

**Reconstruction of the Pavilion at the end of Hylan Boulevard
Adjacent to Satterlee Street in Conference House Park, Staten
Island, Richmond County, New York Project (Contract Number
R006-213M; E-PIN: 8461780040001)**



Prepared for:

City of New York - Landmarks Preservation Commission
New York, New York

City of New York – Department of Parks and Recreation
New York, New York

WWC Contracting
Staten Island, New York

Prepared by:

Leah Mollin-Kling, MAA, R.P.A.,
Chrysalis Archaeological Consultants, Inc.

Edited by:

Alyssa Loorya, Ph.D., R.P.A. and
Lisa Geiger, M.A., R.P.A.
Chrysalis Archaeological Consultants, Inc.

January 2020

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January 2020

EXECUTIVE SUMMARY TABLE

New York SHPO Project Review Number:	N/A
Involved City/State/Federal Agencies:	City of New York - Landmarks Preservation Commission City of New York – Department of Parks and Recreation
Phase of Survey:	Phase IB (Field Testing and Monitoring)
Location Information:	Conference House Park, 2102, 298 Satterlee Street, Staten Island, New York 10307
Survey Area:	Two acres
USGS 7.5 Quad Map:	Perth Amboy NY (USGS 2016)
Archaeological Survey Overview:	No significant cultural resources
Sensitivity Assessment:	Low potential for intact cultural resources
Results of Architectural Survey:	
Buildings within Project Area:	0
Buildings adjacent to Project Area:	0
Previous N/R Buildings:	0
Eligible N/R Buildings:	0
Report Authors:	Leah Mollin-Kling, M.A.A., R.P.A. Alex Agran
Report Editors:	Alyssa Loorya, Ph.D., R.P.A. Lisa Geiger, MA, R.P.A.
Date:	January 2020

EXECUTIVE SUMMARY TEXT

WWC Contracting contracted with Chrysalis Archaeological Consultants, Inc., on behalf of the City of New York – Department of Parks and Recreation (NYC Parks) to provide all Cultural Resource Management (Archaeological) services for the Reconstruction of the Pavilion at the end of Hylan Boulevard Adjacent to Satterlee Street in Conference House Park, Staten Island, Richmond County, New York Project (Contract Number R006-213M; E-PIN: 8461780040001). The archaeological component of the Project was conducted at the behest of NYC Parks, who recognized the historic sensitivity of the area and requested a cultural resource management assessment. Phase IB archaeological field testing and monitoring occurred from August 2018 to August 2019.

Phase IB field testing and monitoring was designed to fulfill cultural resource management requirements for the Reconstruction of the Pavilion at the end of Hylan Boulevard Project. The purpose of the Project is to reconstruct the existing Pavilion, make infrastructure and landscape improvements within the APE, and install new retaining walls and seawalls to prevent flooding.

The Park contains significant pre-contact Native American cultural resources as well as seventeenth, eighteenth, and nineteenth century archaeological resources and architecture. The Phase IB investigations summarized in this report were designed to determine the presence/absence of archaeological resources within the project area and to assess whether they would be adversely affected by project construction plans.

A total of 11 standardized test pits (STPs) measuring 1.5' by 1.5' (0.5m by 0.5m) were excavated on two transects (A-B) as part of the Phase IB field testing of the APE. A majority of the field testing was in highly disturbed stratigraphy. Additionally, 39 construction trenches and 4 test pits were archaeologically monitored within the APE.

No further archaeological mitigation is recommended for this Project. However, based on the known historical and archaeological significance of the Park, subsequent construction projects may be subject to archaeological investigations.

The Phase IB Archaeological Field Testing and Monitoring as part of the for The Reconstruction of the Pavilion at the end of Hylan Boulevard Project was enacted in accordance with the National Historic Preservation Act of 1966, as amended, the Advisory Council on Historic Preservation's "Protection of Historic and Cultural Properties" (36 CFR 800.4), and the NY SHPO's Guidelines for Archaeological Projects, and it adheres to the revised 2018 Landmarks Preservation Commission's "Guidelines for Archaeological Work in New York City."

Alyssa Loorya, Ph.D., R.P.A., President, served as Principal Investigator for this project. Leah Mollin-Kling, M.A.A., R.P.A. served as Field Director and authored this report for Chrysalis. Alex Agran and Elissa Rutigiano served as Field Technicians for this project. Alyssa Loorya, Ph.D., R.P.A., and Lisa Geiger, M.A., R.P.A., edited this report.

