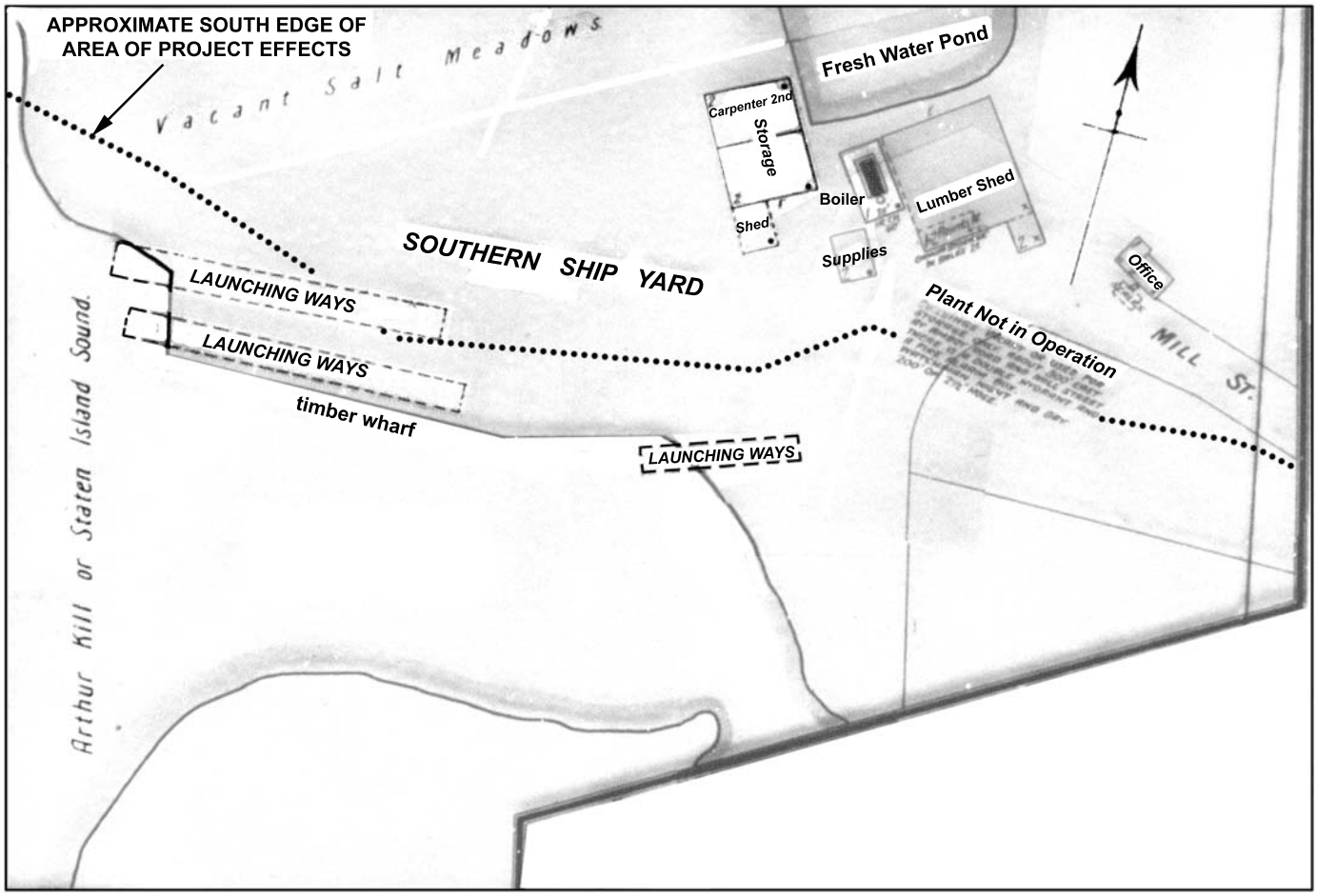


Figure 3-3. DETAIL OF FEATURES AT SOUTH END OF FORMER POND ca.1910
base image: Sanborn Map Company 1898-1910
The site owner is mis-named, and was Southern Shipbuilding Company

approximate scale

50 0 25 50 100 200 FEET

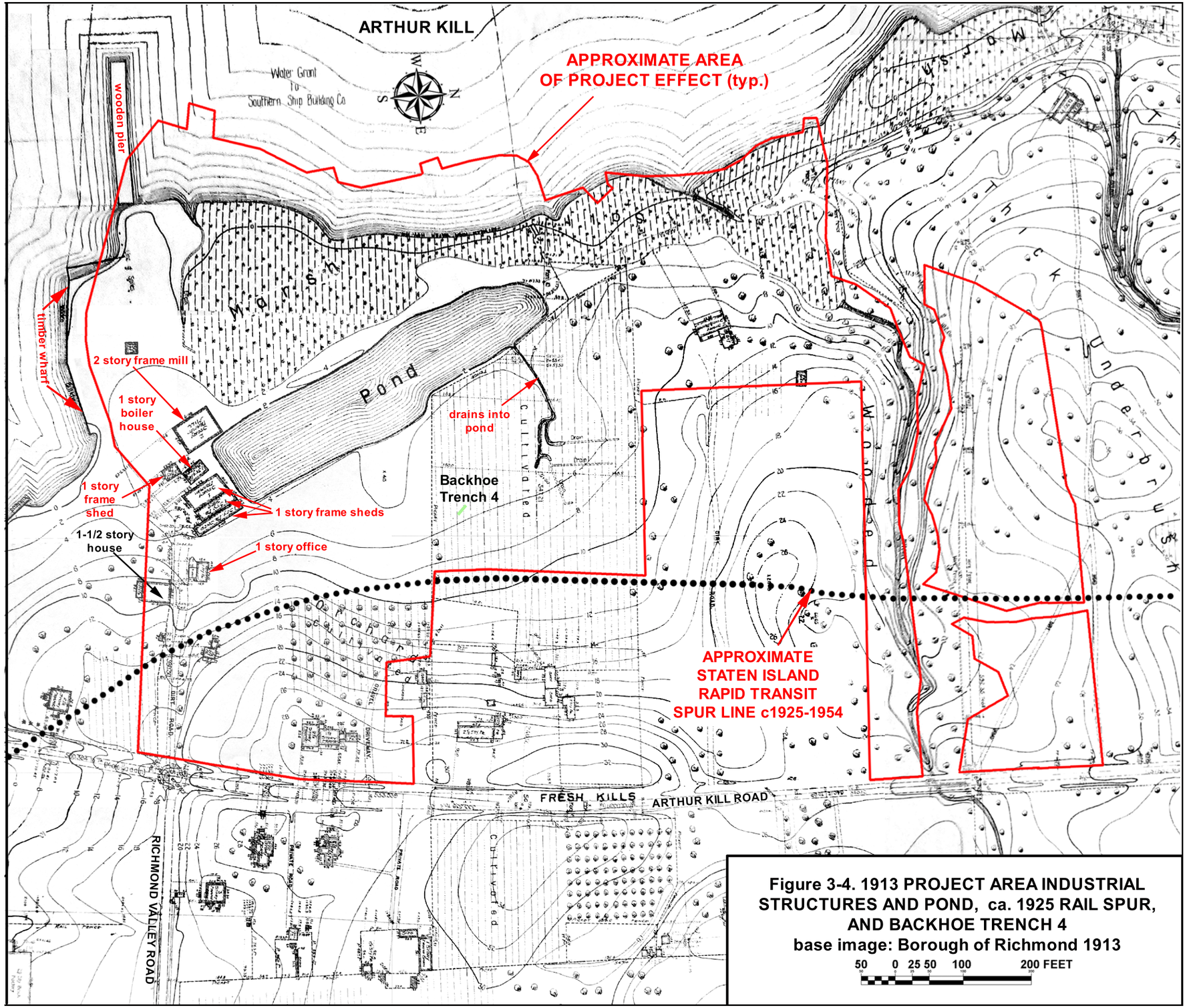


Figure 3-4. 1913 PROJECT AREA INDUSTRIAL STRUCTURES AND POND, ca. 1925 RAIL SPUR, AND BACKHOE TRENCH 4
base image: Borough of Richmond 1913

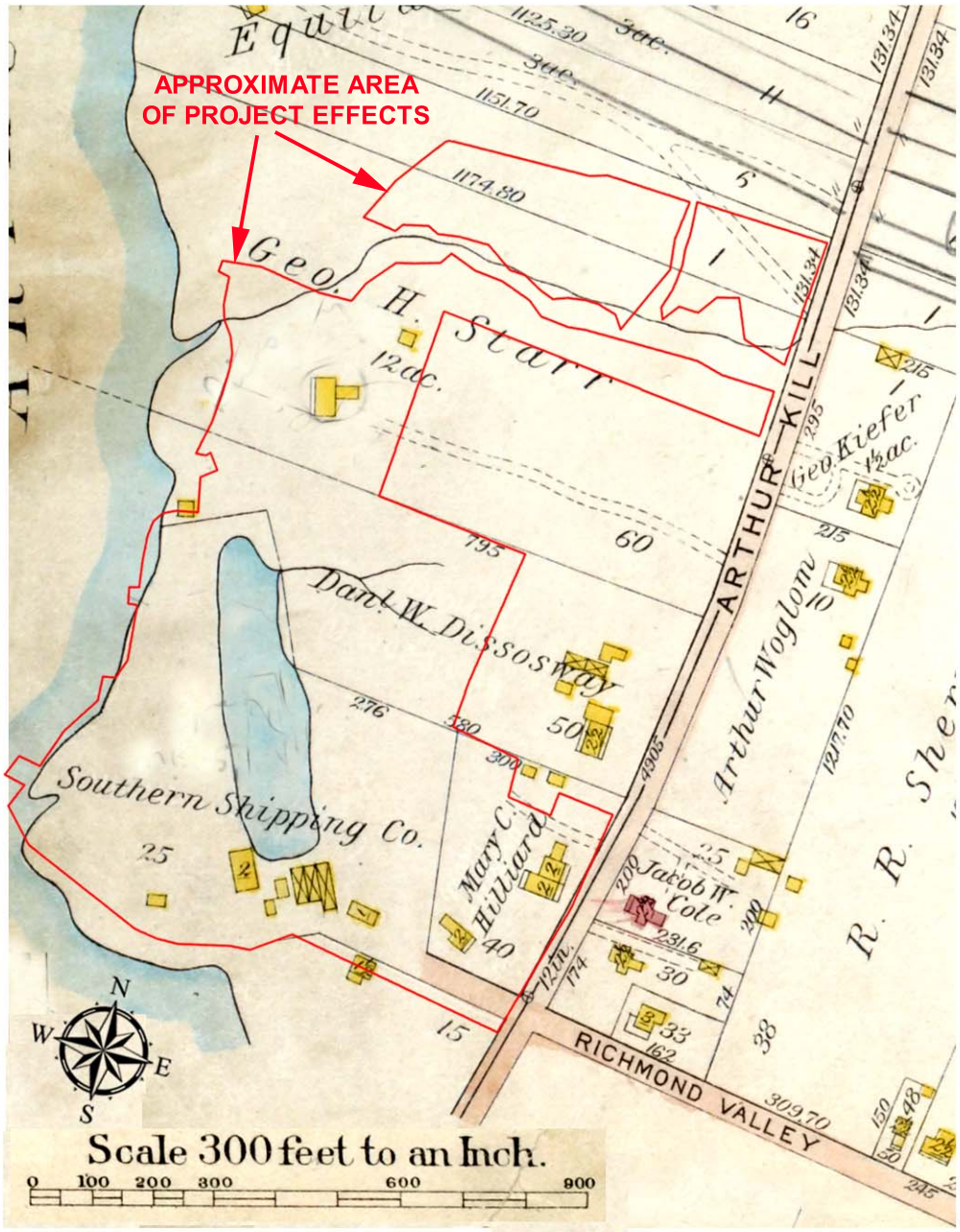


Figure 3-5. PROJECT AREA AND VICINITY ca. EARLY 1917
base image: G.W. Bromley 1917
The complex shown south of the pond is mis-named,
and was Southern Shipbuilding Company

