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November 15, 2018

Sarah Stokely, Program Analyst
Advisory Council on Historic Preservation
401 F Street NW, Suite 308
Washington, DC 20001

Re: Battery Playscape Project, New York County, New York – Notice of Adverse Effect

Dear Ms. Stokely:

The Lower Manhattan Development Corporation (LMDC), as the recipient of Department of Housing and Urban Development ("HUD") Community Development Block Grant program funds, proposes to assist the Battery Conservancy through the New York City Department of Parks and Recreation (DPR) with replacement of a playground in Lower Manhattan (see Figure 1). The proposed playground, known as the "Battery Playscape" (the Project) will be situated within a 1.4-acre portion of Block 3, Lot 1 located near the southeastern portion of the 25-acre Battery Park, in a roughly triangular area bounded by State Street to the north, Peter Minuit Plaza to the east, South Street to the south, and the remainder of Battery Park to the west (see Figures 2 and 3). The proposed Project site is currently developed with a deteriorated playground that was constructed in the 1950s and paved walkways and plantings. LMDC's proposed funding of the Project with HUD funds renders the Project a federal undertaking subject to review under Section 106 of the National Historic Preservation Act, 54 U.S.C. § 306108, and its implementing regulations, 36 C.F.R. Part 800.[1]

Through the Section 106 consultation process that has occurred to date, LMDC has determined that the Project may have an adverse effect on historic properties (remains of the National Register [NR] eligible c. 18th century Battery Wall). The purpose of this letter is to notify the Advisory Council on Historic Preservation (ACHP), pursuant to 36 CFR 800.6(a)(1), of LMDC's finding of adverse effect and to provide the documentation required by 36 CFR 800.11(e).

Description of the Undertaking, federal involvement and area of potential effects (800.11(e)(1)):

As noted above, the undertaking involves replacement of a deteriorated 60-year-old playground and associated walkways and landscaping with a new playground, walkways, and landscaping. The construction of the Project will impact the ground surface across the entire 1.4-acre project site. Though most of these impacts will be shallow (less than 2 feet below ground surface [bgs]), the following project elements will involve impacts to a depth of greater than 2 feet bgs:

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[1] As the entity responsible for conducting federal environmental review under 24 CFR Part 58, LMDC determined that the Project is categorically exempt from further review under the National Environmental Protection Act.

- Composite 20-ton micropiles will be driven to a depth determined by the installing engineer;
- A stormwater retention tank will be constructed so that the bottom of the tank will be 4 feet bgs and it will be constructed on suitable structural backfill compacted per geotechnical engineer recommendation;
- Poured concrete foundations will extend to 4 to 5 feet bgs will be constructed on suitable structural backfill compacted per geotechnical engineer recommendation;
- Trenched drainage lines will extend 3 to 5 feet bgs; and
- Drilled mini piles will extend 5 feet into competent bedrock.

(See Figure 4).

Description of the steps taken to identify historic properties (800.11(e)(2)):

- LMDC, through its professional consultants, prepared a memo (attached) for submission to New York State Historic Preservation Office (SHPO) to initiate Section 106 consultation (May 4, 2018). The memorandum included a description of the Project and its area of potential effect (APE), an initial sensitivity assessment consisting of a review of previous archaeological studies completed for other projects that overlapped or were adjacent to the Project, and a proposed approach for a Phase 1B archaeological investigation.
- After several discussions with the SHPO and local consulting party the New York City Landmarks Preservation Commission (LPC), a Phase 1B archaeological investigation was completed in June 2018. Due to the discovery of remains of the Battery Wall, additional consultation occurred with SHPO and LPC during the field effort and LPC conducted two site visits.
- LMDC then submitted a Phase 1B Archaeological Investigation Report for the review and concurrence of SHPO (September 25, 2018) and submitted a revised Phase 1B report (November 2, 2018) to address the questions and comments of SHPO and LPC (see attached).
- The Phase 1B report concluded that the Project may have an adverse effect on the NR-eligible Battery Wall and recommended specific actions developed in consultation with DPR, SHPO, and LPC to avoid, minimize, and mitigate these adverse effects.
- On November 15, 2018, both SHPO and LPC concurred with the conclusions and recommendations of the revised Phase 1B Report (see attached).

Description of the affected historic properties, including information on the characteristics that qualify them for the National Register (800.11(e)(3)):

- The 2005 South Ferry Terminal Project identified four segments of the c. 18th century Battery Wall and determined that three of them retained sufficient integrity to meet the eligibility requirements of the National Register. Based on the location and orientation of one of those segments, Wall Segment 3, and accepting specific georeferenced historic maps as reasonably accurate, the Battery Wall and a bastion most likely extended through the Project site until their demolition in the late 18th century. Construction of the 4/5 subway line would have destroyed at least a 100-foot-long portion of the wall in this area. The remainder of the site was filled-in with several feet of fill to approximately the present grade by the end of the 19th century.
- The Phase 1B survey sampled portions of the project site that are sensitive for the presence of the Battery Wall and bastion that were expected to be affected by the Project. Scattered, disarticulated stones, some of which were semi-dressed, were observed in two of the test trenches and intact dressed stones were briefly observed in a third trench before they were obscured by the slumping, water-saturated walls of the trench. These remains were observed along the expected alignment of the

Battery Wall. This evidence of wall remains, despite their disarticulated and scattered arrangement, supports a conclusion that the Project site is sensitive for the presence of significant archaeological resources along undisturbed portions of the wall's expected alignment.

Description of the undertaking's effects on historic properties (800.11(e)(4)):

- As described above, though no intact historic properties were identified in the APE, the results of the Phase 1B testing indicate the potential for adverse effects to resources, if present, during construction of the Project. These effects would be direct through soil excavation associated with construction of the Project.

Explanation of why the criteria of adverse effect were found applicable; future actions to avoid, minimize, or mitigate adverse effects (800.11(e)(5)):

- Impacts to historic properties, if such resources are present and intact, would be direct and adverse.
- On August 23, 2018, LMDC consulted with DPR, the Project's design team, SHPO, and LPC to consider ways to avoid, minimize, or mitigate potential adverse effects. Through this and subsequent consultation the Project was modified in order to either avoid or minimize potential adverse effects.
- To further resolve adverse effects, LMDC, in consultation with SHPO, LPC, and DPR is developing a Memorandum of Agreement (MOA) for the Project in accordance with 36 CFR 800.6(b).

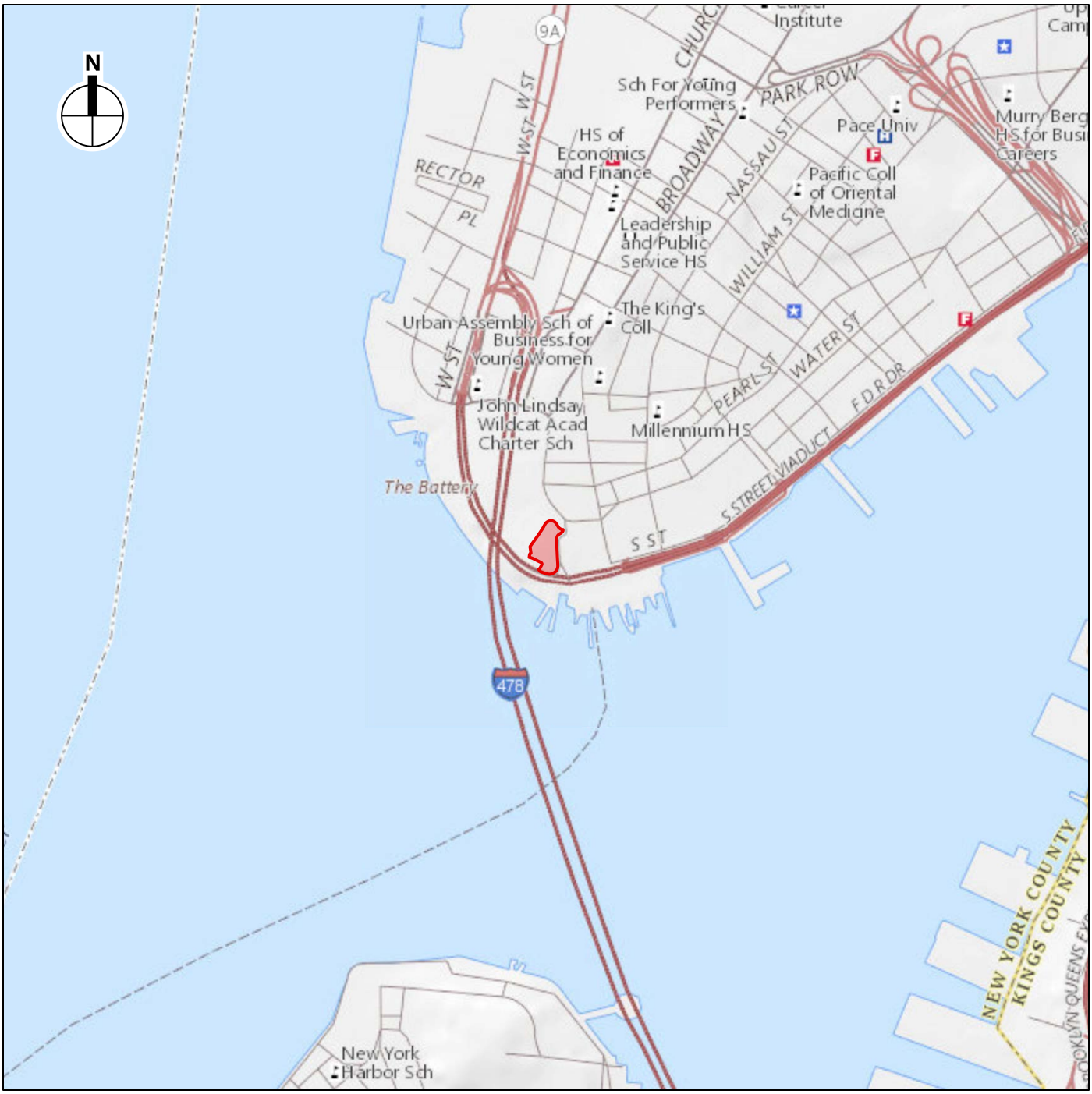
Copies or summaries of any views provided by consulting parties and the public (800.11(e)(6) are attached to this notice.

If we do not hear from you by December 4, 2018 we will proceed with the MOA pursuant to 36 CFR 800.6(b)(1).

If you have any questions or require additional information, please do not hesitate to contact me at (212) 587-9758 or by e-mail at DCiniello@renewnyc.com.

Sincerely,

Daniel A. Ciniello
Acting President



Approximate coordinates of Project Site:
74°0'52"W 40°42'7"N

USGS Topographic Map - Jersey City Quadrangle

THE BATTERY PLAYSCAPE

Figure 1

11.9.18

0 200 FEET

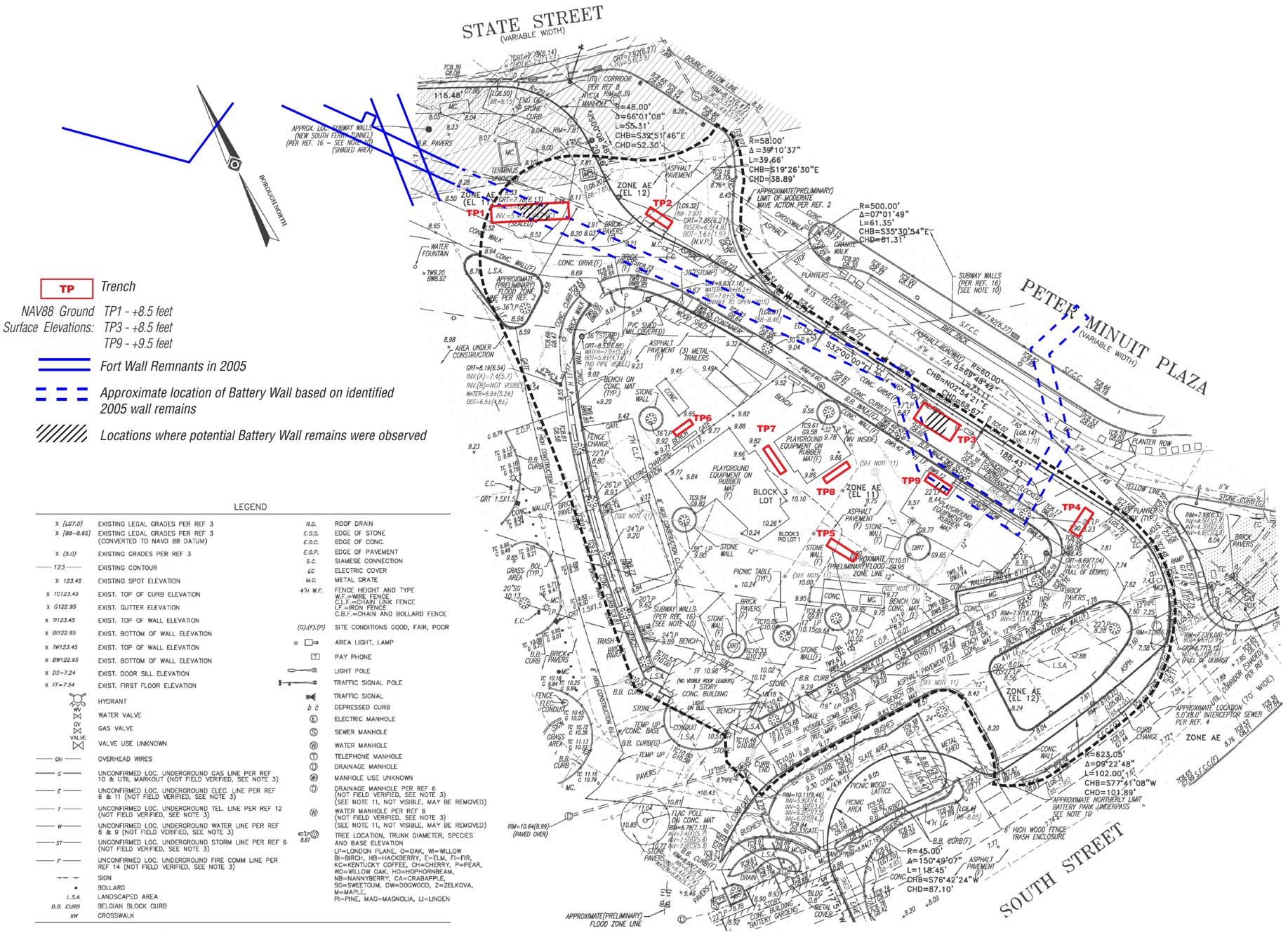
Project Site Boundary

Project Location

THE BATTERY PLAYSCAPE

Figure 2

11.9.18



LEGEND

X [L67.0]	EXISTING LEGAL GRADES PER REF 3	R.D.	ROOF DRAIN
X [88–8.65]	EXISTING LEGAL GRADES PER REF 3 (CONVERTED TO NAVD 88 DATUM)	E.O.S.	EDGE OF STONE
		E.O.C.	EDGE OF CONC.
X (5.0)	EXISTING GRADES PER REF 3	E.O.P.	EDGE OF PAVEMENT
123	EXISTING CONTOUR	S.C.	SIAMESE CONNECTION
		EC	ELECTRIC COVER
X 123.45	EXISTING SPOT ELEVATION	M.C.	METAL GRATE
X TC123.45	EXIST. TOP OF CURB ELEVATION	4'H W.F.	FENCE HEIGHT AND TYPE W.F.=WIRE FENCE C.L.F.=CHAIN LINK FENCE I.F.=IRON FENCE C.B.F.=CHAIN AND BOLLARD FENCE
X G122.95	EXIST. GUTTER ELEVATION		
X TW123.45	EXIST. TOP OF WALL ELEVATION	(G),(F),(P)	SITE CONDITIONS GOOD, FAIR, POOR
X BW122.95	EXIST. BOTTOM OF WALL ELEVATION		AREA LIGHT, LAMP
X TW123.45	EXIST. TOP OF WALL ELEVATION		PAY PHONE
X BW122.95	EXIST. BOTTOM OF WALL ELEVATION		LIGHT POLE
X DS=7.24	EXIST. DOOR SILL ELEVATION		TRAFFIC SIGNAL POLE
X FF=7.54	EXIST. FIRST FLOOR ELEVATION		TRAFFIC SIGNAL
	HYDRANT		DEPRESSED CURB
	WATER VALVE		ELECTRIC MANHOLE
	GAS VALVE		SEWER MANHOLE
	VALVE USE UNKNOWN		WATER MANHOLE
OH	OVERHEAD WIRES		TELEPHONE MANHOLE
G	UNCONFIRMED LOC. UNDERGROUND GAS LINE PER REF 10 & UTIL MARKOUT (NOT FIELD VERIFIED, SEE NOTE 3)		DRAINAGE MANHOLE
			MANHOLE USE UNKNOWN
E	UNCONFIRMED LOC. UNDERGROUND ELEC. LINE PER REF 6 & 11 (NOT FIELD VERIFIED, SEE NOTE 3)		DRAINAGE MANHOLE PER REF 6 (NOT FIELD VERIFIED, SEE NOTE 3) (SEE NOTE 11, NOT VISIBLE, MAY BE REMOVED)
T	UNCONFIRMED LOC. UNDERGROUND TEL. LINE PER REF 12 (NOT FIELD VERIFIED, SEE NOTE 3)		WATER MANHOLE PER REF 6 (NOT FIELD VERIFIED, SEE NOTE 3) (SEE NOTE 11, NOT VISIBLE, MAY BE REMOVED)
W	UNCONFIRMED LOC. UNDERGROUND WATER LINE PER REF 6 & 9 (NOT FIELD VERIFIED, SEE NOTE 3)	40"D 8.87	TREE LOCATION, TRUNK DIAMETER, SPECIES AND BASE ELEVATION LP=LONDON PLANE, O=OAK, WI=WILLOW BI=BIRCH, HB=HACKBERRY, E=ELM, FI=FIR, KC=KENTUCKY COFFEE, CH=CHERRY, P=PEAR, WO=WILLOW OAK, HO=HOPHORNBEAM, NB=NANNYBERRY, CA=CRABAPPLE, SC=SWEETGUM, DW=DOGWOOD, Z=ZELKOVA, M=MAPLE, PI=PINE, MAG=MAGNOLIA, LI=LINDEN
ST	UNCONFIRMED LOC. UNDERGROUND STORM LINE PER REF 6 (NOT FIELD VERIFIED, SEE NOTE 3)		
F	UNCONFIRMED LOC. UNDERGROUND FIRE COMM LINE PER REF 14 (NOT FIELD VERIFIED, SEE NOTE 3)		
	SIGN		
	BOLLARD		
L.S.A.	LANDSCAPED AREA		
B.B. CURB	BELGIAN BLOCK CURB		
XW	CROSSWALK		

11.9.18

STATE STREET

N

STORMWATER RETENTION TANK; BOTTOM OF TANK APPROXIMATELY 5' BELOW GRADE

POURED CONCRETE FOUNDATION, 4' TO 5' DEEP, OR DRILLED MICRO-PILES, OR POURED ~~SONOTUBE~~ FOOTINGS

TRENCHED DRAINAGE LINE, DEPTH VARIES 3' TO 5'

NEW SOUTH FERRY STATION

TEST PIT 1 SECTION

TEST PIT 1, SUPPLEMENTARY SECTION TO SHOW ADJACENT, DEEPER FOOTING CONDITION

UPDATE 9/6/2018:
TWO AREAS WITH REDUCED-DEPTH FOOTING AT 2'-8" BELOW GRADE

LANDSCAPE RETAINING WALL WITH FOOTING BELOW

BURIED DRAINAGE PIPE TO BE TRENCHED

PERIMETER OF STORAGE BUILDING WITH SLAB ON GRADE FLOOR

OUTLINE OF STRUCTURAL FOOTING BELOW

TP-1

TP-2

UPDATE 9/6/2018:
THIS PORTION OF DRAINAGE PIPE HAS BEEN ELIMINATED

4/5 SUBWAY LINE

(SECTION AT TEST PIT 3 ELIMINATED)

PETER MINUIT PLACE

UPDATE 9/6/2018:
THIS PIPE HAS BEEN ELIMINATED

STORMWATER RETENTION TANK; BOTTOM OF TANK APPROXIMATELY 5' BELOW GRADE

~~(8) 20-TON DRILLED MICROPILES~~

EXISTING NYCT ACCESS STAIR TO REMAIN,

~~(5) 4' DEEP SONO TUBE CONCRETE FOOTINGS~~

TP-3

TP-4

TP-5

TP-6

TP-7

TP-8

TP-9

TEST PIT 9 SECTION

(5) 5' DEEP SONO TUBE CONCRETE FOOTINGS

HISTORIC 1 LINE LOOP

SEAGLASS CAROUSEL

UPDATE 9/6/2018:
SEE ATTACHED SSK-001 JEWEL BOX THEATER UPDATED FOUNDATION PLAN

HISTORIC 1 LINE LOOP, OLD STATION

PROJECT LIMIT LINE

EXISTING NYCT VENTS TO REMAIN

BATTERY UNDERPASS (*4)

SOUTH STREET

0 50 FEET

Source: BKSK Architects LLP

Archaeological Monitoring

Preconstruction Testing

THE BATTERY PLAYSCAPE

Preconstruction Testing and Archaeological Monitoring Areas

Figure 4

The Battery Playscape

Block 3, Part of Lot 1

LOWER MANHATTAN, NEW YORK COUNTY, NEW YORK

Phase 1B Archaeological Survey Report

Prepared for:

The Lower Manhattan Development Corporation
22 Cortlandt Street – 11th Floor
New York, NY 10007

Prepared by:

AKRF, Inc.
440 Park Avenue South
New York, NY 10016
212-696-0670

NOVEMBER 1, 2018

Management Summary

SHPO Project Review Number:	18PR02653
Involved Agencies:	Lower Manhattan Development Corporation, Department of Housing and Urban Development, NYC Department of Parks and Recreation, the Battery Conservancy
Phase of Survey:	Phase 1B Archaeological Investigation
Location Information	
Location:	Battery Park, New York
Minor Civil Division:	Lower Manhattan
County:	New York County
Survey Area	
Length:	Approximately 400 feet
Width:	Approximately 200 feet
Area:	1.4 acres
Number of Backhoe Trenches:	9
Size of Backhoe Trenches:	10 to 38 feet in length; 4 to 8 feet in width
Depth of Backhoe Trenches:	6 to 7 feet
USGS 7.5 Minute Quadrangle Map:	Jersey City
Results of Archaeological Survey	
Prehistoric Sites Identified:	None
Historic Sites Identified:	One, Battery Wall
Sites Recommended for Avoidance:	One, Battery Wall
Report Author:	A. Michael Pappalardo, MA Elizabeth D. Meade, MA, MPhil Kelly Britt, Ph.D.
Date of Report:	November 1, 2018

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Photo 11: Facing east showing the excavated center and partially excavated eastern end of TP1. Note presence of several disarticulated rocks on trench floor, the accumulation of standing water at a depth of about 5 feet bgs, and north-south oriented plank at the base of the balk that was likely used to construct the concrete footer visible at the surface of the eastern portion of the trench.

Photo 12: Archaeologists using a 5-foot-long pry bar to probe into the floor of TP1 to determine the depth of a rock obstruction within the water-saturated clayey soils.

Photo 13: Plan view of the concrete footer and large hexagonal nuts discovered 1 foot bgs at the eastern end of TP1.

Photo 14: Facing north showing western half of TP2 excavated to a depth of about 6 feet bgs. Note concrete tiles and thick concrete slab at the ground surface and accumulation of water on floor of trench.

Photo 15: Facing southeast showing eastern end of TP2 where excavation was stopped by a thick concrete slab or utility vault. Note accumulation of standing water at a depth of 5 feet bgs.

Photo 16: Facing southwest showing west wall of the southern half of TP3. Note clean fill with no evidence of wall remains and water accumulation on trench floor at about 6 feet bgs.

Photo 17: Facing northeast showing partial excavation of north half of TP3. Note scattered semi-dressed stones that may be disarticulated wall remains, two square, hand-excavated test pits, and earthenware drainage line on left side of photo.

Photo 18: Facing southeast showing partial excavation of north half of TP3. Note scattered semi-dressed stones that may be disarticulated wall remains, two square, hand-excavated test pits, and earthenware drainage line at bottom of photo.

Photo 19: Facing southwest showing deeper excavation of northern half of TP3. No additional stones were encountered to a depth of 6 feet bgs.

Photo 20: Facing north showing north wall of TP4. Note iron utility line along right side of trench, shallow, thick concrete pad on the left side of photo, mixed sandy fills, and water accumulating on trench floor at a depth of about 6 feet bgs.

Photo 21: Facing east showing the north end of TP5 and mixed sandy fills.

Photo 22: Facing north showing north wall profile of TP6. Note utility line to the left, clean sandy fills, and water accumulating on trench floor at a depth of about 6.5 feet bgs.

Photo 23: Facing south showing excavated TP7, which consisted of clean sandy fills.

Photo 24: Facing south showing south wall profile of TP8, which consisted of clean sandy fills.

Photo 25: Facing west showing the completion of excavation of TP8.

Photo 26: Facing northeast showing the east wall of the southern half of TP9.

Photo 27: Facing south showing southern half of TP9. Note utility line extending through trench along the right side of photo and the accumulation of water on the trench floor at a depth of 6 feet bgs. Not visible in this photo are two dressed stones encountered just below the water surface which appear to be part of an intact foundation wall.

Chapter 1: Project Description and Background

A. PROJECT DESCRIPTION

The Lower Manhattan Development Corporation (LMDC), using funding provided by the Department of Housing and Urban Development (HUD), is assisting the Battery Conservancy through the New York City Department of Parks and Recreation (DPR) with replacement of a playground in Lower Manhattan (see **Figure 1**). The proposed playground, known as the "Battery Playscape," will be situated within a 1.4-acre portion of Block 3, Lot 1 located near the southeastern portion of Battery Park, in a roughly triangular area bounded by State Street to the north, Peter Minuit Plaza to the east, South Street to the south, and the remainder of Battery Park to the west (see **Figures 2** and **3**). The proposed project site is currently developed with a deteriorated playground that was constructed in the 1950s and paved walkways and plantings. Due to the involvement of HUD this project is subject to review under Section 106 of the National Historic Preservation Act (NHPA), which requires consideration of project effects on archaeological resources meeting the eligibility requirements of the National Register of Historic Places.

The present report provides a description of the methods and results of the Phase 1B Archaeological Survey and conclusions and recommendations to avoid, minimize, or mitigate the adverse effects of the proposed action on archaeological resources.

B. INITIAL PROJECT IMPACTS

According to the initial[1] project design, construction of the Battery Playscape will impact the ground surface across the entire 1.4-acre project site. Though most of these impacts will be shallow (less than 2 feet below ground surface [bgs]), the following project elements[2] will involve impacts to a depth of greater than 2 feet bgs (see **Figure 5**):

- **Composite 20-ton micropiles** will be "driven to a depth determined by the installing engineer";
- A **stormwater retention tank** will be constructed so that the bottom of the tank will be 4 feet bgs and it will be constructed on "suitable structural backfill compacted per geotechnical engineer recommendation";
- **Sonotube concrete footings** will be installed to a depth of 4 to 5 feet bgs;
- **Poured concrete foundations** will extend to 4 to 5 feet bgs and it will be constructed on "suitable structural backfill compacted per geotechnical engineer recommendation";
- **Trenched drainage lines** will extend 3 to 5 feet bgs; and
- **Drilled mini piles** will extend 5 feet into competent bedrock.

[1] As discussed later in this report, aspects of the initial project design were later modified to avoid or minimize potential adverse effects.

[2] These descriptions have been provided by BKSK who is serving as project architect and has prepared construction documents under contract to DPR.

C. SUMMARY OF PREVIOUS INVESTIGATIONS

Multiple previous archaeological assessments have been completed in the immediate vicinity of the proposed project site, and some of which appear to have included portions of the project site itself. These investigations are summarized below and typically focused on landfill and landfill-retaining structures as well as 17th and 18th century fortifications that formerly occupied the Battery Park neighborhood and for which the park was named.

PETER MINUIT PLAZA AND WHITEHALL FERRY TERMINAL PROJECT (PHASE 1A AND PHASE 1B)

In 1993, Historical Perspectives, Inc. (HPI) prepared a Phase 1A Archaeological Documentary Study associated with the construction of Peter Minuit Park and reconstruction of the Whitehall Ferry Terminal, situated immediately to the east of the Battery Playscape project site. Despite extensive disturbance associated with the construction of existing subway tunnels, the project site was determined to be sensitive for a variety of archaeological resources, including resources associated with the former river bottom, including ship's cargo and wrecked vessels; landfill and landfill-retaining structures; fortifications associated with 17th and 18th century military activity; and remnants of 19th century transportation structures/streetcar lines. The construction of the park was expected to disturb the project site to a maximum depth of 5 feet below the ground surface. Archaeological testing was recommended in limited areas.

A Phase 1B Archaeological Investigation of the general area was completed by Louis Berger & Associates, Inc. (LBA) in 2000. Testing resulted in the identification of an 18th century landfill-retaining structure, though the landfill deposits were determined to have low research value as a result of disturbance and because the artifacts within the landfill could not be associated with specific individuals or groups. Landfill deposits were generally found between depths of 2 feet below grade and depths of 5 to 7 feet below grade, where excavation was terminated (LBA 2000). The landfill-retaining structure was observed between depths of 5 and 9 feet below grade and was observed on top of soil deposits identified as the original river bottom (ibid). No evidence of fortifications or military activity was observed during the excavation nor was evidence of the remains of 19th century transportation elements observed. Additional archaeological monitoring was recommended to further document the 18th century landfill-retaining structures in the area.

SECOND AVENUE SUBWAY PROJECT (PHASE 1A)

In association with the construction of the Second Avenue Subway, a Phase 1A Archaeological Documentary Study of the proposed subway route was prepared by HPI in 2003 (HPI 2003). HPI's 2003 study and numerous supplemental studies that were prepared thereafter identified areas of prehistoric and historic archaeological sensitivity along much of the proposed subway's extensive alignment, which included an area to the east of the Battery Playscape project site, in the vicinity of the Peter Minuit Park/Whitehall Terminal project site. The Phase 1A study concluded that the Second Avenue Subway project would not result in disturbance to potentially sensitive depths in the vicinity of Peter Minuit Park. As a result, no additional archaeological analysis was recommended, although the Phase 1A determined that this recommendation would have to be reevaluated in the event that project plans were altered and would result in disturbance to other areas in the vicinity.

SOUTH FERRY TERMINAL PROJECT (PHASE 1A THROUGH DATA RECOVERY)

In 2003, the Louis Berger Group, Inc. (LBG) prepared a Phase 1A Archaeological Documentary Study for the site of the new South Ferry Terminal. The study examined the archaeological sensitivity of a 1,800-foot study area that included the area immediately to the north of the location of the proposed Battery Playscape. The site of the terminal was identified as sensitive for historic period archaeological resources including:

evidence of Dutch and English colonial occupation; the remnants of military fortifications including the 17th-century "Half-Moon Battery," the 18th century Fort George (also known as Fort Amsterdam), remnants of barracks, and artifacts such as ordnance and personal effects; and late-19th- and early-20th-century transportation elements such as the remains of elevated railway structures and streetcar lines.

During the construction of the terminal, an extensive archaeological investigation was completed that involved the monitoring of more than 80 percent of the project site. A final report summarizing the results of the Phase 1, 2, and 3 archaeological investigations was prepared by AKRF, URS Corporation, and Linda Stone, RPA in 2012. The archaeological investigations identified four truncated segments of the 18th century fortification walls that originally surrounded Fort George (including one wall immediately north of the Battery Playscape project site), the remnants of Whitehall Slip, and landfill deposits and landfill-retaining structures. Human remains representing a minimum of five individuals were also recovered during the archaeological investigation. It was determined that these remains may have been associated with a chapel cemetery formerly located in Fort George or perhaps were remains that were incorporated into the landfill through other means (ibid).

The South Ferry Terminal researchers determined that three of the wall segments (Wall Segments 1, 3, and 4) retained sufficient integrity to meet the eligibility requirements of the National Register and warrant completion of a data recovery to partially mitigate the unavoidable adverse effects of the project and that one segment did not require data recovery (Wall Segment 2). Documentation of each segment consisted of: hand clearing and the excavation of units; preparation of field sketches and measured drawings; photographic and video documentation; and 3D laser scanning. Portions of some of the wall segments were then labeled, hand-disassembled, individually documented, and packed into crates for long-term storage. The disassembled remains and associated samples were subjected to further analysis including stone sourcing, mortar analysis, and soil flotation. Finally, portions of the walls were reassembled at the completed South Ferry Station and Castle Clinton.

The South Ferry researchers discovered one of the three significant wall segments (Wall Segment 3) adjacent to the northern end of the current project site (see **Figure 4**). The 85-foot-long, north-south oriented Wall Segment 3 consisted of two faces of semi-dressed stone (an eastern and a western face), primarily schist, separated by several feet of an interior stony fill. The shallowest portion of the wall segment was discovered 4.4 feet bgs and the deepest portion was 8.2 feet bgs and it was constructed on top of a foundation of water-rounded boulders. Additional features of this wall segment included: a large log feature discovered beneath it, wooden sheeting on the landward side, and a possible counterfort or buttress to provide additional support.

RECONSTRUCTION OF BATTERY PARK AND PERIMETER BIKEWAY PROJECT (PHASE 1A AND ARCHAEOLOGICAL MONITORING)

A Phase 1A Archaeological Assessment of Battery Park was prepared by archaeologist Joan H. Geismar, Ph.D. in 2010. The project for which the report was prepared involved the restoration of a 12-acre bikeway around the perimeter of the park and landscaped areas situated immediately northwest of the Battery Playscape project site. Dr. Geismar's analysis determined that given the archaeological sites discovered during the construction of the South Ferry Terminal, the remainder of Battery Park was likely sensitive for archaeological resources associated with 17th and 18th century defensive fortifications and 17th through 19th century landfill and landfill-retaining structures. Overall, the project was not designed to include deep impacts, so its potential to disturb archaeological resources was minimal and archaeological monitoring was recommended in undisturbed areas within the project site where project-related excavation would extend to depths greater than 3.5 feet below the ground surface. In 2011, Dr. Geismar completed the archaeological monitoring of nine test trenches excavated to a maximum depth of 6 feet within the park. The test pits revealed only disturbance associated with filling and utility construction dating between the

20th century and the present, and it was determined that while resources may be present at greater depths, the project would not impact archaeological resources and no additional analysis was required.

D. CURRENT SITE CONDITIONS

The project site currently consists of a parking area used by DPR and the Battery Conservancy (**Photos 1** and **4**), the sidewalk lining the western side of Peter Minuit Plaza (**Photos 2** and **3**), and a fenced-in playground area (**Photos 5** and **6**). Subsurface utilities within the playground include electric and water mains and stormwater drainage infrastructure. Subsurface utility lines outside of the existing playground, but still within the project site, include gas, telephone, and electric lines.

Subway tunnels carrying the 1 and 4/5 trains were constructed through the project site in the early 20th century using cut-and-cover excavation methods. Following the subway construction, the project site remained a largely undeveloped grassy area crossed by paved paths until the mid-20th century. In the early 1950s, the FDR Drive was extended beneath Battery Park, connecting it to the West Side Highway along the southern edge of the project site, also using cut-and-cover construction. Little changed in the park until construction of the new South Ferry Terminal along the northern edge of the project site in the early 2000s, resulting in significant disturbance at the northern end of the proposed playground.

E. ENVIRONMENTAL SETTING

TOPOGRAPHY, GEOGRAPHY, AND HYDROLOGY

The island of Manhattan is found within a geographic bedrock region known as the Manhattan Prong of the New England (Upland) Physiographic Province (Isachsen, et al. 2000). The vicinity of the project area is composed mostly of metamorphic rock known as Manhattan Schist (Reeds 1925; Fisher, et al. 1995). This type of bedrock dates to the Ordovician and Cambrian Periods of the Paleozoic Era and were likely formed more than 435 million years before present (Isachsen, et al. 2000). The surface geology in this part of Manhattan is characterized by glacial till of variable texture, though bedrock is shallower in portions of Lower Manhattan and may be situated between 1 and 3 meters below the ground surface in some areas (Cadwell 1989).

The project site is almost entirely located in an area of artificially created land. Manhattan had a much narrower and more irregular shape in the days before systematic landfilling created the regimented shoreline of piers and promenades that we see today. A map of Manhattan's original landform prepared by the Department of Docks in 1873 indicates that the original shoreline's high water mark was located in the vicinity of what is now Pearl Street and the low water mark was situated near what is now Water Street (see **Figure 3**). Therefore, nearly the entire project site is located within an area of landfill reclaimed from the Hudson River.

SOILS

The Web Soil Survey maintained by the United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS)1 indicates that at least eight soil complexes are located in the vicinity of the project corridor. The soil complexes within the project site are as follows:

- Laguardia-Urban Land complex (LUA);
- Urban Land, Tidal Marsh Substratum (UmA);

[1] Accessible at: https://websoilsurvey.nrcs.usda.gov/app/.

- Urban Land, Outwash Substratum (UoA); and
- Urban Land, Reclaimed Substratum (UrA).

Each of these soil types are associated with urban development and anthropogenic landscape modification and all of which are characterized by level ground with slopes between 0 and 3 percent. Typical soil profiles for all of these types involves 15 to 20 inches of cement/pavement over gravelly sand or gravelly sandy loam.

A series of soil borings was completed in conjunction with the creation of the design of the proposed Playscape. The materials observed in the borings are consistent with an area of landfill and include rock and boulder deposits as well as sandy fill materials with traces of wood. One boring situated near the northeastern portion of the project site encountered peat and decomposed organic matter at a depth of approximately 10 feet below the ground surface in association with fill containing bricks, coarse sand, and wood.