TABLE OF CONTENTS

<i>Section:</i>	<i>Page:</i>
Executive Summary (Table and Text)	iii
Table of Contents	v
List of Maps, Tables, Images, and Figures	vi
I. Introduction	01
II. Synthesis of Previous Work	05
III. Context and Research Design	07
IV. Project Methods	10
V. Field Results	11
Phase IB Field Testing	11
Transect A	13
Transect B	17
Phase IB Monitoring	20
Utility Extension - Trench 02	21
Feature 01	25
Weirs - Trenches 03, 04, 05, 09A, 09B, 37	30
Catch Basins - Test Pits 1-3	42
Water Piping - Trench 06	47
Drainage Piping - Trench 07, Test Pit 4	51
Catch Basin Connections - Trenches 08, 10	55
Utility Connections - Trench 11	59
Fire Hydrant Relocation - Trenches 12-15	61
Beach Area Sonotube Excavation - Trenches 16-31	71
Seawalls -Trenches 32-39	96
VI. Laboratory Results	100
VII. Conclusions	100
VIII. Recommendations	101
IX. References	102
X. Appendices	104
A. Complete Subconsultant Reports	105
Phase IB Work Plan (Chrysalis 2018)	106
B. Project Personnel	148

LIST OF MAPS, TABLES, IMAGES, AND FIGURES

<i>Title:</i>	<i>Page:</i>
Map 01: USGS – Perth Amboy Quadrangle, 2016	03
Map 02: Project area map (New York City Tax Map 2012)	04
Map 03: Visual representation of previously identified resources/ archaeological sites relative to the APE	06
Map 04: AWP sensitivity and Phase IB testing and monitoring proposals	09
Map 05: Phase IB Field Map in two parts, west (left) half at top and east (right) half at bottom.	12
Map 06: Beach Field Map	72
Figure 01: Figure 01: Feature 01 north profile	27
Table 01: Stratigraphic Profile East Wall – A-02	14
Table 02: Stratigraphic Profile – A-05	15
Table 03: Stratigraphic Profile – B-03	20
Table 04: Stratigraphic Profile, Section 1, North Wall – Trench 02	21
Table 05: Stratigraphic Profile, Section 2, North Wall – Trench 02	24
Table 06: Stratigraphic Profile West Wall – Trench 04	36
Table 07: Stratigraphic Profile East Wall – Trench 05	37
Table 08: Stratigraphic Profile North Wall – Trench 09A	39
Table 09: Stratigraphic Profile North Wall – Trench 09B	40
Table 10: Stratigraphic Profile East Wall – Trench 37	41
Table 11: Stratigraphic Profile North Wall – TP 1	43
Table 12: Stratigraphic Profile, East Wall – TP 2	44
Table 13: Stratigraphic Profile, West Wall – TP 3	46
Table 14: Stratigraphic Profile South Wall, West End – Trench 06	50
Table 15: Stratigraphic Profile South Wall – Trench 07	53
Table 16: Stratigraphic Profile East Wall, at Roadway – Trench 08	57
Table 17: Stratigraphic Profile North Wall, Center – Trench 11	60
Table 18: Stratigraphic Profile West Wall – Trench 12	62
Table 19: Stratigraphic Profile North Wall – Trench 13	65
Table 20: Stratigraphic Profile North Wall – Trench 14	67
Table 21: Stratigraphic Profile East Wall, Northern Section – Trench 15	70
Table 22: Stratigraphic Profile North Wall – Trench 16	75
Table 23: Stratigraphic Profile North Wall – Trench 18	78
Table 24: Stratigraphic Profile East Wall – Trench 21	84
Table 25: Stratigraphic Profile East Wall – Trench 23	91
Table 26: Stratigraphic Profile, East Wall – Trench 25	92
Table 27: Stratigraphic Profile East Wall – Trench 28	94
Table 28: Stratigraphic Profile West Wall – Trench 32	97
Table 29: Stratigraphic Profile West Wall, Northern Section– Trench 33	98
Table 30: Stratigraphic Profile West Wall, Roadway– Trench 34	99

LIST OF MAPS, TABLES, IMAGES, AND FIGURES (con't)