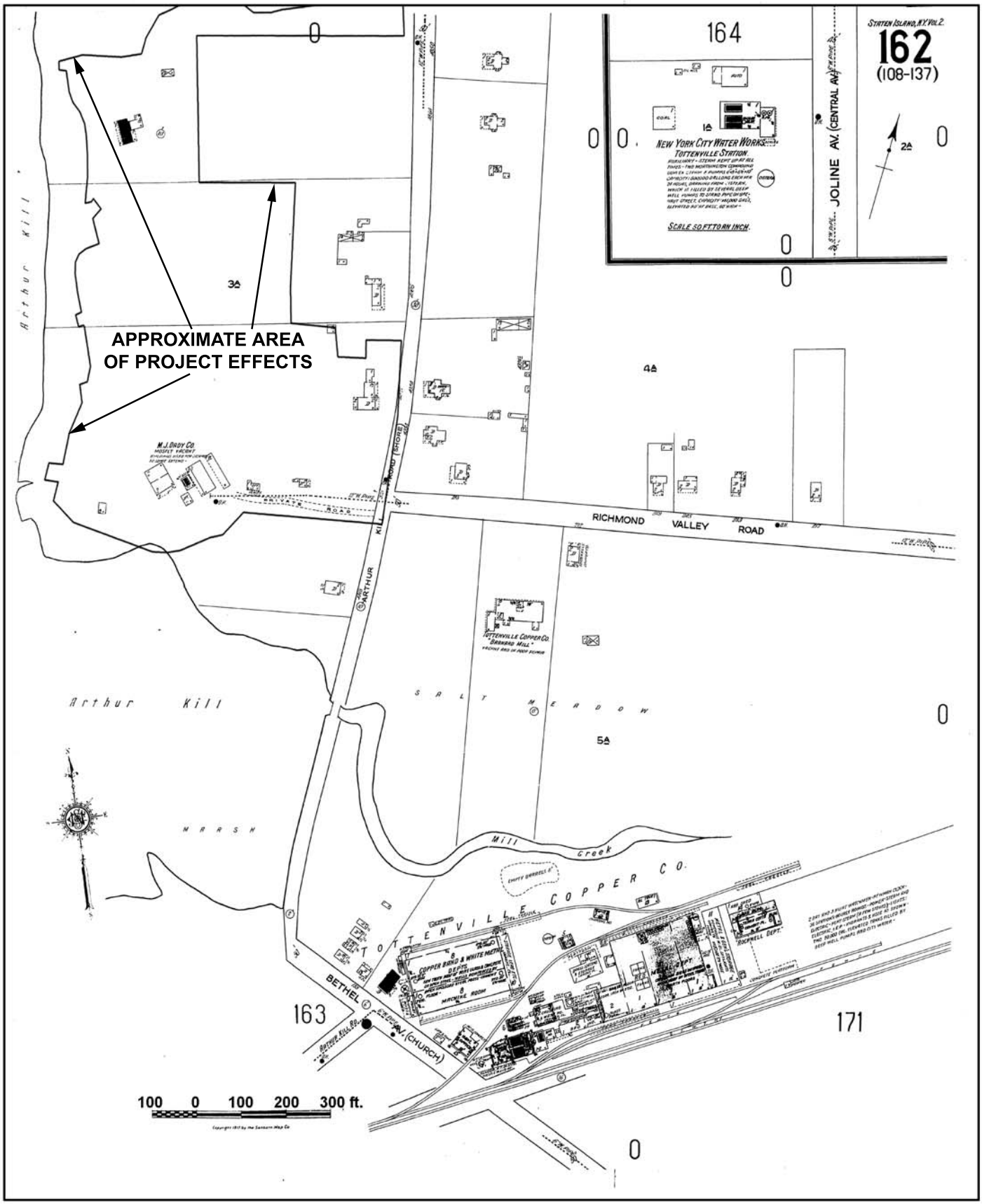


Figure 3-6. PROJECT AREA AND VICINITY ca. LATE 1917
base image: Sanborn Map Company1917
Southern Shipbuilding Company appears to a leased property to M.J. Dady Co.;
12-inch waterline shown from Arthur Kill Road to industrial property

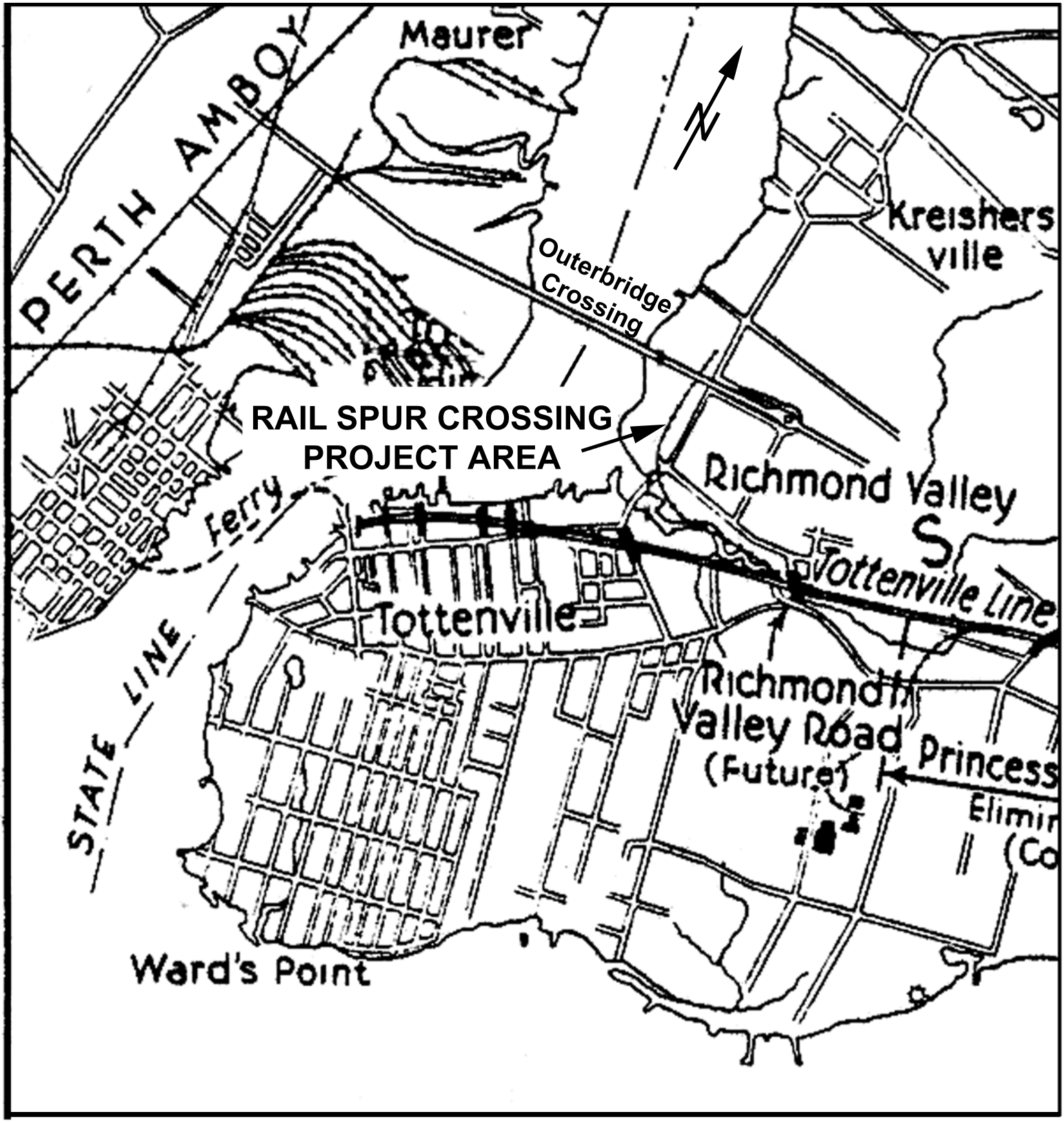


Figure 3-7. LOCATION OF STATEN ISLAND RAILROAD SPUR BUILT ACROSS PROJECT AREA ca. 1925
base image: *Railway Age* 1936
not to scale

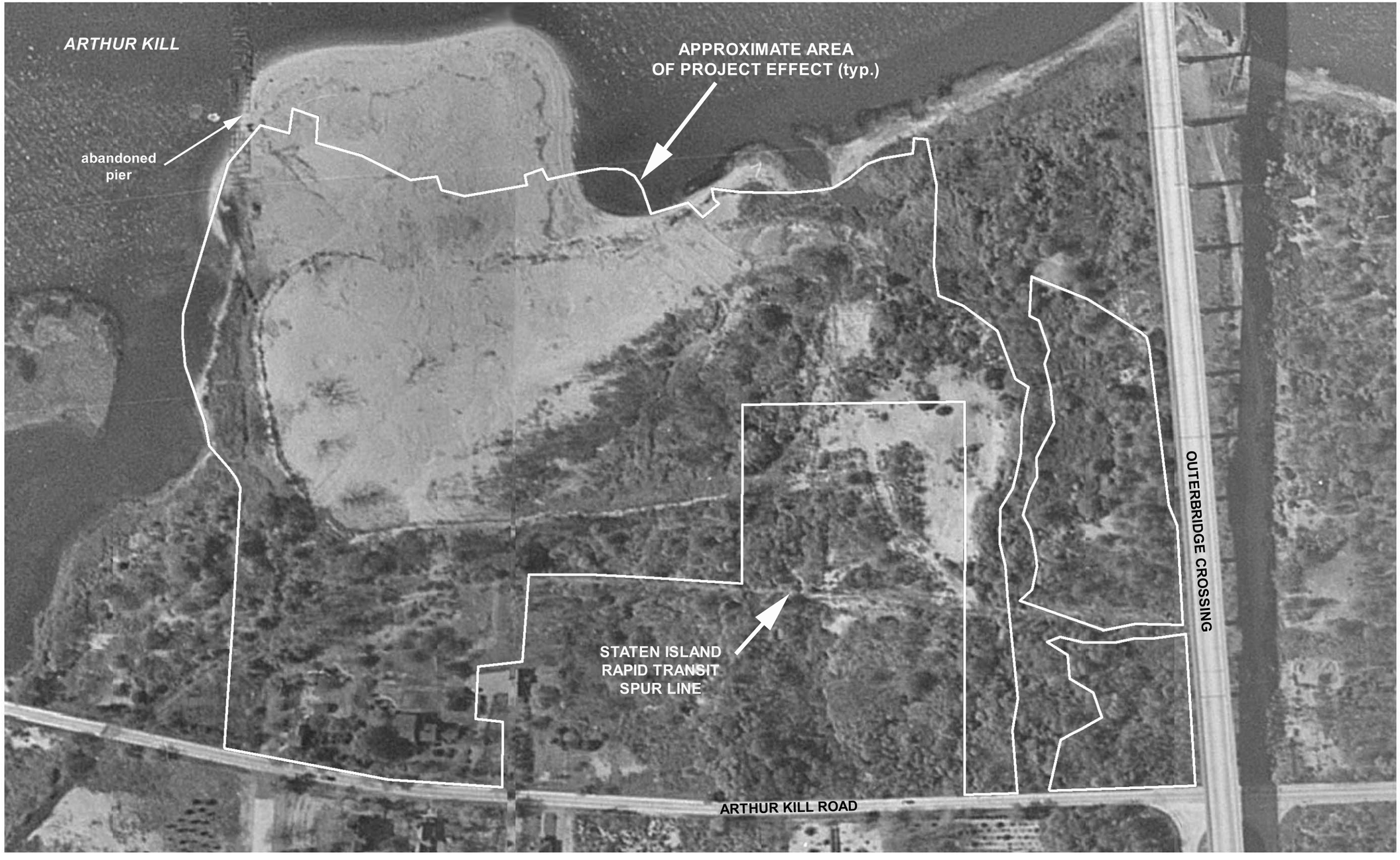


Figure 3-8. PROJECT AREA in 1947
This is the earliest post-1940 map or aerial photograph showing removal of the pond and all associated structures.
base image: NETROnline 1947