Chapter 2: Research Goals and Survey Methods

A. RESEARCH GOALS

The goal of the Phase 1B Archaeological Survey of the Battery Playscape project site was to determine the presence or absence of archaeological resources that could be affected by the proposed project. Based on the results of several previous archaeological assessments completed for other projects in the immediate vicinity (see summary in previous chapter), the project site is considered sensitive for the remains of 17th- and 18th-century fortification walls that formerly occupied Battery Park and for which the park was named, and for historic landfill and landfill-retaining structures. Therefore, the survey was designed to maximize the likelihood of encountering these classes of resources in locations expected to be impacted by construction activities associated with the project to the expected depths of those impacts.

B. SURVEY METHODS

All field testing and analysis was completed under the supervision of a Registered Professional Archaeologist (RPA) in accordance with the Office of Parks, Recreation and Historic Preservation's (OPRHP's) *Phase 1 Archaeological Report Format Guidelines* (2005)[1] and the New York Archaeological Council's (NYAC) *Standards for Cultural Resource Investigations and the Curation of Archaeological Collections in New York State* (1994, adopted by OPRHP in 1995).[2]

PERMITTING AND LOGISTICS

Prior to initiation of fieldwork, AKRF obtained a construction permit from DPR, a tree permit to conduct ground-disturbing activities in the vicinity of City trees, also from DPR, and a New York City Transit (NYCT) construction permit for ground-disturbing activities in the vicinity of subsurface transportation structures. In accordance with the conditions of the tree permit, a licensed arborist was present during all fieldwork in the vicinity of trees and actions were taken to protect City trees from disturbance. In accordance with the NYCT construction permit, NYCT staff made periodic site visits during the survey to observe excavation methods and locations.

In addition, prior to initiating fieldwork AKRF conducted a utility survey to mark out the location of utility lines in the general area of each trench location. Through this process the location of a number of trenches was adjusted to avoid likely utility lines. Despite these precautions, as stated in the field results section below, fieldwork encountered a number of unanticipated utility lines.

FIELD METHODS

Subsurface testing consisted of the excavation of nine backhoe trenches (TP1 through TP9 on **Figure 6**). Trenches were positioned across the project site to investigate locations where deeper impacts are expected (see **Figure 5**) with a particular emphasis on the expected alignment of the 18th century Battery Wall. The

[1] http://parks.ny.gov/shpo/environmental-review/documents/PhaseIReportStandards.pdf

[2] http://nyarchaeology.org/wp-content/uploads/2013/12/NYACStandards.pdf

expected alignment of the Battery Wall was based on georeferencing the 1767 Ratzer map and extrapolating from the results of the 2005 South Ferry Terminal Project (see **Figure 7a** and **Figure 7b**).

Individual trenches varied in length from just under 10 feet to almost 40 feet and in width from just under 4 feet to 9 feet. The field team excavated at least a portion of each trench to at least 6 feet bgs and documented each trench with photographs, field sketches, and notes. Small to moderate quantities of artifacts were recovered during excavation and from the backfill piles and sampled in a representative manner. Given that all of the encountered soils consisted of thick layers of often mixed historic fill, artifact provenience was generally limited to their approximate depth below ground surface (i.e. 2 to 3 feet bgs). In several instances, the field team shovel skimmed the trench floors, hand troweled or brushed areas of interest, and hand excavated small pits. In Trench 1 the field team used a five-foot-long pry bar to probe water-saturated soils for potential features and in Trench 2 used the pin end of a pin flag to probe for potential wall remains.

As the entire project site is paved, the general contractor used a hydraulic hammer and/or a circular saw, depending on the thickness of the paving, to establish the trench's perimeter and remove the paving material. A variable quantity of bedding material was then removed by the excavator before encountering older fill deposits. Below the depths of clearly modern soils, the mechanical excavator, under the direction of the on-site archaeologists, carefully removed the soil in relatively small increments of up to six inches. When possibly sensitive objects were observed by the archaeologists, excavation was halted to afford them the time to examine the object by hand.

During the field survey all depths were measured from the adjacent paved ground surface and they are generally provided throughout this report in relation to the ground surface. The project site is quite level with elevations ranging from +8.5 feet in the DPR/Battery Conservancy parking area and the sidewalk lining the west side of Peter Minuit Plaza to +9.5 feet in the fenced-in playground area (NAV88).

ARTIFACT ANALYSIS

After completion of fieldwork all collected artifacts were transported to AKRF's NYC lab. All artifacts were cleaned with a mild detergent, allowed to dry on stainless steel drying racks, and rebagged in acid-free archival quality plastic bags. Based on the work on Stanley South (1977), analysis of artifacts and organic remains were placed in categories known as Functional Groups. For analysis, the following Functional Groups were used: Architectural, Domestic, Fauna (sub-divided into Shell and Bone), Household (sub-divided into Household Ceramics and Household Glass), Personal, and Unknown. While some ceramic sherds did mend with others from the same context, the majority were too small to determine the type or size of the vessel from which they originated, however identifications were made for other classification types, including "Type"—primarily "Service"—and "Part", such as "Rim", "Body" or "Base." Faunal remains were analyzed by Marie-Lorraine Pipes, PhD. The results of Dr. Pipes' analysis are summarized in this final technical report and are also included in Appendix B. Dr. Pipes also completed the analysis of the faunal remains recovered during the archaeological investigation of the South Ferry Terminal site (AKRF, et al. 2012).

Given the fragmentary nature of the majority of the artifacts, a Minimum Number of Vessel (MNV) count was not calculated. Similarly, a Mean Ceramic Date (MCD) could only be determined for the ceramic artifacts recovered from Trench 5, which contained the largest number of artifacts and largest percentage of ceramics. However, the production date ranges are attributed to fairly wide manufacturing dates. The terminus post-quem (TPQ) dates were determined primarily using ceramic manufacturing dates.

A. PREHISTORIC CONTEXT

In general, Native American habitation sites are most often located in coastal areas with access to marine resources, near fresh water sources and areas of high elevation and level slopes less than 10 to 12 percent (NYAC 1994). Further indication of the potential presence of Native American activity near a project site is indicated by the number of precontact archaeological sites that have been previously identified in the vicinity. While the project site is entirely situated in an area of historic landfill, documented Native American activity occurred along the coastline in the immediate vicinity of the project site.

Information regarding such previously identified archaeological sites was obtained from various locations including the site files of OPRHP and the New York State Museum (NYSM), accessed via the New York State Cultural Resources Information System (CRIS)[1] and published accounts such as R.P. Bolton's 1922 work, *Indian Paths in the Great Metropolis*. These sites are summarized in **Table 1**, below. Because many of these sites were discovered and reported by early archaeologists (e.g., Parker 1922, Bolton 1922) in the early 20th century, there is limited descriptive information available.

Table 1
Precontact Archaeological Sites in the Vicinity of the Project Site

Site Name/ Number	Time Period	Approximate Distance from Project Site	Site Type
Shell Point/Werpoes **NYSM**: 4059	Precontact	1.1 miles (6,000 feet)	Native American village and shell middens
Nechtanc **NYSM**: 4060	Precontact; Contact	1.3 miles (7,000 feet)	Native American village used as a retreat during 17th century wars with the Dutch
Kapsee **Bolton (1922)**: 1	Precontact	(500 feet)	Rocky area at the southern tip of Manhattan island
Sources: The New York State Cultural Resources Information System (CRIS); Parker 1922, and Bolton 1922.			

Kapsee, rocky ledge at the southern end of the island, is the only previously identified Native American site within one mile of the project site (Grumet 1981, Bolton 1922; Bolton 1934; Bolton 1975). Bolton described *Kapsee* as the name for both the upland area at the southern tip of Manhattan and for the "rock islets that off it shore" (Bolton 1922:51). Bolton (1975) further described the site:

> *There was a landing place at Pearl Street, where the shore was liberally covered with shells, and natives probably spent a good deal of time on the shore as they came from or went to Brooklyn, but there does not seem to have been a settlement in the locality. The land was rocky, there was no near-by drinking water, and the place was very exposed* (Bolton 1975:52).

The rocks of Kapsee (also known as the "Copsey Rocks") are depicted at the southern tip of Manhattan on several historic maps, including Vinckeboons' 1649 map and Lyne's 1728, 1730, and 1731 maps as well

[1] Accessible at: https://cris.parks.ny.gov

as later reproductions of Manhattan's precontact conditions, such as those drawn by MacCoun in 1909. It is likely that they were situated within the project site or in the immediate vicinity prior to the extension of the shoreline through landfilling. Previous archaeological assessments of the area have confirmed that while Native American activity certainly occurred near the Kapsee rocks, it would be highly unlikely that intact precontact archaeological resources would be present in the area (HPI 1993; HPI 2003; LBG 2003; Geismar 2010).

B. HISTORIC CONTEXT

The historic development of Battery Park in general has been largely documented in the previous archaeological investigations summarized in Chapter 1. Historic maps depict the vicinity of the proposed project site within the open water occupied only by the Kapsee rocks until the 1730s. The first development within the project site was the construction of George Augustus' Royal Battery, which was built between 1735 and 1745 (AKRF, et al. 2012). The battery is depicted on the 1755 Maerschalck map of Lower Manhattan, which suggests that the structure was situated along the eastern side of the project site. By the publication of the Ratzer map, which depicts conditions circa 1767, Fort George and its associated battery walls were constructed at the southern end of Manhattan Island (see **Figure 4**). As seen on the map, battery walls and a bastion were located near the eastern boundary of the proposed project site. Campbell's 1782 map of the fort suggests that the artillery barracks were in close proximity to the project site within the interior of the fort. The fort was demolished in 1790 and by the publication of the 1797 Taylor-Roberts map, a park known as "the Battery" was constructed along the southern end of the island. A flag staff formerly located on the western portion of the park was relocated to the vicinity of the project site in the early 19th century. The history of the park, the fort, and the Royal Battery are thoroughly described in AKRF, et al. 2012.

As described previously, the existing subway tunnels carrying the 1 and 4/5 trains through the project site were constructed in the early 20th century. Photographs included in LBG 2003 show the extensive excavation that occurred as a result of the construction of those tunnels. The project site remained a largely undeveloped portion of Battery Park until the mid-20th century. An aerial photograph taken in 1924[1] depicts the project site as a grassy area crossed by paved paths. The park was reconstructed and expanded in the early 1950s and a 1951 aerial photograph[2] reflects the construction that was occurring at that time, including the extension of FDR Drive beneath Battery Park to connect it to the West Side Highway. The existing playground and comfort station were constructed on the project site in the 1950s after the reconstruction of the park. Few changes are noticeable within the project site on aerial photographs and Sanborn maps published between the 1950s and the present. In the early 2000s, the new South Ferry Terminal was constructed along the northern edge of the project site, resulting in significant disturbance at the northern end of the proposed Playscape.

[1] Accessible through: http://maps.nyc.gov/doitt/nycitymap/
[2] Accessible through: http://maps.nyc.gov/doitt/nycitymap/

Chapter 4: Results of Survey

A. INTRODUCTION

From June 18 to June 26, 2018, AKRF conducted an archaeological survey of the Battery Playscape project site to determine the potential for the project to impact archaeological resources. The investigation consisted of the excavation of nine backhoe trenches (TP1 through TP9 on **Figure 6**). Individual trenches varied in length from just under 10 feet to almost 40 feet and in width from just under 4 feet to 9 feet. The field team excavated at least a portion of each trench to at least 6 feet bgs and documented each trench with photographs, field sketches, and notes. Small to moderate quantities of artifacts were recovered during excavation and from the backfill piles and sampled in a representative manner (see Section C). **Table 2** below provides a summary of each trench including whether or not it was expected to encounter the remains of the Battery Wall and a summary of the results.

Based on the results of the 2005 South Ferry Terminal fieldwork and earlier map analysis, the remains of the Battery Wall were expected in three of the trenches: TP1, TP3, and TP9. As indicated in **Table 2**, the field team observed large stones likely associated with the Battery Wall in all three trenches that were expected to encounter them. Excavation of the other trench locations was not expected to encounter the remains of fortification walls (and did not) but they were sensitive for the presence of historic landfill and landfill-retaining structures. Landfill-retaining structures were not observed in any of trenches though all of the trenches but TP2 and TP6 encountered layers of historic landfill. The collected artifact assemblage is discussed after the fieldwork section. The following is a more detailed description of each of the trenches.

B. RESULTS OF FIELDWORK

TRENCH 1

Trench 1 was excavated approximately 40 feet south of the southern end of Wall Segment 3 (discussed earlier), within the narrow band of land not disturbed by tunnel construction associated with South Ferry Station and the 4/5 line in the DPR/Battery Conservancy parking area (see **Figure 6** and **Photo 1**). The trench was oriented somewhat perpendicular to the expected alignment of Wall Segment 3 to maximize the potential for intersecting with it should it continue into the Battery Playscape project site. This large trench was excavated in three segments after removal of a 3-inch-thick layer of hexagonal asphaltic concrete pavers and over a foot of concrete and bedding material (**Photo 7**). Excavation of this western third exposed a broken 6-inch-diameter earthenware sewer line in the southwest corner at a depth of about 2 feet, the root ball of what must have once been a very large tree, which extended into the center third of the trench, and a large poured-concrete footer in the northwest corner of the trench (**Photo 8**). This footer extended beyond the bottom of the trench, which was excavated to about 6.5 feet bgs (**Photo 9**). As can be clearly seen in **Photos 8** and **9**, this portion of the trench has been extensively disturbed from excavation associated with construction of the footer and drainage line. The disturbed fills consist of yellow brown sand with gravel and dark brown organic silty sand. No wall remains were encountered in the western portion of TP1. By a depth of 6 feet bgs water began to accumulate on the trench floor.

Table 2
Summary of Test Trenches

Trench	Dimensions (width X length X depth [feet])	Sensitivity	Results	Depth of Ground Water (feet bgs)
TP1	8 X 38 X 6	Battery Wall Remains	• Thick concrete slab • Two substantial concrete footers • Historic fill • Scattered, disarticulated wall remains at about 4 feet bgs	4.83
TP2	4 X 12 X 6	Landfill/Landfill-retaining Structures	• Thick concrete slab • Concrete vault • Mixed, disturbed gravels	4.66
TP3	9 X 20 X 6	Battery Wall Remains/Bastion	• Thick concrete slab • Scattered, disarticulated wall remains at 2.5 to 3.5 feet bgs • Historic fill • Utility disturbance	5
TP4	5 X 14 X 6	Landfill/Landfill-retaining Structures	• Mixed, disturbed sands and gravel with historic artifacts	5
TP5	4 X 15.5 X 6	Landfill/Landfill-retaining Structures	• Mixed sandy fill with historic artifacts	6
TP6	2.3 X 9.6 X7.5	Landfill/Landfill-retaining Structures	• Utility disturbance • Concrete pad • Mixed sandy fills with a small quantity of historic artifacts	7
TP7	4 X 15 X 6	Landfill/Landfill-retaining Structures	• Mixed sandy fill with historic artifacts	6
TP8	3.7 X 14 X 6	Landfill/Landfill-retaining Structures	• Mixed sandy fill with historic artifacts	6
TP9	5 X 13.5 X 6	Battery Wall Remains/Bastion	• Mixed sandy fills and brick rubble with a small quantity of historic artifacts • Intact, dressed-stone foundation at 6 feet bgs obscured by ground water and slumping trench walls	5
Note: The ground surface elevation in the vicinity of TP1 through TP4 and TP6 was approximately +8.5 while the elevation in the vicinity of TP5 and TP7 through TP9 was approximately +9.5 (NAV88).				

Excavation of the central portion of TP1 exposed the rest of the substantial root system first seen to the west (**Photo 7**), which was encountered within a 3-foot-thick layer of dark brown organic soil immediately below the concrete and bedding material. Soils in the remainder of this portion of the trench consisted of layers of mixed sandy brown fill that extended to a depth of about 4 feet bgs, at which point the excavator bucket encountered a large rock (**Photo 10**). Due to the possibility that the rock was evidence of wall remains, excavation proceeded primarily by hand at this point. During hand excavation of the trench floor, the field team encountered a small number of large rocks beginning at a depth of 3.83 feet bgs. The rocks appeared to be scattered and disarticulated (as opposed to the clearly aligned orientation of the wall faces

of Wall Segment 3 documented during the South Ferry Terminal Project). By a depth of 4.83 feet bgs standing water began to accumulate on the trench floor and the water-saturated soils made hand excavation all but impossible (**Photo 11**). In order to gain some information regarding the presence or absence of potential wall remains at lower depths in this area without excavation, the field team used a five-foot-long pry bar to systematically probe for obstructions. The probes were conducted at an interval of about one foot along four east-west oriented transects spaced two feet apart from each other. The probed area covered an area of about 84 square feet (**Figure 8** and **Photo 12**). As indicated in **Figure 8**, probing encountered a rock-like obstruction at depths ranging from 4.6 to almost 7 feet bgs. In some locations the pry bar sank through the soft clayey soils to a depth of over 7 feet bgs without encountering an obstruction. As neither water removal nor additional excavation were possible, and after consultation with LPC and OPRHP including a site visit by Amanda Sutphin, Director of Archaeology at LPC, the field team placed plastic sheeting and plywood boards on the trench floor and backfilled this portion of the trench with the excavated soils.

Excavation of the final, eastern third of TP1 stopped at a depth of only 1.5 feet bgs when a substantial concrete footer was encountered (**Photo 13**). This 3.5 by 3.5-foot square footer appeared identical to the features identified as surface transportation infrastructure during the South Ferry Terminal Project. As excavation of this substantial object would have required extensive excavation around it to the depth already determined sensitive for wall remains, it was left in place. The field team encountered a north-south oriented wooden plank to the west of the footer that may have been part of a shoring system during excavation associated with construction of the footer (**Photo 11**). Due to the shallow excavation of this portion of the trench, it is not possible to determine the presence or absence of Battery Wall remains. However, if such remains were present, they would have likely been disturbed by construction of the footer.

TRENCH 2

Trench 2 was excavated in the DPR/Battery Conservancy parking lot at the northern end of the project site (see **Photo 1** and **Figure 6**). This 12-foot-long trench encountered a 1 foot 8 inch-thick slab of reinforced concrete followed by 6 feet of apparently recently deposited gravelly fill. Excavation stopped at a depth of 6 feet, at which point the trench began to fill with water (**Photos 14** and **15**). Excavation was impeded along the south half of this trench by a substantial concrete vault (**Photo 15)**. This trench was excavated several feet inland of the expected location of the Battery Wall. The field team encountered no potential wall remains, landfill-retaining structures, or any other type of archaeological feature.

TRENCH 3

North-south oriented Trench 3 was excavated in the sidewalk lining the western side of Peter Minuit Plaza (**Photo 2**), at about the point where the 1767 Ratzer map depicts the Battery Wall as veering southwest to form a bastion (see **Figure 6**). This 20-foot-long trench was excavated through almost a foot of concrete and bedding material in two 10-foot-long segments. The southern segment consisted of almost 7 feet of clean dark yellow brown sandy fill. At a depth of 6 feet bgs water began to quickly accumulate across the trench's floor (**Photo 16**). No possible wall remains were observed during the excavation of this half.

However, in the northern segment, a small cluster of disarticulated, large (10 inches to 1 foot 2 inches in length), semi-dressed stones was observed between 2.5 and 3.5 feet bgs, immediately below a one-foot-thick layer of modern brown fill (10YR 4/3) of mixed sands. As in Trench 1, excavation proceeded by hand once the field team observed possible wall remains. The northern segment was hand-excavated to a depth of about 3 feet bgs and each of the several encountered stones was pedestalled in situ. This soil layer appeared to be historic fill and consisted of strong brown (7.5YR 4/4) sandy silt. As seen in **Photos 17** and **18**, the stones clearly appear to be disarticulated and scattered, in contrast to the wall remains encountered during the 2005 South Ferry Terminal Project. The large voids between the stones were probed with the

wire end of a pin flag and no additional stones were detected. An east-west oriented utility line with associated modern builder's trench was discovered at about the same depth as the wall remains at the northern end of the trench and a north-south oriented electrical line was identified prior to beginning the survey by a utility mark-out company adjacent to the eastern side of the trench. At this point the team excavated two 2.5- by 2.5-foot-square test pits into the floor of the trench in locations with no apparent stones to determine if intact wall remains were present at a deeper depth (see **Photos 17** and **18**). These two pits were excavated through sandy brown historic fill to a depth of 4.5 feet bgs and encountered no additional stones.

LPC archaeologist Jessica Striebel MacLean, Ph.D., conducted a site visit and concurred with AKRF archaeologists that the observed scatter of stones though likely associated with the former Battery Wall did not constitute an intact resource and possessed no archaeological significance in and of itself. MacLean further concurred that excavation should continue to a depth of 6 feet bgs to determine the presence or absence of deeper resources. The field team proceeded to excavate a 4-foot-wide trench in the northern half of Trench 3 to 6 feet bgs and encountered no evidence of wall remains or any other archaeological features (**Photo 19**). As will be discussed in the Artifact Analysis section below, the field team collected 82 artifacts from this trench. This higher artifact count was likely due to the fact that the archaeologists spent quite a bit of time troweling and brushing soil from around the stones and looking for additional stones, activities that lead to the observation of higher numbers of artifacts than monitoring excavation with a backhoe. However, these materials were not recovered from a recognizable feature and appear instead to have been from the fill.

TRENCH 4

Trench 4 was excavated further to the south along the sidewalk lining the western side of Peter Minuit Plaza from Trench 3 (**Photo 3**) in an area that would likely have been outside of the Battery Wall (**Figure 6**). Below a 4-inch-thick layer of concrete and 6 inches of dark gravelly bedding material, excavation encountered mixed sandy brown fill to a depth of 6 feet bgs (10YR 7/6 grading to 7.5YR 4/6). Excavation was obstructed by a north-south oriented utility line at a depth of 2.5 feet bgs in the eastern portion of the trench and by a thick concrete slab also at a depth of 2.5 feet bgs in the western portion of the trench (**Photo 20**). Water quickly accumulated on the trench floor and no wall remains or any other archaeological feature was observed in this trench.

TRENCH 5

Trench 5 was excavated in the fenced-in playground area in the location of the proposed stormwater retention tank (**Photo 5**). Excavation encountered an 8 inch layer of asphalt and sandy bedding material followed by layers of dark brown (10YR 3/2) and strong brown (7.5YR 3/2) silty sandy fill to a depth of just under 2 feet bgs. At this point excavation encountered a thick, artifact-rich layer of fill consisting of dark brown (10YR 3/2) silty sand (**Photo 21**) that continued to a depth of 6 feet 2 inches bgs. Water did not accumulate at the bottom of this trench though the soils at a depth of 6 feet had a high water content. A representative sample of the types of artifacts observed in this trench were collected by the field team leading to the recovery of 85 artifacts, more artifacts than were collected in any of the other trenches. The artifacts were recovered from fill and not an identifiable feature. No archaeological features or evidence of landfill-retaining structures were observed in Trench 5.

TRENCH 6

Trench 6 was excavated at the southern end of the DPR/Battery Conservancy parking lot, just outside of the fenced-in playground area (**Photo 4**), an area that would have been outside of the Battery Wall. Excavation encountered a 2-inch thick layer of asphalt, 5 inches of bedding material, and a thick, uniform

layer of dark brown sandy fill to a depth of 7.5 feet bgs (**Photo 22**). This trench was only 2.3 feet wide in order to avoid an electrical line identified during the mark-out survey conducted before the archaeological survey was initiated and the adjacent chainlink fence. Another utility was encountered at a depth of just under 2 feet in the western portion of the trench and a 1.5-foot-thick concrete slab was encountered at a depth of 6 inches at the eastern end of the trench. Very few artifacts were observed and collected and no archaeological features were encountered in this trench.

TRENCH 7

Like Trench 5, Trench 7 was excavated in the fenced-in playground area (**Photo 5**) in an area that would have been outside the Battery Wall and encountered clean sandy fills beneath asphalt and bedding material (**Photo 23**). The fills in this trench consisted of different shades of dark brown followed by a reddish sand (5YR 5/6 mixed with 7.5YR 5/4) with brick fragments and occasional cobbles. A smaller quantity of historic artifacts were observed and recovered from this trench and once again, no evidence of archaeological features or landfill-retaining structures was observed.

TRENCH 8

Trench 8 was also excavated in the fenced-in playground area (**Photo 5**) in an area that would have been outside the Battery Wall and was very similar to Trench 5, which was excavated 25 feet to the south. Soils consisted of 6 inches of asphalt and bedding followed by 40 inches of uniform dark brown (10YR 3/2) sandy silty fill followed by a mottled fill consisting of dark brown (10YR 4/4) and strong brown (7.5YR 5/6) coarse silty sand (**Photo 23**). Excavation stopped at a depth of 6 feet bgs at which point the trench floor appeared to be damp. The field team collected 83 artifacts from this trench, which was only slightly fewer than that collected from Trench 5. Given the observed similarities in the playground area, it appears likely that much of the fill used to reclaim this area originated from a similar source.

TRENCH 9

This trench was excavated in the fenced-in playground area in a location that would have been in the vicinity of the Battery Wall bastion (**Figure 6**). Although the initial plan was to excavate this trench at the proposed location of the Jewel Box Theater, it was shifted to the north to avoid disturbing a children's climbing structure that will be in use until the Battery Playscape project is initiated (**Photo 6**). This smaller trench had a length of only 13.5 feet and encountered more disturbance than the other trenches excavated in the playground area. The east wall soil profile (**Photo 26**) consisted of: 6 inches of asphalt and bedding material; 20 inches of dark brown (10YR 3/4) silty sand with brick rubble; 1 foot of black (10YR 2/1) clean, fine sandy silt; and dark brown (10YR 3/3) silty sand at a depth of 4.5 feet bgs. The west wall profile (**Photo 27**) consisted of: 11 inches of asphalt and bedding material; almost 2 feet of dark brown (10YR 3/4) silty sandy fill will brick rubble and rocks; a 4-inch-thick layer of black (10YR 2/1) sandy silt that tapered to the north; and a brown (10YR 4/4) to dark brown (10YR 3/1) clean fine sand to a depth of about 6 feet bgs. A 5-inch-diameter northeast-southwest oriented pipe was encountered toward the northern end of the trench at a depth of 2 feet 9 inches bgs.

At a depth of 6 feet bgs the backhoe bucket scrapped along the top of a substantial stone object in the western side of the trench. Subsequent cleaning with the backhoe bucket and long-handled shovels extended into the trench from the ground surface briefly exposed two courses of apparently large dressed-stone blocks. The stone to the south appeared to have an elevation approximately 9 inches shallower than the one located to its north, forming a step. Soon after their exposure and before it was possible to take a photograph, the stones were obscured beneath slumping trench walls, shallow ground water, and water-saturated soils. During the brief opportunity available to view the stones it appeared that they formed the northwest corner of a foundation that may extend further to the south and west beyond the trench's walls and deeper into the

ground. Exploratory scraping into the loose wet soils along the east side of the stones to a depth of about 6.5 feet bgs failed to encounter any more stone. Unfortunately, the slumping trench walls necessitated the expedited backfilling of the trench to avoid the undercutting of the trench walls (**Photo 27**).

C. RESULTS OF ARTIFACT ANALYSIS

A total of 441 artifacts were recovered from the nine trenches excavated as part of the Phase 1B Archaeological Survey of the Battery Playscape site (see **Table 3**). The majority of the assemblage was represented by fragmented, non-diagnostic artifacts of poor preservation quality and few cross-mends, all of which tend to be characteristics of secondary or fill deposits (AKRF, et al. 2012). Though at least one (and often several) temporally diagnostic artifacts were recovered from each trench, they span a production period extending from as early as 1640 to as recent as the present. The close proximity of artifacts from disparate time periods indicate a chaotic mixture of source material and make the assemblage poorly suited to serve as a tool to determine the chronology of landfilling across the project site. A discussion of the artifacts summarized by Functional Group and by trench is included in this chapter.

Table 3
Summary of Artifact Assemblage

Trench	Trench Location Relative to Wall	Artifact Count by Functional Group							Total (% of Total)
		Architectural	Ceramics	Domestic	Faunal	Glass	Personal	Unknown	
1	Intersects	13	15	0	21	10	9	0	**68 (15%)**
2	Inland/Landfill	0	3	0	1	0	0	0	**4 (1%)**
3	Intersects	11	30	1	14	8	18	0	**82 (19%)**
4	Outside/Landfill	2	34	0	4	4	3	1	**48 (11%)**
5	Outside/Landfill	8	49	1	13	6	8	0	**85 (19%)**
6	Outside/Landfill	1	7	0	6	2	0	0	**16 (4%)**
7	Outside/Landfill	1	19	0	7	2	3	0	**32 (7%)**
8	Outside/Landfill	5	62	0	10	5	1	0	**83 (19%)**
9	Intersects	2	9	0	7	1	4	0	**23 (5%)**
Total (% of Total):		**47 (11%)**	**228 (52%)**	**2 (0.5%)**	**83 (19%)**	**38 (9%)**	**46 (10%)**	**1 (<0.5%)**	**441 (100%)**

Notes: See full artifact catalog in **Appendix A**.

ARTIFACT ANALYSIS BY FUNCTIONAL GROUP

ARCHITECTURAL GROUP, DOMESTIC GROUP, AND UNKNOWN OBJECTS

The Architectural Group included 47 artifacts that represented 11 percent of the total assemblage. These were primarily non-diagnostic construction materials including brick fragments, remnants of mortar, stone building elements, a possible floor tile, flat window glass and fasteners such as nails and stakes. A fragment of what may be architectural tar was recovered from Trench 1. Other artifacts included fragments of earthenware utility pipes, unidentifiable iron objects, and slag. The majority of the fasteners were highly corroded and it was therefore impossible to determine if they were used prior to deposition and, therefore, these artifacts could be associated with either construction or destruction activities.

A nearly complete yellow brick and a similar yellow brick fragment consistent with Dutch bricks produced in the 17th and 18th centuries were recovered from Trenches 5 and 9. Similar yellow bricks were recovered during the archaeological investigation of the South Ferry Terminal Site (AKRF, et al. 2012). Architectural elements such as nails and red brick fragments were collected in lower concentrations than other diagnostic artifact types. Another object of interest was a rounded stone (possibly yellow jasper) object in Trench 5 that may have been a stone finial or decorative architectural item. A photograph of Battery Park taken by

Ewing Galloway in 1915 depicts fence posts topped by circular elements lining the landscaped areas of the park. While the 1915 fencing was a slightly different size and possibly made of metal, the stone object recovered from Trench 5 may have been part of a similar landscaping element.

The artifacts within the Domestic Group included two fragments of anthracite coal.

FAUNAL GROUP

The Faunal Group was the second-largest artifact group and contained 83 artifacts, or 19 percent of the total assemblage. The faunal assemblage was primarily composed of cow, sheep, and pig bones, other mammals and bird bone, and a small number of oyster (3) and hard-shell clam (4) shells or shell fragments. Osteological artifacts were recovered from all trenches except for Trench 2 and shell fragments were collected in Trenches 2, 3, and 5. The faunal remains are summarized by trench in **Table 4**. Nearly all of the faunal remains were associated with foodways, however two bone fragments—the radius of a dog and the ulna of a pigeon—are assumed to have been associated with animals naturally occurring in the environment.[1] While a small number of clam and oyster shells were recovered—also presumed to have been related to consumption practices given their placement within the fill and the absence of complete bivalves—a smaller sample of shell was collected and therefore the remainder of this discussion will focus on osteological remains.

As described in Chapter 2, "METHODOLOGY," nearly all of the osteological remains (66) were analyzed by Marie-Lorraine Pipes, PhD (see Appendix B). An additional eight bone fragments representing mammals were not submitted for analysis. Of the sample submitted for review, Dr. Pipes determined that nearly all of the faunal remains represented "dietary refuse and processed waste" associated with the consumption, butchering, and discard of the remains of domesticated livestock including cows, pigs, and sheep although a small number of other animals—including dog, chicken, pigeon, and cod—were also recovered (Pipes 2018: 1). Cattle remains were the most numerous, representing 46 percent of the faunal assemblage. Cow bones were recovered from all trenches with the exception of Trench 7, with unidentified mammal, sheep, and pig remains also observed. Two cod bones were recovered from Trench 3 as was a single chicken bone from Trench 7.

All food-related remains examined by Dr. Pipes appeared to have been professionally butchered (Pipes 2018). The cattle bones largely represented beef and veal cuts and many of the sheep bones were from lambs and most cuts were associated with large hams or roasts as well as stews and steaks (ibid). Some trimming waste representing material removed from meat cuts intended for consumption associated with both cattle and sheep was observed that may have been discarded into the river during the landfilling process.

[1] While pigeons can be consumed, it is assumed that given the urban setting of this site, the pigeon bone found originated within the local environment.

Table 4
Summary of Faunal Remains by Trench

	Shell		Bone (Food-Related)								Bone (Environmental)		
Trench	Clam	Oyster	Chicken	Cod	Cow	Large Mammal	Unknown Mammal*	Medium Mammal	Pig	Sheep	Dog	Pigeon	Total (% of Total)
1	0	0	0	0	16	0	0	0	0	3	1	1	**21 (25%)**
2	1	0	0	0	0	0	0	0	0	0	0	0	**1 (1%)**
3	1	0	0	2	8	1	0	0	2	0	0	0	**14 (17%)**
4	0	0	0	0	1	0	0	1	0	2	0	0	**4 (5%)**
5	1	1	0	0	6	0	0	0	2	3	0	0	**13 (16%)**
6	0	1	0	0	3	0	0	0	2	0	0	0	**6 (7%)**
7	0	1	1	0	0	0	3	2	0	0	0	0	**7 (8%)**
8	0	0	0	0	1	0	5	0	0	4	0	0	**10 (12%)**
9	**0**	**3**	**0**	**0**	**3**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**7 (8%)**
Total (% of Total):	**3 (4%)**	**6 (7%)**	**1 (1%)**	**2 (2%)**	**38 (46%)**	**1 (1%)**	**8 (10%)**	**3 (4%)**	**6 (7%)**	**13 (16%)**	**1 (1%)**	**1 (1%)**	**83 (100%)**

Note: *Not analyzed/included in Pipes 2018
Source: Pipes 2018 (see **Appendix B**).

PERSONAL GROUP

As shown in **Table 3**, the Personal Group made up 10 percent of the total assemblage and primarily consisted of undecorated white ball clay pipe stem fragments (see **Table 5**), but also included several partial or whole white ball clay pipe bowls and one coin.

Table 5
Summary of Personal Group Artifacts

Trench	Pipe Stem	Pipe Bowl	Coin	Total (% of Total):
1	8	1	0	**9 (19%)**
2	0	0	0	**0 (0%)**
3	17	1	0	**18 (39%)**
4	2	0	1	**3 (7%)**
5	7	1	0	**8 (17%)**
6	0	0	0	**0 (0%)**
7	3	0	0	**3 (7%)**
8	1	0	0	**1 (2%)**
9	4	0	0	**4 (9%)**
Total(% of Total):	**42 (91%)**	**3 (7%)**	**1 (2%)**	**46 (100%)**

Source: See artifact catalog in **Appendix A.**

Nearly all of the personal artifacts (91 percent) were pipe stem fragments of varying size, some of which had signs of use. Three of the stem fragments bore decorative markings. The first, recovered from Trench 5 appeared to bear the marking "…O…" which appears similar to the font and spacing used in the mark of the McDougall firm which manufactured pipes in Glasgow, Scotland between circa 1846 and 1891 (William and Mary Center for Archaeological Research 2002; Museums Victoria Collection n.d.). The second marked pipe stem featured a molded star pattern at one end and the third was marked with concentric

rings and fluting with ".P" visible. Both pipe stems were recovered from Trench 7 but neither mark could be accurately identified. Of the three pipe bowls recovered, two—from Trenches 3 and 5—bore no identifiable markings. The final pipe bowl, however, was recovered from Trench 1 and based on the bowl shape is suspected to have been produced between 1830 and 1880 (Diane Dallal; Pers. Comm. 2018). The bowl featured elaborate decorations with a masonic motif. Identifiable symbols within the design as seen on the pipe bowl include:

- A compass, representing reason (Paton 1873);
- A square representing the notion that a "Freemason's conduct will be tried by moral law" and representing a working tool of operative masons and a symbol of virtue for speculative masons (Paton 1873:94);
- A ladder (on the rim of the bowl);
- The all-seeing eye representing the "omniscience of God" (Paton 1873:70); and
- A triangle or pyramid which is meant to represent "God's qualities" (Reckner and Dallal 2000:120).

Finally, one coin was recovered from Trench 4, representing the final artifact from the Personal Group. Though highly corroded and heavily worn, through limited conservation efforts to remove corrosion and using the aid of a microscope, diagnostic markings became visible on the 29 millimeter-diameter coin. The front of the coin was embossed with the word "LIBERTY" and the profile of a woman facing to the right of the coin with a scarf draped around her neck. On the rear of the coin was the word "ONE" surrounded by a laurel leaf pattern on either side of the coin. The size of the coin and the decorative elements that could be observed are consistent with the "Liberty Large One Cent coin" produced between circa 1796 and 1807 (USA Coin Book n.d.).

CERAMIC ARTIFACTS

Ceramics were the most commonly recovered artifact class, were recovered from every trench, made up 52 percent of the assemblage, and included 11 identifiable ware types (see **Table 6**). The most common ware type was identified as pearlware (24 percent), which was recovered from almost every trench, followed closely by whiteware (21 percent), most of which was recovered from Trench 8. Almost half of all recovered ceramic fragments came from Trenches 5 and 8, both located in the fenced-in playground area and located only 25 feet apart.

Given the fragmentary nature of the assemblage, few sherds could be identified to functional type. However, the assemblage includes some distinctive ware types such as: two mending, green, molded neoclassical shell-edge ceramic sherds recovered from Trench 5 which could potentially be the top/lid to a compote dish or tureen; a tin-glazed, buff-bodied earthenware tile fragment with blue on white design recovered from Trench 9 with decorative elements that could represent a Biblical motif similar to the tin-glazed, buff-bodied earthenware tiles found in the South Ferry Terminal excavations (AKRF, et al. 2012); and one small white salt-glazed stoneware rim fragment with a barley pattern from Trench 4 that has an early and relatively short manufacturing date of 1740 to 1775.

Table 6
Summary of Ceramic Artifacts by Ware Type

Ware Type	Date Production Range	Trench									Total (% of Total):
		1	2	3	4	5	6	7	8	9	
Porcelain	1685-1853	0	0	2	1	0	0	3	11	0	**17 (7%)**
Creamware	1762-1820	0	0	0	0	1	0	0	0	0	**1 (<1%)**
Pearlware	1775-1853	2	0	2	11	9	3	11	16	0	**54 (24%)**
Refined White Earthenware	1780-Present	0	0	1	1	21	0	0	5	0	**28 (12%)**
Red and Coarse Red Earthenware	1750-1810	3	0	2	7	0	0	0	1	6	**19 (8%)**
Slipware and Possible Slipware	1670-1795	6	0	5	1	0	0	0	0	1	**13 (6%)**
Stoneware	1720-1850	2	0	1	7	8	0	0	1	1	**20 (9%)**
Stoneware or White Granite	1720-1850	1	0	0	0	0	0	0	0	0	**1 (<1%)**
Tin Glazed Earthenware	1640-1800	0	0	13	3	0	0	1	0	1	**18 (8%)**
White Granite	1840-Present	0	0	0	0	3	4	1	2	0	**10 (4%)**
Whiteware	1815-Present	1	3	4	3	7	0	3	26	0	**47 (21%)**
Total (% of Total):		**15 (7%)**	**3 (1%)**	**30 (13%)**	**34 (15%)**	**49 (21%)**	**7 (3%)**	**19 (8%)**	**62 (27%)**	**9 (4%)**	**228 (100%)**

Source: See Artifact Catalog in **Appendix A.**

GLASS ARTIFACTS

Household Glass made up nine percent of the assemblage (see **Table 3**). The majority of the 38 glass artifacts were small fragments that could not be identified but which appeared to be bottle glass of various colors. The remainder of the glass artifacts included a complete cornflower blue medicine bottle from Trench 6 (discussed below), a complete clear glass ink bottle from western portion of Trench 1, and several fragments of clear glass stemware/drinking glasses from Trenches 3, 5, 7, and 8.

The two complete bottles that were recovered were diagnostic and production dates were established for both. The clear ink bottle from the western portion of Trench 1 was embossed with the name of the Sheaffer Ink Company and bore a patent number—1759866—that was first issued to Owen E. Raab in 1930. The second bottle, recovered from Trench 6, was a small cornflower blue medicine bottle embossed with "Bromo Caffeine." The product was a powdered headache treatment commonly mixed with seltzer water that was invented in 1888 and the bottle was likely produced by the Cumberland Glass Company of Bridgeton, New Jersey between the 1880s and 1930 (Glass Bottle Marks n.d.; Munsey 2011; Lockhart, et al. 2014).

Table 7
Summary of Glass Artifacts by Type and Color

Artifact Type	Glass Color	Trench									Total (% of Total):
		1	2	3	4	5	6	7	8	9	
Medicine Bottle	Cornflower Blue	0	0	0	0	0	1	0	0	0	**1 (3%)**
Stemware/ Drinking Glass	Clear	0	0	2	0	2	0	1	1	0	**6 (16%)**
Other Bottle	Clear	1	0	2	0	0	0	0	0	0	**3 (8%)**
	Green (all shades)	5	0	3	2	3	1	1	2	1	**18 (47%)**
	Aqua	1	0	1	0	0	0	0	2	0	**4 (10%)**
	Cobalt Blue	0	0	0	0	1	0	0	0	0	**1 (3%)**
Ink Bottle	Clear	1	0	0	0	0	0	0	0	0	**1 (3%)**
Unidentified	Clear	1	0	0	2	0	0	0	0	0	**3 (8%)**
	Amber	1	0	0	0	0	0	0	0	0	**1 (3%)**
Total (% of Total):		**10 (26%)**	**0 (0%)**	**8 (21%)**	**4 (10%)**	**6 (16%)**	**2 (5%)**	**2 (5%)**	**5 (13%)**	**1 (3%)**	**38 (100%)**

Source: See Artifact Catalog in **Appendix A.**

ARTIFACT DISTRIBUTION BY TRENCH

The following is a breakdown of artifact and organic remains analysis by trench. Trenches 1, 3, and 9 were placed to intersect with the line of the Battery Wall based on historic maps (e.g., the 1776 Ratzer map) and the observations made during the South Ferry Terminal archaeological investigation (AKRF, et al. 2012). Trench 2 was excavated inland of the Wall and Trenches 4 to 8 were located on the water side within the landfill west of the former Battery Wall.

TRENCH 1

Trench 1 was placed to intersect with the line of the Battery Wall and was excavated in two sections referred to as Trench 1A and Trench 1B in the artifact catalogue. Artifacts were recovered from Trench 1A between depths of 3 and 6 feet below the ground surface and from Trench 1B at depths ranging between 3 and 5 feet. Combined, a total of 66 artifacts were recovered from the two portions of this trench with the majority being located within Trench 1B. The artifacts belonged to the Architectural, Ceramics, Faunal, Glass, and Personal groups. Diagnostic artifacts recovered from the trench included: fragments of British buff-bodied slipware and Stafford slipware with trail and dot decorations, both with a production date range of 1670 to 1795, fragments of blue transfer printed pearlware with Chinoserie motif with a manufacturing date range of 1790 to 1836; a pipe bowl decorate with a masonic motif that was likely produced between 1830 and 1880; and a clear glass ink bottle produced after 1930. It is likely that the more recent artifacts were introduced into this area during excavation associated with the two concrete piers and utility line. The seven diagnostic artifacts recovered in the vicinity of the potential wall remains had production dates extending from the late 17th century through the 19th century (except for an undecorated whiteware fragment).

TRENCH 2

Trench 2 was excavated inland of the Battery Wall and only four artifacts were recovered from the trench at a depth of 3 feet 8 inches. The recovered artifacts included one fragment of a clam shell and three fragments of an undecorated whiteware chamber pot, of which two fragments mend. Whiteware ceramics began to be produced circa 1815 and are still made to this day (Azizi, et al 1996).

TRENCH 3

Trench 3 was also placed to intersect with the line of the Battery Wall and was excavated in two halves. In the north half of the trench, artifacts were recovered from depths ranging between 1 and 6 feet. The south half of the trench was excavated in two levels: Level 1 extended between 2 and 3 feet below ground surface and Level 2 was continued between 4 and 6 feet. A total of 82 artifacts was excavated from Trench 3, with the majority (63) recovered from the north half. As mentioned previously, the higher artifact count from this trench was likely a product of the careful hand excavation of a large portion of the trench to investigate a possible stone feature.

The majority of the artifacts from Trench 3 were ceramic sherds likely produced between 1640 and 1800 and represent the oldest portion of the entire assemblage. The Trench 3 ceramics included a large number of tin-glazed buff–bodied earthenware including both Delft decorative tiles and Delft service ware. Most of the tin-glazed earthenware features blue and white hand-painted designs while one fragment had the remnant of a purple design. The ceramics from this trench also included British buff-bodied earthenware and Stafford slipware with a trail and dot motif that is similar to that found in Trench 1 and likely date to 1670-1795. There is also one small fragment of what appears to be Westerwald salt-glazed stoneware with an etched cordon, a painted blue band, and an unglazed interior that was likely produced in Germany between 1720 and 1850 (Janowitz, Pers. Comm. 2018). Two sherds of Chinese-export, soft-bodied, underglaze blue hand-painted porcelain were also recovered from Trench 3. One bears an unidentifiable maker's mark and the fragments were likely produced between 1740 and 1850. Several fragments of pearlware—typically produced between the 18th and 19th centuries—were recovered from Trench 3. These included a fragment with an overglaze blue transfer-print; a fragment with a polychrome hand-painted floral motif; and a fragment that could be pearlware or whiteware with a molded green neoclassical shell-edge. Finally, Trench 3 contained several pieces of undecorated whiteware with a wide manufacturing date range beginning in 1815 and continuing through the present.

TRENCH 4

Trench 4 was excavated in three levels: Level 1 extended between 1 and 2 feet below the ground surface; Level 2 extended between 2 and 3 feet, and Level 3 extended between 3 feet and 4.5 feet. Of the 48 artifacts recovered from this trench, the majority (25) were from Level 2. This trench contained a variety of artifacts in all levels with manufacturing date ranges extending between the 17th and 20th centuries. The upper level of the trench contained a Liberty Large One Cent coin likely produced in the late 18th or early 19th century.

Level 2 contained a number of diagnostic ceramics, including tin-glazed earthenware service dishes and Stafford slipware with trail and dot motif with manufacturing dates starting in the 17th century and continuing into the 18th century, The majority of ceramics were pearlware sherds with various designs from cobalt blue hand painted large brush stroke patterns to both green and blue molded shell-edgewares. One piece of blue, hand-painted, underglaze, soft-bodied Chinese-export porcelain was recovered, as were three fragments of possibly locally-made stoneware—both buff and gray bodied—that date to the 17th to mid-18th century. One diagnostic blue transfer-printed whiteware fragment was illustrated the "Crossing the Stream" pattern featuring a man helping woman and child cross a stream amidst a pastoral setting floral/botanical border. The production of whiteware illustrated with pastoral scenes was highest during the period between 1819 and 1836 (Samford 1997).

Additional, slightly older ceramics were recovered from Level 3 of this trench, including gray/buff-bodied stoneware and green molded shell-edge pearlware. In addition, a rim fragment of molded white salt-glazed stoneware with barley motif that dates to between 1740 and 1775 was also recovered. In addition, a body sherd of polychrome hand-painted pearlware that matches polychrome hand-painted pearlware teacups and saucers recovered from the South Ferry Terminal project.

TRENCH 5

Trench 5—located in the landfill area outside of the Battery Wall—yielded a total of 85 artifacts and represented approximately 19 percent of the total assemblage. The artifacts from Trench 5 were dominated by ceramics with a smaller number of glass artifacts, faunal remains, and architectural, domestic, and personal objects also recovered. While Trench 5 provides the richest amount of artifacts of the nine Trenches, the majority of the artifacts are small and only few contain discernable markings or designs that are indicative to specific time periods. Diagnostic artifacts recovered from this trench were all identified with production date ranges in the 17th and 18th centuries. What was potentially the oldest identified artifact was recovered from Level 2. The ceramic fragment was a small dark black, smooth glazed, gray-bodied stoneware and is possibly of the Jackfield type that was produced between the 1740s and the 1880s.

Other diagnostic ceramics from Trench 5 included two large rim fragments from green molded neoclassical shell edge pearlware. These artifacts mend and could possibly represent the top of a tureen or compote dish that date to 1800-1830 (Janowitz, Pers. Comm. 2018). Additionally, two ironstone sherds with partial maker's marks were present within Level 4. One was a white granite plate base fragment with a black transfer-printed maker's mark on bottom of base that included the partial word "JAME..." and the hindquarters of a seated lion. This is similar to the mark of the firm of James Edwards & Sons from Dalehall Pottery, Burslem, Staffordshire and could therefore have been produced during that firm's period of operation between 1842 and 1881 (James Edwards n.d.). The second white granite fragment bears a black transfer-printed maker's mark on bottom of base marked with "...INA"—likely meaning "CHINA"— with a partial animal illustration, possibly a unicorn, also similar to the mark used by James Edwards and Sons. The two fragments are of different thicknesses and do not appear to have come from the same vessel. The majority of the other ceramic vessel fragments recovered from this trench are pearlware or whiteware fragments with manufacturing date ranges between 1875 and 1900.

Of the small number of glass fragments recovered from this trench, almost all were small with no distinguishable marks. One fragment of cobalt blue glass was embossed with "…Y 1848," which may represent a production date of 1848. None of the pipe stem fragments within this trench were diagnostic, although one fragment from Level 2 was embossed with "…O…" in a style and size similar to a mark used by the MacDougal pipe manufacturing firm in Glasgow between circa 1846 and 1891.

TRENCH 6

Trench 6, located in the landfill outside the Battery Wall, contained only 16 artifacts. Several items were diagnostic, including several fragments of pearlware that were likely produced in the late 18th or early 19th century. One pearlware fragment featured a hand-painted polychrome design and another featured a blue transfer-printed pastoral design similar to those that were popular in the early 20th century (Samford 1997). The previously discussed Bromo Caffeine bottle was also found within this trench and was likely produced in the late-19th or early 20th centuries.

TRENCH 7

Trench 7, located outside the Battery Wall within the area of known landfill, included 32 artifacts that were recovered from fill deposits situated between 2 and 5 feet below the ground surface. These artifacts included one tin-glazed buff-bodied earthenware fragment with a hand-painted blue floral motif (manufactured 1640 to 1800); eight blue transfer-printed pearlware fragments with a Chinese motif (manufactured 1780 to 1814); and three Chinese-export soft-paste porcelain fragments with blue hand-painted underglaze Chinese design motifs. The design of the latter appears consistent with fourth period Canton Pavilion landscape designs (MACLab 2002c; Bates 2004; Maddsen and White: 86). The ceramics from this trench also included white granite and whiteware sherds with production dates ranging between the early 19th century

and the present. In addition to diagnostic ceramics, two decorated pipe stems likely manufactured after 1850 were recovered including one decorated with a Peter Dorni-style oak stem and leaf decoration and the other with a fluted stem/bowl. Many companies were making Peter Dorni style pipes in the 19th century and the fluted style pipe was one of the most common styles found in New York City. Both date to post-1850 (Diane Dallal, Pers. Comm. 2018).

TRENCH 8

Trench 8, located within the landfilled area outside the Battery Wall, comprised two excavated arbitrary levels: Level 1 extended between 0 and 2 feet below ground surface and Level 2 was situated between 2 and 6 feet below ground surface. Based on the 83 artifacts that were recovered from this trench, the fill deposits within Level 2 appear to be slightly older than Level 1, suggesting the that shallower deposits are secondary or tertiary fill deposits deposited more recently. The majority of the artifacts from this trench were recovered from Level 2. The majority of these artifacts were ceramics, several of which were diagnostic. In Level 1, ceramic artifacts included pearlware, whiteware and porcelain, the majority of which was undecorated with the exception of one piece of hand-painted underglazed polychrome pearlware with a floral motif and double gold band near top of rim that was likely produced between 1791 and 1815 (MACLab 2002d). One small fragment of blue transfer-print whiteware with a possible basket motif was likely produced between 1815 and 1915. This trench also contained many small decorated pearlware and whiteware sherds with indistinguishable motifs or undecorated that have manufacturing date ranges that would continue through the present.

TRENCH 9

Trench 9 was excavated in the vicinity of the bastion that was situated near the southern edge of the Battery Wall. Only 23 artifacts were uncovered from Trench 9, which was largely filled with clean soil and brick rubble. Few of the artifacts were diagnostic. The recovered artifacts in this trench included a Dutch yellow brick possibly produced in the 17th or 18th century. Diagnostic ceramics were similar to those seen in other trenches and included a piece of British buff-bodied earthenware; a fragment of gray-bodied salt-glazed stoneware rim sherd with cobalt blue motif possible from a crock or jug dating to 1720-1850; and one piece of tin-glazed earthenware tile with blue on white motif of trees or plants. The tin-glazed tile fragment likely dates to between 1640 and 1800 and what little decoration that is visible is stylistically similar to the biblical scenes popular on Delft tiles in the 17th to 18th centuries. Several similar tiles were recovered from the South Ferry Terminal excavation (AKRF, et al. 2012).

Chapter 5: Conclusions, Project Redesign, and Recommendations

A. CONCLUSIONS

POTENTIAL REMAINS OF THE BATTERY WALL

The 2005 South Ferry Terminal Project identified four segments of the c. 18th century Battery Wall and determined that three of them retained sufficient integrity to meet the eligibility requirements of the National Register. Based on the location and orientation of one of those segments, Wall Segment 3, and accepting the georeferenced 1767 Ratzer map as reasonably accurate (see **Figures 7a** and **7b**), the Battery Wall and a bastion most likely extended through the Battery Playscape project site until their demolition in the late 18th century. It is likely that the wall once extended southward a distance of approximately 350 feet from the site's northern end along its eastern edge adjacent to Peter Minuit Plaza to the vicinity of the covered subway entrance in the southeast portion of the site where it formed a southwest pointing bastion before continuing to the east beyond the project site's boundaries (see **Figures 7a** and **7b**). Construction of the 4/5 subway line would have destroyed at least a 100-foot-long portion of the wall. The remainder of the site was filled-in with several feet of fill to approximately the present grade by the end of the 19th century.

The Phase 1B survey sampled portions of the project site that are sensitive for the presence of the Battery Wall and bastion and portions that are sensitive for the presence of landfill-retaining structures where they were expected to be affected by the project. Scattered, disarticulated stones, some of which were semi-dressed, were observed in Trenches 1 and 3 and intact dressed stones were briefly observed in Trench 9 before they were obscured by the slumping, water-saturated trench walls (see **Figures 7a** and **7b** for the location of the three areas). These remains were observed along the expected alignment of the Battery Wall. **Table 8** below provides a summary of the evidence for Battery Wall remains and conclusions that can be drawn from the field observations. Fieldwork encountered no evidence of landfill-retaining structures to the depth of expected project impacts, indicating that the site in fact has a low sensitivity for such resources. However, evidence of wall remains, despite their disarticulated and scattered arrangement, supports a conclusion that the project site is sensitive for the presence of significant archaeological resources along undisturbed portions of the wall's expected alignment.

ARTIFACTS RECOVERED FROM THE LANDFILL

The Battery Playscape Phase 1B Survey recovered a total of 441 historic artifacts from nine backhoe trenches excavated across the 1.4-acre project site (see **Appendix A**). The assemblage comprises a range of domestic, personal, architectural, and commercial activities with dates of production extending from as early as the mid-17th century through the early 20th century and even the present in the case of undecorated whiteware fragments. The small size and fragmentary nature of the individual artifacts made the identification of vessel form generally impossible and only a few of the larger pieces could be mended. Artifacts from widely separated time periods were recovered in close context and no identifiable features or spatially discrete or distinct concentrations were observed. For example, diagnostic artifacts recovered in close proximity from Trench 1 included fragments of British buff-bodied and Stafford slipware that date from 1670 to 1795, blue transfer printed pearlware with Chinoserie motif with a date range of 1790 to 1836,

a pipe bowl decorate with a masonic motif that was likely produced between 1830 and 1880, and an ink bottle produced after 1930.

The assemblage's depositional context is landfill and the functional and temporal mixture of artifacts is indicative of a secondary deposit. These artifacts were originally discarded elsewhere as household or commercial waste over an extended period of time and were later redeposited in the project site during periodic land reclamation efforts. These factors lead to a conclusion that the assemblage does not possess sufficient integrity to be meet National Register eligibility requirements.

Table 8
Summary of Encountered Wall Remains

Trench	Evidence of Wall Remains	Conclusions
TP1	Scattered, disarticulated rock between 3.83 and 4.83 feet bgs Solid obstruction at 5 to 7 feet bgs based on soil probing No wall faces observed	Disarticulated stones may be intact interior wall fill as found in Wall Segment 3 or demolition debris Rock-like obstruction could be intact wall remains or rubble fill Depth and shallow ground water will make confirmation logistically difficult and require engineered shoring and dewatering Regarding the wall faces: they may have been destroyed by construction of the two large footings or the large tree, they may lie deeper, or the eastern face may be present in the unexcavated eastern third of TP1 Evidence of wall confirms sensitivity of this area
TP3	Several scattered, disarticulated semi-dressed rocks between 2.5 and 3.5 feet bgs in a small portion of trench No remains at lower depths	Disarticulated stones may be remains of late-18th century wall demolition or modern disturbance Evidence of wall confirms sensitivity of this area
TP9	Intact, dressed-stone foundation at 6 feet bgs Stones appear to form a corner obscured by ground water and slumping trench walls	Intact stones are possible remains of Battery Wall or bastion Stones are dissimilar to semi-dressed smaller stones depicted in photographs of wall segments from South Ferry Terminal project Depth of feature and shallow ground water will make confirmation logistically difficult and require engineered shoring and dewatering
Note: The ground surface elevation in the vicinity of TP1 through TP4 was approximately +8.5 while the elevation of TP5 and TP7 through TP9 was approximately +9.5 (NAV88).		

However, despite the assemblage's lack of integrity, there are several reasons that it may be of limited research value, particularly in combination with the South Ferry Terminal Project assemblage.

1. Despite its small size and the inability to distinguish vessel form for most artifacts, the assemblage includes some distinctive ware types, including: two mending, green, molded neoclassical shell-edge ceramic sherds recovered from Trench 5 which could potentially be the top/lid to a compote dish or tureen; a tin-glazed, buff-bodied earthenware tile fragment with blue on white design recovered from Trench 9 with decorative elements that could represent a Biblical motif similar to the tin-glazed, buff-bodied earthenware tiles found in the South Ferry Terminal excavations (AKRF, et al. 2012); and one small white salt-glazed stoneware rim fragment with a barley pattern from Trench 4 that has an early and relatively short manufacturing date of 1740 to 1775.

2. Many of the artifacts, particularly the ceramics, appear similar in style and ware type to some of those found in the South Ferry Terminal excavations and may therefore offer an extension of that assemblage's research value in areas such as changing refuse patterns.

3. Additionally, the assemblage may offer general insight into the evolving relationship of residents, land owners, and policy makers, among others, with the changing physical landscape of 18th and 19th century Lower Manhattan.

Therefore, given these possible research areas, the assemblage may be of sufficient value to warrant long-term storage at a suitable repository.

POTENTIAL EFFECTS OF THE PROPOSED ACTION

According to the initial[1] project design, project components with the potential to affect the area of sensitivity for the Battery Wall and bastion are limited to an approximately 500 square foot area that will contain foundations for a climbing structure at the northern end of the site (Adventure Bluffs), which would require replacement of water-saturated soils with a suitable bedding material; an approximately 50-foot-long segment of the trenched drainage line adjacent to the Adventure Bluffs that will be excavated to 3 to 5 feet bgs; an approximately 60-foot-long segment of trenched drainage line along the sidewalk lining the western side of Peter Minuit Plaza that will also be excavated to 3 to 5 feet bgs; and a group of piles and sonotubes that will support the Jewel Box Theater. **Table 9** below provides a summary analysis of the effects of these project components on potential Battery Wall remains based on the results of the Phase 1B field survey (see **Figure 6**). The other project components described earlier in this report are considered unlikely to affect archaeological resources.

B. PROJECT REDESIGN

On August 23, 2018, after completion and dissemination of the analysis presented in **Table 9** above, AKRF and LMDC engaged in a conference call with DPR, DPR's design and geotechnical team (represented by BKSK), OPRHP, and LPC to consider ways to avoid, minimize, or mitigate potential adverse effects. Through this conversation and subsequent conversations between LMDC, BKSK, the Battery Conservancy, and DPR, the project team decided to make the following design modifications in order to either avoid or minimize potential adverse effects.

ADVENTURE BLUFFS AND ADJACENT DRAINAGE LINE

Design options for the Adventure Bluffs' concrete footer in the vicinity of Trench 1 are highly constrained to the north by a stairway associated with South Ferry Terminal and the top of the station's shallow pile wall (see **Figure 9** and the cross section included in **Figure 10a)**. These constraints make it impossible to shift the proposed footer to the north. However, most of the Adventure Bluffs footing has been re-designed at the location of Trench 1 to only extend to 2 feet 8 inches bgs (see **Figures 9** and **10a)**, significantly reducing the potential to impact potential Battery Wall remains, as no such potential remains were encountered in the central portion of Trench 1 until a depth of 3.83 feet bgs. (No wall remains were observed in the western portion of Trench 1 to a depth of 6.5 feet bgs and excavation in the eastern portion did not progress beyond 1.5 feet bgs due to the presence of a substantial concrete footer.) Because it is shallow, the footer has very little excess capacity and cannot be locally adjusted by the engineer to avoid small areas of sensitivity, should any wall remains be encountered during construction. Although the re-designed footer in the location of Trench 1 will only extend to 2 feet 8 inches bgs, the footing immediately to the east and

[1] As discussed below, aspects of the initial project design were later modified to avoid or minimize potential adverse effects.

west of Trench 1 will extend to between 4 feet and 4.5 feet bgs (see **Figure 10b**). In addition, the adjacent drainage line that will extend to 3 to 5 feet bgs has been reduced in length for 50 feet to 25 feet (see **Figures 9** and **10a**).

Table 9
Comparison of Initial and Modified Project Impacts and Potential Effects

Project Element[1]	Condition of Wall Remains Based on Phase 1B Testing	Project Impacts		Potential Effects
		Initial Design	Modified Design	
Adventure Bluffs	Possibly intact rubble fill and/or wall remains from 3.83 to 7 feet bgs	Spread-foot foundation to 5 feet bgs (may require replacement of water-saturated clayey soils with suitable bedding material)	Spread-foot foundation from 2 feet 8 inches to 4.5 feet bgs (may require replacement of unsuitable material)	**Adverse effect** if wall remains are intact and shallower than expected **No effect** if wall remains are not intact
Drainage line adjacent to Adventure Bluffs	Possibly intact rubble fill and/or wall remains from 3.83 to 7 feet bgs	Trenching to 3 to 5 feet bgs a distance of 50 feet	Trenching to 3 to 5 feet bgs a distance of 25 feet	**Adverse effect** if wall remains are intact and impacts extend below 3 or 4 feet bgs **No effect** if wall remains are not intact or impacts are shallow
Drainage line along Peter Minuit Plaza	Disarticulated wall remains	Trenching to 3 to 5 feet bgs	Project element has been eliminated	**No effect** as project elements has been eliminated
Jewel Box Theater	Intact dressed-stone foundation at 6 feet bgs in the vicinity	Installation of sonotube concrete footings to up to 5 feet bgs and drilled mini piles to competent bedrock	Installation of sonotube concrete footings to up to 5 feet bgs and construction of spread-foot foundation to 2.5 feet bgs	**Adverse effect** if intact wall remains are shallow and extend to theater site **No effect** if intact remains do not extend to theater site or are not shallow

Note: The ground surface elevation in the vicinity of the Adventure Bluffs is approximately +8.5 while the elevation in the vicinity of the theater is approximately +9.5 (NAV88).

[1] See Figure 9

Although the presence of water saturated soils in this area may require some over-excavation to achieve a bearing condition, the design team intends to over-excavate as little as possible since over-excavating itself has the effect of weakening the bearing capacity of soils. The geotechnical engineer does not anticipate that broad swaths of soil will need to be removed and replaced, but that it is more likely that localized pockets of soil will be found inadequate and replaced.

Designs for the adjacent drainage line may extend to a depth of 3 to 5 feet bgs but have been reduced in length for 50 to 25 feet (see **Figure 9**).

DRAINAGE LINE ALONG PETER MINUIT PLACE

This project element, originally part of a bio swale, has been eliminated as indicated in **Figure 9** and the redesigned drainage plan included in **Figure 11** shows the area of sensitivity for wall remains as the location of planting beds that will not require a drainage line.

JEWEL BOX THEATER

As indicated in **Figure 9**, the foundation of the theater was redesigned by the structural engineer (Thornton Tomasetti) to eliminate the eight 20 ton drilled micropiles and replace them with the shallower spreadfoot foundation depicted in **Figure 13**. (**Figure 12** provides a small-scale depiction of the entire re-designed Jewel Box Theater Ground Plan, though it is difficult to interpret due to the large scale of the actual plan.) Thornton Tomasetti replaced the original piles with a 2-foot-thick mat slab (over the subway tunnel's zone of structural influence) and six 5 foot by 5 foot concrete footings, each extending to a depth of 2.5 feet bgs (outside the subway's zone of structural influence). The design of this relatively shallow foundation can also be locally adjusted by the engineer (e.g. small areas of sensitivity can potentially be bridged over), should any wall remains be encountered during construction.

The five 4-foot-deep sono tube concrete footings are still part of the design. Construction of these footings first requires excavation of the footing location.

C. RECOMMENDATIONS

Due to the persistent though reduced[1] potential for adverse effects to the National Register eligible remains of the Battery Wall from construction of the Adventure Bluffs and adjacent drainage line and the Jewel Box Theater, additional mitigation measures are recommended. Through consultation with OPRHP and LPC, LMDC has agreed to conduct additional testing at the Jewel Box Theater location prior to construction to determine if the remains encountered in Trench 9 extend to that location and to conduct archaeological monitoring during the construction period. These mitigation measures will be detailed in an agreement document to be signed by LMDC and OPRHP with DPR being an invited signatory. The agreement document will require preparation of a Pre-Construction Activities, Monitoring, and Unanticipated Discoveries Plan in consultation with OPRHP and LPC and describe additional mitigation measures that would be taken in the event that adverse impacts cannot be avoided (whether determined during the pre-construction activities or during monitoring). These additional mitigation measures shall be comprised of some combination of data recovery and an educational component.

Though the Battery Playscape Phase 1B artifact assemblage was determined to lack sufficient integrity to meet the eligibility requirements of the National Register, it may have sufficient research value as an extension of the South Ferry Terminal assemblage to warrant long-term storage. Accordingly, LMDC will offer the collection to the LPC repository or other appropriate facility.

[1] The potential for adverse effects has been reduced through the project re-design described in the previous subsection.

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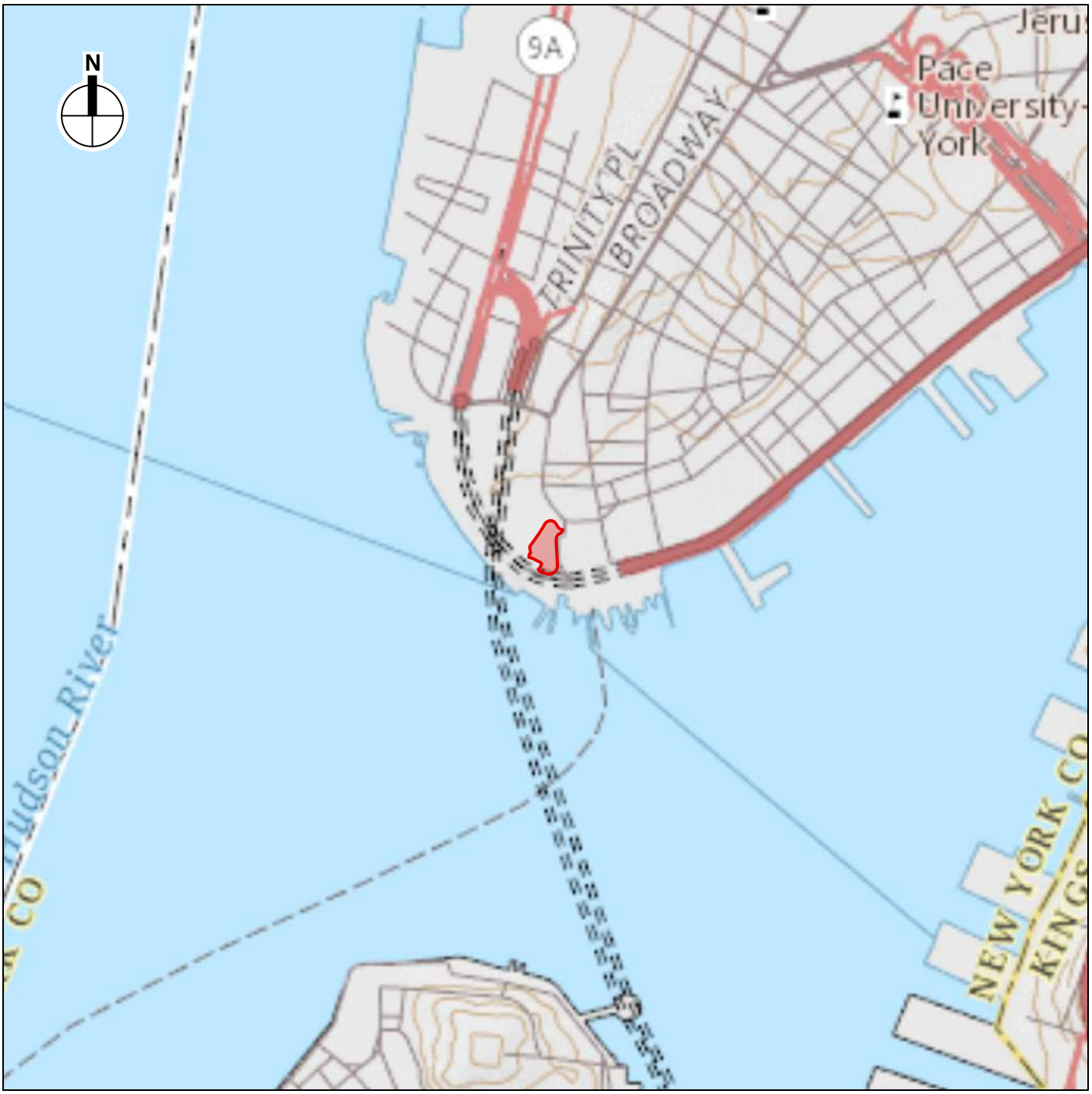
FIGURES