50 0 25 50 100 200 FEET

W N S E

Figure 3-9. PROJECT AREA IN 1954
rail spur has been removed
base image: NETROnline 1954

50 0 25 50 100 200 FEET

ARTHUR KILL

Abandoned pier

APPROXIMATE AREA OF PROJECT EFFECT (typ.)

OUTERBRIDGE CROSSING

Approximate berms located in 2015

Approximate Backhoe Trench 4

REMOVED STATEN ISLAND RAPID TRANSIT SPUR LINE

ARTHUR KILL ROAD

RICHMOND VALLEY ROAD

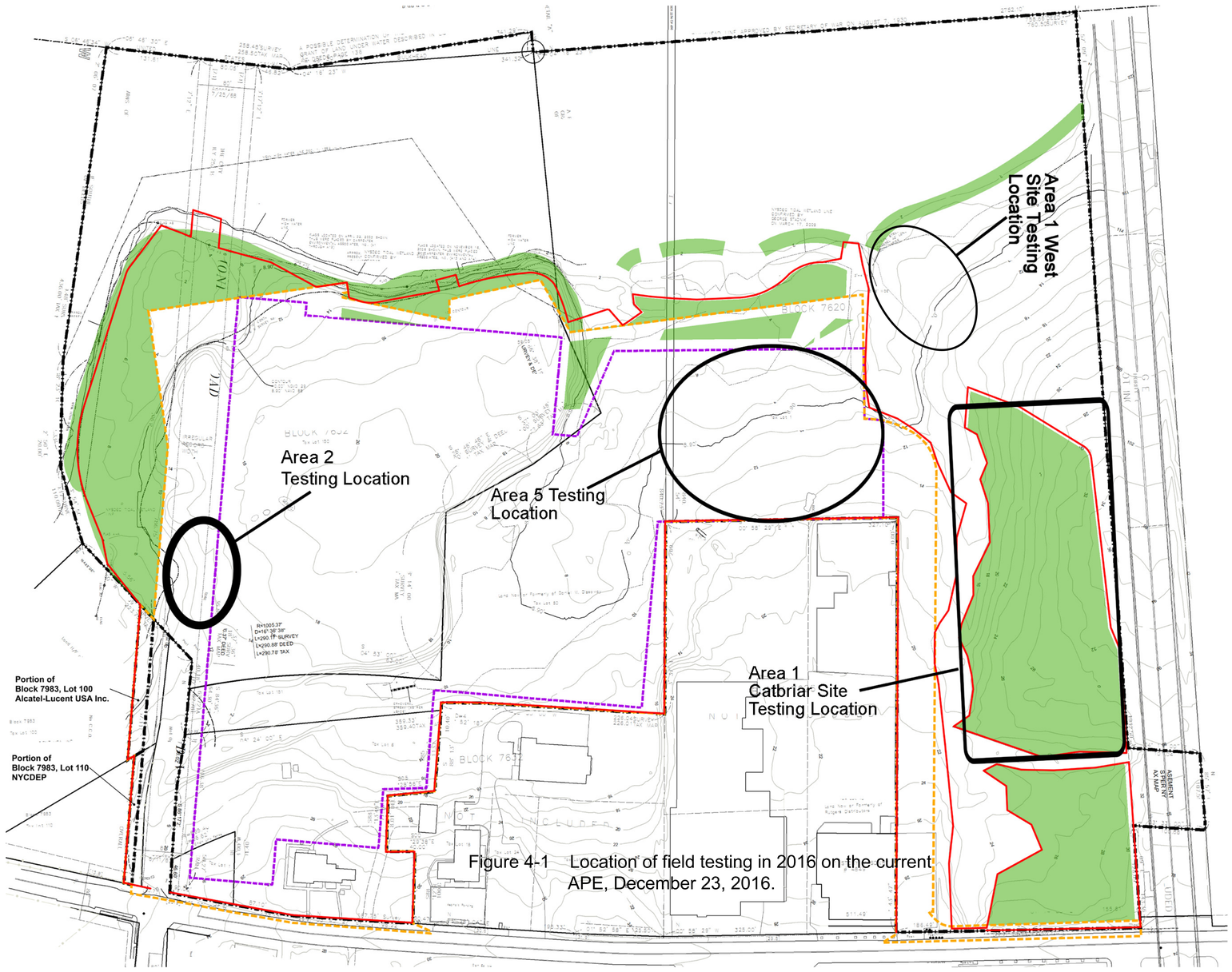


Figure 4-1 Location of field testing in 2016 on the current APE, December 23, 2016.

Legend

- LOD/APE Line
- Lot Lines
- Development Outline
- Mitigation Area
- Limit of Underground Garage Line Base Slab at El. 7'

APE Map

12/22/2016

Riverside Galleria
Block 7620, Lot 1
Block 7632, Lots 1, 6, 50, 150 & 151
Staten island, New York

0 60 120 240 Feet

Basefile: Rogers Surveying, PLLC, Staten Island, New York, Arthur Kill Road, Richmond Valley Rd, Staten island, New York, South Richmond Topographical Survey, 6/1/2016

CAPITAL ENVIRONMENTAL CONSULTANTS, INC.

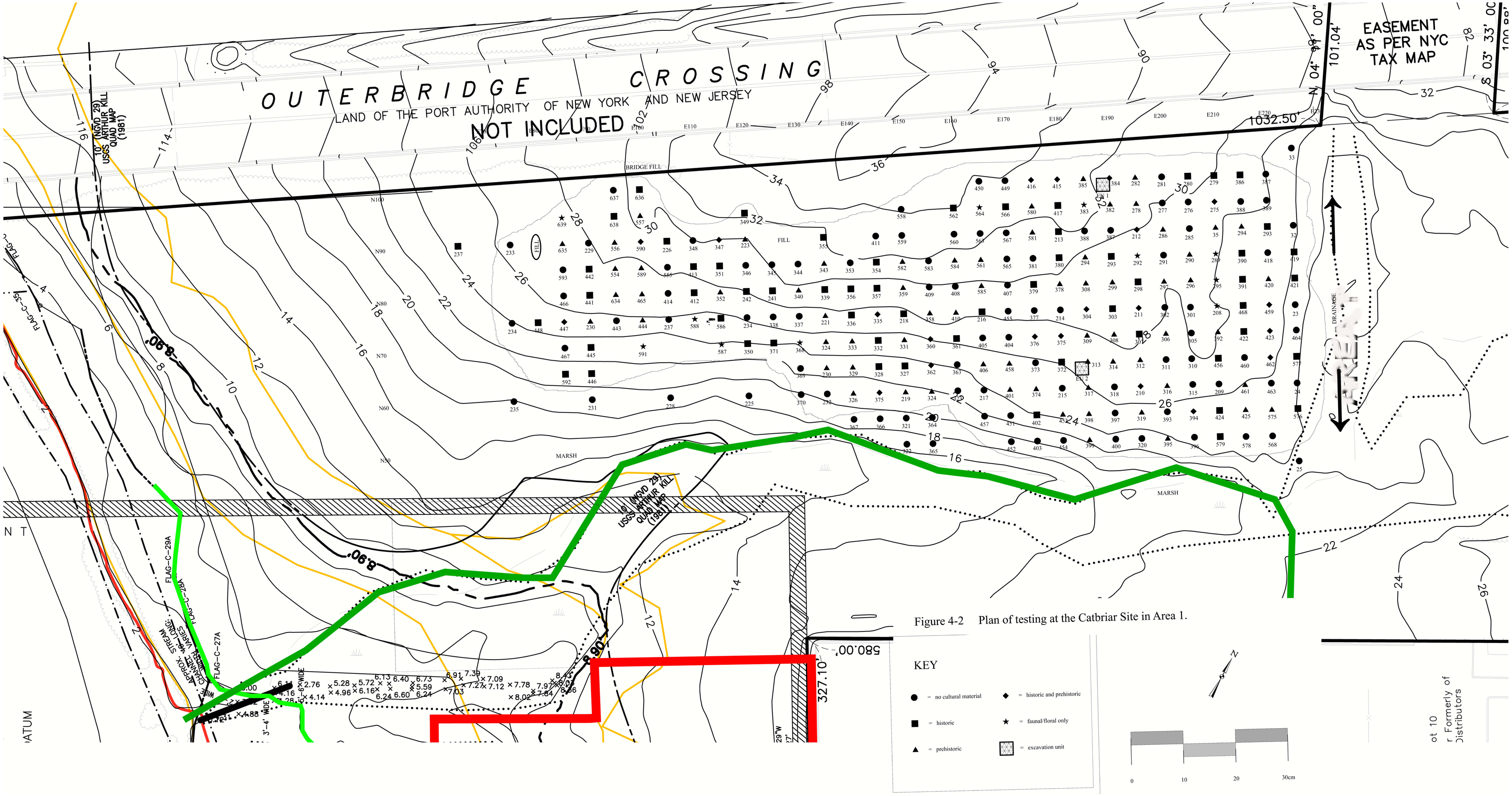


Figure 4-2 Plan of testing at the Catbriar Site in Area 1.