Approximate coordinates of Project Site:
74°0'52"W 40°42'7"N

USGS Topographic Map - Jersey City Quadrangle

THE BATTERY PLAYSCAPE

Figure 1

9/7/2018

0 200 FEET

Project Site Boundary

Project Location

THE BATTERY PLAYSCAPE

Figure 2

9/7/2018

0 200 FEET

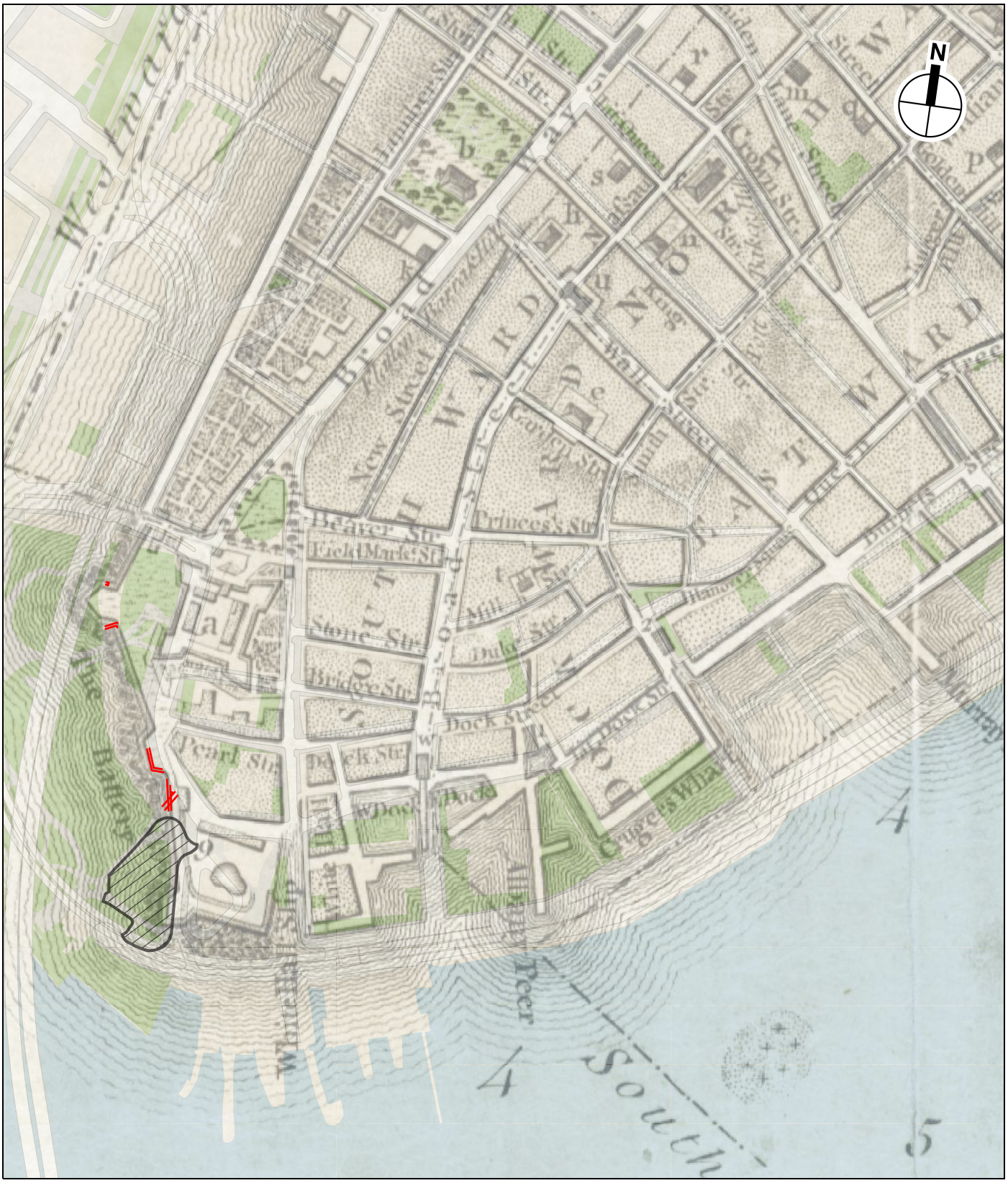
Project Site Boundary

Aerial

THE BATTERY PLAYSCAPE

Figure 3

8/31/2018



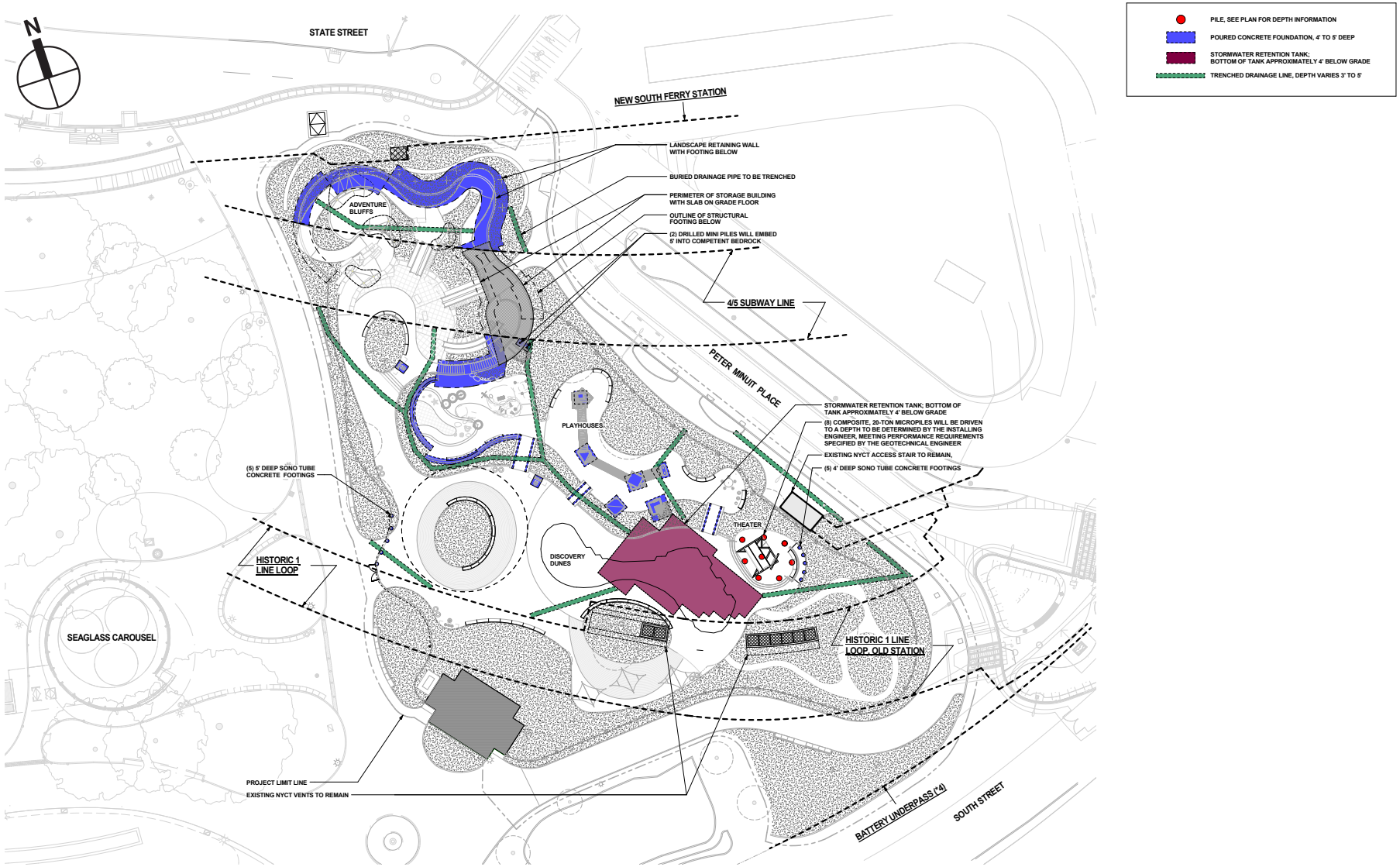
Fort Wall Remnants in 2005

Project Site

1767 Ratzer

THE BATTERY PLAYSCAPE

Figure 4

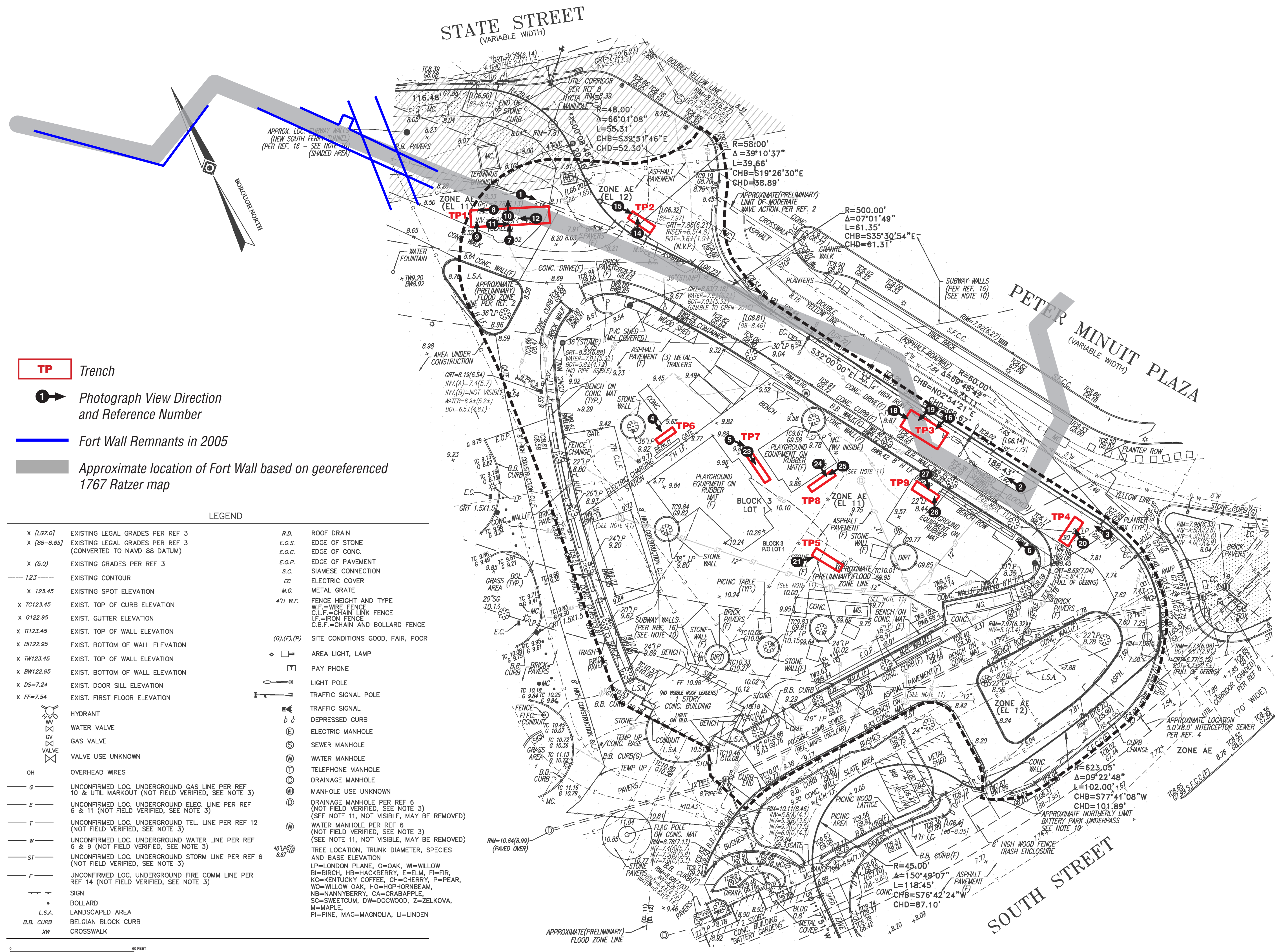


Source: BKSK Architects LLP

Below Ground Structures

THE BATTERY PLAYSCAPE

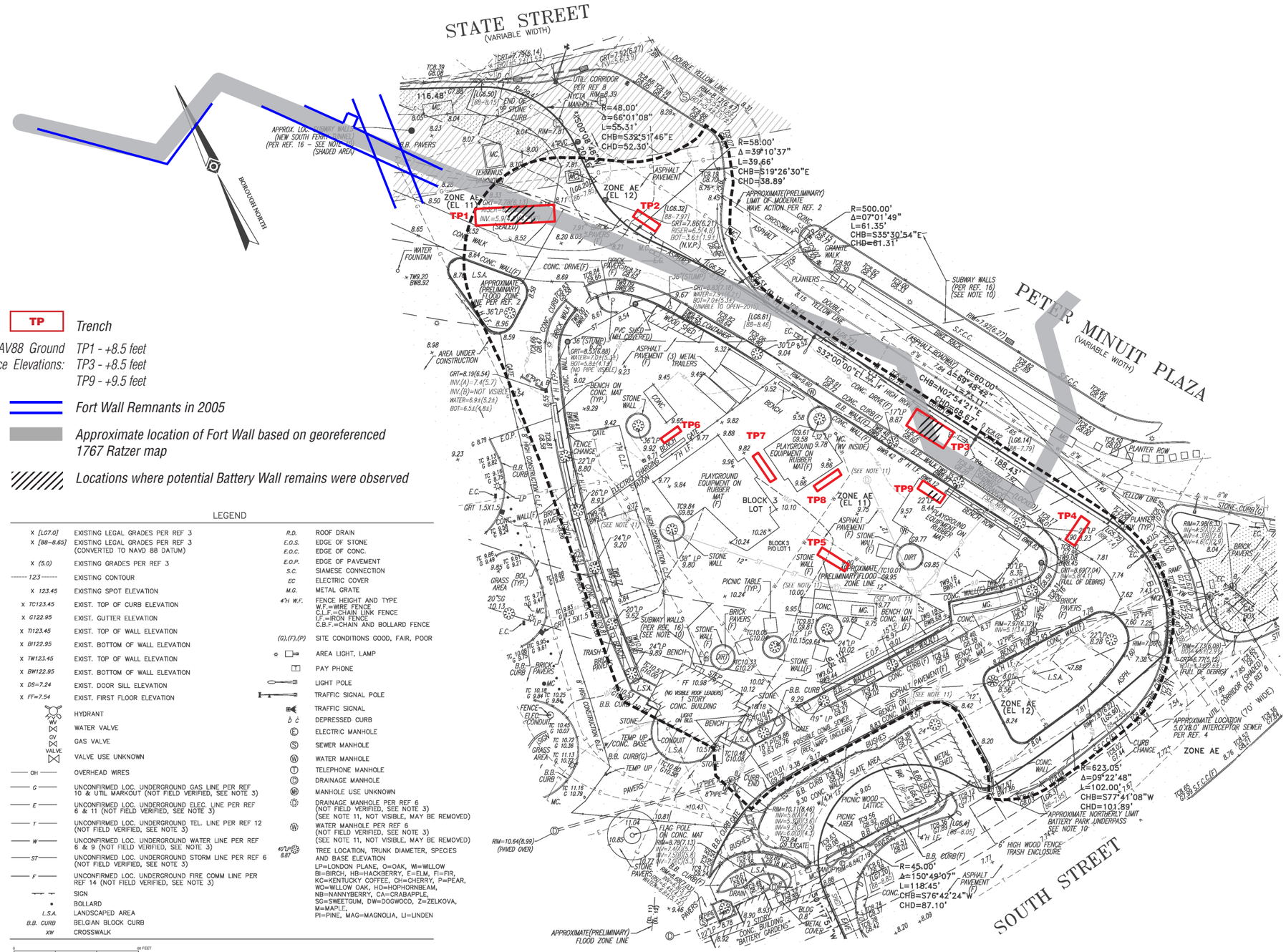
Figure 5



Trench Locations and Key to Photographs

Figure 6

9/18/2018



TP — Trench

NAV88 Ground Surface Elevations:
TP1 - +8.5 feet
TP3 - +8.5 feet
TP9 - +9.5 feet

Fort Wall Remnants in 2005

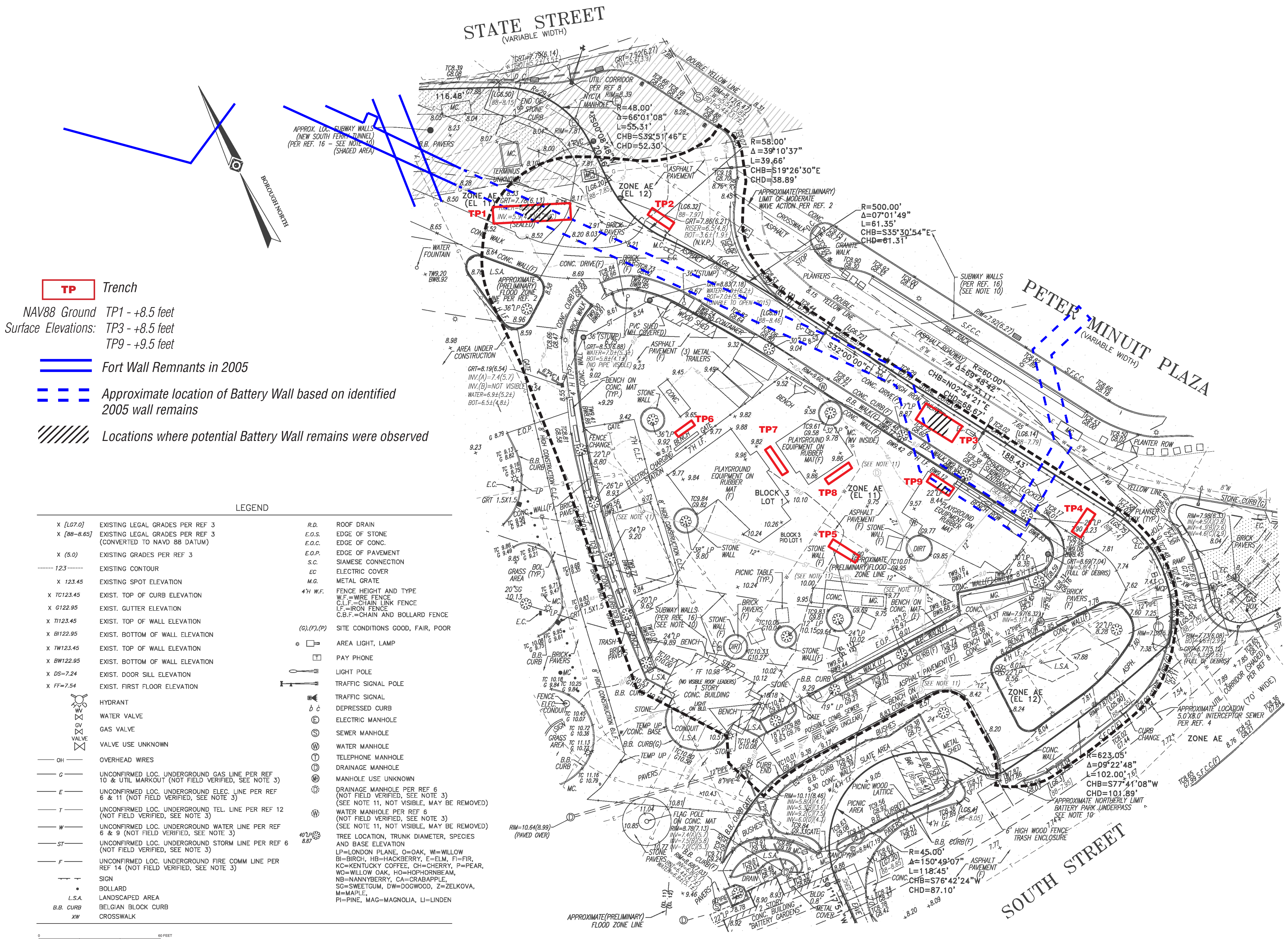
Approximate location of Fort Wall based on georeferenced 1767 Ratzer map

Locations where potential Battery Wall remains were observed

LEGEND

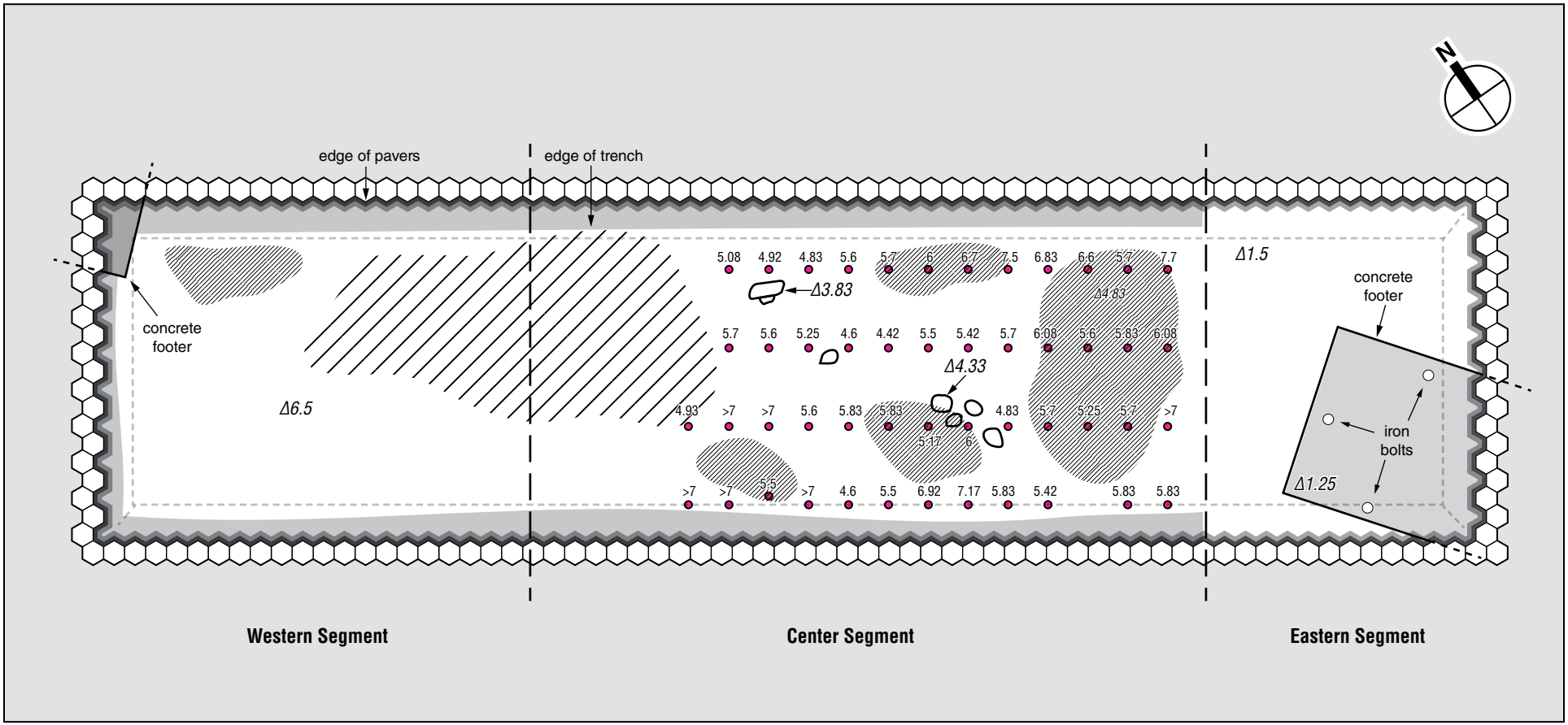
x [LG7.0]	EXISTING LEGAL GRADES PER REF 3	R.D.	ROOF DRAIN
x [88–8.65]	EXISTING LEGAL GRADES PER REF 3 (CONVERTED TO NAVD 88 DATUM)	E.O.S.	EDGE OF STONE
		E.O.C.	EDGE OF CONC.
x (5.0)	EXISTING GRADES PER REF 3	E.O.P.	EDGE OF PAVEMENT
		S.C.	SIAMESE CONNECTION
123	EXISTING CONTOUR	EC	ELECTRIC COVER
x 123.45	EXISTING SPOT ELEVATION	M.G.	METAL GRATE
x TC123.45	EXIST. TOP OF CURB ELEVATION	4'H W.F.	FENCE HEIGHT AND TYPE W.F.=WIRE FENCE C.L.F.=CHAIN LINK FENCE I.F.=IRON FENCE C.B.F.=CHAIN AND BOLLARD FENCE
x G122.95	EXIST. GUTTER ELEVATION		
x T123.45	EXIST. TOP OF WALL ELEVATION	(G),(F),(P)	SITE CONDITIONS GOOD, FAIR, POOR
x B122.95	EXIST. BOTTOM OF WALL ELEVATION		AREA LIGHT, LAMP
x TW123.45	EXIST. TOP OF WALL ELEVATION	T	PAY PHONE
x BW122.95	EXIST. BOTTOM OF WALL ELEVATION		LIGHT POLE
x DS=7.24	EXIST. DOOR SILL ELEVATION		TRAFFIC SIGNAL POLE
x FF=7.54	EXIST. FIRST FLOOR ELEVATION		TRAFFIC SIGNAL
	HYDRANT		DEPRESSED CURB
WV	WATER VALVE	E	ELECTRIC MANHOLE
GV	GAS VALVE	S	SEWER MANHOLE
VALVE	VALVE USE UNKNOWN	W	WATER MANHOLE
OH	OVERHEAD WIRES	T	TELEPHONE MANHOLE
G	UNCONFIRMED LOC. UNDERGROUND GAS LINE PER REF 10 & UTIL MARKOUT (NOT FIELD VERIFIED, SEE NOTE 3)	D	DRAINAGE MANHOLE
		?	MANHOLE USE UNKNOWN
E	UNCONFIRMED LOC. UNDERGROUND ELEC. LINE PER REF 6 & 11 (NOT FIELD VERIFIED, SEE NOTE 3)	D	DRAINAGE MANHOLE PER REF 6 (NOT FIELD VERIFIED, SEE NOTE 3) (SEE NOTE 11, NOT VISIBLE, MAY BE REMOVED)
T	UNCONFIRMED LOC. UNDERGROUND TEL. LINE PER REF 12 (NOT FIELD VERIFIED, SEE NOTE 3)	W	WATER MANHOLE PER REF 6 (NOT FIELD VERIFIED, SEE NOTE 3) (SEE NOTE 11, NOT VISIBLE, MAY BE REMOVED)
W	UNCONFIRMED LOC. UNDERGROUND WATER LINE PER REF 6 & 9 (NOT FIELD VERIFIED, SEE NOTE 3)	40"□ 8.87	TREE LOCATION, TRUNK DIAMETER, SPECIES AND BASE ELEVATION LP=LONDON PLANE, O=OAK, WI=WILLOW BI=BIRCH, HB=HACKBERRY, E=ELM, FI=FIR, KC=KENTUCKY COFFEE, CH=CHERRY, P=PEAR, WO=WILLOW OAK, HO=HOPHORNBEAM, NB=NANNYBERRY, CA=CRABAPPLE, SG=SWEETGUM, DW=DOGWOOD, Z=ZELKOVA, M=MAPLE, PI=PINE, MAG=MAGNOLIA, LI=LINDEN
ST	UNCONFIRMED LOC. UNDERGROUND STORM LINE PER REF 6 (NOT FIELD VERIFIED, SEE NOTE 3)		
F	UNCONFIRMED LOC. UNDERGROUND FIRE COMM LINE PER REF 14 (NOT FIELD VERIFIED, SEE NOTE 3)		
	SIGN		
	BOLLARD		
L.S.A.	LANDSCAPED AREA		
B.B. CURB	BELGIAN BLOCK CURB		
XW	CROSSWALK		

9/18/2018



Results of Survey

Figure 7b



0 8 FEET

Δ1.5 *Depth below ground surface*

Standing water

Substantial tree root system

5.7 *Depth below ground surface of submerged/ buried obstruction determined through probing*

Potential disarticulated remains of Battery Wall

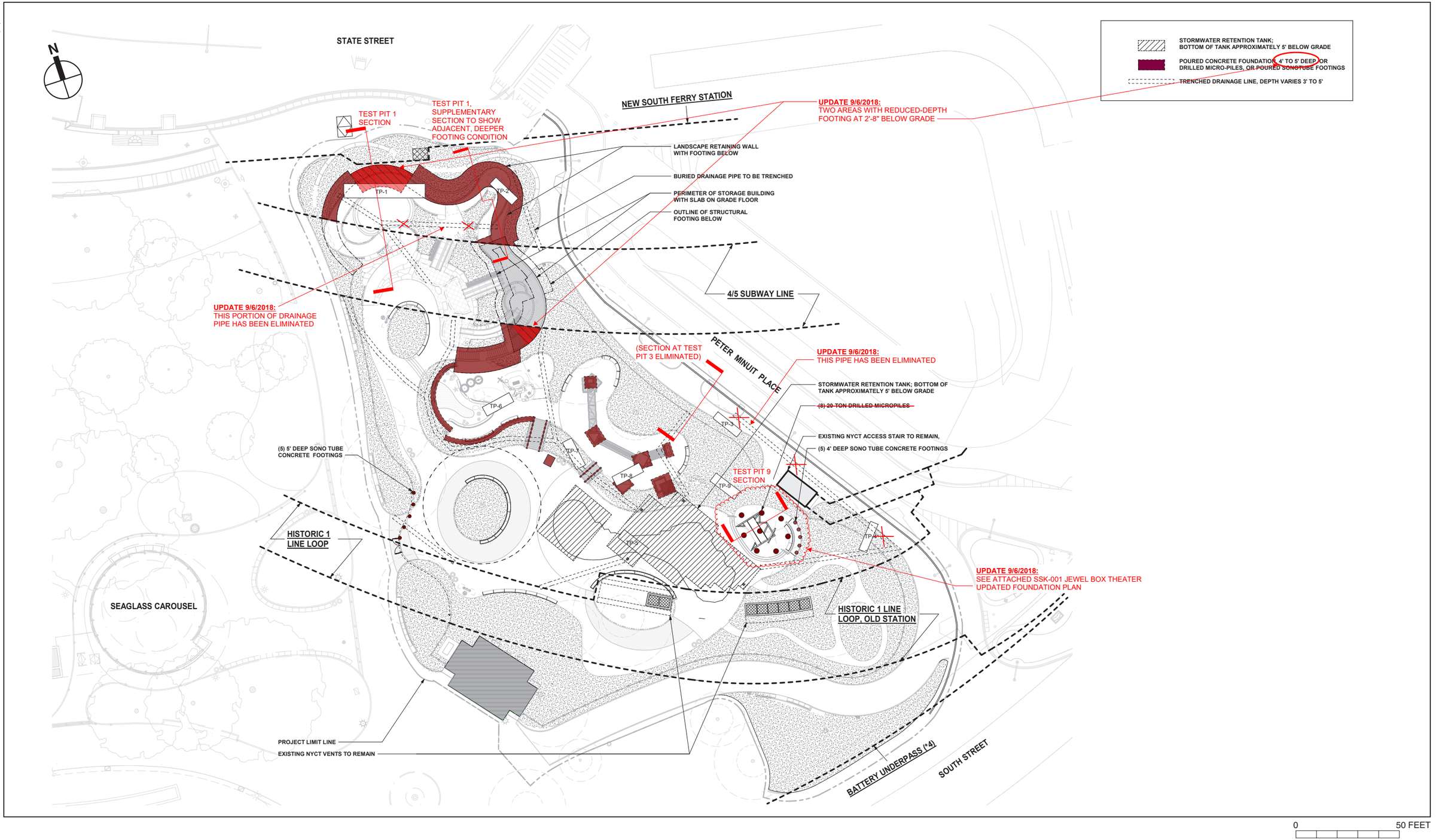
NAV88 ground surface elevation is +8.5 feet

Plan View of TP1 Indicating Depths of Excavation and Submerged Obstruction

THE BATTERY PLAYSCAPE

Figure 8

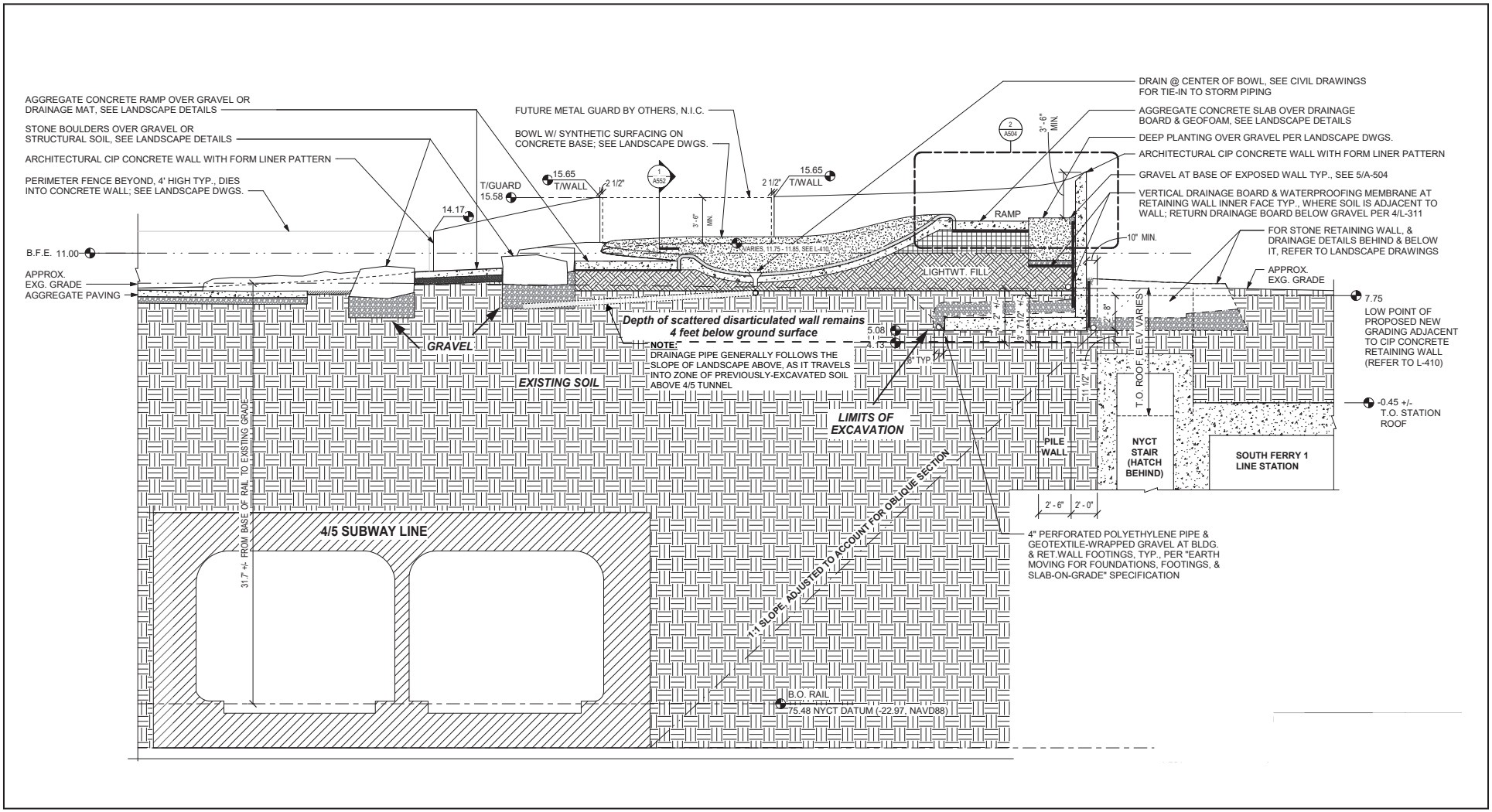
11/2/2018



Source: BKSK Architects LLP

THE BATTERY PLAYSCAPE

Redesigned Below Ground Structures
Figure 9



Source: BKSK Architects LLP

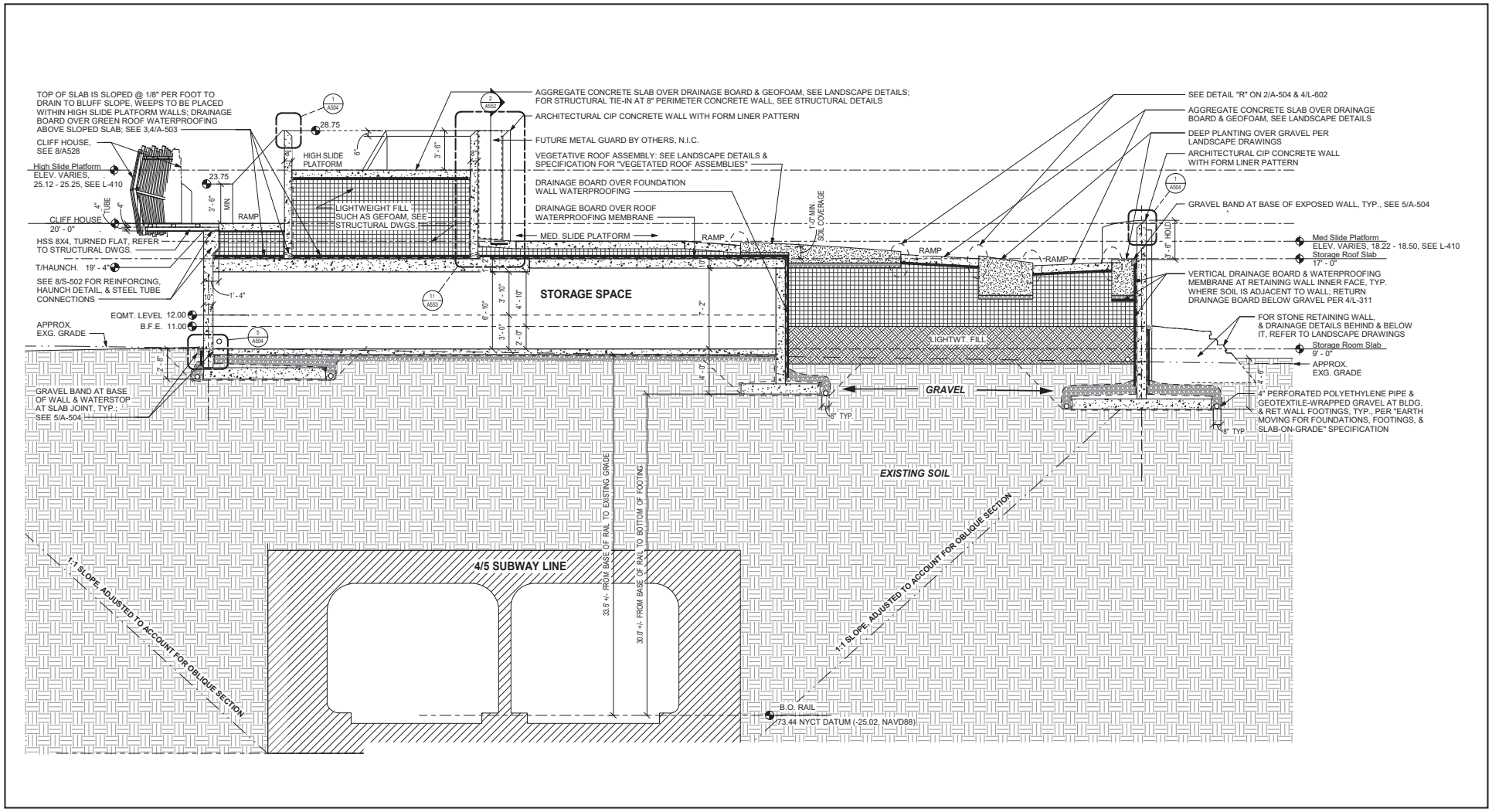
NOTE: Elevations based on NAV88

0 16 FEET

THE BATTERY PLAYSCAPE

Redesigned Adventure Bluffs Test Pit 1 Section

Figure 10a



Source: BKSK Architects LLP

NOTE: Elevations based on NAV88

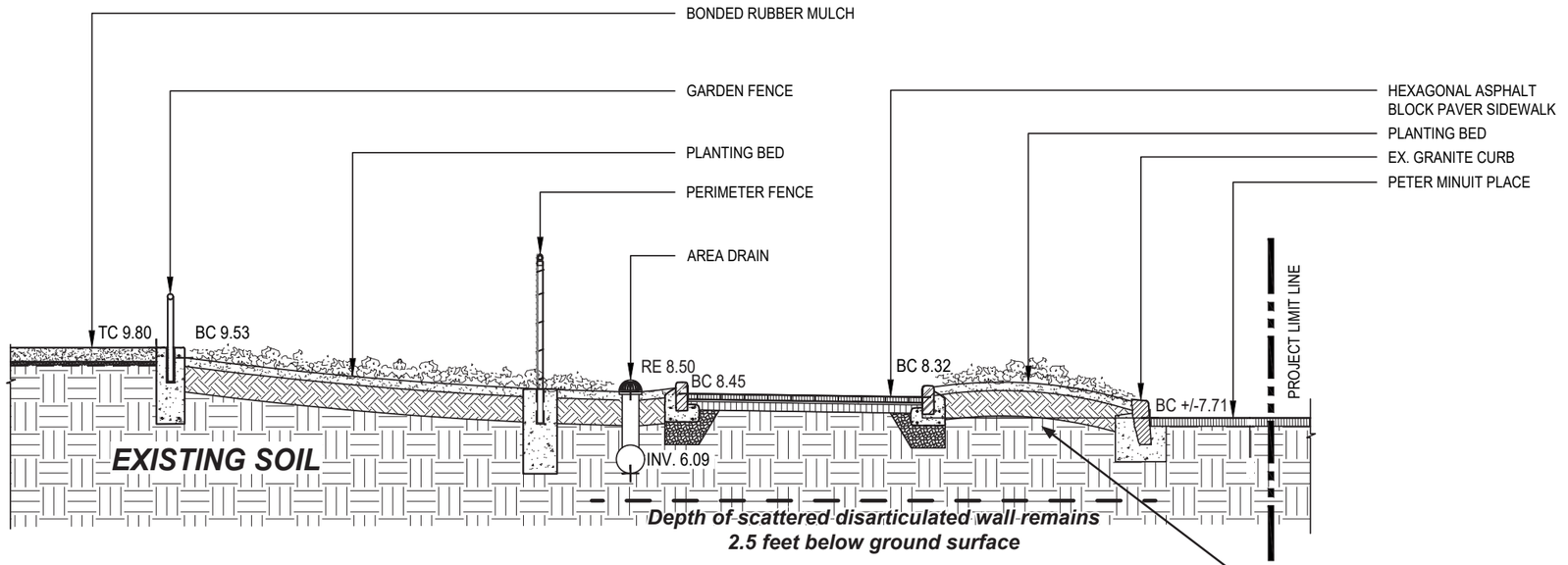
0 16 FEET

Redesigned Adventure Bluffs Test Pit 1 Supplementary Section

THE BATTERY PLAYSCAPE

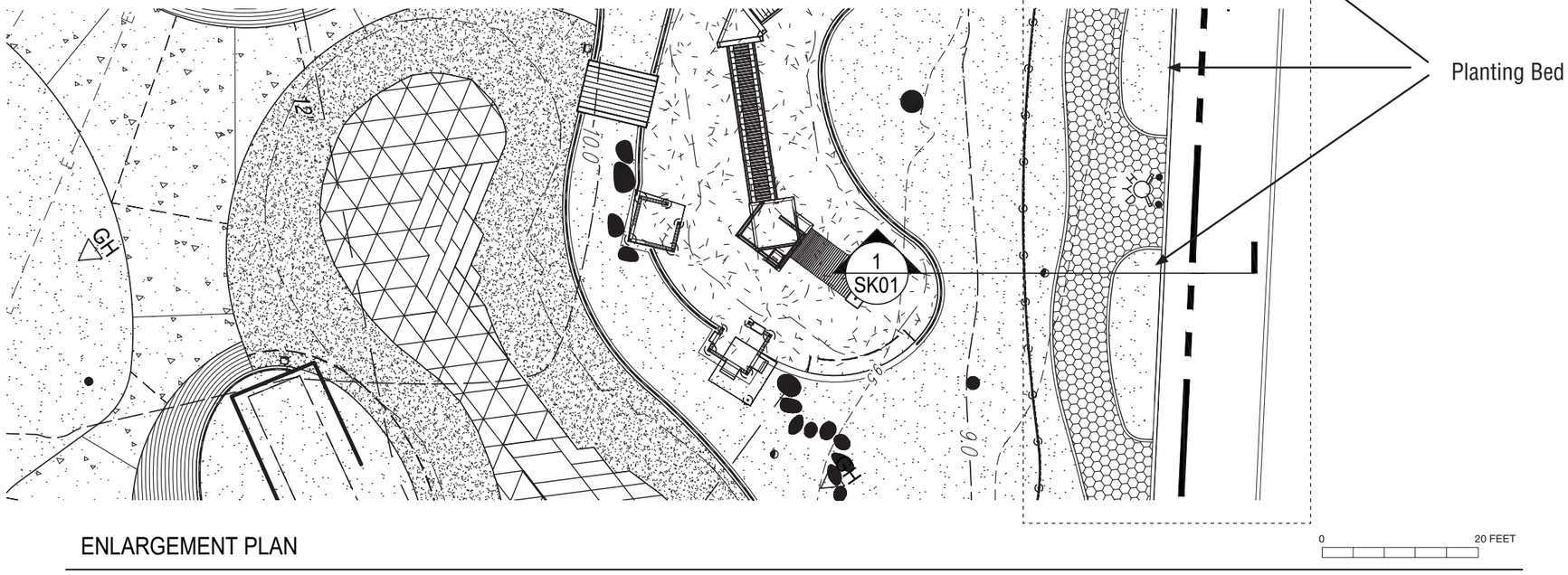
Figure 10b

11/2/2018



SECTION - IMAGINATION MARSH THROUGH PETER MINUIT PLACE

0 5 FEET



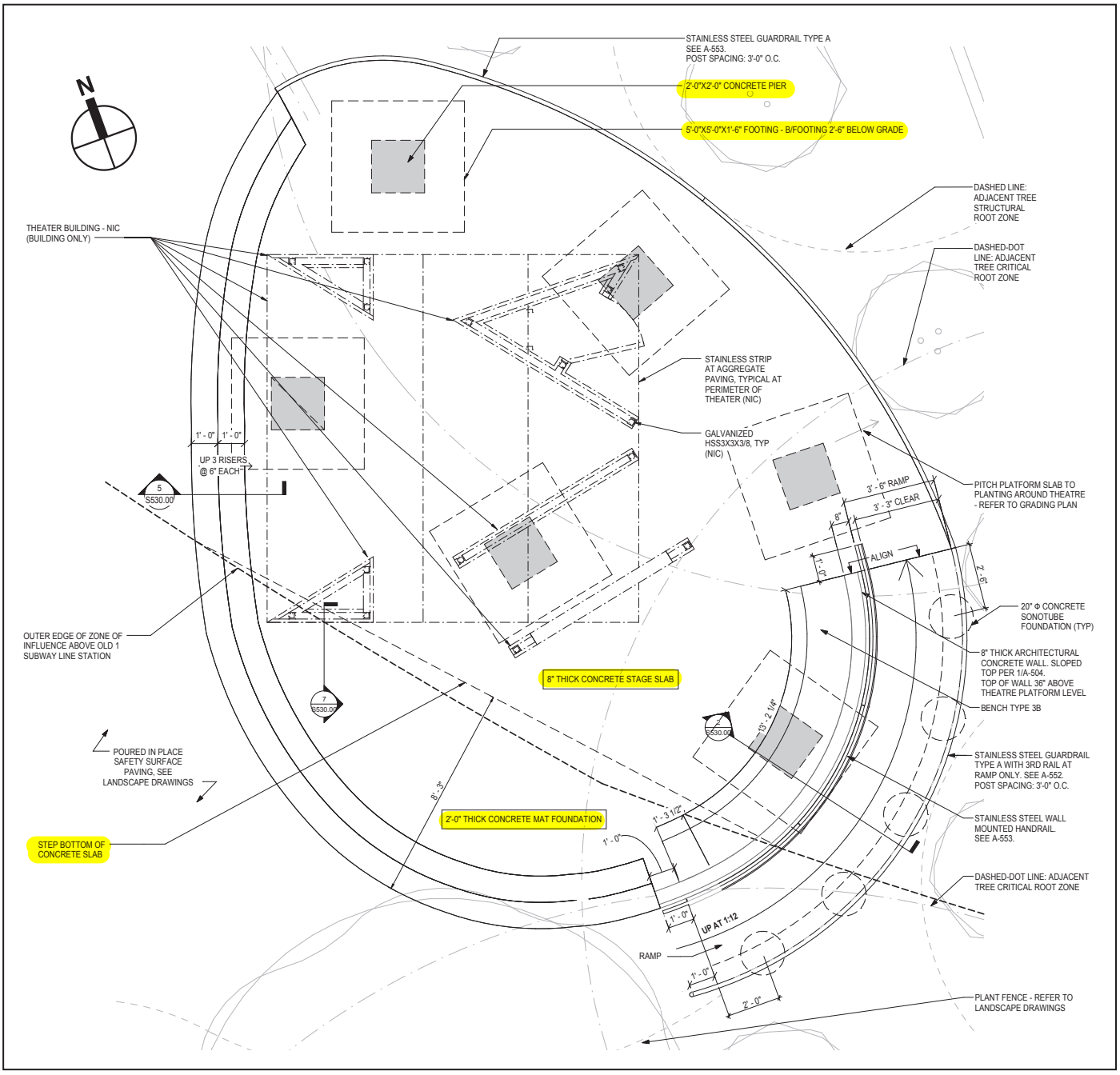
ENLARGEMENT PLAN

0 20 FEET

Source: STARR WHITEHOUSE Landscape Architects and Planners PLLC

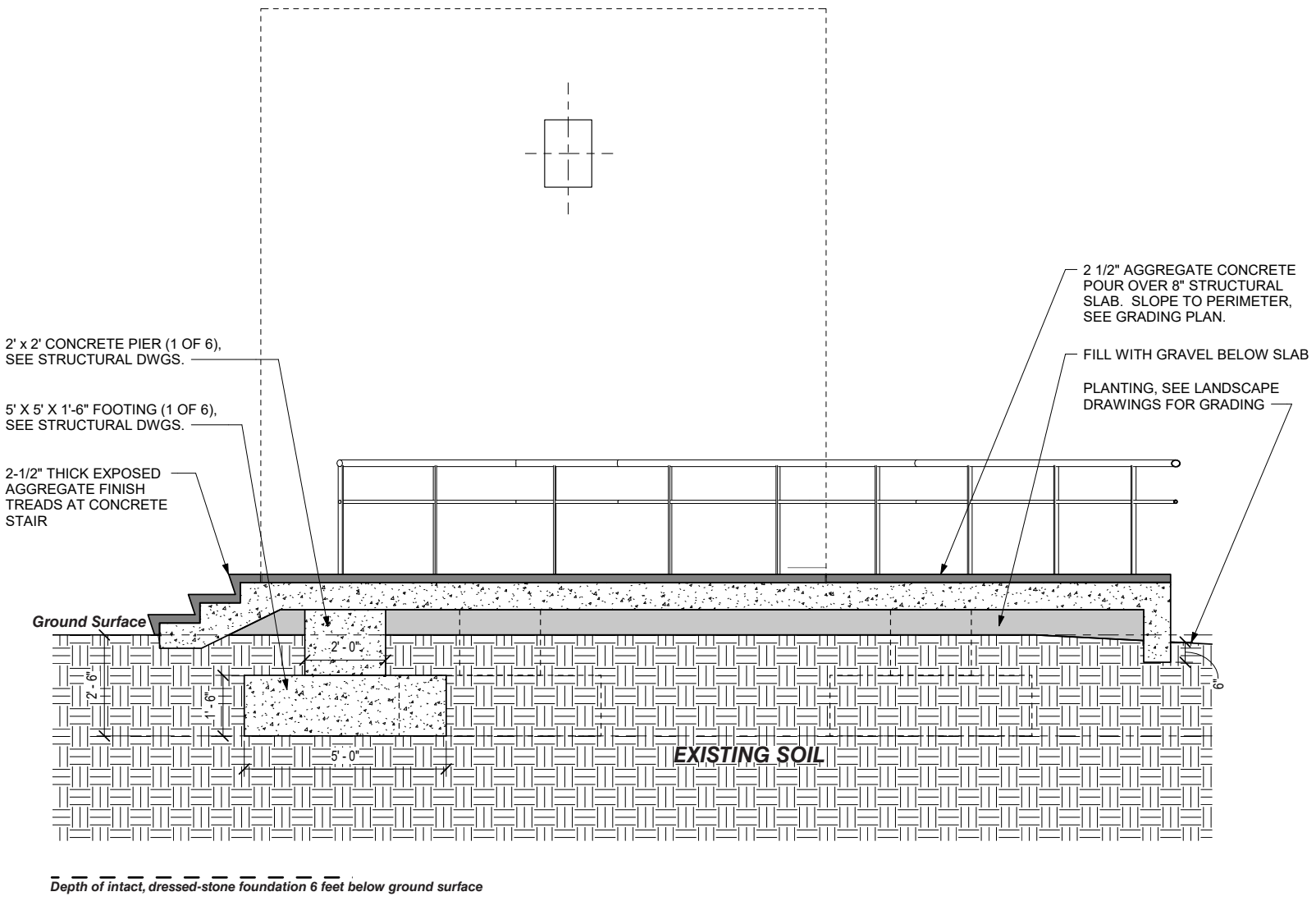
NOTE: Elevations based on NAV88

11/2/2018



Source: Thornton Tomasetti

Redesigned Jewel Box Theater Ground Plan



Source: BKSK Architects LLP

NOTE: Elevations based on NAV88

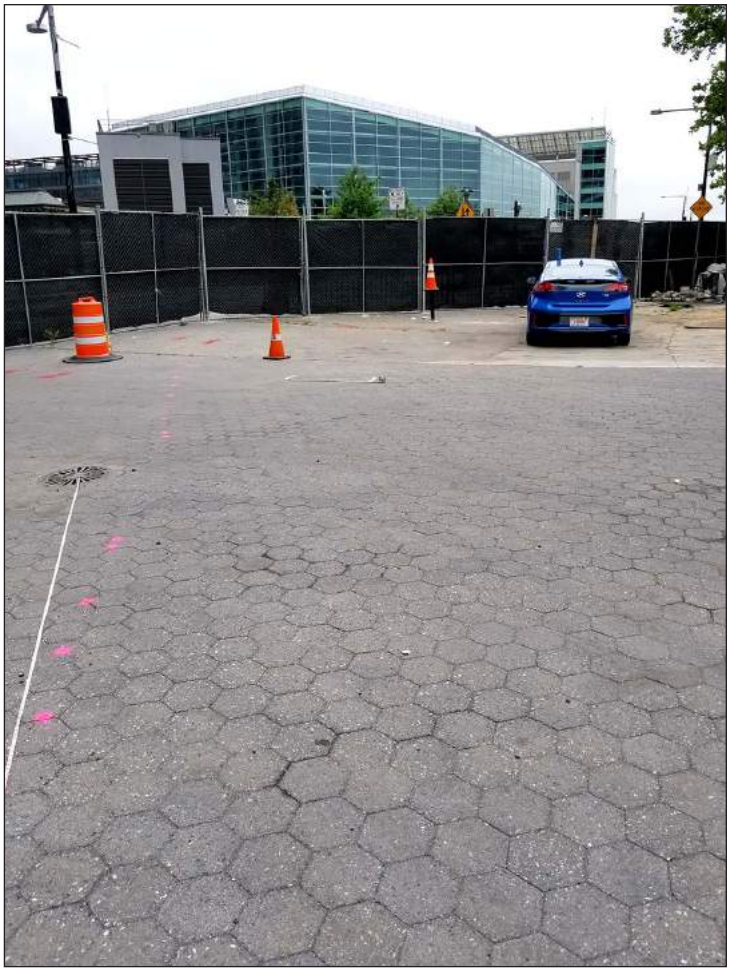
0 6 FEET

Redesigned Jewel Box Theater Cross Section

THE BATTERY PLAYSCAPE

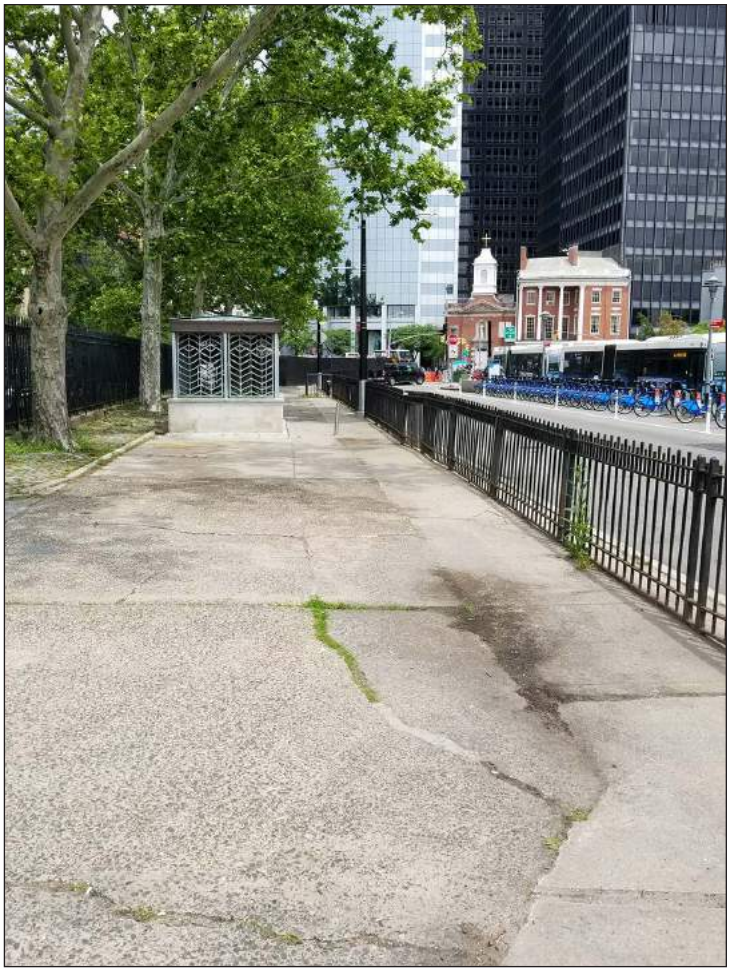
Figure 13

PHOTOGRAPHS

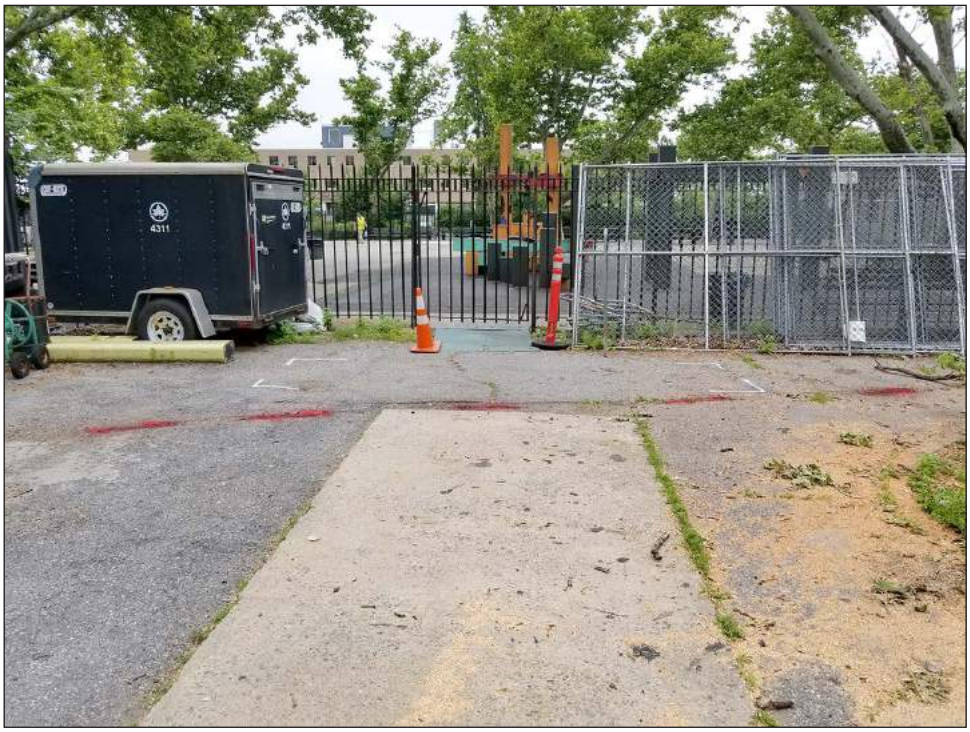


Facing east from the northern end of the Battery Playscape site, an area currently being used for parking and staging activities. TP1 was excavated in the foreground and TP2 was excavated in the background **1**

Facing north along the sidewalk lining Peter Minuit Plaza. TP3 was excavated in the sidewalk beyond the covered subway entrance to the left **2**

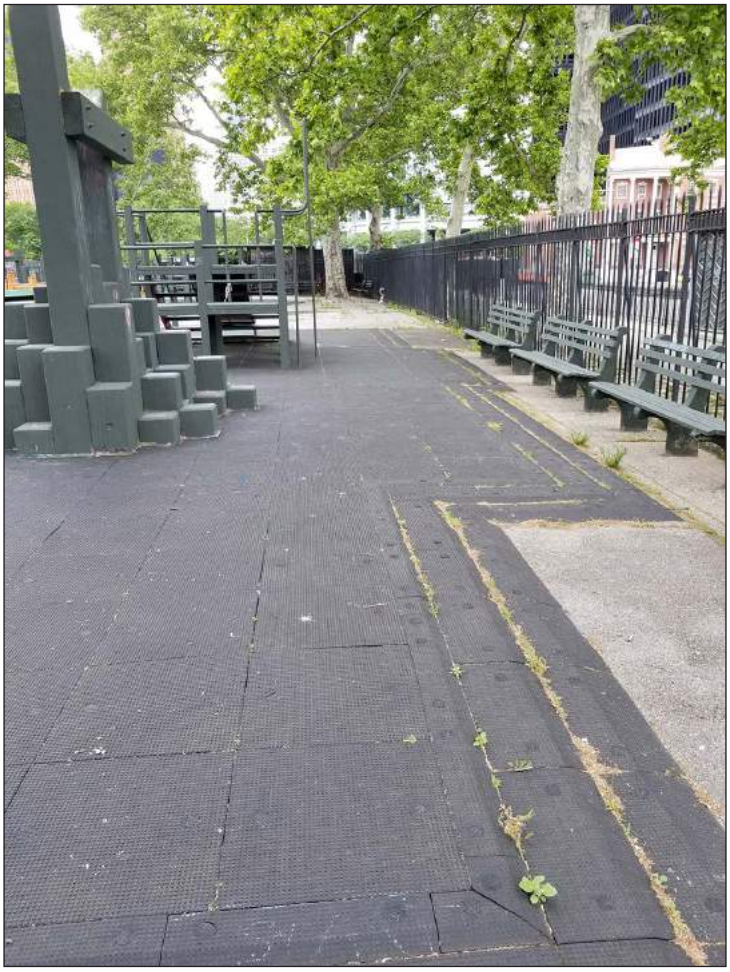


Facing north along the sidewalk lining Peter Minuit Plaza. TP4 was excavated in the foreground. A covered subway entrance is located further to the north **3**



Facing south from within the parking and staging area towards the iron fence lining the northern side of the playground area. TP6 was excavated in the area marked with white spray paint, just beyond the red spray paint marking the location of an electric line **4**

Facing southeast from the northern end of the fenced-in playground area. TP7 was excavated in the area marked with white spray paint. TP5 was excavated at the right edge of the photo and TP8 was excavated just beyond the climbing structure to the left **5**



Facing north from the southeast corner of the fenced-in playground area. TP9 was excavated on the far side of the rubber mat to the right of the climbing structure **6**

Facing north showing the excavation of TP1. Note concrete tiles and thick concrete paving in this area **7**

Facing west towards western wall of TP1. Note 6-foot-tall poured concrete pier in northwest corner of trench, disturbed soils, and fractured drainage line in southwest corner of trench. The trench floor is approximately 4 feet bgs in this photo **8**

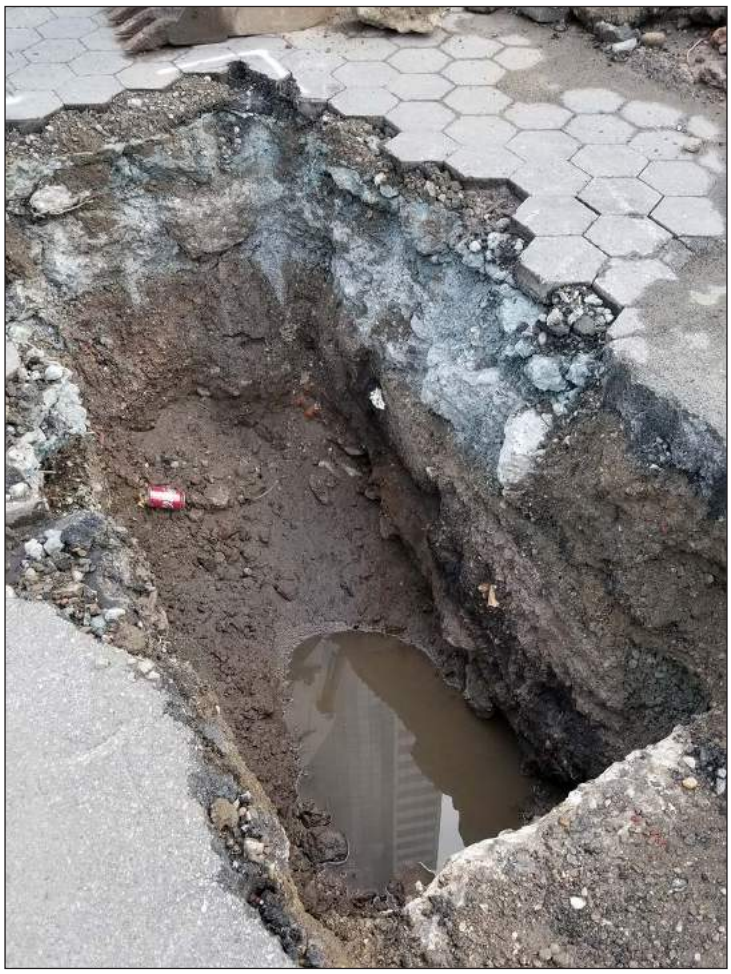
Facing north at the west end of TP1 showing the north wall profile and poured concrete pier to the left. Note that the floor of the trench is filling with water at a depth of about 6 feet bgs **9**

Facing north at the center of TP1 showing north wall profile. Note large rock on floor of trench that was one of several that may be evidence of the disarticulated battery wall **10**

11 Facing east showing the excavated center and partially excavated eastern end of TP1. Note presence of several disarticulated rocks on trench floor, the accumulation of standing water at a depth of about 5 feet bgs, and north-south oriented plank at the base of the balk that was likely used to construct the concrete footer visible at the surface of the eastern portion of the trench

12 Archaeologists using a 5-foot-long pry bar to probe into the floor of TP1 to determine the depth of a rock obstruction within the water-saturated clayey soils

Planview of the concrete footer and large hexagonal nuts discovered 1 foot bgs at the eastern end of TP1 **13**



Facing north showing western half of TP2 excavated to a depth of about 6 feet bgs. Note concrete tiles and thick concrete slab at the ground surface and accumulation of water on floor of trench **14**

Facing southeast showing eastern end of TP2 where excavation was stopped by a thick concrete slab or utility vault. Note accumulation of standing water at a depth of 5 feet bgs **15**

Facing southwest showing west wall of the southern half of TP3. Note clean fill with no evidence of wall remains and water accumulation on trench floor at about 6 feet bgs **16**

Facing northeast showing partial excavation of north half of TP3. Note scattered semi-dressed stones that may be disarticulated wall remains, two square, hand-excavated test pits, and earthenware drainage line on left side of photo **17**

Facing southeast showing partial excavation of north half of TP3. Note scattered semi-dressed stones that may be disarticulated wall remains, two square, hand-excavated test pits, and earthenware drainage line at bottom of photo **18**

Facing southwest showing deeper excavation of northern half of TP3. No additional stones were encountered to a depth of 6 feet bgs **19**

Facing north showing north wall of TP4. Note iron utility line along right side of trench, shallow, thick concrete pad on the left side of photo, mixed sandy fills, and water accumulating on trench floor at a depth of about 6 feet bgs **20**

Facing east showing the north end of TP5 and mixed sandy fills **21**

Facing north showing north wall profile of TP6. Note utility line to the left, clean sandy fills, and water accumulating on trench floor at a depth of about 6.5 feet bgs **22**

Facing south showing excavated TP7, which consisted of clean sandy fills **23**

Facing south showing south wall profile of TP8, which consisted of clean sandy fills **24**

Facing west showing the completion of excavation of TP8 **25**

Facing northeast showing the east wall of the southern half of TP9 **26**

Facing south showing southern half of TP9. Note utility line extending through trench along the right side of photo and the accumulation of water on the trench floor at a depth of 6 feet bgs. Not visible in this photo are two dressed stones encountered just below the water surface which appear to be part of an intact foundation wall

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APPENDIX A:
Artifact Catalogue

Trench	Provenience	Lev	Opening Depth (ft)	Closing Depth (ft)	Group	Class	Type	Object	Part	Material/ Ware/ Glass Color	Count	Production Date	Comments	Source	Original Bag Provenience	Lab bag number
2		1	3.67	3.67	Faunal	Consumption	Clam	Shell	Fragment	Shell	1				TP 2 3 feet 8	32
2		1	3.67	3.67	Ceramics	Personal	Hygiene	Chamber Pot	Rim/Body	Whiteware	3	1815-Present	Two fragments mend. Glazed and undecorated.	Azizi, et al. 1996	TP 2 3 feet 8 inches	33
3	North Half	1	1	6	Domestic	Heating/Cooking	Coal	Coal	Lump	Anthracite	1				TP 3 N 1/2 1-4'	39
3	South Half	1	2	3	Glass	Storage	Bottle	Bottle	Base	Aqua Glass	1		Slight patina		TP 3 (4-6') 2' 3" S 1/2	65
3	North Half	1	1	6	Personal	Smoking	Pipe	Pipe	Bowl/Foot	Ball Clay	1		Undecorated		TP 3 N 1/2 1-4'	58
3	North Half	1	1	6	Personal	Smoking	Pipe	Pipe	Stem	Ball Clay	9		Various sizes and lengths; One has a small portion of foot; All undecorated		TP 3 N 1/2 1-4'	57
3	North Half	1	1	6	Personal	Smoking	Pipe	Pipe	Stem/foot	Ball Clay	3		Undecorated, various sizes, unused		TP 3 N 1/2 2'5"	59
3	North Half	1	1	6	Personal	Smoking	Pipe	Pipe	Stem/foot	Ball Clay	1		Undecorated, used		TP 3 N 1/2 1'-2'	60
3	North Half	1	1	6	Glass	Storage	Bottle	Unident	Base	Clear Glass	1		Pontil mark on bottom, slight patina		TP 3 N 1/2 1-4'	54
3	South Half	1	2	3	Glass	Service	Drinking	Stemware	Base/Body	Clear Glass	2		Thick base and body fragments of beer mug, slight patina		TP 3 (4-6') 2' 3" S 1/2	63
3	South Half	1	2	3	Glass	Storage	Bottle	Bottle	Neck	Clear Glass	1		Clear glass with a hand painted blue rim on exterior; slight patina		TP 3 (4-6') 2' 3" S 1/2	64
3	North Half	1	1	6	Glass	Storage	Bottle	Bottle	Body	Green Glass	1		Heavy patina		TP 3 N 1/2 1'-2'	56
3	North Half	1	1	6	Glass	Storage	Bottle	Bottle	Body	Green Glass	1		Heavy patina		TP 3 N 1/2 1-4'	55
3	North Half	1	1	6	Architectural ?	Unident	Unident	Unident	Fragment	Iron	2		Both heavily corroded. One flat rectangular piece-possibly hoop piece from barrel? One possible nail fragment		TP 3 N 1/2 1-4'	35
3	North Half	1	1	6	Architectural	Construction	Building Material	Unident	Fragment	Mortar	2		Slightly greenish in color		TP 3 N 1/2 1-4'	36
3	North Half	1	1	6	Architectural	Construction	Building Material	Unident	Fragment	Mortar	4				TP 3 N 1/2 2.5' BGS Near Rocks	38
3	North Half	1	1	6	Ceramics	Dishes	Service	Hollowware	Body	Pearlware	1	1775-1815	Overglaze blue transfer print	Azizi, et al. 1996	TP 3 N 1/2 1-4'	46
3	North Half	1	1	6	Ceramics	Dishes	Service	Hollowware	Body	Porcelain	1	1740-1850	British? underglaze blue hand painted soft-bodied	Azizi, et al. 1996	TP 3 N 1/2 1-4'	47
3	South Half	1	2	3	Ceramics	Dishes	Service	Unident	Base	Porcelain	1	1740-1850	British underglaze blue hand painted soft-bodied. Single character maker's mark on bottom	Azizi, et al. 1996; Pers. Comm. Meta Janowitz	TP 3 (4-6') 3' S 1/2	62
3	North Half	1	1	6	Architectural	Utility	Plumbing	Utility Pipe	Fragment	Red bodied earthenware	2		Metallic glaze interior and exterior		TP 3 N 1/2 1-4'	34
3	North Half	1	1	6	Ceramics	Unident	Unident	Unident	Body	Red earthenware	2		1 fragment glazed interior and exterior, one fragment yellowish glaze on exterior.		TP 3 N 1/2 1-4'	44
3	North Half	1	1	6	Ceramics	Dishes	Service	Unident	Rim	Refined white earthenware	1	1815-1900; 1780-1895	Whiteware or Pearlware? Molded shell edged, green. Neoclassical edge. Whiteware? Pearlware?	Azizi, et al. 1996; Bates and Cooper 2014	TP 3 1'-2' N 1/2	53
3	North Half	1	1	6	Faunal	Consumption	Clam	Shell	Fragment	Shell	1				TP 3 N 1/2 1-4'	40
3	North Half	1	1	6	Architectural ?	Unident	Unident	Slag	Unident	Slag	1				TP 3 N 1/2 1-4'	37
3	North Half	1	1	6	Ceramics	Unident	Unident	Hollowware	Rim/Body	Slipware	3	1670-1795	Stafford, Slipware, Trail/Dot. (Originally 4 fragments, 1 missing)	Azizi, et al. 1996; Bagley	TP 3 N 1/2 1-4'	45
3	North Half	1	1	6	Ceramics	Dishes	Service	Hollowware	Body	Stoneware (Gray/buff bodied)	1	1720-1850	Salt-glazed. Etched cordon and painted with blue band. No glaze on interior. Westerwald style? German	Azizi, et al. 1996; Pers. Comm. Meta Janowitz	TP 3 N 1/2 1-4'	48
3	North Half	1	1	6	Ceramics	Dishes	Service	Hollowware	Body/rim	Tin Glazed earthenware	2	1640-1800	One White glazed with blue decoration-unidentifiable but possible floral-has dots. One undecorated. Both spalled.	Azizi, et al. 1996	TP 3 N 1/2 1-4'	50

Trench	Provenience	Lev	Opening Depth (ft)	Closing Depth (ft)	Group	Class	Type	Object	Part	Material/ Ware/ Glass Color	Count	Production Date	Comments	Source	Original Bag Provenience	Lab bag number
3	North Half	1	1	6	Ceramics	Furnishing	Decorative	Tile	Body	Tin Glazed earthenware	2	1640-1800	Two possible Delft tiles. One white glaze undecorated; one white glaze, purple decoration-unidentifiable motif. Both spalled.	Azizi, et al. 1996	TP 3 N 1/2 1-4'	51
3	North Half	1	1	6	Ceramics	Unident	Unident	Tin glaze	Body	Tin Glazed earthenware	9	1640-1800	Blue and white hand painted glaze fragments from Delftware.	Azizi, et al. 1996	TP 3 N 1/2 1-4'	52
3	North Half	1	1	6	Ceramics	Dishes	Service	Hollowware	Body/rim	Whiteware	2	1815-Present	Two whiteware fragments fused together. Undecorated and spalled.	Azizi, et al. 1996	TP 3 N 1/2 1-4'	49
3	North Half	1	1	4	Faunal	Consumption	Cod	Dorsal ray	Whole		2					Faunal-
3	North Half	1	1	4	Faunal	Consumption	Cow	Lumbar Vertebra	Transverse Process		1		Cleaved; flaking cortex			Faunal-17
3	North Half	1	1	4	Faunal	Consumption	Cow	Rib	Proximal fragment		3					Faunal-18
3	North Half	1	1	6	Faunal	Consumption	Cow	Scapula	Shaft section		1		sawed; stained			Faunal-20
3	North Half	1	1	4	Faunal	Consumption	Pig	Axis	Section		1		Unfused; cleaved			Faunal-
3	South Half	1	2	3	Faunal	Consumption	Cow	Left Mandible	Distal section		2		Chopped			Faunal-12
3	South Half	1	4	6	Faunal	Consumption	Cow	Proximal Phalange	Whole		1		1.5 years olf			Faunal-13
3	South Half	1	4	6	Faunal	Consumption	Large Mammal	Longbone	Section		1					Faunal-15
3	South Half	1	4	6	Faunal	Consumption	Pig	Femur	Partial		1		Neonate; carnivore gnaw marks			Faunal-
3	South Half; Backdirt	2	4	6	Personal	Smoking	Pipe	Pipe	Stem	Ball clay	3		Undecorated, various sizes, little to no use, thinnest piece-has mouthpiece attached		TP 3 (4-6') Backhoe Dirt S	71
3	South Half; Backdirt	2	4	6	Personal	Smoking	Pipe	Pipe	Stem	Ball clay	1		Undecorated, little to no use; Slightly oval in profile		TP 3 (4-6') 9" S 1/2 Backhoe dirt	72
3	South Half; Backdirt	2	4	6	Glass	Storage	Bottle	Wine/Champagne	Neck/Neck Finish	Olive Green Glass	1		Dark green molded, champagne finish, flattened string rim, wine/champagne bottle with patina	Jones, et al. 1989	TP 3 (4-6') Backhoe Dirt S 1/2	70
3	South Half; Backdirt	2	4	6	Ceramics	Dishes	Service	Unident	Body	Pearlware	1	1795-1825	Polychrome hand painted floral motif.	Azizi, et al. 1996	TP 3 (4-6') 9" S 1/2 Backhoe dirt	69
3	South Half; Backdirt	2	4	6	Ceramics	Dishes	Service	Mug	Body/base/ handle	Slipware	2	1670-1795	Stafford, Slipware, Trail/Dot on handle fragment; spalled base fragment.	Azizi, et al. 1996; Bagley	TP 3 (4-6') Backhoe Dirt S	67
3	South Half; Backdirt	2	4	6	Ceramics	Dishes	Service	Unident	Body/rim	Whiteware	2	1815-Present	Undecorated.	Azizi, et al. 1996	TP 3 (4-6') 9" S 1/2 Backhoe dirt	68
4		1	1	2	Personal	Smoking	Pipe	Pipe	Stem	Ball clay	1		Undecorated		TP 4 S 1/2 1-2'	77
4		1	1	2	Glass	Unident	Unident	Unident	Body	Clear Glass	1				TP 4 S 1/2 1-2'	76
4		1	1	2	Personal	Currency	Coin	Coin	Whole	Copper Alloy	1	1796-1807	Heavily corroded. Front marked, "LIBERTY" with silhouette of woman faceing right, with draped bust; back marked "ONE" laurel leaf pattern along either side; 29 MM diameter	CoinMintages n.d.; PCGS CoinFacts n.d.; USA Coin Book n.d.	TP 4 S 1/2 1-2'	78
4		1	1	2	Ceramics	Furnishing	Decorative	Flowerpot	Rim, base and body	Red earthenware	6		Red earthenware flower pot fragments. Two rim fragments, three body fragments, and one base fragment.		TP 4 S 1/2 1-2'	73
4		1	1	2	Ceramics	Dishes	Service	Unident	body	Stoneware (Gray/buff bodied)	1		Sale glaze. Hand painted blue glaze		TP 4 S 1/2 1-2'	75
4		1	1	2	Ceramics	Dishes	Service	Unident	body	Whiteware	1	1815-Present	Undecorated, spalled	Azizi, et al. 1996	TP 4 S 1/2 1-2'	74
4		2	2	3	Architectural	Construction	Window	Flat Glass	Fragment	Aqua Glass	1		Light patina		TP 4 2'6"	80