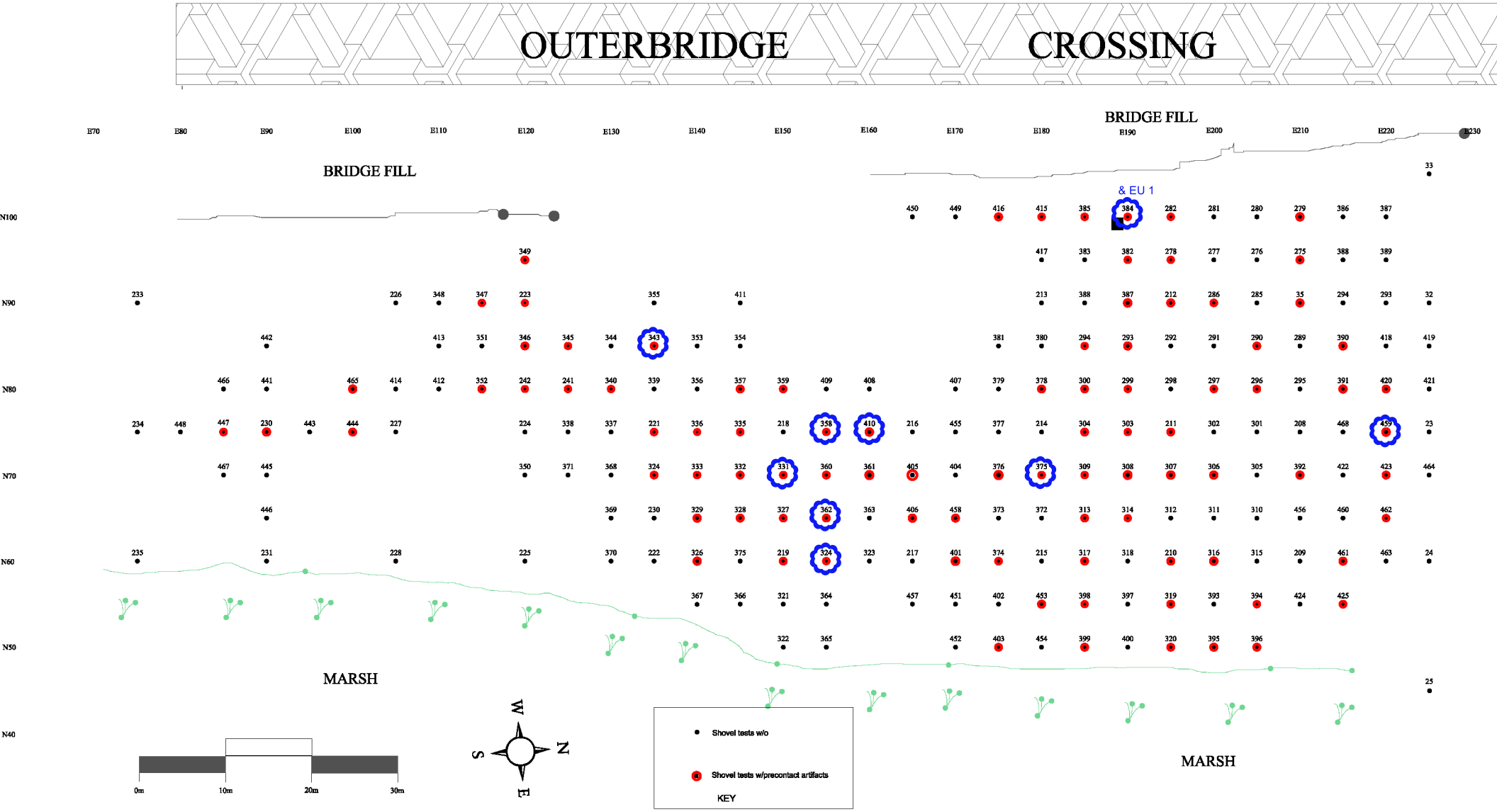


Figure 4-3 Plan of testing at the Catbriar Site showing the distribution of ceramics (from Figure 31, GCI 2015).

= Tests & EU with prehistoric ceramics

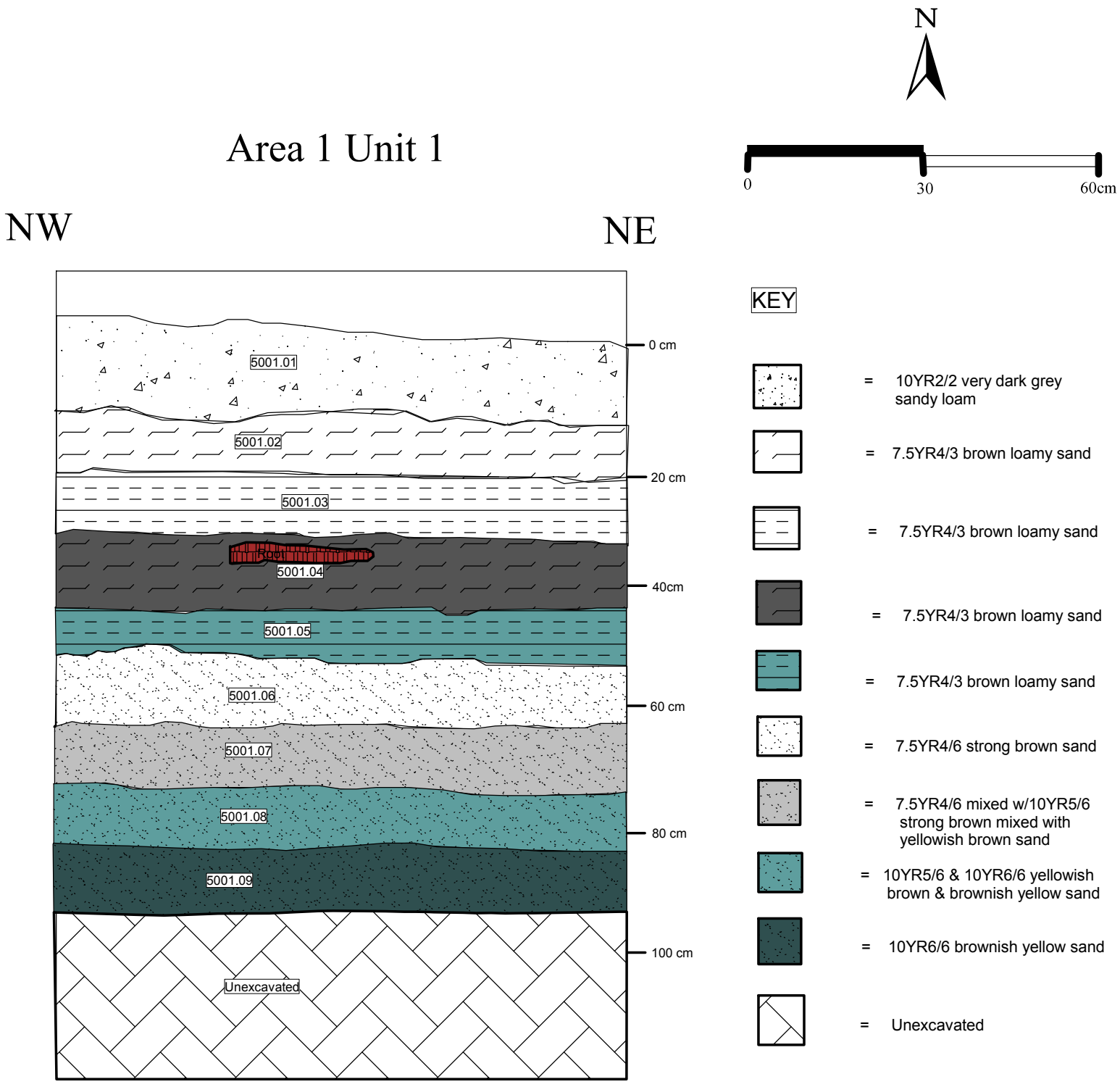


Figure 4-4 North Profile of Unit 1 at the Catbriar Site in Area 1.

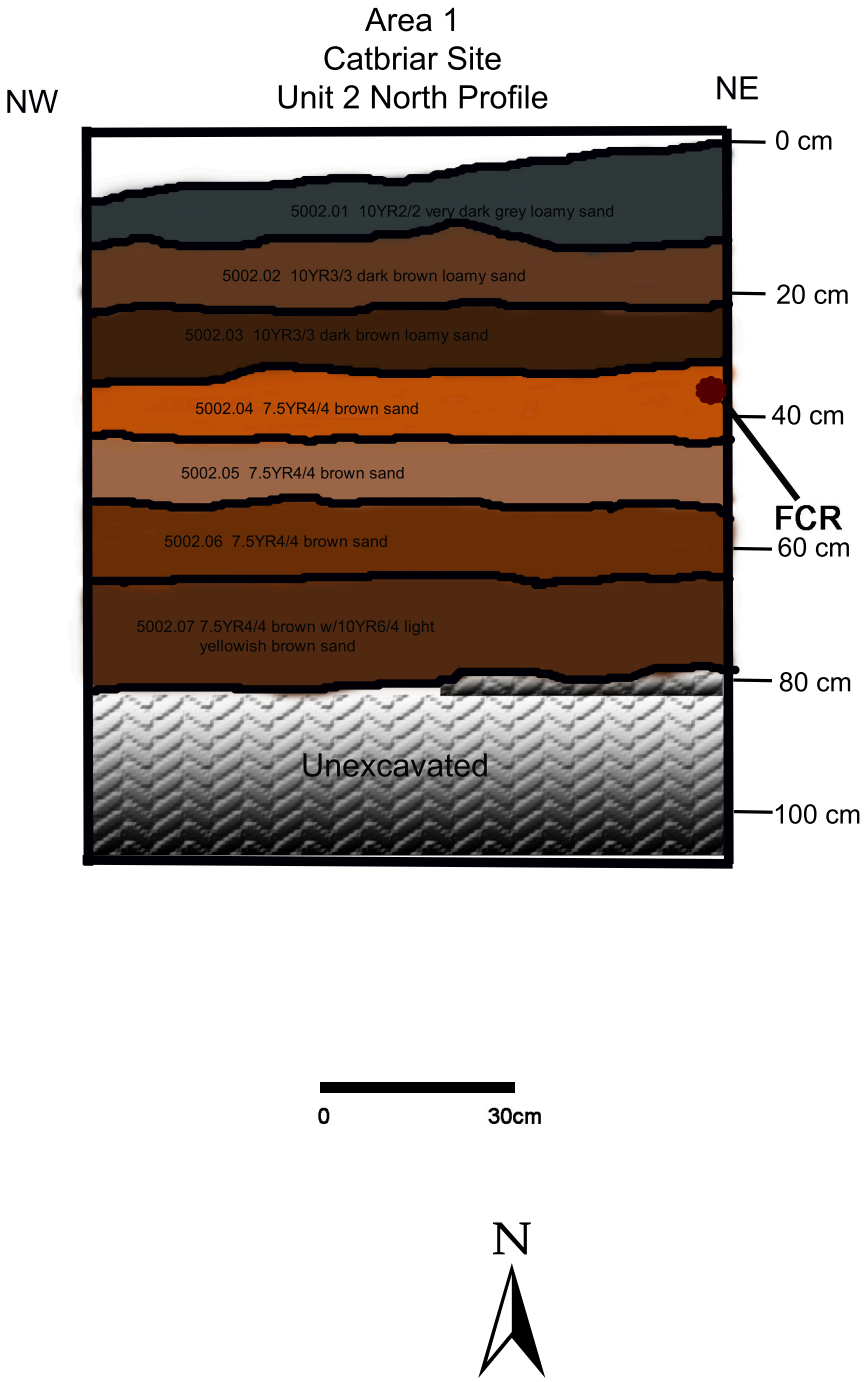


Figure 4-5 North Profile of Unit 2 at the Catbriar Site in Area 1.