Trench	Provenience	Lev	Opening Depth (ft)	Closing Depth (ft)	Group	Class	Type	Object	Part	Material/ Ware/ Glass Color	Count	Production Date	Comments	Source	Original Bag Provenience	Lab bag number
4		2	2	3	Personal	Smoking	Pipe	Pipe	Stem	Ball clay	1		Undecorated and unused		TP 4 2'6"	95
4		2	2	3	Glass	Unident	Unident	Unident	Body	Clear Glass	1		Thick, heavy patina		TP 4 2'6"	94
4		2	2	3	Glass	Storage	Bottle	Bottle	Base/Body	Dark Green Glass	2		Heavy patina		TP 4 2'6"	93
4		2	2	3	Ceramics	Dishes	Service	Hollowware	Body/Base	Pearlware	5	1775-1840	Undecorated. Possibly 3 vessels: two bowls, one plate. Two pieces one bowl	Azizi, et al. 1996	TP 4 2'6"	86
4		2	2	3	Ceramics	Dishes	Service	Hollowware	Rim	Pearlware	2	1800-1830	Green molded shell edge ware. Neoclassical edge-ware.	MACLab 2002f	TP 4 2'6"	85
4		2	2	3	Ceramics	Dishes	Service	Hollowware	Body	Pearlware	1	1815-1830	Cobalt blue hand painted floral pattern with large brush strokes	MacLab 2002d	TP 4 2'6"	84
4		2	2	3	Ceramics	Dishes	Service	Hollowware	Body	Porcelain	1	c. 1785-1853	Blue hand painted underglaze in Chinese motif. Soft paste porcelain. Chinese export porcelain.	MacLab 2002c	TP 4 between 2-3'	90
4		2	2	3	Ceramics	Dishes	Service	Hollowware	Rim	Refined white earthenware	1	1780-1895	Blue molded shell edge ware. Neoclassical edge-ware.	MACLab 2002f	TP 4 between 2-3'	87
4		2	2	3	Ceramics	Dishes	Service	Hollowware	Body	Slipware	1	1670-1795	Stafford, Slipware, Trail/Dot	Azizi, et al. 1996; Bagley	TP 4 2'6"	83
4		2	2	3	Ceramics	Storage	Unident	Unident	Body/Handle	Stoneware (Buff bodied)	2	1720-1850?	Buff-bodied salt glaze stoneware handle and body fragment. Indeterminate cobalt blue motif on handle and body fragment. Body fragment, lighter gray exterior glaze, orange brown wash interior. Locally made?	Azizi, et al. 1996	TP 4 between 2-3'	91
4		2	2	3	Ceramics	Storage	Unident	Unident	Body	Stoneware (Gray bodied)	1	1720-1850?	Gray-bodied salt glaze stoneware crock, jar or jug with indeterminate cobalt blue motif. Light brown wash interior. Locally	Azizi, et al. 1996	TP 4 between 2-3'	92
4		2	2	3	Ceramics	Dishes	Service	Hollowware	Body	Tin Glazed earthenware	2	1640-1800	White glazed with blue floral decoration flaked from ceramic fragment listed above in same context	Azizi, et al. 1996	TP 4 2'6"	82
4		2	2	3	Ceramics	Dishes	Service	Hollowware	Body	Tin Glazed Earthenware	1	1640-1800	White glazed with blue floral decoration	Azizi, et al. 1996	TP 4 2'6"	81
4		2	2	3	Ceramics	Dishes	Service	Hollowware	Body	Whiteware	1	1815-Present	Undecorated. Slightly curved and thick.	Azizi, et al. 1996	TP 4 between 2-3'	88
4		2	2	3	Ceramics	Dishes	Service	Hollowware	Rim	Whiteware	1	1819-1836	"Crossing the Stream" Pattern: man helping woman and child cross stream, pastoral setting floral/botanical border. Blue underglaze transfer-print; Pastoral scenes hit peak production from 1819-1836 (Samford 1997)	Transferware Collector's Club Database n.d.; Samford 1997; MACLAb 2002b	TP 4 between 2-3'	89
4		2	2	3	Faunal	Consumption	Cow	Radius	Proximal fragment		1		1 year old; stained			Faunal-21
4	Backdirt	3	3	4.5	Architectural	Construction	Fastener	Nail/Stake	Whole	Iron	1		Highly corroded		TP 4 (0-2') Backhoe Fill 3'-	96
4	Backdirt	3	3	4.5	Ceramics	Dishes	Service	Unident	Body	Pearlware	1	1795-1825	Hand painted underglazed. Brown line decoration similar to polychrome painted pearlware teacups and saucers found at South Ferry	Azizi, et al. 1996; AKRF, et al. 2012 (Figure 6-21)	TP 4 (0-2') Backhoe Fill 3'-4'6"	104
4	Backdirt	3	3	4.5	Ceramics	Dishes	Service	Bowl?	Rim	Pearlware	1	1800-1830	Green molded shell edge ware. Neoclassical edge-ware.	MACLab 2002f	TP 4 (0-2') Backhoe Fill 3'-	102
4	Backdirt	3	3	4.5	Ceramics	Dishes	Service	Unident	Rim	Pearlware	1	18th-19th century	Transfer printed blue	Azizi, et al. 1996; MACLab	TP 4 (0-2') Backhoe Fill 3'-	103
4	Backdirt	3	3	4.5	Unident	Unident	Unident	Unident	Body/rim	Red bodied earthenware	1		Brown glaze on interior; Slightly concave shape; possible utility pipe?		TP 4 (0-2') Backhoe Fill 3'-	105
4	Backdirt	3	3	4.5	Ceramics	Dishes	Service	Unident	Rim, base and body	Red earthenware	1	1750-1810	Glazed slipped interior, thick.	AKRF, et al. 2012	TP 4 (0-2') Backhoe Fill 3'-	99

Trench	Provenience	Lev	Opening Depth (ft)	Closing Depth (ft)	Group	Class	Type	Object	Part	Material/ Ware/ Glass Color	Count	Production Date	Comments	Source	Original Bag Provenience	Lab bag number
4	Backdirt	3	3	4.5	Ceramics	Storage	Unident	Unident	Body	Stoneware (Gray bodied)	1		Unglazed bisque, no decoration.		TP 4 (0-2') Backhoe Fill 3'-	100
4	Backdirt	3	3	4.5	Ceramics	Storage	Unident	Unident	Body	Stoneware (Gray/buff bodies)	1		Gray/buff bodied salt glazed stoneware with brown slip, handle missing. Possibly a jug?		TP 4 (0-2') Backhoe Fill 3'-4'6"	98
4	Backdirt	3	3	4.5	Ceramics	Dishes	Service	Plate	Rim	Stoneware (white salt-glazed)	1	1740-1775/83	Molded, Barley pattern, British Staffordshire.	Azizi, et al. 1996; MACLAb 2002f; Arendt, et al. 2017	TP 4 (0-2') Backhoe Fill 3'-4'6"	101
4	Backdirt	3	3	4	Faunal	Consumption	Medium Mammal	Rib	Shaft section		1		sawed; stained			Faunal-23
4	Backdirt	3	3	4	Faunal	Consumption	Sheep	Humerus	Whole		1		3.5 years olf; cut marks			Faunal-
4	Backdirt	3	3	4	Faunal	Consumption	Sheep	Radius	Proximal section		1		0.25 years old; stained			Faunal-22
5		1	Asphalt bedding in wall	Asphalt bedding in wall	Ceramics	Dishes	Service	Unident	Rim	Refined white earthenware	1	1800-1830s	Whiteware or Pearlware? Neoclassical molded edgeware, blue.	MACLab 2002f	TR 5 Asphalt bedding in wall.	106
5		2	2	4	Domestic	Heating/Cooking	Coal	Coal	Lump	Anthracite	1				TR 5 2'-4' Artifact Rich Fill Layer	111
5		2	2	4	Personal	Smoking	Pipe	Pipe	Stem	Ball Clay	1	1846-1891?	Unused. Possible engraved "…O…" Possibly attributed to McDougall Glasgow?	William and Mary Center for Archaeological Research (2002) and Museums Vicitoria Collections	TR 5 2'-4' Artifact Rich Fill Layer	128
5		2	2	4	Personal	Smoking	Pipe	Pipe	Stem	Ball Clay	3		Various sizes, undecorated and unused		TR 5 2'-4' Artifact Rich Fill Layer	126
5		2	2	4	Personal	Smoking	Pipe	Pipe	Stem/bowl /foot	Ball Clay	1		Undecorated and unused		TR 5 2'-4' Artifact Rich Fill Layer	127
5		2	2	4	Glass	Service	Drinking	Stemware	Stem/base	Clear Glass	2		Light patina, pontil mark on base bottom		TR 5 2'-4' Artifact Rich Fill Layer	125
5		2	2	4	Glass	Storage	Bottle	Bottle	Base/Body	Cobalt Blue Glass	1	1848?	Embossed: "…Y 1848"		TR 5 2'-4' Artifact Rich Fill Layer	124
5		2	2	4	Glass	Storage	Bottle	Bottle	Base	Dark Green Glass	1		High push up, pontil and heavy patina		TR 5 2'-4' Artifact Rich Fill Layer	123
5		2	2	4	Glass	Storage	Bottle	Bottle	Base	Dark Green Glass	1		Shallow push up, possibly molded, light patina			
5		2	2	4	Glass	Storage	Bottle	Bottle	Body	Dark Green Glass	1		light patina			
5		2	2	4	Architectural	Construction	Fastener	Nail?	Fragment	Iron	1		Fragment		TR 5 2'-4' Artifact Rich Fill Layer	108
5		2	2	4	Ceramics	Dishes	Service	Unident	Rim/Base	Pearlware	1	1775-1840	Undecorated.	Azizi, et al. 1996	TR 5 2'-4' Artifact Rich Fill Layer	119
5		2	2	4	Architectural	Utility	Plumbing	Utility Pipe	Fragment (rim)	Red bodied earthenware	1		Dark brown glaze on interior that stops approximately 30 cm from rim, thick. Exterior unglazed, mortar inclusions,		TR 5 2'-4' Artifact Rich Fill Layer	109
5		2	2	4	Architectural?	Unident	Unident	Unident	Fragment	Red bodied earthenware	1		Dark brown glaze on interior, spalled on exterior, could be part of other red bodied earthenware possible utility pipe in same context		TR 5 2'-4' Artifact Rich Fill Layer	122
5		2	2	4	Ceramics	Dishes	Service	Unident	Body	Refined white earthenware	5	1875-1900	Molded ribbed motif	MacLab 2002a	TR 5 2'-4' Artifact Rich Fill Layer	120

Trench	Provenience	Lev	Opening Depth (ft)	Closing Depth (ft)	Group	Class	Type	Object	Part	Material/ Ware/ Glass Color	Count	Production Date	Comments	Source	Original Bag Provenience	Lab bag number
5		2	2	4	Ceramics	Dishes	Service	Unident	Rim	Refined white earthenware	1	1875-1900	Molded rib and vine pattern.	MACLab 2002a	TR 5 2'-4' Artifact Rich Fill Layer	121
5		2	2	4	Faunal	Consumption	Clam	Shell	Fragment	Shell	1		Hard shell clam		TR 5 2'-4' Artifact Rich Fill Layer	113
5		2	2	4	Faunal	Consumption	Oyster	Shell	Fragment	Shell	1		Oyster shell		TR 5 2'-4' Artifact Rich Fill Layer	114
5		2	2	4	Architectural?	Decoration	Unident	Possible Finial?	Finial	Stone	1		Possible worked stone finial for decorative landscape/architectural item? Possible yellow jasper? 1915 Galloway photo of Battery Park shows fencing around grass with round finials at top of posts	Galloway 1915	TR 5 2'-4' Artifact Rich Fill Layer	110
5		2	2	4	Ceramics	Storage?	Unident	Unident	Fragment	Stoneware (Gray bodied salt glazed)	1		Light gray interior and exterior, undecorated.		TR 5 2'-4' Artifact Rich Fill Layer	115
5		2	2	4	Ceramics	Storage?	Unident	Unident	Fragment	Stoneware (Gray bodied)	1	1740s-1880s	Gray-bodied stoneware with smooth brown slip on interior and exterior, possible Jackfield ?	Azizi, et al. 1996; MACLab 2002h	TR 5 2'-4' Artifact Rich Fill Layer	116
5		2	2	4	Ceramics	Dishes	Service	Unident	Body	Stoneware (white salt glazed)	1	1740-1775(83)	Undecorated	Azizi, et al. 1996; MACLab 2002e; Arendt, et al. 2017	TR 5 2'-4' Artifact Rich Fill Layer	118
5		2	2	4	Ceramics	Dishes	Service	Unident	Body	Whiteware	4	1815-Present	Undecorated, spalled	Azizi, et al. 1996	TR 5 2'-4' Artifact Rich Fill Layer	117
5		2	2	4	Architectural	Construction	Building material	Brick	Fragment	Yellow coarse earthenware	1	17th-18th C	Almost complete brick	AKRF, et al. 2012	TR 5 2'-4' Artifact Rich Fill Layer	107
5		2	2	4	Faunal	Consumption	Cow	Calcaneus	Partial		1		3 years old			Faunal-
5		3	3	3	Personal	Smoking	Pipe	Pipe	Stem	Ball Clay	1		Undecorated, unused		TR 5 Artifacts in fill ~3'	138
5		3	3	3	Architectural	Construction	Fastener	Nail	Whole	Iron	1		Highly corroded		TR 5 Artifacts in fill ~3'	129
5		3	3	3	Ceramics	Dishes	Service	Hollowware	Body/Base	Pearlware	2	1775-1840	Undecorated. One fragment has molded foot ring-plate?	Azizi, et al. 1996.	TR 5 Artifacts in fill ~3'	131
5		3	3	3	Ceramics	Dishes	Service	Hollowware	Body/Base	Refined white earthenware	2	1815-1915	Pearlware or whiteware? Transfer-print, under, blue. Unidentifiable motif.	Azizi, et al. 1996.	TR 5 Artifacts in fill ~3'	132
5		3	3	3	Ceramics	Dishes	Service	Hollowware	Rim	Refined white earthenware	1	1860-1900	Molded wheat pattern, spalled on one side.	MACLab 2002a	TR 5 Artifacts in fill ~3'	134
5		3	3	3	Ceramics	Dishes	Service	Hollowware	Body	Refined white earthenware	4	1875-1900	Molded ribbed motif	MacLab 2002a	TR 5 Artifacts in fill ~3'	133
5		3	3	3	Ceramics	Storage	Unident	Unident	Body/base	Stoneware (Gray bodied)	1	1690-1775?	Gray-bodied salt glazed stoneware with light brown slip interior and exterior-possible locally made or English Brown Stoneware used for bottles.	MACLab 2002g	TR 5 Artifacts in fill ~3'	135
5		3	3	3	Ceramics	Storage	Unident	Unident	Body/base	Stoneware (Gray bodied)	1	1800-1840	Gray-bodied salt glazed stoneware with brown slip interior and exterior, possible Albany slip, Top to a cover? Lead glazed?	Azizi, et al. 1996.	TR 5 Artifacts in fill ~3'	136
5		3	3	3	Ceramics	Storage	Unident	Unident	Body/base	Stoneware (Gray bodied)	1	1800-1840	Gray-bodied salt glazed stoneware with interior brown slip-possible Albany slip, exterior light gray, undecorated. Clear lead glaze on interior?	Azizi, et al. 1996.	TR 5 Artifacts in fill ~3'	137
5		3	3	3	Ceramics	Dishes	Service	Hollowware	Body	Whiteware	3	1815-Present	Undecorated, thick	Azizi, et al. 1996	TR 5 Artifacts in fill ~3'	130
5		4	3.34	3.34	Personal	Smoking	Pipe	Pipe	Stem	Ball Clay	1		Undecorated stem, unused		T5 3'4" Back dirt	148
5		4	3.34	3.34	Ceramics	Dishes	Service	Hollowware	Rim/Base	Pearlware	2	1815-1830	Hand painted cobalt blue underglazed fragments. Rim spalled.	MACLab 2002d	T5 3'4" Back dirt	142

Trench	Provenience	Lev	Opening Depth (ft)	Closing Depth (ft)	Group	Class	Type	Object	Part	Material/ Ware/ Glass Color	Count	Production Date	Comments	Source	Original Bag Provenience	Lab bag number
5		4	3.34	3.34	Ceramics	Dishes	Service	Hollowware	Rim	Pearlware	1	1840-1860s	Unscalloped impressed edgeware, blue, spalled.	MACLab 2002f	T5 3'4" Back dirt	141
5		4	3.34	3.34	Ceramics	Dishes	Service	Hollowware	Body	Pearlware	1	c1790-1820	Possible blue banded annular ware, small fragment-spalled	Texas A&M n.d.	T5 3'4" Back dirt	143
5		4	3.34	3.34	Ceramics	Dishes	Service	Hollowware	Base	Refined white earthenware	1	1815-Present/1840-Present	Undecorated molded base fragment	Azizi, et al. 1996	T5 3'4" Back dirt	140
5		4	3.34	3.34	Ceramics	Dishes	Service	Hollowware	Base	Refined white earthenware	2	1875-1900	Molded vertical ribbed motif, undecorated	Azizi, et al. 1996; MAC Lab	T5 3'4" Back dirt	144
5		4	3.34	3.34	Ceramics	Dishes	Service	Hollowware	Base	Refined white earthenware	2	1875-1900	Molded horizontal ribbed motif, undecorated	Azizi, et al. 1996; MAC Lab	T5 3'4" Back dirt	145
5		4	3.34	3.34	Ceramics	Dishes	Service	Hollowware	Base	White Granite	1	1840-1915	Thick, Ironstone molded rim base fragment with undeterminable blue transfer print on interior	Azizi, et al. 1996	T5 3'4" Back dirt	139
5		4	3.34	3.34	Ceramics	Dishes	Service	Hollowware	Base	White Granite	1	1840-Present	Black transfer-printed maker's mark on bottom of base marked with "...INA". Right side of mark, with possible unicorn above "...INA". Possibly another James Edwards & Sons piece? Thicker, spalled		T5 3'4" Back dirt	147
5		4	3.34	3.34	Ceramics	Dishes	Service	Hollowware	Base	White Granite	1	1842-1882	Embossed black transfer-printed maker's mark on bottom of base marked "JAME..." with back portion on reclining lion. Spalled. Possibly attributed to James Edwards & Sons from Dalehall Pottery, Burslem, Staffordshire, which used a similar mark	James Edwards n.d.	T5 3'4" Back dirt	146
5		5	4	6	Ceramics	Dishes	Service	Hollowware	Base	Creamware?	1	1762-1820	Molded base with foot, spalled, undecorated	Azizi, et al. 1996	TR 5 4'-6' Back dirt Finds	151
5		5	4	6	Ceramics	Dishes	Service	Hollowware	Rim	Pearlware	2	1800-1830	Green molded shell edge ware. Neoclassical edge-ware. Possible top to tureen? Sent pictures to Meta Janowitz for more information-8/2/18. Meta Janowitz said it could be top to a compote dish or tureen 8/2/18.	MACLab 2002f	TR 5 4'-6' Back dirt Finds	155
5		5	4	6	Architectural?	Unident	Unident	Unident	Fragment	Red bodied earthenware	2		Dark brown glaze on interior, could be part of other red bodied earthenware possible utility pipe in same context		TR 5 4'-6' Back dirt Finds	156
5		5	4	6	Ceramics	Dishes	Service	Hollowware	Rim	Refined white earthenware	2	1815-1915	Pearlware or whiteware? Undecorated, spalled on exterior.	Azizi, et al. 1996	TR 5 4'-6' Back dirt Finds	154
5		5	4	6	Ceramics	Storage	Unident	Jar	Rim	Stoneware (Gray bodied)	1		Gray salt-glazed stoneware, undecorated. The fragment has clear glaze on interior and exterior. Molded with flat lip on rim.		TR 5 4'-6' Back dirt Finds	152
5		5	4	6	Ceramics	Storage	Unident	Jar	Rim	Stoneware (Gray bodied)	1		Gray bodied salt-glazed stoneware, undecorated. The rim fragment has light brown slip on interior.		TR 5 4'-6' Back dirt Finds	153
5	Backdirt	5	4	6	Faunal	Consumption	Cow	Rib	Distal section		1		Sawed			Faunal-44
5	Backdirt	5	4	6	Faunal	Consumption	Cow	Rib	Proximal section		1		Chopped; eroded cortex			Faunal-43
5	Backdirt	5	4	6	Faunal	Consumption	Cow	Rib	Shaft section		2		sawed			Faunal-42
5	Backdirt	5	4	6	Faunal	Consumption	Cow	Ulna	Proximal section		1		3.5 years old; sawed			Faunal-41
5	Backdirt	5	4	6	Faunal	Consumption	Pig	Radius	Partial		1		1 year old			Faunal-

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5	Backdirt	5	4	6	Faunal	Consumption	Pig	Rib	Distal section		1		Chopped			Faunal-45
5	Backdirt	5	4	6	Faunal	Consumption	Sheep	Elbow - Humerus, Radius	Joint		2		0.25 years old; chopped; carnivore gnawmarks; weathering present			Faunal-47
5	South Half, Backdirt	6	n/a	n/a	Personal	Smoking	Pipe	Pipe	Stem	Ball Clay	1		Undecorated stem, unused		Tr 5 S 1/2 Back dirt	158
5	South Half, Backdirt	6	n/a	n/a	Faunal	Consumption	Sheep	Tibia	Proximal section		1		3.5 years old; chopped			Faunal-39
6		1	1	1	Faunal	Consumption	Oyster	Shell	Whole	Fragment	1				TP 6 1ft East End	
6		1	1	1	Glass	Storage	Bottle	Bottle	Body	Green Glass	1		Light patina		TP 6 1ft East End	
6	East End	1	1	1	Architectural	Construction	Building Material	Unident	Fragment	Mortar	1				TP 6 1ft East End	
6		1	1	1	Ceramics	Dishes	Service	Hollowware	Body	Pearlware	2	1795-1825	One undecorated and spalled fragment. One underglazed, polychrome hand painted-blue linear design and green dot	Azizi, et al. 1996	TP 6 1ft East End	
6		1	1	1	Ceramics	Dishes	Service	Hollowware	Rim	Pearlware	1	1819-1836	Transfer print, under, blue pastoral motif.	MACLab 2002b	TP 6 1ft East End	
6		1	1	1	Ceramics	Dishes	Service	Hollowware	Rim	White Granite	1	1840-Present	Thick, undecorated.	Azizi, et al. 1996	TP 6 1ft East End	
6	Backdirt	2	n/a	n/a	Glass	Grooming/health	Medicine	Bottle	Whole	Cornflower Blue Glass	1	After 1888	Side embossed: "BROMO CAFFEINE"; base embossed: "D"; Approx. 3 1/8" tall, 1" diameter mouth; Possible cork top with hand-blown finish; Light patina	Glass Bottle Marks n.d.; Lockhart, et al. 2014; Munsey 2011	TP 6 Back dirt	
6	Backdirt	2	n/a	n/a	Ceramics	Dishes	Service	Hollowware	Base/body	White Granite	3	1840-Present	Thick, undecorated	Azizi, et al. 1996	TP 6 Back dirt	
6	Backdirt	3	n/a	n/a	Faunal	Consumption	Pig	Femur	Shaft		1		Cut marks on body			Faunal-
6	Backdirt	4	n/a	n/a	Faunal	Consumption	Cow	Tibia	Distal section		2		Neonate; cleaved			Faunal-26
6	Backdirt	5	n/a	n/a	Faunal	Consumption	Cow	Left Mandible	Proximal fragment		1					Faunal-27
6	Backdirt	6	n/a	n/a	Faunal	Consumption	Pig	Atlas	Whole		1		Very large			Faunal-
7		1	2	5	Personal	Smoking	Pipe	Pipe	Stem	Ball clay	1		Undecorated, unused		Tr 7 2'	
7		1	2	5	Personal	Smoking	Pipe	Pipe	Stem	Ball clay	1		molded; design of star pattern wrapping end			
7		1	2	5	Personal	Smoking	Pipe	Pipe	Stem	Ball clay	1		Molded; has oak stem and leaf design and a ".P", start of fluting for bowl (missing); possibly Peter Dorni style	Dallal, Pers. Comm. 2018	TP 7 2'-5'	
7		1	2	5	Faunal	Consumption	Mammal	Unident	Long bone	Bone	3		Not included in faunal analysis		TP 7 2'-5'	
7		1	2	5	Glass	Service	Drinking	Stemware	Stem/base	Clear Glass	1		Light patina, pontil mark on base bottom		TP 7 2'-5'	
7		1	2	5	Glass	Storage	Bottle	Bottle	Base/body	Green/Olive Green Glass	1		Heavy patina, conical push up, free-blown-no mold seams; Possible wine bottle		TP 7 2'-5'	
7		1	2	5	Ceramics	Dishes	Service	Hollowware	Body/Base	Pearlware	2	1775-1820	Hand painted, underglaze, blue floral	Azizi, et al. 1996	TP 7 2'-5'	
7		1	2	5	Ceramics	Dishes	Service	Hollowware	Body	Pearlware	1	1775-1840	Undecorated, thick	Azizi, et al. 1996	TP 7 2'-5'	
7		1	2	5	Ceramics	Dishes	Service	Hollowware	Body/Base	Pearlware	8	1780-1814	Transfer-printed, underglaze blue. Chinese motif. "14" embossed on base fragment below a undeterminable maker's mark.	MacLab 2002b	TP 7 2'-5'	
7		1	2	5	Ceramics	Dishes	Service	Hollowware	Body	Porcelain	3	c. 1785-1853	Blue hand painted underglaze in Chinese motif. Soft paste porcelain. Chinese export porcelain. Fourth period Canton Pavilion landscape. One fragment thicker and more as fine detailed. Two fragments fine detailed landscape design	MACLan 2002b; Bates 2014; Maddsen and White 2011	TP 7 2'-5'	

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7		1	2	5	Architectural?	Dishes/Construction	Service/decorative	hollowware or floor tile?	Fragment	Porcelain	1		Gray bodied hard paste porcelain, unglazed. Perfectly square. Just under 2"		TP 7 2'-5'	
7		1	2	5	Faunal	Consumption	Oyster	Shell	Fragment	Shell	1				TP 7 2'-5'	
7		1	2	5	Ceramics	Dishes	Service	Hollowware	Body	Tin Glazed earthenware	1	1640-1800	Tin glazed buff-bodied earthenware-Delft. Hand painted blue floral motif on exterior	Azizi, et al. 1996	TP 7 2'-5'	
7		1	2	5	Ceramics	Dishes	Service	Hollowware	Body	White Granite	1	1840-Present	Undecorated, thick	Azizi, et al. 1996	TP 7 2'-5'	
7		1	2	5	Ceramics	Dishes	Service	Hollowware	Base	Whiteware	1	1815-Present	Undecorated base with foot rim, spalled		Tr 7 2'	
7		1	2	5	Ceramics	Dishes	Service	Hollowware	Body	Whiteware	2	1815-Present	Undecorated	Azizi, et al. 1996	TP 7 2'-5'	
7		1	2	5	Faunal	Consumption	Chicken	Femur	Distal section		1		cut			Faunal-30
7		1	2	5	Faunal	Consumption	Medium Mammal	Longbone	Fragment		2					Faunal-29
8		1	0	2	Glass	Service	Drinking	Stemware	Rim	Clear Glass	1		Light patina		TR 8 0-2'	
8		1	0	2	Glass	Storage	Bottle	Bottle	Body	Olive Green Glass	1				TR 8 0-2'	
8		1	0	2	Ceramics	Dishes	Service	Hollowware	Body	Pearlware	1	1775-1820	Hand painted, underglaze, blue undeterminable motif	Azizi, et al. 1996	TR 8 0-2'	
8		1	0	2	Ceramics	Dishes	Service	Hollowware	Body	Pearlware	1	1795-1815/1825	Hand painted, underglaze, polychrome, floral motif with double gold band near top of rim	MacLab 2002d	TR 8 0-2'	
8		1	0	2	Ceramics	Dishes	Service	Hollowware	Body	Porcelain	1		Undecorated, white glaze, molded, soft paste		TR 8 0-2'	
8		1	0	2	Ceramics	Dishes	Service	Hollowware	Body	Refined white earthenware	1	1815-1915	Transfer-print, underglaze blue. Undeterminable motif	Azizi, et al. 1996	TR 8 0-2'	
8		1	0	2	Ceramics	Dishes	Service	Hollowware	Rim	White Granite	2	1840-Present	Undecorated, one thick and low quality.	Azizi, et al. 1996	TR 8 0-2'	
8		1	0	2	Ceramics	Dishes	Service	Hollowware	Rims/Body	Whiteware	6	1815-Present	Undecorated.	Azizi, et al. 1996	TR 8 0-2'	
8		2	2	6	Architectural	Construction	Window	Flat Glass	Fragment	Aqua Glass	4		Light to moderate patina		TR 8 2-8'	
8		2	2	6	Glass	Storage	Bottle	Bottle	Body	Aqua Glass	2		Two shades of aqua glass; One has a partial "7" embossed		TR 8 2-8'	
8		2	2	6	Personal	Smoking	Pipe	Pipe	Stem	Ball clay	1		Undecorated		TR 8 2-8'	
8		2	2	6	Faunal	Consumption	Mammal	Unident	Long bones/rib?	Bone	5		Not included in faunal analysis		TR 8 2-8'	
8		2	2	6	Glass	Storage	Bottle	Bottle	Body	Olive Green Glass	1				TR 8 2-8'	
8		2	2	6	Ceramics	Dishes	Service	Hollowware	Body/Rim/ base	Pearlware	4	1775-1840	Undecorated, spalled.	Azizi, et al. 1996	TR 8 2-8'	
8		2	2	6	Ceramics	Dishes	Service	Hollowware	Body	Pearlware	1	18th-19th century	Transfer print, underglaze, blue. Floral motif on rim	MacLab 2002b	TR 8 2-8'	
8		2	2	6	Ceramics	Dishes	Service	Hollowware	Body	Pearlware	1	18th-19th century	Transfer print, underglaze, blue. Undeterminable motif	MacLab 2002b	TR 8 2-8'	
8		2	2	6	Ceramics	Dishes	Service	Hollowware	Base	Pearlware	1	18th-19th century	Transfer print, underglaze, blue. Italian villa scenery. Possible Tivoli? Possible mend with floral print rims above?	MacLab 2002b	TR 8 2-8'	
8		2	2	6	Ceramics	Dishes	Service	Hollowware	Rim	Pearlware	1	18th-19th century	Transfer print, underglaze, blue. Geometric could be Chinese or Chinoisere motif.	MACLab 2002b	TR 8 2-8'	
8		2	2	6	Ceramics	Dishes	Service	Hollowware	Rim/body	Pearlware	5	18th-19th century	Transfer print, underglaze, blue. Floral motif on rim.	MACLab 2002b	TR 8 2-8'	

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8		2	2	6	Ceramics	Dishes	Service	Hollowware	Body	Pearlware	1	c1790-1820	Possible blue banded annular ware, small fragment	Texas A&M n.d.	TR 8 2-8'	
8		2	2	6	Ceramics	Dishes	Service	Hollowware	Rim/Base	Porcelain	1	1685-1840	Possible bone china. Chinese Export Porcelain. Similar in motif to base fragment found at South Ferry-Object 19 Context 1438 South Ferry-General South Ferry 16196.448 from LPC Repository catalog. Brownish/red hand painted overglaze. Motif leave, and flowers with a	AKRF, et al. 2012	TR 8 2-8'	
8		2	2	6	Ceramics	Dishes	Service	Bowl/Cup	Base/Rim	Porcelain	2	c. 1785-1853	Blue hand painted underglaze in Chinese motif. Soft paste porcelain. Chinese export porcelain.Possible Canton Pavilion landscape	MacLab 2002c	TR 8 2-8'	
8		2	2	6	Ceramics	Dishes	Service	Hollowware	Base/Rim/ Body	Porcelain	7	c. 1785-1853	Blue hand painted underglaze in Chinese motif. Soft paste porcelain. Chinese export porcelain. Possible Canton Pavilion landscape. Rain and clud design on rims. Two rim fragments, One base fragment and four body fragments	MacLab 2002c	TR 8 2-8'	
8		2	2	6	Ceramics	Dishes	Service	Unident	Body	Red earthenware	1	1750-1810	Red bodied, slip decorated glazed interior, thick.	AKRF, et al. 2012	TR 8 2-8'	
8		2	2	6	Architectural?	Unident	Unident	Unident	Unident	Redware	1		Thick, partially dark brown lead glaze, exterior has mortar attached		TR 8 2-8'	
8		2	2	6	Ceramics	Dishes	Service	Hollowware	Rim	Refined white earthenware	2	1775-1840; 1815-1900	Whiteware or Pearlware? Molded shell edged, blue. Neoclassical edge. One Whiteware? One Pearlware? One Spalled on exterior.	Azizi, et al. 1996	TR 8 2-8'	
8		2	2	6	Ceramics	Dishes	Service	Hollowware	Rim	Refined white earthenware	1	1815-1900; 1780-1895	Whiteware or Pearlware? Molded shell edged, green. Neoclassical edge. Whiteware? Pearlware? Spalled on	Azizi, et al. 1996; Bates and Cooper 2014	TR 8 2-8'	
8		2	2	6	Ceramics	Unident	Unident	Unident	Rim	Refined white earthenware	1	1815-1915	Transfer print, underglaze, blue.	Azizi, et al. 1996	TR 8 2-8'	
8		2	2	6	Ceramics	Storage	Unident	Unident	Body	Stoneware (Gray bodied)	1		Gray bodied salt glazed stoneware, light brown slip interior, light brown/clear glaze exterior.		TR 8 2-8'	
8		2	2	6	Ceramics	Dishes	Service	Hollowware	Rim	Whiteware	1	1815-1915	Transfer print, underglaze, blue. Possible basket motif.	Azizi, et al. 1996	TR 8 2-8'	
8		2	2	6	Ceramics	Dishes	Service	Hollowware	Body	Whiteware	1	1815-Present	Undecorated, thick	Azizi, et al. 1996	TR 8 2-8'	
8		2	2	6	Ceramics	Personal	Hygiene	Chamber Pot	Rim	Whiteware	2	1815-Present	Glazed and undecorated. One spalled.	Azizi, et al. 1996	TR 8 2-8'	
8		2	2	6	Ceramics	Unident	Unident	Unident	Body/Base/ Rim	Whiteware	15	1815-Present	Undecorated. Four spalled. One base fragment, one rim fragment, 13 body fragments. Some could possible mend with chamber pot listed above-same glaze and thickness	Azizi, et al. 1996	TR 8 2-8'	
8		2	2	6	Ceramics	Unident	Unident	Unident	Handle	Whiteware	1	1815-Present	Glazed and undecorated. Matches in glaze to chamber pot rims above-could be fragments of vessel	Azizi, et al. 1996	TR 8 2-8'	
8			2	8	Faunal	Consumption	Cow	Rib	Section		1		Sawed			Faunal-
8			2	8	Faunal	Consumption	Sheep	Metacarpus	Proximal section		1		Chopped			Faunal-33
8			2	8	Faunal	Consumption	Sheep	Scapula	Distal fragment		1					Faunal-31

Trench	Provenience	Lev	Opening Depth (ft)	Closing Depth (ft)	Group	Class	Type	Object	Part	Material/ Ware/ Glass Color	Count	Production Date	Comments	Source	Original Bag Provenience	Lab bag number
8			2	8	Faunal	Consumption	Sheep	Tibia	Distal section		1		1.25 years; cleaved			Faunal-34
8			2	8	Faunal	Consumption	Sheep	Tibia	Proximal section		1		3.5 years; chopped			Faunal-35
9	Fill below black soils	1	???	???	Personal	Smoking	Pipe	Pipe	Stem	Ball Clay	3		Three undecorated pipe stems, various sizes, possibly slightly used		TR 9 Fill below black soils	
9	Fill below black soils	1	???	???	Ceramics	Storage	Holloware	Unident	Rim/Body	Course Red Earthenware	2		Possible flower pot or jar		TR 9 Fill below black soils	
9	Fill below black soils	1	???	???	Glass	Storage	Bottle	Bottle	Body	Olive Green Glass	1		Heavy patina		TR 9 Fill below black soils	
9	Fill below black soils	1	???	???	Faunal	Consumption	Oyster	Shell	Fragment/ Whole	Shell	3		Three oyster shell fragments.		TR 9 Fill below black soils	
9	Fill below black soils	1	???	???	Ceramics	Dishes	Service	Unident	Body	Slipware	1	1670-1795	Yellow/Buff bodied slipware, spalled interior.	Azizi, et al. 1996	TR 9 Fill below black soils	
9	Fill below black soils	1	???	???	Ceramics	Dishes	Service	Unident	Rim	Stoneware (Gray bodied)	1	1720-1850?	Gray-bodied salt glaze stoneware crock, jar or jug with indeterminate cobalt blue	Azizi, et al. 1996	TR 9 Fill below black soils	
9	Fill below black soils	1	???	???	Architectural	Construction	Building Material	Brick	Fragment	Yellow coarse earthenware	1	17th-18th C	One half of yellow brick		TR 9 Fill below black soils	
9	Fill Below Black Soil	1	???	???	Faunal	Consumption	Cow	Rib	Proximal section		2		Chopped			Faunal-38
9	Fill Below Black Soil	1	???	???	Faunal	Consumption	Sheep	Tibia	Proximal section		1		3.5 years old; chopped			Faunal-37
9	Artifact pocked in East Wall	2	3.5	3.5	Personal	Smoking	Pipe	Pipe	Stem	Ball Clay	1		Undecorated pipe stem; Unused		TR 9 Artifact pocket in East Wall 3' 6" BGS	
9	Artifact pocket in East Wall	2	3.5	3.5	Ceramics	Dishes	Service?	Unident	Body	Red earthenware	4		Three light brown glaze exterior, brown slip interior. One light brown glaze interior and gray slip exterior.		TR 9 Artifact pocket in East Wall 3' 6" BGS	
9	Artifact pocket in East Wall	2	3.5	3.5	Faunal	Consumption	Cow	Lumbar Vertebra	Section		1		Unfused; Cleaved			Faunal-36
9	Brick Rubble	3	0	2	Ceramics	Furnishing	Decorative	Tile	Body	Tin Glazed earthenware	1	1640-1800	One blue and white delft tile unident motif- but has tree/plants on it. Spalled on one side.	Azizi, et al. 1996	TR 9 Brick Rubble 0-2'	
9	Near Pipe	4	???	???	Architectural	Construction	Building Material	Unident	Unident	Stone/Mortar	1		Stone fragment with mortar		TR 9 Near pipe	
1A		1	3	6	Glass	Unident	Unident	Unident	Unident	Amber Glass	1				TP 1A West Side of Trench at 3 feet in soil	10
1A		1	3	6	Personal	Smoking	Pipe	Pipe	Bowl	Ball Clay	1	c. 1830-1880	Masonic motif with flower vines as decoration and compass decorations; Belly bowl and foot; Lightly used	Paton 1873; Reckner and Dallal 2000; Pers. Comm. Diane Dallal	TP 1A Back dirt	11
1A		1	3	6	Glass	Storage	Ink Jar	Ink Jar	Complete jar	Clear Glass	1	After 1930	Bottom embossed: "SHEAFFER'S/ SKRIP/ 7 (in circle)/PAT'D 1759866;" Screw top; Mold seams; upper portion features built-in ink pocket and side embossed "THIS SIDE DOWN TO FILL INK POCKET"	Patent 1,759,866 issued to Owen E. Raab by US Patent Office May 27,	TP 1A West Side of Trench at 3 feet in soil	9
1A		1	3	6	Glass	Unident	Unident	Unident	Body	Clear Glass	1		Seam in fragment		TP 1A 4-5 feet West Wall	3
1A		1	3	6	Architectural	Construction	Fastener	Nail	Fragment	Iron	2		Highly Corroded, one fragment, one whole nail		TP 1A West Wall 4 feet	5

Trench	Provenience	Lev	Opening Depth (ft)	Closing Depth (ft)	Group	Class	Type	Object	Part	Material/ Ware/ Glass Color	Count	Production Date	Comments	Source	Original Bag Provenience	Lab bag number
1A		1	3	6	Architectural	Construction	Fastener	Stake	Whole	Iron	1		Highly corroded, 6.5" long		TP 1A West Wall 4 feet	6
1A		1	3	6	Architectural	Construction	Unident	Unident	Unident	Iron	5		Iron with a piece of charcoal attached to one fragment		TP 1A 4.6 feet West Wall Corner	7
1A		1	3	6	Architectural	Construction	Pavement	Possible tar fragment	Fragment	Possible Tar	4				TP 1A West Wall 4-5 feet	4
1A		1	3	6	Ceramics	Unident	Unident	Unident	Body	Slipware?	1	1670-1795	Possible yellow/Buff bodied slipware, spalled interior	Azizi, et al. 1996	TP 1A Back dirt	8
1A			3	5	Faunal	Consumption	Cow	Rib	Shaft Fragment		4		Sawed			Faunal-1
1A	Backdirt		n/a	n/a	Faunal	Consumption	Sheep	Left Mandible	Proximal Section		1		Stained; Chopped; age 1.75			Faunal-2
1B		1	3	5	Glass	Storage	Bottle	Bottle	Body	Aqua Glass	1		Embossed "…ER"		TP 1B Shovel dirt 4 feet 5 inches	29
1B		1	3	5	Personal	Smoking	Pipe	Pipe	Stem	Ball Clay	8		Small pipe stem fragments, undecorated, various sizes		TP 1B Shovel Dirt	31
1B		1	3	5	Glass	Storage	Bottle	Bottle	Body	Clear Glass	1				TP 1B Shovel dirt 4 feet 5 inches	30
1B		1	3	5	Glass	Storage	Bottle	Bottle	Base	Dark Green Glass	1		Thick, Shallow dome push up		TP 1B Backhoe Dirt	23
1B		1	3	5	Glass	Storage	Bottle	Bottle	Body	Dark Green Glass	1		Thin		TP 1B 3-5'	24
1B		1	3	5	Architectural	Construction	Window?	Unident	Unident	Light Aqua Glass	1		Flat		TP 1B East Wall	26
1B		1	3	5	Glass	Storage	Bottle	Bottle	Body	Light Green Glass	1		Thick		TP 1B 3-5'	25
1B		1	3	5	Glass	Storage	Bottle	Bottle	Body	Olive Green Glass	1		Embossed with "DI..." "KA..." and "U...", Corroded		TP 1B Shovel dirt 4 feet 5 inches	27
1B		1	3	5	Glass	Storage	Bottle	Bottle	Body	Olive Green Glass	1		Patina		TP 1B Shovel dirt 4 feet 5 inches	28
1B		1	3	5	Ceramics	Dishes	Service	Unident	Body/Rim	Pearlware	2	1790-1836	Blue transfer print, Chinese/ Chinoiserie pattern, mends.	Azizi, et al. 1996; MACLab	TP 1B Shovel dirt 4 feet 5 inches	17
1B		1	3	5	Ceramics	Unident	Unident	Hollowware	Rim/Body	Red earthenware	2		Glazed on both sides		TP 1B Shovel dirt 4 feet 5 inches	21
1B		1	3	5	Ceramics	Unident	Unident	Unident	Unident	Red earthenware	1		Thick, unglazed, Possible Kiln furniture?		TP 1B Shovel dirt 4 feet 5 inches	19
1B		1	3	5	Ceramics	Unident	Unident	Hollowware	Rim/Body	Slipware	4	1670-1795	Stafford, Slipware, Trail/Dot; Two fragments mend	Azizi, et al. 1996; Bagley	TP 1B Shovel dirt 4 feet 5 inches	22
1B		1	3	5	Ceramics	Unident	Unident	Unident	Unident	Slipware?	1	1670-1795	Possible yellow/Buff bodied slipware, spalled interior	Azizi, et al. 1996	TP 1B East 3 feet 4 inches	16
1B		1	3	5	Ceramics	Unident	Unident	Unident	Body	Stoneware (Gray Salt glazed)	2		1 glazed on inside		TP 1B Shovel dirt 4 feet 5 inches	20
1B		1	3	5	Ceramics	Dishes	Service	Unident	Base	Stoneware? White Granite?	1	18-19th century	Undecorated, thin, smooth clean glaze, no orange peel-like marks	MacLab 2002a	TP 1B Shovel dirt 4 feet 5 inches	18
1B		1	3	5	Ceramics	Unident	Unident	Unident	Unident	Whiteware	1	1815-Present	White glazed interior	Azizi, et al. 1996	TP 1B East Wall	15
1B			3	5	Faunal	Consumption	Cow	Maxilla	Fragment		1					Faunal-
1B			3	5	Faunal	Consumption	Cow	Metacarpus	Sahft		1		Neonate; cut marks; carnivore gnaw marks; eroded cortex			Faunal-3
1B			3	5	Faunal	Consumption	Cow	Metacarpus	Whole		1		2 years old; flaking cortex			Faunal-
1B			3	5	Faunal	Consumption	Cow	Radius	Distal section		1		3.5 years old			Faunal-10

Trench	Provenience	Lev	Opening Depth (ft)	Closing Depth (ft)	Group	Class	Type	Object	Part	Material/ Ware/ Glass Color	Count	Production Date	Comments	Source	Original Bag Provenience	Lab bag number
1B			3	5	Faunal	Consumption	Cow	Rib	Shaft section		3		sawed			Faunal-9
1B			3	5	Faunal	Consumption	Cow	Scapula	Section		5		Chopped; stained			Faunal-
1B			3	5	Faunal	Consumption	Sheep	Left Mandible	Proximal section		2		around 1 year old; chopped			Faunal-8
1B			3	5	Faunal	Environmental	Dog	Radius	Proximal fragment		1		age 0.5 years			Faunal-5
1B			3	5	Faunal	Environmental	Pigeon, Unspecified	Ulna	Distal fragment		1					Faunal-4

APPENDIX B:
Faunal Catalogue

Battery Playscape 1B
Faunal Report
Marie-Lorraine Pipes, PhD RPA

1. Introduction

A small faunal assemblage was recovered within a series of test pit excavations. These small deposits are composed primarily of domesticated livestock remains and represent dietary refuse and processed waste. There are a few exceptions which include the forearm of a dog and a dorsal spine from a codfish. There are similarities in the kinds of meats represented across the site area, all of which appear to have been professionally butchered. The overall state of bone preservation is very good.

2. Methodology

Each bone specimen was identified by species when possible and otherwise by class and size range category. For the purposes of this report, large mammal is equivalent in size to cattle and medium mammal to pig and sheep. Table 1 presents the list of identified species by class. Table 2 summarizes faunal remains by Test Pits. Two counts are presented, the Total Number of bone Fragments (TNF) and the Minimum Number of bone Units (MNU). In brief, the TNF count serves as a curation tool indicating the absolute number of bone fragments for a given row of data. The MNU count is an adjusted bone count based on the number of actual skeletal elements represented. Not all rows of data received an adjusted bone count (MNU) as its application was used only when one or more skeletal elements were identified. For example, a crushed cattle rib consisting of 12 bone fragments would be tallied as 12 TNF and would receive an adjusted count of 1 MNU. All of the bone was weighed. The descriptions in the report were based on the MNU or adjusted bone count.

Each bone specimen was further identified by skeletal element, portion, and age at death, when possible. All apparent bone modifications were recorded. The term “bone modification” refers to the physical alteration of the original appearance of a skeletal element either by human, animal or other agents. Bone modifications at this site included butcher marks, gnaw marks, heat exposure and weathering.

Identifications were made with the aid of a comparative skeletal type collection and the use of references including but not limited to: Brown and Gustafson (1979), Cornwall (1956), Lyman (1977), Olsen (1964), Pipes (1995), Schmid (1972), and Ubaldi and Grossman (1987). In the report that follows refuse types are classified based on skeletal elements and associated butcher marks. "Dietary refuse" and ‘trimming waste” are terms used to describe refuse generated by household activities: for example, “dietary refuse” refers to the bones from a roast or a ham steak; “processed cut” refers to discarded cranial elements used to make dishes like headcheese; and “trimming waste” refers to bones removed from a haunch such as a foot from a mutton shank. Meat ranks are based on information from Ubaldi and Grossman (1987). Figures 1-4 illustrate the reduction of cattle, veal, pig and sheep carcasses into butcher units and meat cuts. Table 3 summarizes meat cuts by Test Pits.

Catalog numbers were assigned to each provenience. All the original provenience information and the assigned catalog number are indicated for every row of data in the database. Each row of data was bagged separately within a provenience and assigned a sequential specimen number, e.g. catalog 1, item 1, etc.

3. Data Summary

The range of species included cattle, pig, sheep, dog, chicken, pigeon and cod (Table 1). The largest concentrations of bone were found in TP1 A/B, TP 3 and TP 5. Cattle remains were found in every area, except for TP 7. In most areas either pig or sheep were found with cattle. TP 5 was the area in which all three species were found together. Chicken was present in TP 7, the only area in which no identifiable mammal was present. Pigeon was recovered from TP 1B and cod from TP 3.

Beef and veal cuts were both represented as was the case with pork. Most of the sheep cuts were lamb. The value of cuts ranged from expensive to cheap. The types of cuts included small units such as steaks though the majority were large roasts and hams, as well as stew meats. Most meat cuts were processed by band saw though some were cleaved. Processed waste included butchered mandibles. These were the discards from tongue removal. Trimming waste was indicated for cattle and sheep. These foot bones have no dietary value and would have been discarded prior to cooking. One piece of worked bone was found in TP3 (Specimen # 5.3). It measures 79 mm in length and is pointed at one end.

The entire assemblage is consistent with the kinds of foods consumed during the nineteenth century by which time the range of species exploited was far less diverse than in earlier periods.

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Table 1. List of identified classes and species.

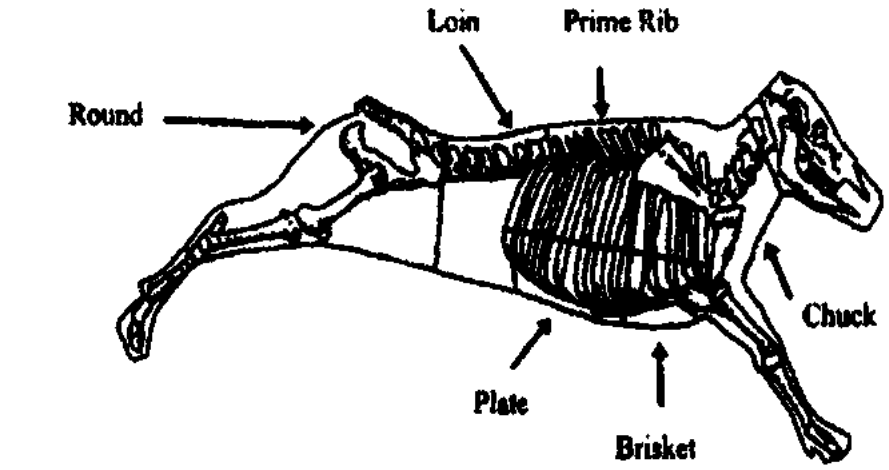
Class	Species	*Latin Name*
Mammal		
	Cattle	*Bos Taurus*
	Dog	*Canis familiaris*
	Pig	*Sus scrofa*
	Sheep	*Ovis aries*
Bird		
	Chicken	*Gallus gallus*
	Pigeon, sp.	*Columbidae*
Fish		
	Cod	*Gadus morhua*

Table 2. Summary of faunal remains from lot Test Pits.

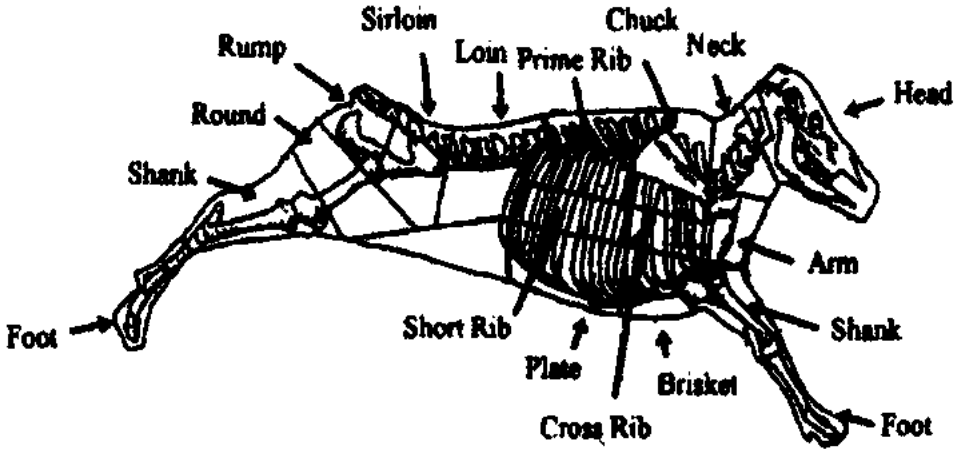
Class/Species/	TP 1A		TP 1B		TP 3		TP 4		TP 5		TP 6		TP 7		TP 8		TP 9	
Size-range Category	TNF	MNU	TNF	MNU	TNF	MNU	TNF	MNU	TNF	MNU	TNF	MNU	TNF	MNU	TNF	MNU	TNF	MNU
Mammal																		
Cattle	4	1	12	7	8	5	1	1	6	6	3	2	-	-	1	1	3	2
Dog	-	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pig	-	-	-	-	2	2	-	-	2	2	2	2	-	-	-	-	-	-
Sheep	1	1	2	1	-	-	2	2	3	2	-	-	-	-	4	4	1	1
Medium Mammal	-	-	-	-	-	-	1	1	-	-	-	-	2	-	-	-	-	-
Large Mammal	-	-	-	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal TNF/MNU	*5*	*2*	*15*	*9*	*11*	*8*	*4*	*4*	*11*	*10*	*5*	*4*	*2*	*-*	*5*	*5*	*4*	*3*
Bird																		
Chicken	-	-	-	-	-	-	-	-	-	-	-	-	1	1	-	-	-	-
Pigeon sp.	-	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal TNF/MNU	-	-	*1*	*1*	-	-	-	-	-	-	-	-	*1*	*1*	-	-	-	-
Fish																		
Cod	-	-	-	-	2	1	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal TNF/MNU	-	-	-	-	*2*	*1*	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL TNF/MNU	5	2	16	10	13	9	4	4	11	10	5	4	3	1	5	5	4	3

Table 3. Summary of beef, pork and mutton meat cuts from Test Pits, MNU.

Meat	Meat Cut	Cut Type	Rank Value	TP 1A/1B MNU	TP 3 MNU	TP 4 MNU	TP 5 MNU	TP 6 MNU	TP 7 MNU	TP 8 MNU	TP 9 MNU
Beef											
	Loin	Steak	1	-	1	-	-	-	-	-	1
	Prime Rib	Steak	2	-	1	-	1	-	-	-	1
	Chuck	Roast	5	1	1	-	-	-	-	-	-
	Short Rib	Stew	6	3	-	-	2	-	-	1	-
	Brisket	Stew	7	-	-	-	1	-	-	-	-
	Shank	Stew	9	1	-	1	2	-	-	-	-
	Head	Processed	9	1	1	-	-	1	-	-	-
	Foot	Trim	0	-	1	-	-	-	-	-	-
			Total	6	5	1	1	-	1	6	2
Veal											
	Leg	Roast	2	-	-	-	-	1	-	-	-
	Foot	Processed	7	2	-	-	-	-	-	-	-
			Total	2	-	-	1	-	-	-	-
Pork											
	Butt Ham	Ham	1	-	-	-	-	1	-	-	-
	Neonate	Roast	1	-	1	-	-	-	-	-	-
	Picnic Ham	Ham	4	-	-	-	1	-	-	-	-
	Spare Rib	Stew	5	-	-	-	1	-	-	-	-
	Processed	Head	6	-	1	-	-	1	-	-	-
		Total		-	2	-	2	-	2	-	-
Mutton											
	Shank-end	Roast	3	-	-	-	1	-	-	1	1
	Chuck	Roast	4	-	-	1	1	-	-	1	-
	Shank	Stew	7	-	-	1	-	-	-	1	-
	Head	Processed	7	2	-	-	-	-	-	-	-
	Trim	Foot	0	-	-	-	-	-	-	1	-
			Total	2	-	2	-	-	4	2	1

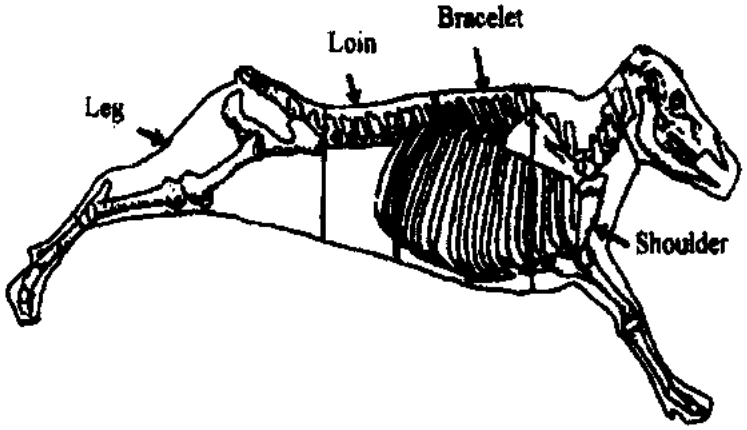


Butcher Cuts

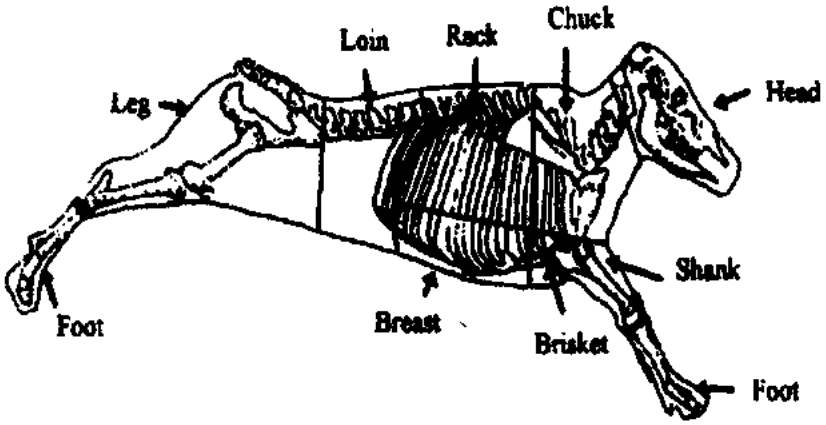


Meat Cuts

Figure 1. Cattle/Beef Secondary Butcher Cuts and Primary Meat Cuts.

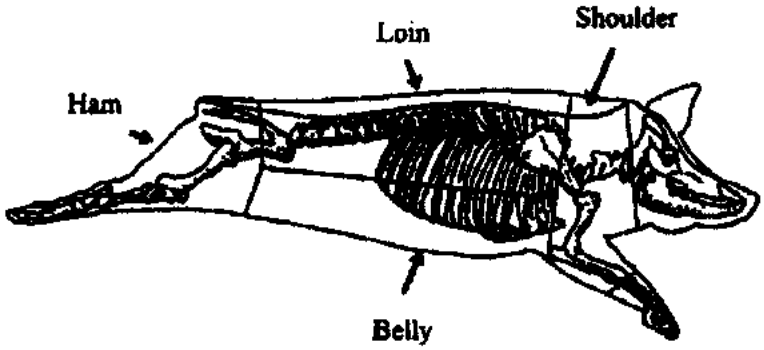


Butcher Cuts

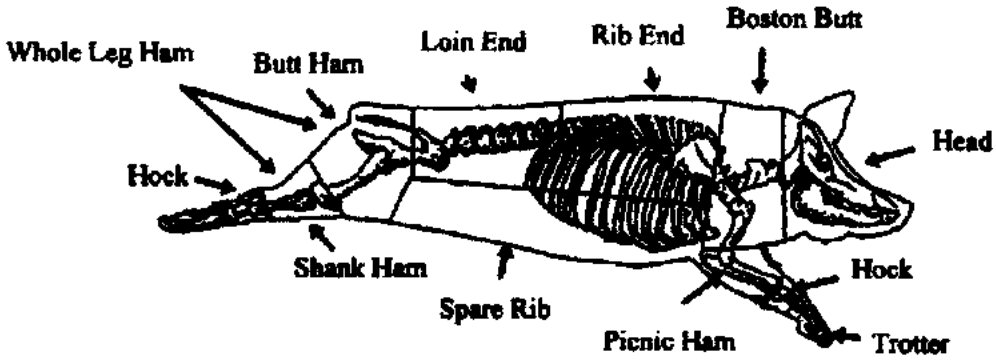


Meat Cuts

Figure 2. Cattle/Veal Secondary Butcher Cuts and Primary Meat Cuts.

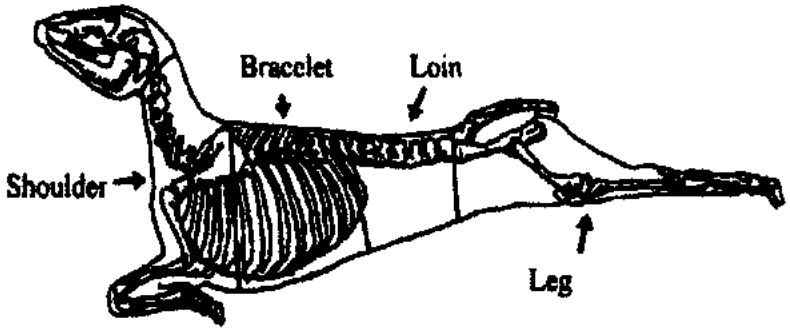


Butcher Cuts

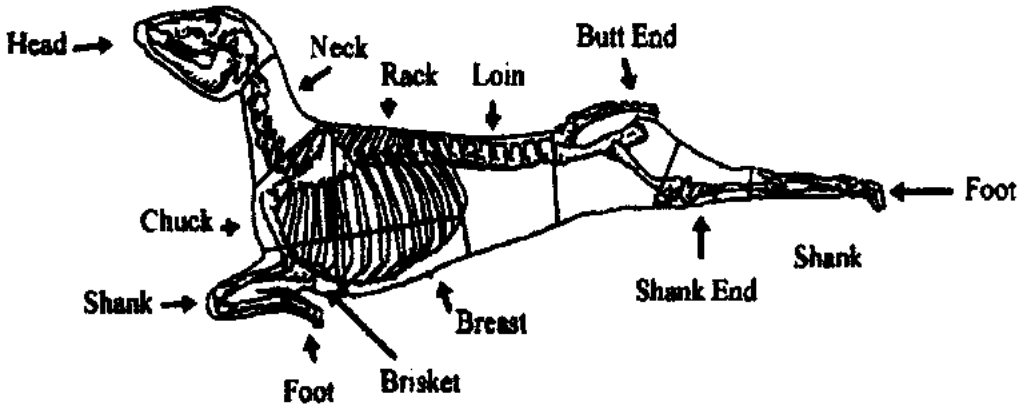


Meat Cuts

Figure 3. Pig/Pork Secondary Butcher Units and Primary and Meat Cuts



Butcher Cuts



Meat Cuts

Figure 4. Sheep/Mutton Secondary Butcher Cuts and Primary Meat Cuts.

ID	Site Name	Test Pit	Half	Depth	Other	Catnum No	Item Number	Species	Species Translation	Latin	Total Number of bone Fragments	MNU Type	Minimum Number Translation	Minimum Number of bone Units	Weight (gram)	Skeletal Element	Skeletal Element Translation	Skeletal Element Part	Skeletal Part Translation	Age	Age translation	Illustrated meat cut	Cut Mark	Cut Mark Translation	Gnaw Mark	Gnaw Translation	Heat Exposure	Heat Exposure Translation	Weathering	Weathering Translations	Note Field
1	Battery Playscape 1B	1A	-	3-5'	-	1	1	zmd70	Cow	Bos taurus	4	4	Minimum Number of Meat Cuts	1	23	38	Rib	41	Shaft section	0	-	278	1	Sawed	0	-	0	-	0	-	
2	Battery Playscape 1B	1A	-	-	Backdirt	2	1	zmd35	Sheep	Ovis aries	1	4	Minimum Number of Meat Cuts	1	32	9	Left Mandible	8	Proximal section	43	@ 1 3/4	976	8	Chopped	0	-	0	-	60	Stained	
3	Battery Playscape 1B	1B	-	3-5'	Shovel dirt/Backhoe dirt	3	1	zmd70	Cow	Bos taurus	1	2	Minimum Number of Elements	1	35	64	Metacarpus	5	Shaft	2	Neonate (Less than 6 months)	0	3	Cut marks(s) on body	10	Carnivore	0	-	3	Eroded cortex	
4	Battery Playscape 1B	1B	-	3-5'	Shovel dirt/Backhoe dirt	3	2	zbw04	Pigeon, Unspecified	Columbidae	1	2	Minimum Number of Elements	1	0.24	62	Ulna	7	Distal fragment	0	-	0	0	-	0	-	0	-	0	-	
5	Battery Playscape 1B	1B	-	3-5'	Shovel dirt/Backhoe dirt	3	3	zmd20	Dog	Canis familiaris	1	2	Minimum Number of Elements	1	4.72	61	Radius	6	Proximal fragment	78	+ 1/2 year	0	0	-	0	-	0	-	0	-	
6	Battery Playscape 1B	1B	-	3-5'	Shovel dirt/Backhoe dirt	3	4	zmd70	Cow	Bos taurus	1	2	Minimum Number of Elements	1	18.57	6	Maxilla	2	Fragment	0	-	0	0	-	0	-	0	-	0	-	Nariz
7	Battery Playscape 1B	1B	-	3-5'	Shovel dirt/Backhoe dirt	3	5	zmd70	Cow	Bos taurus	5	4	Minimum Number of Meat Cuts	1	51.3	50	Scapula	3	Section	0	-	0	8	Chopped	0	-	0	-	60	Stained	
8	Battery Playscape 1B	1B	-	3-5'	Shovel dirt/Backhoe dirt	3	6	zmd35	Sheep	Ovis aries	2	4	Minimum Number of Meat Cuts	1	14.54	9	Left Mandible	8	Proximal section	44	@ 1 Year	976	8	Chopped	0	-	0	-	0	-	
9	Battery Playscape 1B	1B	-	3-5'	Shovel dirt/Backhoe dirt	3	7	zmd70	Cow	Bos taurus	3	4	Minimum Number of Meat Cuts	2	26.11	38	Rib	41	Shaft section	0	-	278	1	Sawed	0	-	0	-	0	-	
10	Battery Playscape 1B	1B	-	3-5'	Shovel dirt/Backhoe dirt	3	8	zmd70	Cow	Bos taurus	1	4	Minimum Number of Meat Cuts	1	130.01	61	Radius	9	Distal section	93	- 3 1/2 years	1	0	-	0	-	0	-	0	-	
11	Battery Playscape 1B	1B	-	3-5'	Shovel dirt/Backhoe dirt	3	9	zmd70	Cow	Bos taurus	1	4	Minimum Number of Meat Cuts	1	172.68	64	Metacarpus	1	Whole	87	- 2 years	0	0	-	0	-	0	-	10	Flaking cortex	
12	Battery Playscape 1B	3	S	2-3'	-	4	1	zmd70	Cow	Bos taurus	2	4	Minimum Number of Meat Cuts	1	36.38	9	Left Mandible	9	Distal section	0	-	999	8	Chopped	0	-	0	-	0	-	
13	Battery Playscape 1B	3	S	4-6'	-	5	1	zmd70	Cow	Bos taurus	1	2	Minimum Number of Elements	1	28.02	74	Proximal Phalange	1	Whole	84	+ 1 1/2 years	0	0	-	0	-	0	-	0	-	
14	Battery Playscape 1B	3	S	4-6'	-	5	2	zmd60	Pig	Sus domesticus	1	2	Minimum Number of Elements	1	2.57	100	Femur	4	Partial	2	Neonate (Less than 6 months)	0	0	-	10	Carnivore	0	-	0	-	
15	Battery Playscape 1B	3	S	4-6'	-	5	3	zmz05	Large Mammal	-	1	7	Minimum Number of Worked bone artifacts.	1	11.04	120	Longbone	3	Section	0	-	0	0	-	0	-	0	-	0	-	79 mm long x 23 mm wide, shped to a v point
16	Battery Playscape 1B	3	N	1-4'	-	6	1	zps20	Cod	Gadus morhua	2	2	Minimum Number of Elements	1	1.26	177	Dorsal ray	1	Whole	0	-	0	0	-	0	-	0	-	0	-	
17	Battery Playscape 1B	3	N	1-4'	-	6	2	zmd70	Cow	Bos taurus	1	4	Minimum Number of Meat Cuts	1	15.46	34	Lumbar Vertebra	35	Transverse Process	0	-	0	60	Cleaved	0	-	0	-	10	Flaking cortex	
18	Battery Playscape 1B	3	N	1-4'	-	6	3	zmd70	Cow	Bos taurus	3	2	Minimum Number of Elements	1	11.96	38	Rib	6	Proximal fragment	0	-	0	0	-	0	-	0	-	0	-	
19	Battery Playscape 1B	3	N	1-4'	-	6	4	zmd60	Pig	Sus domesticus	1	4	Minimum Number of Meat Cuts	1	5.11	32	Axis	3	Section	15	Unfused	51	60	Cleaved	0	-	0	-	0	-	
20	Battery Playscape 1B	3	N	1-6'	-	7	1	zmd70	Cow	Bos taurus	1	4	Minimum Number of Meat Cuts	1	33.04	50	Scapula	41	Shaft section	0	-	94	1	Sawed	0	-	0	-	60	Stained	
21	Battery Playscape 1B	4	-	2-3'	-	8	1	zmd70	Cow	Bos taurus	1	2	Minimum Number of Elements	1	10.69	61	Radius	6	Proximal fragment	80	+ 1 year	0	0	-	0	-	0	-	60	Stained	
22	Battery Playscape 1B	4	-	3-4'	Backhoe fill.	9	1	zmd35	Sheep	Ovis aries	1	2	Minimum Number of Elements	1	4.88	61	Radius	8	Proximal section	60	- 1/4 year	0	0	-	0	-	0	-	60	Stained	
23	Battery Playscape 1B	4	-	3-4'	Backhoe fill.	9	2	zmz04	Medium Mammal	-	1	4	Minimum Number of Meat Cuts	1	6.45	38	Rib	41	Shaft section	0	-	0	1	Sawed	0	-	0	-	60	Stained	
24	Battery Playscape 1B	4	-	3-4'	Backhoe fill.	9	3	zmd35	Sheep	Ovis aries	1	2	Minimum Number of Elements	1	49.78	60	Humerus	1	Whole	92	+ 3 1/2 years	0	3	Cut marks(s) on body	0	-	0	-	0	-	
25	Battery Playscape 1B	6	-	-	Backdirt	10	1	zmd60	Pig	Sus domesticus	1	2	Minimum Number of Elements	1	33.87	100	Femur	5	Shaft	0	-	0	3	Cut marks(s) on body	0	-	0	-	0	-	
26	Battery Playscape 1B	6	-	-	Backdirt	10	2	zmd70	Cow	Bos taurus	2	4	Minimum Number of Meat Cuts	1	24.78	101	Tibia	9	Distal section	2	Neonate (Less than 6 months)	471	60	Cleaved	0	-	0	-	0	-	
27	Battery Playscape 1B	6	-	-	Backdirt	10	3	zmd70	Cow	Bos taurus	1	4	Minimum Number of Meat Cuts	1	26.61	9	Left Mandible	6	Proximal fragment	0	-	0	0	-	0	-	0	-	0	-	

ID	Site Name	Test Pit	Half	Depth	Other	Catnum No	Item Number	Species	Species Translation	Latin	Total Number of bone Fragments	MNU Type	Minimum Number Translation	Minimum Number of bone Units	Weight (gram)	Skeletal Element	Skeletal Element Translation	Skeletal Element Part	Skeletal Part Translation	Age	Age translation	Illustrated meat cut	Cut Mark	Cut Mark Translation	Gnaw Mark	Gnaw Translation	Heat Exposure	Heat Exposure Translation	Weathering	Weathering Translations	Note Field
28	Battery Playscape 1B	6	-	-	Backdirt	10	4	zmd60	Pig	Sus domesticus	1	2	Minimum Number of Elements	1	28.58	31	Atlas	1	Whole	0	-	0	0	-	0	-	0	-	0	-	Very large individual.
29	Battery Playscape 1B	7	-	2-5'	-	11	1	zmz04	Medium Mammal	-	2	0	-	0	1.14	120	Longbone	2	Fragment	0	-	0	0	-	0	-	0	-	0	-	
30	Battery Playscape 1B	7	-	2-5'	-	11	2	zbd09	Chicken	Gallus gallus	1	2	Minimum Number of Elements	1	1.97	100	Femur	9	Distal section	0	-	0	9	Cut	0	-	0	-	0	-	
31	Battery Playscape 1B	8	-	2-8'	-	12	1	zmd35	Sheep	Ovis aries	1	2	Minimum Number of Elements	1	12.21	50	Scapula	7	Distal fragment	0	-	0	0	-	0	-	0	-	0	-	
32	Battery Playscape 1B	8	-	2-8'	-	12	2	zmd70	Cow	Bos taurus	1	4	Minimum Number of Meat Cuts	1	16.97	38	Rib	3	Section	0	-	0	1	Sawed	0	-	0	-	0	-	
33	Battery Playscape 1B	8	-	2-8'	-	12	3	zmd35	Sheep	Ovis aries	1	4	Minimum Number of Meat Cuts	1	22.26	64	Metacarpus	8	Proximal section	0	-	515	8	Chopped	0	-	0	-	0	-	
34	Battery Playscape 1B	8	-	2-8'	-	12	4	zmd35	Sheep	Ovis aries	1	4	Minimum Number of Meat Cuts	1	13.66	101	Tibia	9	Distal section	64	- 1 1/4 year	457	60	Cleaved	0	-	0	-	0	-	
35	Battery Playscape 1B	8	-	2-8'	-	12	5	zmd35	Sheep	Ovis aries	1	4	Minimum Number of Meat Cuts	1	18.13	101	Tibia	8	Proximal section	93	- 3 1/2 years	462	8	Chopped	0	-	0	-	0	-	
36	Battery Playscape 1B	9	east wall	3'6"	-	13	1	zmd70	Cow	Bos taurus	1	4	Minimum Number of Meat Cuts	1	24.54	34	Lumbar Vertebra	3	Section	15	Unfused	12	60	Cleaved	0	-	0	-	0	-	
37	Battery Playscape 1B	9	-	-	fill below black soils	14	1	zmd35	Sheep	Ovis aries	1	4	Minimum Number of Meat Cuts	1	34.06	101	Tibia	8	Proximal section	93	- 3 1/2 years	470	8	Chopped	0	-	0	-	0	-	
38	Battery Playscape 1B	9	-	-	fill below black soils	14	2	zmd70	Cow	Bos taurus	2	4	Minimum Number of Meat Cuts	1	22.46	38	Rib	8	Proximal section	0	-	285	8	Chopped	0	-	0	-	0	-	
39	Battery Playscape 1B	5	S	-	Backdirt	15	1	zmd35	Sheep	Ovis aries	1	4	Minimum Number of Meat Cuts	1	18.89	101	Tibia	8	Proximal section	93	- 3 1/2 years	462	8	Chopped	0	-	0	-	0	-	
40	Battery Playscape 1B	5	-	2-4'	-	16	1	zmd70	Cow	Bos taurus	1	2	Minimum Number of Elements	1	73.39	112	Calcaneus	4	Partial	91	- 3 years	0	0	-	0	-	0	-	0	-	
41	Battery Playscape 1B	5	-	4-6'	Backdirt	17	1	zmd70	Cow	Bos taurus	1	4	Minimum Number of Meat Cuts	1	114.94	62	Ulna	8	Proximal section	92	+ 3 1/2 years	161	1	Sawed	0	-	0	-	0	-	
42	Battery Playscape 1B	5	-	4-6'	Backdirt	17	2	zmd70	Cow	Bos taurus	2	4	Minimum Number of Meat Cuts	2	95.8	38	Rib	41	Shaft section	0	-	278	1	Sawed	0	-	0	-	0	-	
43	Battery Playscape 1B	5	-	4-6'	Backdirt	17	3	zmd70	Cow	Bos taurus	1	4	Minimum Number of Meat Cuts	1	17.7	38	Rib	8	Proximal section	0	-	285	8	Chopped	0	-	0	-	3	Eroded cortex	
44	Battery Playscape 1B	5	-	4-6'	Backdirt	17	4	zmd70	Cow	Bos taurus	1	4	Minimum Number of Meat Cuts	1	24.75	38	Rib	9	Distal section	0	-	279	1	Sawed	0	-	0	-	0	-	
45	Battery Playscape 1B	5	-	4-6'	Backdirt	17	5	zmd60	Pig	Sus domesticus	1	4	Minimum Number of Meat Cuts	1	6.78	38	Rib	9	Distal section	0	-	279	8	Chopped	0	-	0	-	0	-	
46	Battery Playscape 1B	5	-	4-6'	Backdirt	17	6	zmd60	Pig	Sus domesticus	1	2	Minimum Number of Elements	1	18.22	61	Radius	4	Partial	80	+ 1 year	0	0	-	0	-	0	-	0	-	
47	Battery Playscape 1B	5	-	4-6'	Backdirt	17	7	zmd35	Sheep	Ovis aries	2	3	Minimum Number of Articulated Meat Cuts	1	23.37	58	Elbow - Humerus, Radius	30	Joint	76	+ 1/4 year	732	8	Chopped	10	Carnivore	0	-	1	Weathering present	

AKRF

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Memorandum

To: Laura Rogers, Associate Counsel

From: A. Michael Pappalardo

Date: May 3, 2018

Re: Battery Playscape – Archaeological Background and Suggested Phase 1B Approach

cc:

Introduction

The Lower Manhattan Development Corporation (LMDC), using funding provided by the Department of Housing and Urban Development (HUD), is assisting the Battery Conservancy through the New York City Department of Parks and Recreation (DPR) with construction of a replacement playground in Lower Manhattan (see Figure 1). The proposed playground, known as the "Battery Playscape," will be situated within a 1.4-acre portion of Block 3, Lot 1 located near the southeastern portion of Battery Park, in a roughly triangular area bounded approximately by State Street to the north, Peter Minuit Plaza to the east, South Street to the south, and the remainder of Battery Park to the west (see Figures 2 and 3). The proposed project site is currently developed with a deteriorated playground that was constructed in the 1950s and paved walkways and plantings. The proposed project has been designed to recover underutilized space surrounding the existing playground in order to triple the size of the play area and to allow for new water management practices, increased green space, and revitalized play experiences for children in the local community. Due to the involvement of HUD this project is subject to review under Section 106 of the National Historic Preservation Act (NHPA).