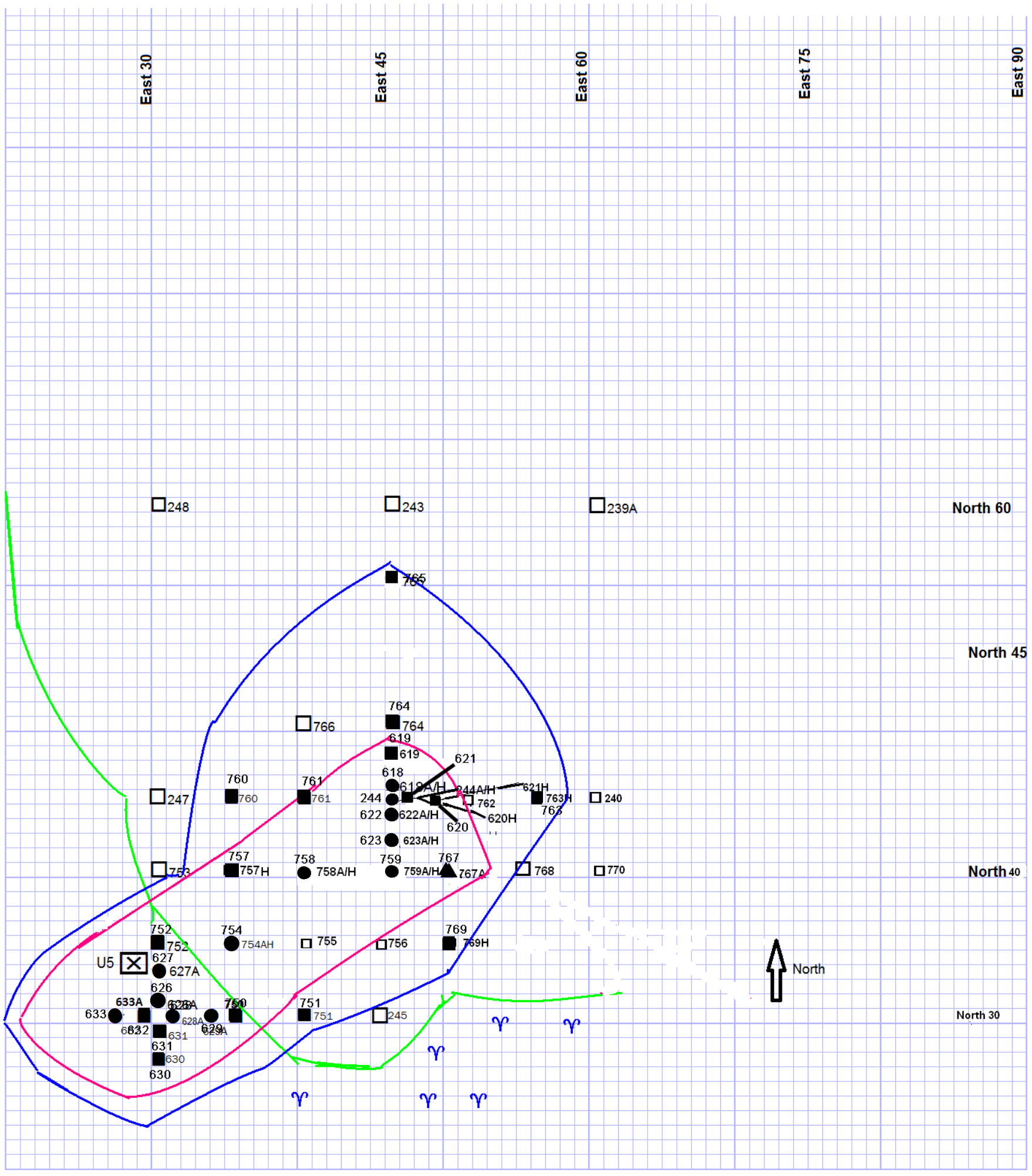
Free Multi-Width Graph Paper from http://incompetech.com/graphpaper/multiwidth/

Riverside Area 1 West
Greenhouse Consultants Inc.
June 2, 2016

By William Sandy, RPA

Legend
■ = Shovel Test w/Historic Content
▲ = Shovel Test with Aboriginal Content
● = Shovel Test with both Aboriginal and Historic Content
□ = Shovel Test with No Cultural Remains
☒ = Unit
♈ = wetlands
= wetlands setback
= Precontact Site
= Historic Site

Scale
0 10 m



Area 1
Unit 5

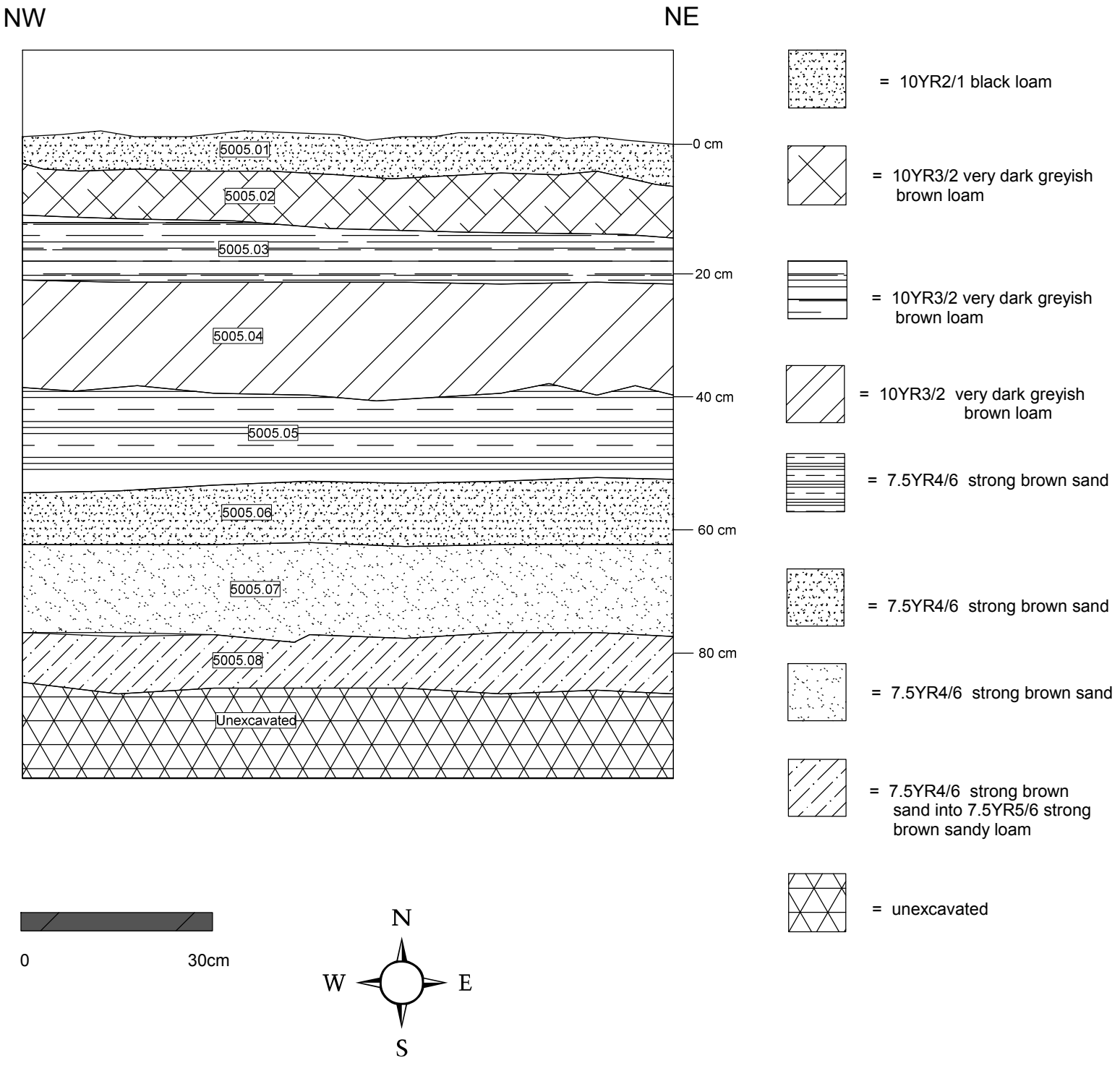


Figure 4-7 North Profile of Unit 5 in Area 1 West.

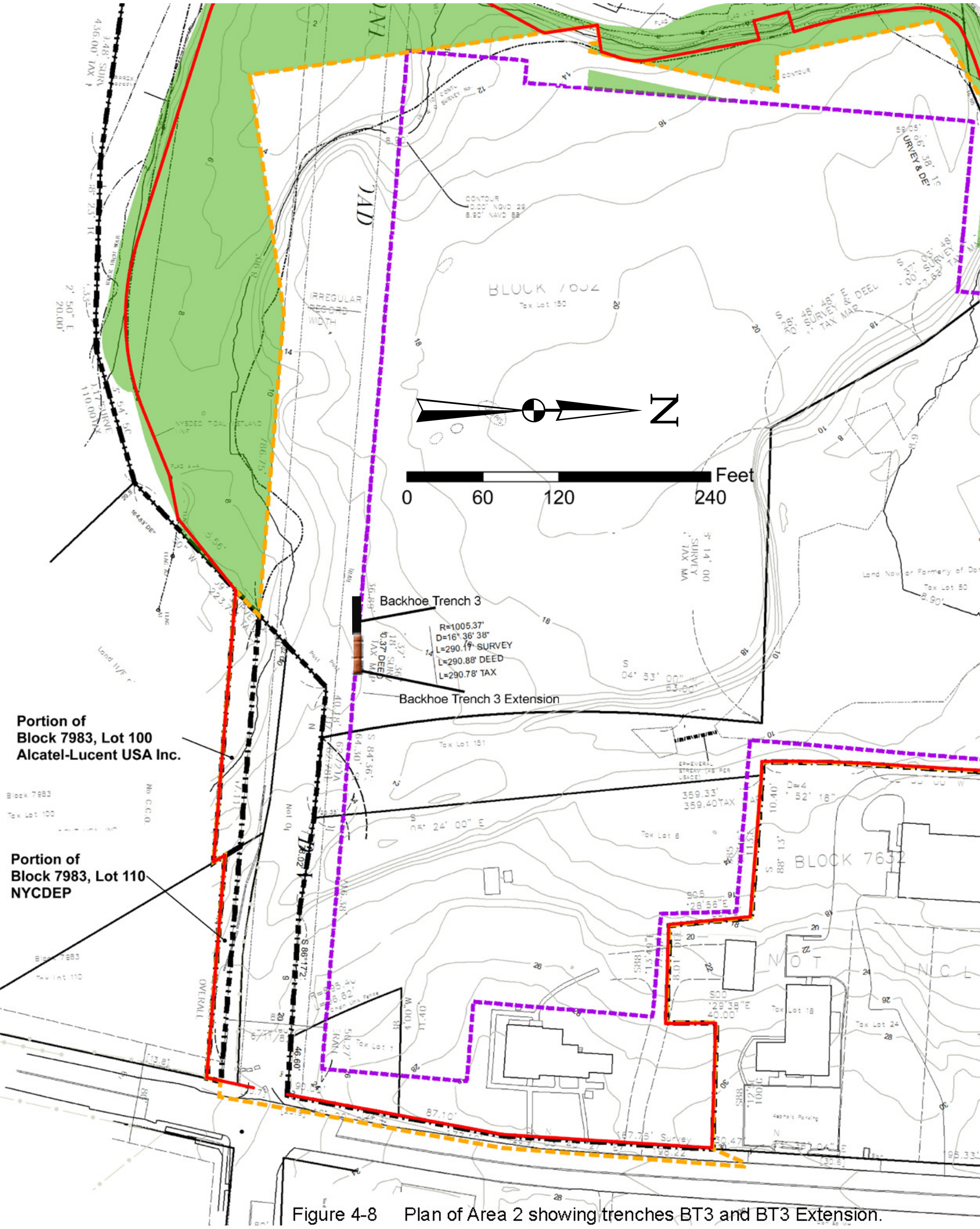
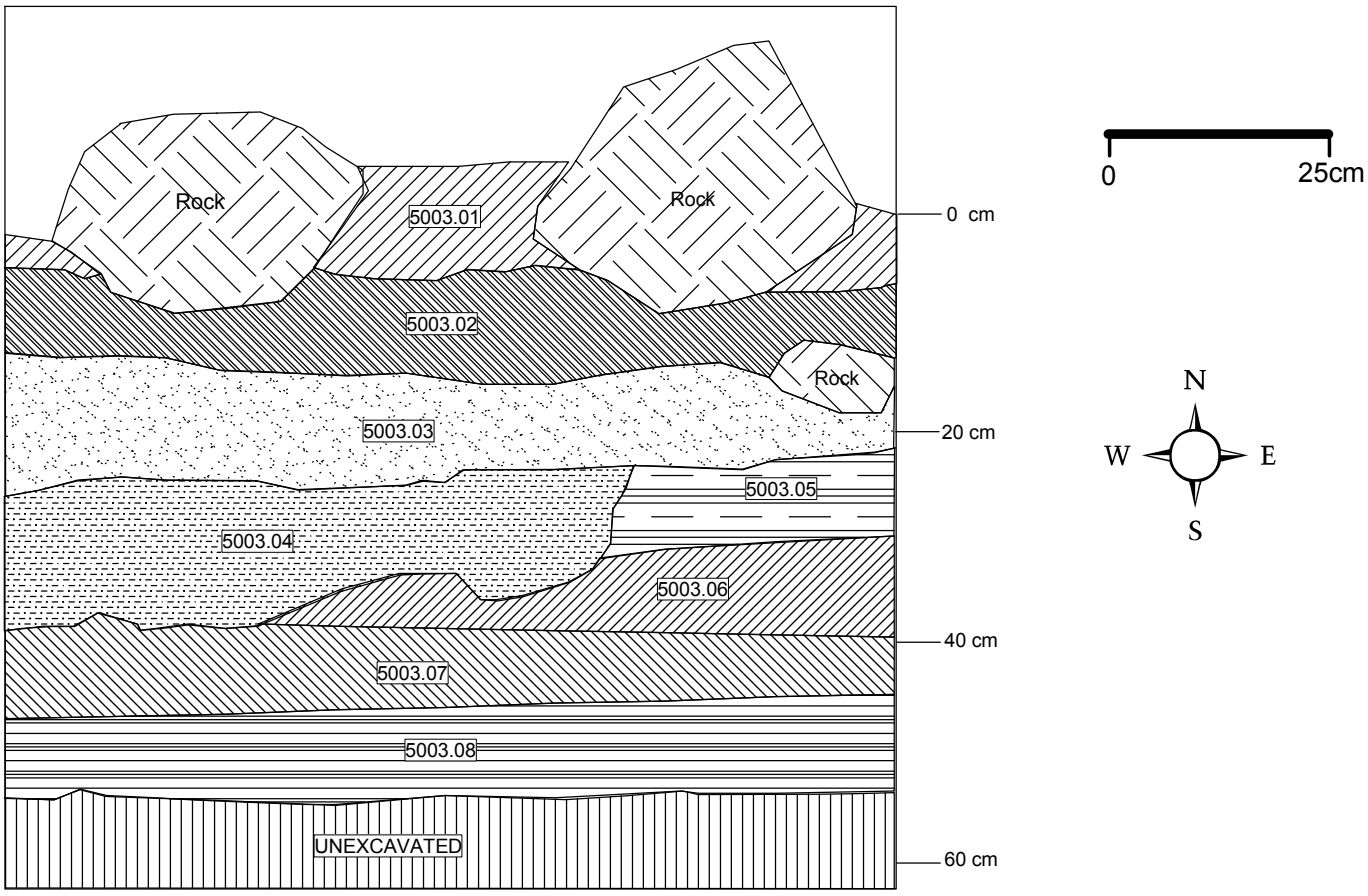


Figure 4-8 Plan of Area 2 showing trenches BT3 and BT3 Extension.

Figure 4-9 Plan of Area 5 showing 2016, 2013 and 2008 fieldwork.

AREA 5
Unit 3
North Profile



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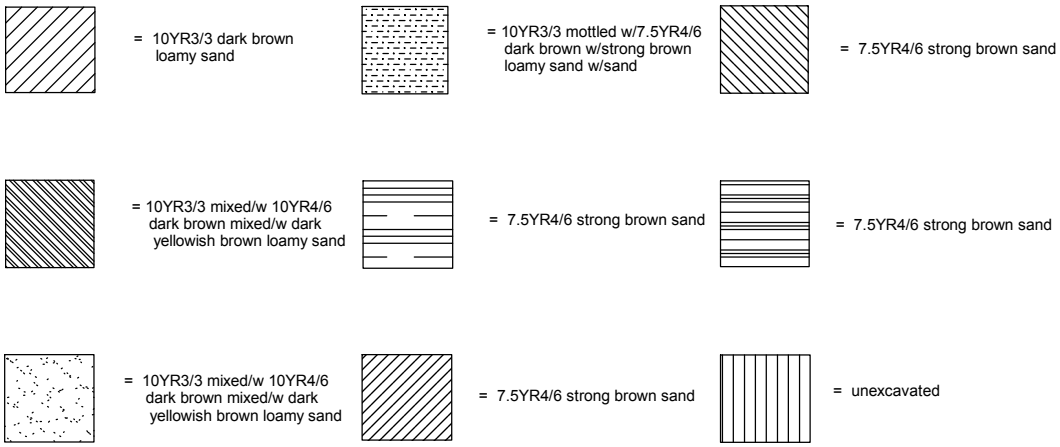


Figure 4-10 North profile of Unit 3 in Area 5.

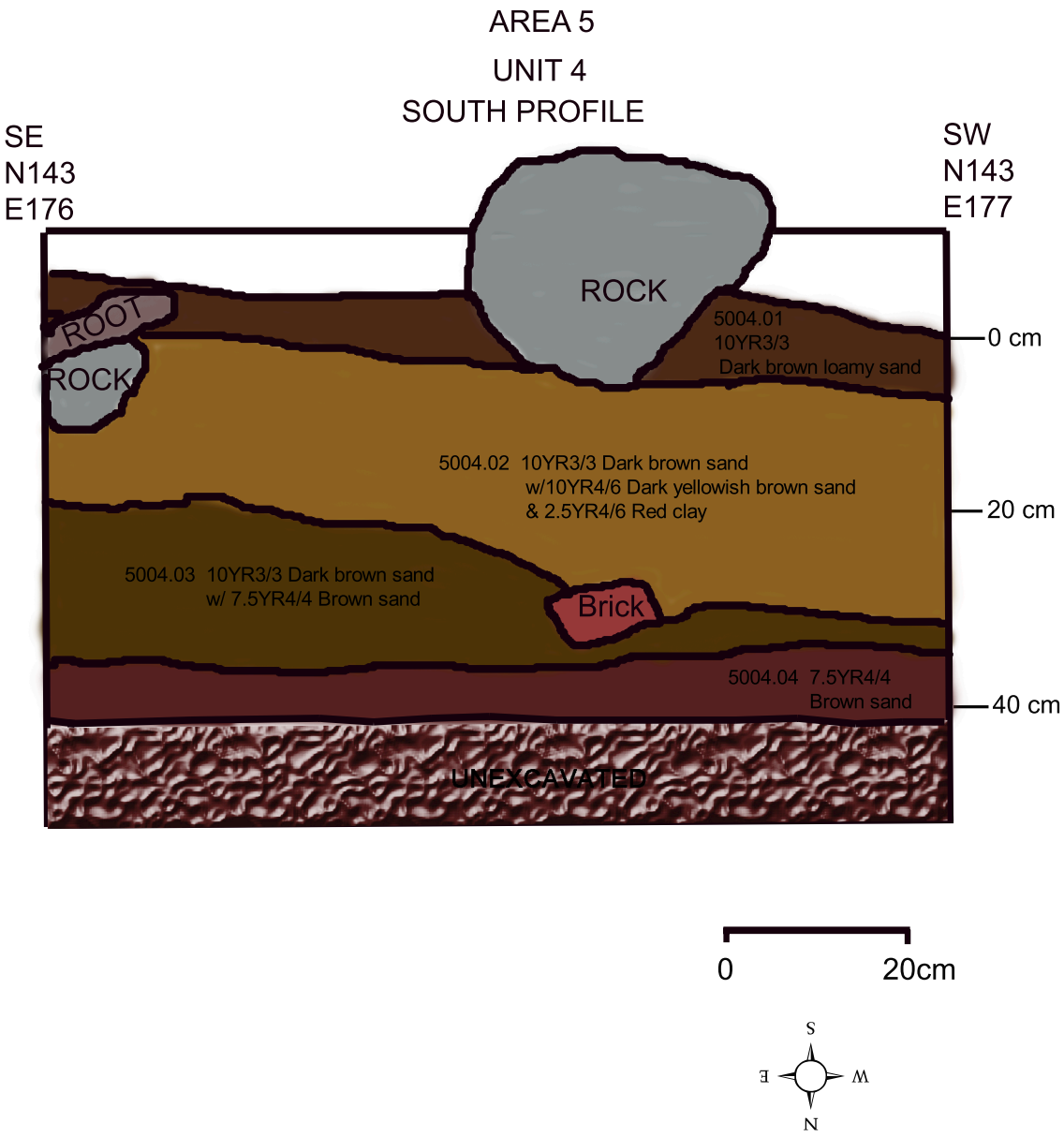


Figure 4-11 South profile of Unit 4 in Area 5.