Project Impacts

Construction of the Battery Playscape will impact the current ground surface across essentially the entirety of the 1.4-acre project site. Though most of these impacts will be shallow, the following project elements will involve impacts to a depth of greater than 2 feet below ground surface (bgs)-(see **Figure 5**):

- **Composite 20-ton Micropiles** will be "driven to a depth to be determined by the installing engineer" (BKSK[1]);
- **Stormwater Retention Tank** will be constructed so that the bottom of the tank will be 4 feet bgs and it will be constructed on "suitable structural backfill compacted per geotechnical engineer recommendation" (BKSK);

[1] BKSK is serving as project architect and has prepared construction documents under contract to DPR.

- **Sonotube Concrete Footings** will be installed to a depth of 4 to 5 feet bgs;
- **Poured Concrete Foundations** will extend to 4 to 5 feet bgs;
- **Trenched Drainage Line** will extend to 3 to 5 feet bgs; and
- **Drilled Mini Piles** will extend "5 feet into competent bedrock" (BKSK).

Previous Archaeological Investigations

Multiple previous archaeological assessments have been completed in the immediate vicinity of the proposed project site, some of which appear to have included portions of the project site itself: *Peter Minuit Plaza and Whitehall Ferry Terminal Project* – Phase 1A and Phase 1B (HPI 1993); *Second Avenue Subway Project* – Phase 1A (HPI 2003); *South Ferry Terminal Project* – Phase 1A through Data Recovery (LBG 2003; AKRF and URS 2012); and *Reconstruction of Battery park and Perimeter Bikeway Project* – Phase 1A and Archaeological Monitoring (Geismar 2010). These investigations determined the general area to be sensitive for historic landfill and landfill-retaining structures as well as 17th- and 18th-century fortifications that formerly occupied Battery Park and for which the park was named.

Fieldwork associated with two of these surveys identified archaeological resources: the South Ferry Project encountered segments of an 18th-century battery wall at depths of 4 to 8 feet bgs (See Figure 4) and the Whitehall Ferry Project encountered historic landfill as shallow as 2 feet bgs. Of most relevance to the present project is the extensive archaeological fieldwork conducted in association with the South Ferry Terminal Project. That effort identified four segments of an 18th-century battery wall, three of which were in good enough condition to warrant evaluation and mitigation and one of which was encountered adjacent to the north side of the current project site (see Figure 4). Each wall segment was documented through the following: hand clearing and the excavation of units; field sketches and measured drawings; photography; 3D laser scanning; and videography. Portions of some of the wall segments were then labeled, hand-disassembled, individually documented, and packed into crates for long-term storage. The disassembled remains and associated samples were subjected to further analysis including stone sourcing, mortar analysis, and soil flotation. Finally, portions of the walls were reassembled at South Ferry Station and Castle Clinton.

Historic Development and Existing Conditions

The historic development of Battery Park has been documented in the previous archaeological investigations listed above. Historic maps depict the vicinity of the proposed project site as part of the open waters of New York Harbor until the 1730s. The first development of the project site was the construction of George Augustus' Royal Battery between 1735 and 1745, which appears to have been situated along the site's eastern side. By circa 1767, Fort George and its associated battery walls were constructed at the southern end of Manhattan island (see **Figure 4**), including battery walls and a bastion along the eastern side of the project site. The fort was demolished in 1790 and a park known as "the Battery" was constructed by 1797.

Subway tunnels carrying the 1 and 4/5 trains were constructed through the project site in the early 20th century using cut and cover excavation methods. The project site then remained a largely undeveloped grassy area crossed by paved paths until the mid-20th century. In the early 1950s, the FDR Drive was extended beneath Battery Park to connect it to the West Side Highway, also using cut and cover construction. Little changed in the park until construction of the new South Ferry Terminal along the northern edge of the project site in the early 2000s, resulting in significant disturbance at the northern end of the proposed Playscape (see Figure 5 for the tunnel locations).

The project site is currently largely occupied by the existing play area, a one-story concrete comfort station situated to the southwest, which will not be affected, and paved areas with benches, picnic tables, and planters (see Figure 3). Subsurface utilities within the playground include electric and water mains and stormwater drainage infrastructure. Subsurface utility lines outside of the existing playground, but still within the project site, include gas, telephone, and electric lines.

Archaeological Sensitivity

The entire project site is assumed to be disturbed to a depth of at least 2 feet bgs as a result of construction and reconstruction of the existing park, playground features, and utilities. The locations of the existing tunnels, stations, and entrances would have been extensively disturbed to much deeper depths by substantial excavation at the time of their original construction.

Based on previous investigations, undisturbed portions of the project site between the tunnels are sensitive for the following historic period archaeological resources: landfill and landfill-retaining devices and the remnants of 18th-century fortifications. Fortification walls were encountered at depths as shallow as 4 feet bgs during the South Ferry Terminal excavation and historic landfill as shallow as 2 feet bgs at Whitehall Ferry. The depth of sensitivity for these resources at the Playscape project site is between approximately 2 and 12 feet bgs.

Discussion

Based on the location and orientation of the wall segment discovered closest to and directly north of the Playscape project site during the 2005 South Ferry Station excavations, and accepting the georeferenced 1767 Ratzer map as reasonably accurate, the battery wall and a bastion once extended through the Playscape project site a distance of approximately 350 feet and had a width of approximately 8 feet, except for the bastion, which could have been wider. It is likely that this wall once extended southward from the northern end of the project site along the site's eastern edge adjacent to Peter Minuit Place to the vicinity of the covered subway entrance in the southeast portion of the project site, where it turned at a right angle and continued to the east (see Figure 4). Construction of the 4/5 Subway Line would have destroyed at least a 100-foot-long portion of the wall, reducing the area of sensitivity to an area approximately 250 feet in length. Project components with the potential to affect this remaining area of sensitivity for the battery wall are limited to approximately 500 square feet of foundations for a climbing structure at the northern end of the site, which will be excavated to a depth of up to 5 feet bgs, two segments of the trenched drainage line, one to the north and one in the vicinity of the covered subway entrance to the southeast, with a total length of about 100 feet that will be excavated to about 5 feet bgs, and, to a significantly lesser extent, some of the piles and sono tubes that will support the theater (see Figure 5). Therefore, a significant portion of the area sensitive for the presence of battery wall remains will be unaffected by the project, and, if the wall is present, it will remain buried within the project site.

Phase IB Investigation

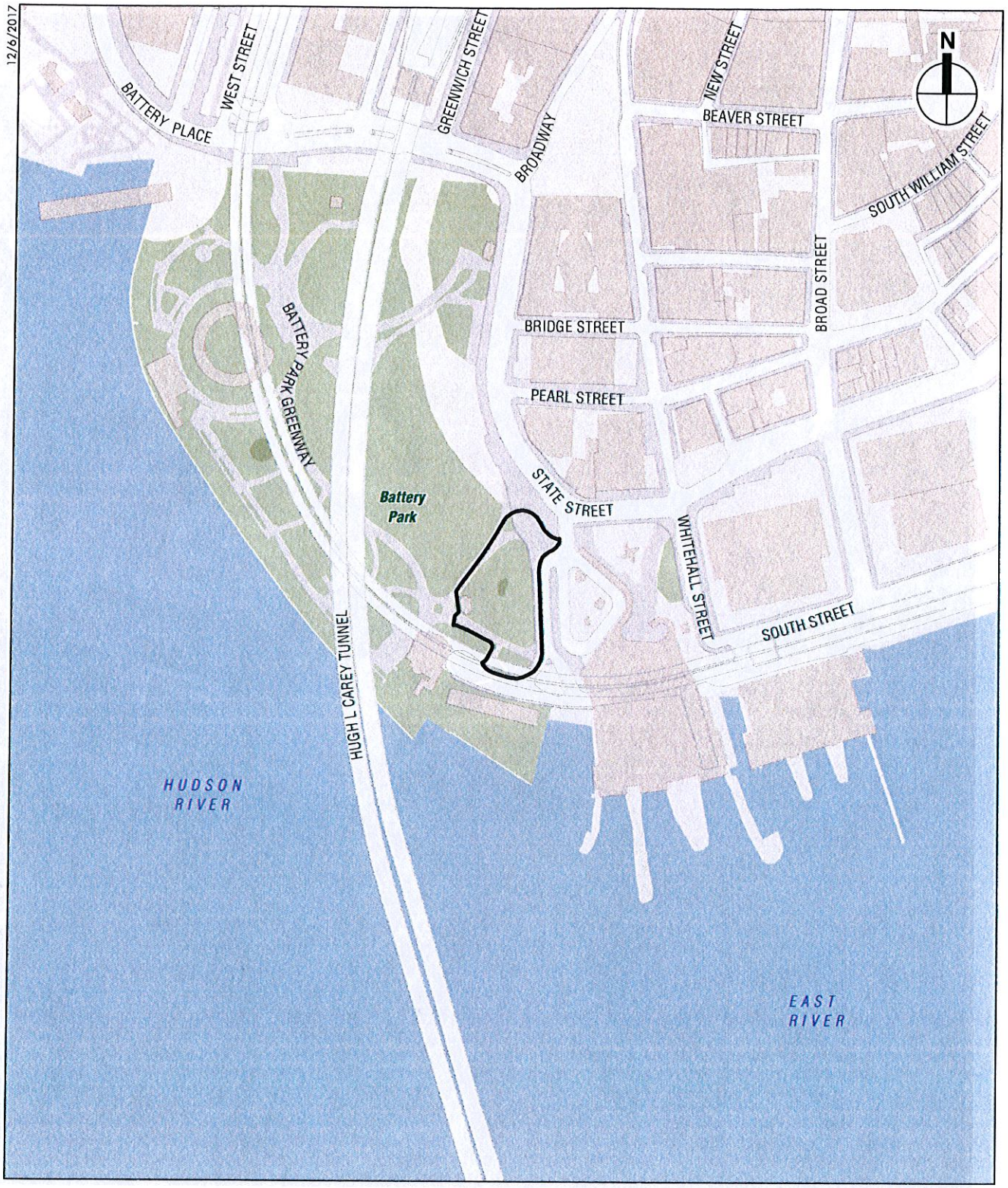
AKRF recommends archaeological fieldwork to determine the presence or absence of archaeological resources and, if present, to determine their significance in advance of construction This testing would be conducted through the completion of up to nine archaeologically-monitored backhoe trenches that systematically sample the specific areas where project components will extend more than 2 feet bgs and have the potential to intersect with known archaeological resources. A map of the proposed trench locations is attached as Figure 6 but is subject to change after review by New York City Transit's Department of Building. Trench dimensions vary but each will be excavated to a maximum depth of 6 feet below ground surface. The Phase 1B Archaeological Investigation would be conducted in accordance with NYC Landmarks Preservation Commission's (LPC's) "Guidelines for Archaeology work in New York City," issued in 2002, with the standards for Historic and Cultural Resources analyses as specified in the CEQR Technical Manual as amended in 2014, with the "Phase 1 Archaeological Report Format Requirements" as issued by OPRHP in 2005, and with the "Standards for Cultural Resources Investigations and the Curation of Archaeological Collections in New York State" as issued by the New York Archaeological Council in 1994 and adopted by OPRHP in 1995. All fieldwork will be completed by or supervised by archaeologists who meet the Secretary of the Interior's Professional Qualifications Standards for cultural resources specialists and will be a Registered Professional Archaeologist (RPA).

A. Michael Pappalardo

Approximate coordinates of Project Site:
74°0'52"W 40°42'7"N

THE BATTERY PLAYSCAPE

USGS Topographic Map
Jersey City Quadrangle
Figure 1



THE BATTERY PLAYSCAPE

Project Location
Figure 2

12/6/2017

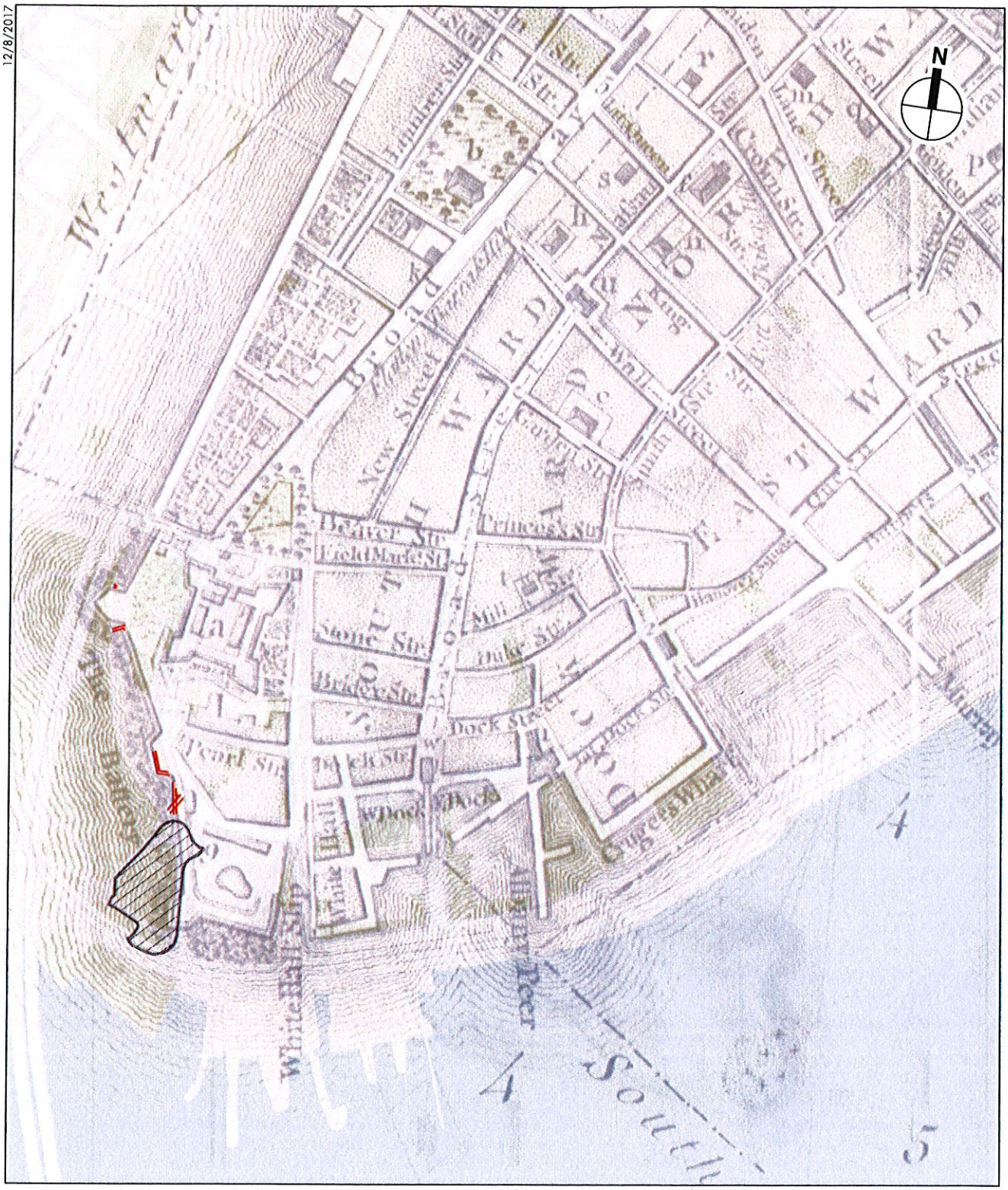
Project Site

0 500 FEET

THE BATTERY PLAYSCAPE

Aerial
Figure 3

12/8/2017

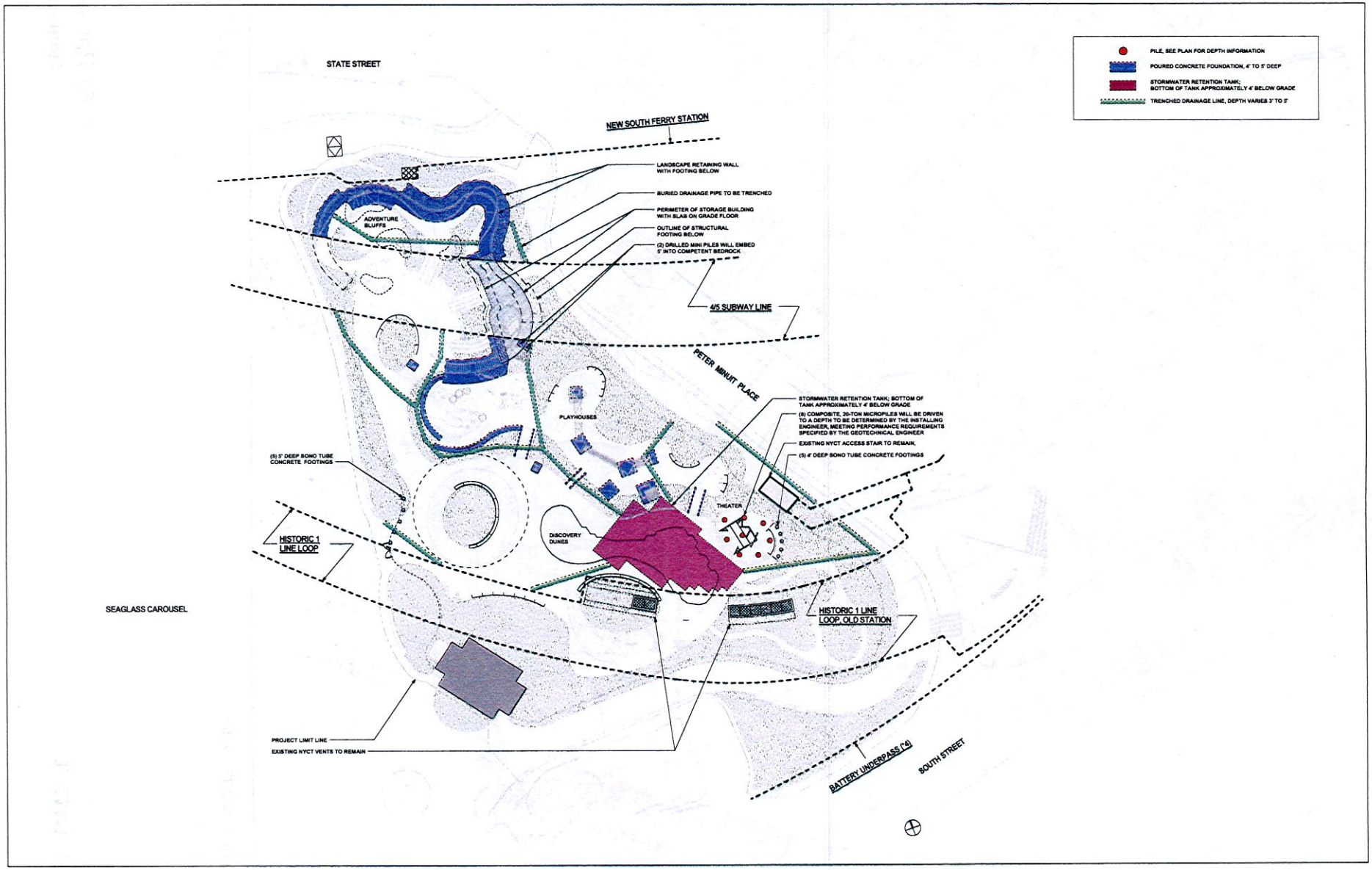


THE BATTERY PLAYSCAPE

1767 Ratzer

Figure 4

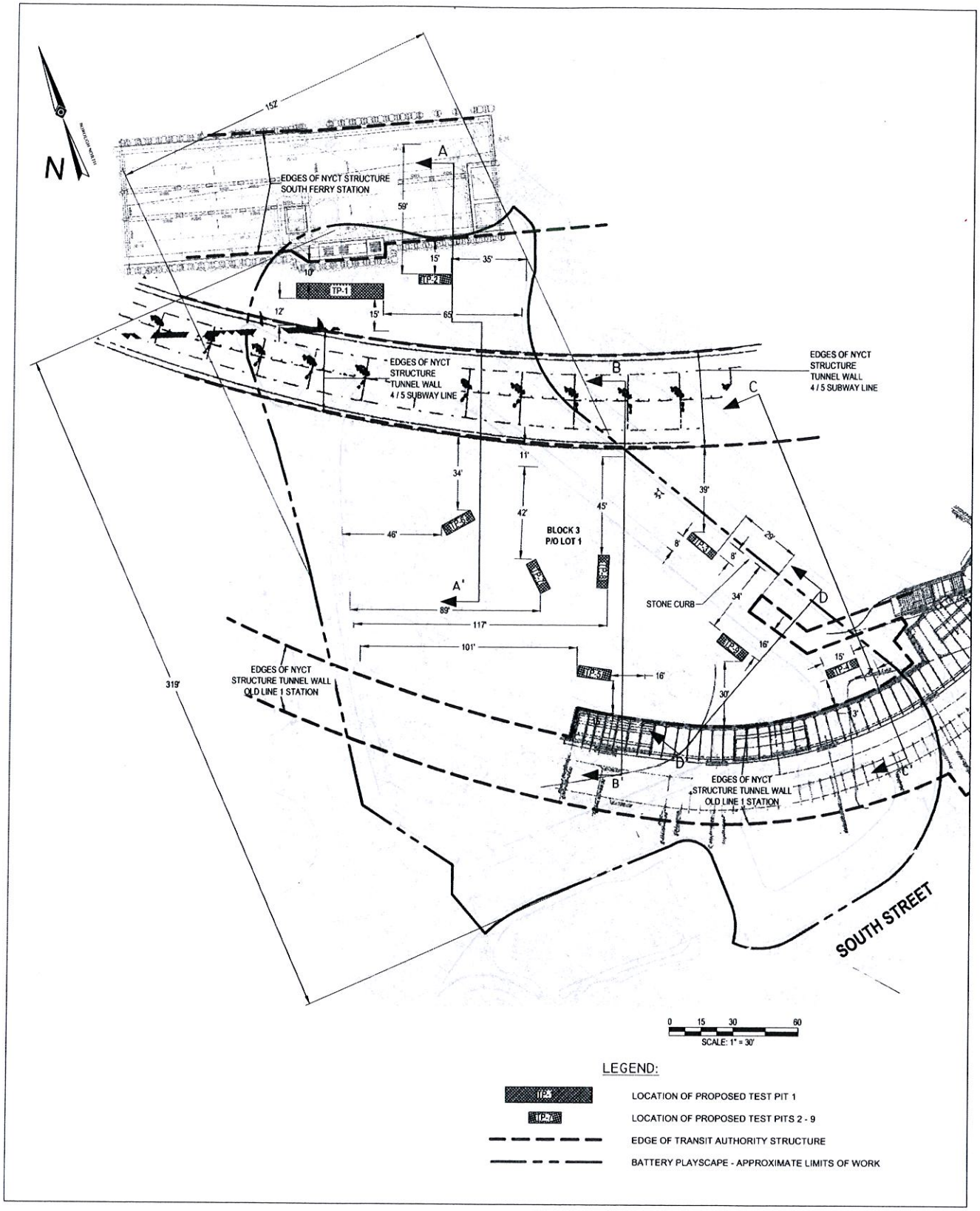
1.11.18



Source: BKSK

BATTERY PLAYSCAPE

Below Ground Structures
Figure 5



BATTERY PLAYSCAPE

Plan View of Investigation Area

Figure 6

LMDC
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22 Cortlandt Street, 11th Floor New York, NY 10007
Tel: 212.962.2300 Fax 212.962.2431
www.renewnyc.com

Mr. Philip A. Perazio
Historic Preservation Program Analyst – Archaeology Unit
New York State Parks, Recreation and Historic Preservation
State Historic Preservation Office
P.O. Box 189
Waterford, New York 12188-0189

May 4, 2018

Dear Mr. Perazio,

As you are aware, the Lower Manhattan Development Corporation ("LMDC") proposes to provide funding to the New York City Department of Parks and Recreation ("DPR") to rehabilitate a 1.4 acre portion of the 25 acre Battery Park at the southern tip of Manhattan, including replacement and expansion of a 1950s era playground, and reconstruction of surrounding planting areas and paths (the "Project"). The new playground (the "Playscape") and updated adjacent areas would not only provide an improved recreational experience to residents and visitors, but would also include important stormwater management features and reduced impervious surfaces in this sensitive location within the 100-year floodplain.

Prior to LMDC's involvement in the Project, the New York City Parks Department conducted the environmental reviews required under the State and City Environmental Quality Review laws and concluded that the Project was exempt from further review as a Type II action under 6 NYCRR 617.5(c)(2) and (6) ("replacement rehabilitation or reconstruction of a structure or facility, in kind on the same site . . ." and main "maintenance of existing landscaping or natural growth").

However, LMDC proposes to fund the Project with federal Community Development Block Grant funds granted to LMDC as a responsible entity through the U.S. Department of Housing and Urban Development, and thus the Project is subject to review under Section 106 of the National Historic Preservation Act ("NHPA").

We write to initiate the consultation required under NHPA by providing additional information about the Project and its potential to affect archaeological resources, and to describe LMDC's proposed strategy for identifying and resolving the potential unavoidable adverse effects of construction.

As is further described in the attached memo from LMDC's consultant AKRF, the Project will involve ground disturbance of up to 5 feet bgs in a limited number of locations on the Project Site. Some of these proposed excavations have the potential to impact an 18th-century battery

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wall and related features.[1] Those features were extensively documented in connection with the South Ferry Terminal Project.

In order to identify the potential for and resolve adverse effects, LMDC plans to conduct a Phase 1B Archaeological Investigation of the site, to begin at the end of May. An outline of the testing strategy proposed to be used is included in the attached background document prepared by AKRF.

Given the extensive existing documentation of the 18th-century battery wall, the limited number of Project elements planned for installation at depths greater than 2 feet that have the potential to intersect that wall, and the resulting foreseeability of some potential outcomes of the investigation, LMDC has prepared an outline of proposed responses. Addressing potential mitigations with SHPO at this stage in the consultation as is permitted under 36 C.F.R 800.2(g) would enable LMDC to conduct certain elements of potential mitigations contemporaneously with the investigation, while the test trenches are open and the archaeological team mobilized. That approach would allow LMDC to both carry out its obligations under NHPA and its obligation to conserve limited resources for an important public project.

LMDC has identified the following potential outcomes of this investigation:

1) The investigation encounters no historic properties;
2) The investigation encounters historic properties, but LMDC determines, after consultation with SHPO and LPC, the impacts would not qualify as adverse effects;
3) The investigation encounters the historic battery wall, and LMDC determines that the likely impacts qualify as adverse effect; or
4) The investigation encounters historic properties other than the battery wall, and LMDC determines that the likely impacts qualify as adverse effect.

LMDC proposes the following framework for resolution of the above investigative outcomes:

1) If no historic properties are encountered, LMDC prepares an unanticipated discoveries plan and makes a finding of no adverse effects, ending consultation.
2) If historic properties are encountered, but LMDC determines, after consultation with SHPO and LPC, any impacts would not qualify as adverse effects, LMDC would proceed as in #1 above.

[1] While the Background Memo indicates that the Project Site is also sensitive for historic landfill retaining structures and associated landfill, it should be noted that the Whitehall Ferry investigation concluded that landfill on that site had "low research value" and in contrast to the historic battery wall, LMDC is not aware of any historic landfill retaining structures potentially located within the Project Site. See "Disturbance Memorandum and Archaeological Assessment" prepared by AKRF for the Battery Playscape, dated January 2018, attached. The focus of LMDC's investigation will be on potential impacts to the historic battery wall or any unanticipated historic properties eligible for listing, which, pursuant to 36 C.F.R. 800.16(l), does not include artifacts in historic landfill that are not "related to and located within" such properties.

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3) In case of potential adverse effect to the historic battery wall, (a) If LMDC's consultant were to advise LMDC that the identified wall remains are consistently similar to those already thoroughly documented during the South Ferry Project, LMDC would arrange for basic data recovery, including photography and sampling; (b) If LMDC's consultant were to advise LMDC that the identified wall remains are substantially dissimilar to those already thoroughly documented during the South Ferry Project, LMDC would arrange for more extensive data recovery.
4) If other historic properties are encountered, LMDC would further consult with SHPO and LPC on the appropriate resolution to any impacts to other resources.

In all cases LMDC would consult with the project sponsors to determine if changes could be made to the project design to eliminate encounters with archeological resources or make them de minimis. In case of outcome 3 or 4, LMDC proposes to conduct public outreach to the Battery Park Conservancy, the Landmarks Preservation Conservancy, the Downtown Alliance and any entity SHPO recommends be contacted (as well as the ACHP) to solicit comments on proposed treatment of adverse effects.

LMDC looks forward to discussing this proposed approach with SHPO at your earliest convenience and to receiving SHPO's input. Please do not hesitate to contact me with any questions or comments.

Sincerely,

Laura Rogers
Associate Counsel

NEW YORK
STATE OF
OPPORTUNITY

Parks, Recreation, and Historic Preservation

ANDREW M. CUOMO
Governor

ROSE HARVEY
Commissioner

May 07, 2018

Mr. A Michael Pappalardo
Sr. Technical Director
AKRF, Inc.
440 S. Park Avenue
New York, NY 10016

Re: HUD
Battery Playscape
Borough of Manhattan, New York County, NY
18PR02653

Dear Mr. Pappalardo:

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 materials submitted for this project – letter from LMDC (Rogers, 4 May 2018) and memo prepared by AKRF "Battery Playscape – Archaeological Background and Suggested Phase 1B Approach" (Pappalardo, 3 May 2018). We concur with the proposed approach for the Phase IB archaeological investigation. Please continue consultation with this office as the investigation proceeds.

If you have any questions, please don't hesitate to contact me.

Sincerely,

Philip A. Perazio

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: Daniel Ciniello and Brent Destouche, LMDC
Jessica MacLean and Amanda Sutphin, LPC
Laura Rogers, ESD

NEW YORK
STATE OF
OPPORTUNITY

Parks, Recreation, and Historic Preservation

ANDREW M. CUOMO
Governor

ROSE HARVEY
Commissioner

October 02, 2018

Mr. A Michael Pappalardo
Sr. Technical Director
AKRF, Inc.
440 S. Park Avenue
New York, NY 10016

Re: HUD
Battery Playscape
Borough of Manhattan, New York County, NY
18PR02653

Dear Mr. Pappalardo:

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 Battery Playscape, Block 3, Part of Lot 1, Lower Manhattan, New York County, New York, Phase 1B Archaeological Survey Report* (AKRF, 25 September 2018). We concur with the comments provided by the Landmarks Preservation Commission (Sutphin, 1 October 2018).

This investigation has resulted in the identification of what may be the remnant of an 18th Century battery wall bastion, a potentially National Register-eligible historic property. The limited view provided in Trench 9 does not permit a definitive identification of this feature nor of its extent within the project's Area of Potential Effects. Therefore, in order to more confidently identify the nature and dimensions of this feature, assess its National Register eligibility, and examine options for avoidance or mitigation, if appropriate, this office recommends that a limited Phase II investigation is warranted. Understanding the constraints encountered during the initial investigation, we request submission of a possible work plan to achieve these goals.

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: Daniel Ciniello and Brent Destouche, LMDC
Jessica MacLean and Amanda Sutphin, LPC
Laura Rogers, ESD

Landmarks Preservation Commission

1 Centre Street
9th Floor North
New York, NY 10007

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Fax (212)-669-7960
http://nyc.gov/landmarks

ARCHAEOLOGY

Project number: LOWER MANHATTAN DEVELOPMENT CO / 106.M
Project: BATTERY PARK PLAYSCAPE
Address: BATTERY PARK, **BBL:** 1000030001
Date Received: 9/25/2018

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.

[ ] No archaeological significance

[ ] Designated New York City Landmark or Within Designated Historic District

[ ] Listed on National Register of Historic Places

[ ] Appears to be eligible for National Register Listing and/or New York City Landmark Designation

[X] May be archaeologically significant; requesting additional materials

Comments:

The LPC is in receipt of the, "Battery Playscape Block 3, Part of Lot 1, New York, New York Phase IB Archaeological Survey Report," prepared by AKRF, Inc and dated September 25, 2018.

We recommend that the report be revised as follows:

(1) We appreciate that the project has been redesigned to minimize impacts on potentially significant archaeological resources. However, the report should provide more information about how the redesign relates to what was found (especially the Adventure Bluffs and Adjacent Drainage line as the text notes the foundations were reduced but now other related footings will be to 4.5 feet and the drainage line may be to 5 feet). We recommend that the cross sections be amended to show where the archaeological resources are located;

(2) The potential discovery of a dressed-stone foundation in Test Pit 9 is an interesting discovery and an appropriate mitigation measure for the project may be to better document

Landmarks Preservation Commission

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what is there (although, of course, addressing the water issues would require careful planning).

Cc: NYSHPO

10/1/2018

SIGNATURE DATE

Amanda Sutphin, Director of Archaeology

File Name: 33391_FSO_ALS_10012018.doc

NEW YORK
STATE OF
OPPORTUNITY.

Parks, Recreation, and Historic Preservation

ANDREW M. CUOMO
Governor

ROSE HARVEY
Commissioner

November 15, 2018

Mr. A Michael Pappalardo
Sr. Technical Director
AKRF, Inc.
440 S. Park Avenue
New York, NY 10016

Re: HUD
Battery Playscape
Borough of Manhattan, New York County, NY
18PR02653

Dear Mr. Pappalardo:

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 revised Phase IB report - *The Battery Playscape, Block 3, Part of Lot 1, Lower Manhattan, New York County, New York, Phase 1B Archaeological Survey Report* (AKRF, 1 November 2018). We concur with its conclusions and recommendations.

Based on this, we recommend that this investigation has encountered additional remains of the 18th Century Battery Wall (06101.015768), which was previously recommended as eligible for listing on the National Register of Historic Places. Please submit materials to update the site record in our online system.

While the applicant has made efforts to minimize impacts, the project may still have an **Adverse Effect** on this historic property. Therefore, we recommend that a Memorandum of Agreement (MOA) be drafted that describes the measures to be undertaken in case of such adverse effects.

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: Daniel Ciniello and Brent Destouche, LMDC
Jessica MacLean, Gina Santucci, and Amanda Sutphin, LPC
Karen Meara, CLM; Laura Rogers and Goldie Weizel, ESD

NYC Landmarks Preservation Commission

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ARCHAEOLOGY

Project number: LOWER MANHATTAN DEVELOPMENT CO / 106.M
Project: BATTERY PARK PLAYSCAPE
Address: BATTERY PARK, **BBL:** 1000030001
Date Received: 11/9/2018

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.

[ ] No archaeological significance

[ ] Designated New York City Landmark or Within Designated Historic District

[ ] Listed on National Register of Historic Places

[ ] Appears to be eligible for National Register Listing and/or New York City Landmark Designation

[X] **May be archaeologically significant; requesting additional materials**

Comments: The LPC is in receipt of the, "Phase IB Archaeological Survey Report for the Battery Playscape Block 3, Part of Lot 1, New York, New York," prepared by AKRF, Inc and dated November 1, 2018.

The LPC concurs with the findings that significant archaeological resources are likely within the project area. The Commission notes that the project has been redesigned and that mitigation will occur as defined in a separate agreement. The LPC would like to be a consulting party to the mitigation agreement.

Please submit a pdf of the entire document and a hard copy for the LPC archives.

Cc: NYSHPO and NYCDPR

Amanda Sutphin

11/15/2018

SIGNATURE
Amanda Sutphin, Director of Archaeology

DATE

File Name: 33391_FSO_ALS_11092018.doc