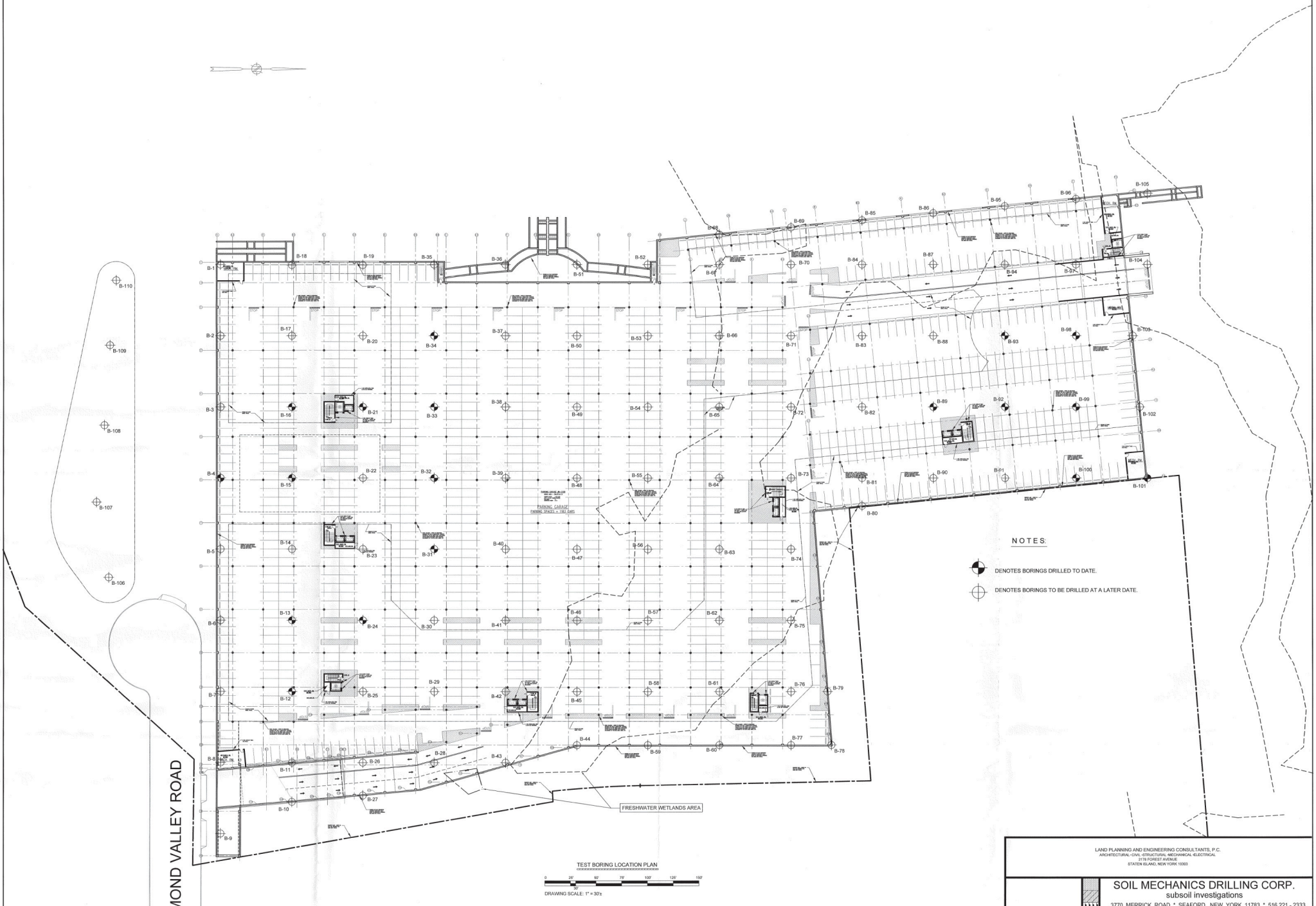


Figure 7-1 Location of 2008-2009 Soil Borings, from Subsurface Investigations, Soil Mechanics Drilling Corporation, January 9, 2009.



Figure 7-2 Location of 2016 Structural and Stormwater Borings, from Boring Location Plan, Capital Environmental Consultants, March 22, 2016.

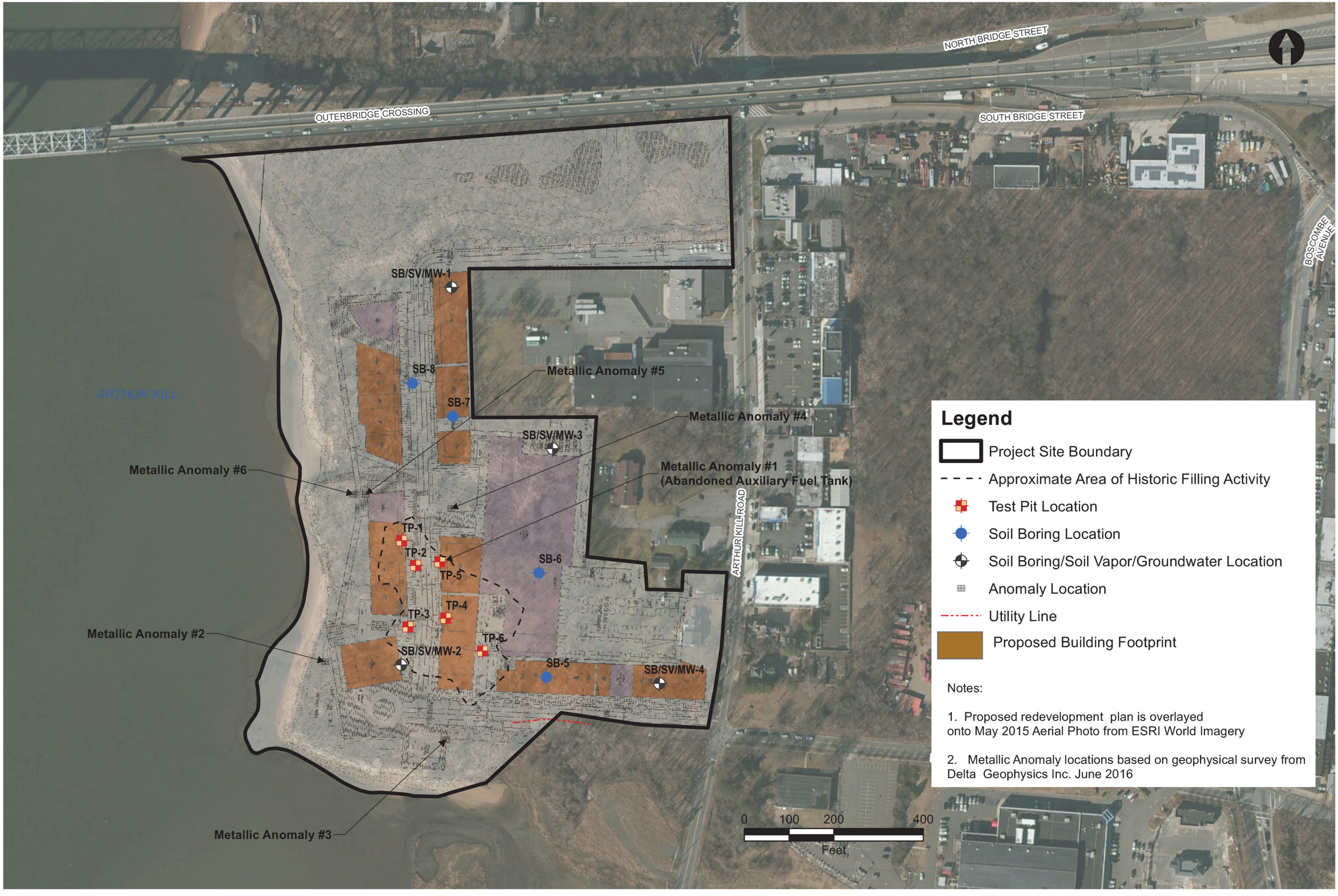


Figure 7-3 Location of Sample Borings and Test Pits, from Sample Locations, Figure 2, AKRF Environmental Consultants, September 9, 2016.

AKRF
Environmental Consultants
440 Park Avenue South, New York, N.Y. 10016

Riverside Galleria
Staten Island, New York

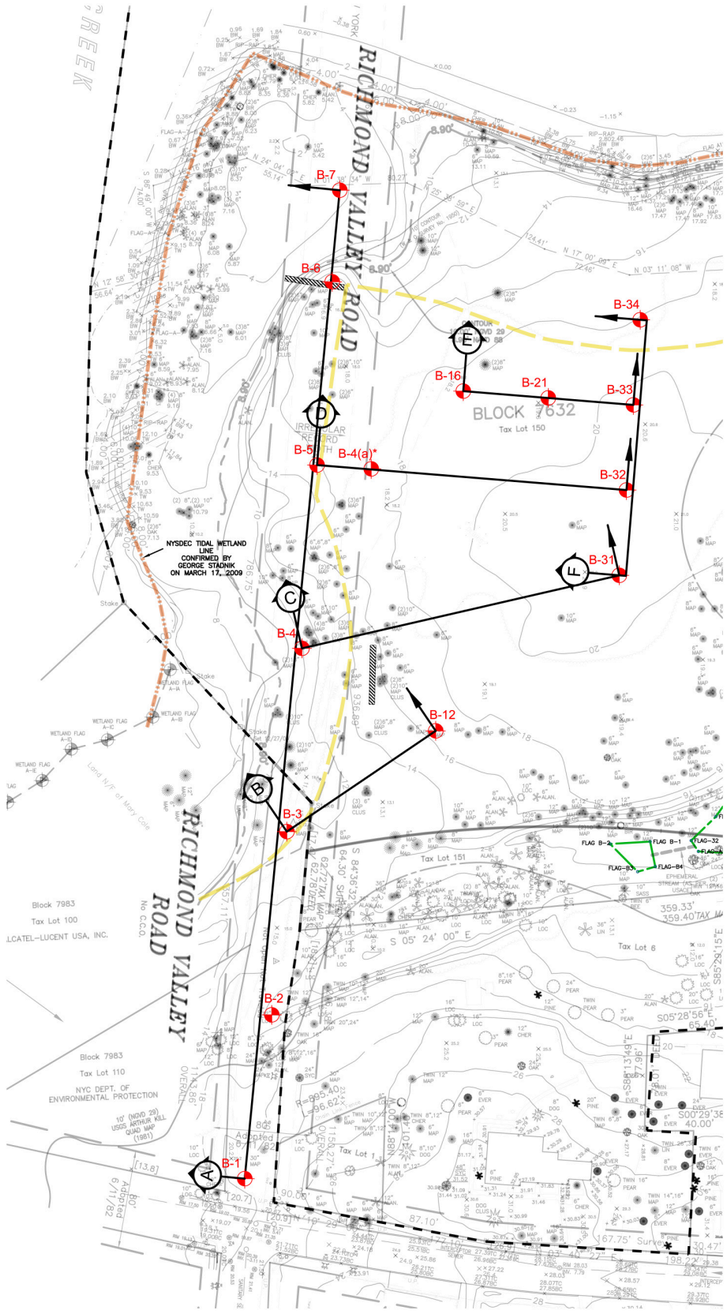
SAMPLE LOCATIONS

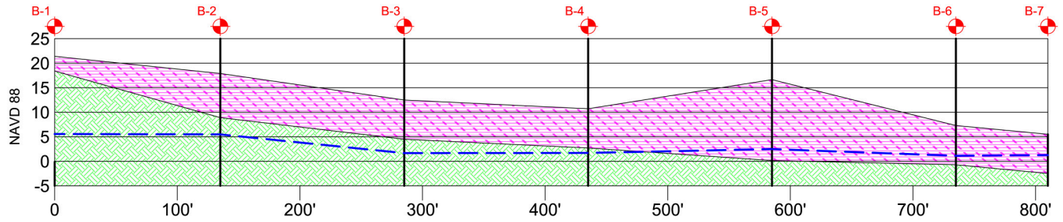
DATE
9/16/2016

PROJECT No.
11715

FIGURE
2

©2016 AKRF, Inc. Environmental Consultants W:\Projects\11715 - WATERFRONT COMMONS\TECHNICAL\GIS and Graphics\Hazmat\11715 Fig 2 Sample Locations.mxd





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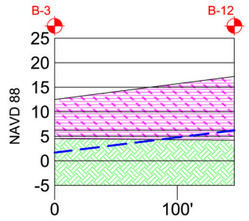

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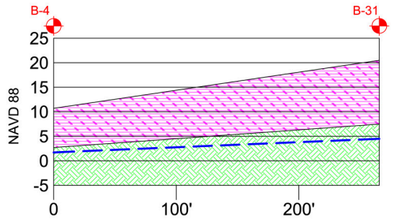

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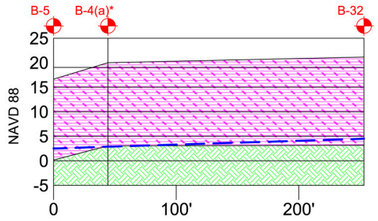
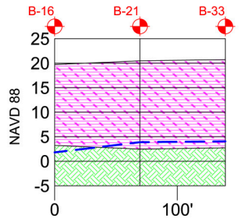


*B-4(a) represents sample B-4 from the 2009 sampling event

SECTION D



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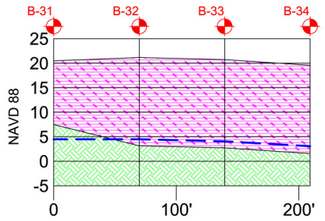


SECTION F

FILL

SOIL

GROUNDWATER TABLE

PROPERTY LINE

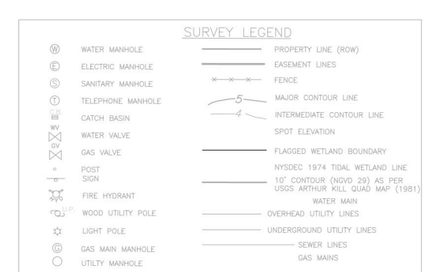
CEA NYSDEC TIDAL WETLAND LINE

JOINT NYSDEC TIDAL WETLAND ADJACENT AREA/USGS 10' CONTOUR LINE

ACOE FRESHWATER WETLAND LINE

SW1 BORING LOCATION

ARCHEOLOGICAL TRENCHES





*B-4(a) represents sample B-4 from the 2009 sampling event

Note: Boring elevations for the 2008/2009 sampling events were in the Staten Island Richmond vertical datum. Elevations were converted to the NAVD88 vertical datum .

Figure 7-4 Geologic Cross-Sections 2008-2009, from Capital Environmental Consultants, April 10, 2017.

HORIZONTAL GRAPHIC SCALE

60 0 30 60 120 240

(IN FEET)
1 inch = 60 ft.

CAPITAL ENVIRONMENTAL CONSULTANTS, INC.

RIVERSIDE GALLERIA
BLOCK 7620, LOT 1
BLOCK 7632, LOTS 1, 6, 50, 150 & 151
STATEN ISLAND, NEW YORK

No.	DATE	REVISION	BY

REFERENCES: Survey: Rogers Surveying, Staten Island, NY, South Richmond Topographical, Dwg. File 29816-NAVD88, 9/17/15

GEOLOGIC CROSS SECTIONS 2008/2009

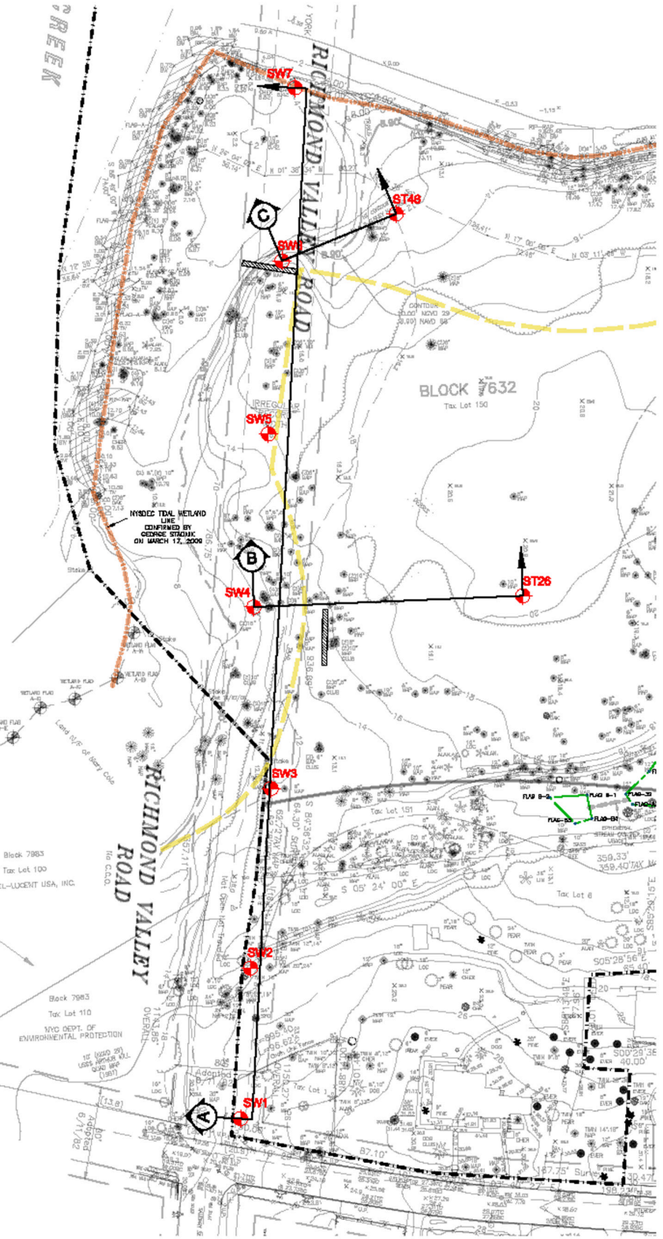
Date 4/10/2017

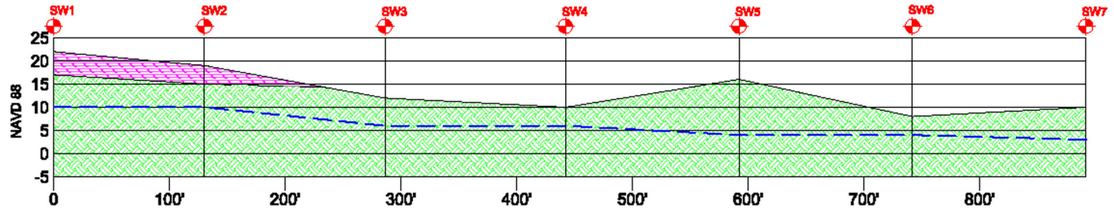
Scale AS NOTED

Sheet No.

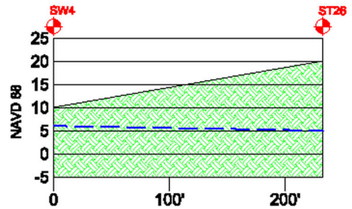
File No. 16001_Borings

Sheet Reference No. SCT2





SECTION A



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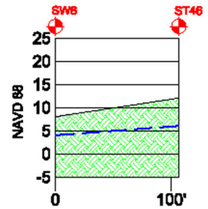


SECTION C

FILL

SOIL

GROUNDWATER TABLE

PROPERTY LINE

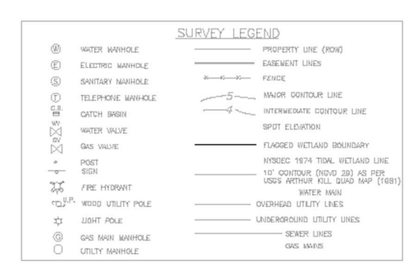
CEA NYSDEC TIDAL WETLAND LINE

JOINT NYSDEC TIDAL WETLAND ADJACENT AREA/USGS 10' CONTOUR LINE

ACOE FRESHWATER WETLAND LINE

SW1 BORING LOCATION

ARCHEOLOGICAL TRENCHES





HORIZONTAL GRAPHIC SCALE

(IN FEET)
1 inch = 60 ft.

Figure 7-5 Geologic Cross-Sections, June-July 2016, from Capital Environmental Consultants, April 10, 2017.

CAPITAL ENVIRONMENTAL CONSULTANTS, INC.

RIVERSIDE GALLERIA
BLOCK 7620, LOT 1
BLOCK 7632, LOTS 1, 6, 50, 150 & 151
STATEN ISLAND, NEW YORK

No.	DATE	REVISION	BY

REFERENCES: Survey: Rogers Surveying, Staten Island, NY, South Richmond Topographical, Dwg. File 29815-NAVD88, 9/17/15

GEOLOGIC CROSS SECTIONS
JUNE/JULY 2016

Date 4/10/2017

Scale AS NOTED

Sheet No.

File No. 16001_Borings

Sheet Reference No. SCT1



Photo 4-1 View looking north in the Catbriar Site in Area 1 at Excavation Unit 1. Outerbridge Crossing is in the rear.



Photo 4-2 North profile of Unit 1 in the Catbriar Site in Area 1.



Photo 4-3 North profile of Unit 2 in the southeast part of the Catbriar Site.



Photo 4-4 View looking west at ST600 in progress in Area 1.



Photo 4-5 ST600 north profile in Area 1.



Photo 4-6 View looks south at ST608 (right), and ST607 in progress near ST242 in Area 1.



Photo 4-7 ST608 north profile.



Photo 4-8 Profile photo of ST616 near ST250 in Area 1.



Photo 4-9 - ST625 north profile showing three strata. It is near ST244 in Area 1 West.



Photo 4-10 This view looks northeast at Unit 5 in Area 1 West prior to excavation.



Photo 4-11 Unit 5 north profile.



Photo 4-12 View looking north at the excavation of BT3 Extension in Area 2.



Photo 4-13 View looking northwest at the bottom of BT3 Extension showing natural strata beginning at 3.5m below surface.



Photo 4-14 View looking northwest at BT3 Extension with the sampled intact soils in the foreground by the sifter.



Photo 4-15 View looking east at ST716 being excavated with an array of STs around ST191 in Area 5.



Photo 4-16 ST716 east profile.



Photo 4-17 View looking north at ST 654 in Area 5.



Photo 4-18 ST654 north profile.



Photo 4-19 View looking north at ST656 in Area 5.



Photo 4-20 ST656 north profile.



Photo 4-21 This view looks north at Unit 3 prior to excavation in Area 5.



Photo 4-22 Unit 3 north profile.



Photo 4-23 View looking east at Unit 4 in Area 5 prior to excavation.



Photo 4-24 Unit 4 south profile.



Photo 6–1 Example of Windsor Tradition, Clearview Stamped pottery, Catalog #777, exterior view.



Photo 6–2 Example of Windsor Tradition, Windsor Brushed pottery, Catalog #725, exterior view.



Photo 6–3 Example of East River Tradition, East River Cordmarked pottery, Catalog #652, exterior view.



Photo 6–4 Example of East River Tradition, Bowmans Brook Incised pottery, Catalog #787, exterior view.



Photo 6–5 Example of East River Tradition, Bowmans Brook Stamped pottery, Catalog #747, exterior view.



Photo 6–6 Example of East River Tradition, Eastern Incised pottery, Catalog #1958, exterior view.