<i>Title:</i>	<i>Page:</i>
Image 01: Overview of Transect A	13
Image 02: Stratigraphic profile, east wall, A-02	15
Image 03: End of Transect A (A-08), with modern surface disturbances	16
Image 04: Excavation of A-08, with modern disturbances	17
Image 05: Overview of Transect B	18
Image 06: B-02 east profile	19
Image 07: Eastern section of Trench 02, excavation in progress	22
Image 08: Stratigraphic profile, Section 1, north wall, Trench 02	23
Image 09: Trench 02, Section 2, excavation in progress	24
Image 10: Stratigraphic profile, Section 2, north wall – Trench 02	25
Image 11: Feature 01 (highlighted) in situ, facing north	26
Image 12: Feature 01 (highlighted) in profile, Trench 02	28
Image 13: Trench 02, excavation in progress to the west of Feature 01	29
Image 14: Disarticulated wooden post in fill, Trench 02	30
Image 15: Weir area pre-excavation, looking west	31
Image 16: Excavation in progress, Trench 03, looking east	32
Image 17: Stratigraphic profile, west wall – Trench 03	33
Image 18: Trench 03, post-excavation, looking north	33
Image 19: Trench 04 post excavation, looking south	34
Image 20: Western wall profile – Trench 04	35
Image 21: East wall profile, Trench 05	37
Image 22: Excavation-in-progress, Trench 09A, looking north	38
Image 23: Stratigraphic profile, North wall, center section – Trench 09A	39
Image 24: Stratigraphic profile, North wall, western section – Trench 09B	41
Image 25: Catch Basin 1/TP 1 pre-excavation	42
Image 26: Stratigraphic profile, north wall profile – TP 1	43
Image 27: Location of TP 2 (highlighted) with Trench 03 on left	44
Image 28: Stratigraphic profile, east wall – TP 2	45
Image 29: Location of TP 3, looking east	46
Image 30: Stratigraphic profile, west wall – TP 3	47
Image 31: Trench 06 pre-excavation	48
Image 32: Trench 06 excavation in progress, with Catch Basin 1 in	49
Image 33: South wall profile, Trench 06	50
Image 34: Trench 07 pre-excavation, looking west	51
Image 35: Trench 07, excavation in progress, looking west	52
Image 36: South wall profile, Trench 07	53
Image 37: TP 4, excavation in progress, looking west	54
Image 38: South wall profile, TP 4	55
Image 39: Trench 08, excavation in progress, looking south	56
Image 40: East wall profile, Trench 08	57
Image 41: Trench 10, excavation in progress, looking south	58

Image 42:	East wall profile, Trench 10	59
Image 43:	Trench 11, overview, looking west	60
Image 44:	South wall profile, Trench 11	61
Image 45:	Trench 12, excavation in progress, looking southeast	62
Image 46:	West wall profile, Trench 12	63
Image 47:	Trench 13, pre-excavation	64
Image 48:	Fire hydrant elements exposed, Trench 13	65
Image 49:	North wall profile, Trench 13	66
Image 50:	Trench 14, post-excavation, looking east	67
Image 51:	North wall profile, Trench 14	68
Image 52:	Trench 15, excavation in progress	69
Image 53:	East wall profile, northern section Trench 15	70
Image 54:	Beach area pre-excavation, facing southwest	71
Image 55:	Trenches 16-23, post-excavation	73
Image 56:	Construction debris and fill removal, beach area	74
Image 57:	Trench 16, excavation in progress	75
Image 58:	Trench 16, post-excavation	76
Image 59:	Trench 17, excavation in progress	77
Image 60:	Trench 18, post-excavation	77
Image 61:	High water table in Trenches 19 and 20	78
Image 62:	Old rebar and concrete slab in Trench 19	79
Image 63:	Asphalt layer, Trench 20	80
Image 64:	Discovery of second concrete layer during excavation of Trench 20	81
Image 65:	Widening of Trench 20	82
Image 66:	Concrete slab found in widened portion of Trench 20	82
Image 67:	Trench 21, post-excavation	83
Image 68:	Trench 22, post-excavation	84
Image 69:	Trenches 23-25, along the southernmost line of east-west oriented main wooden support beams	85
Image 70:	Trenches 26-31, running south to north along the western edge of the main support beams	86
Image 71:	Unexcavated area due to concrete flooring	87
Image 72:	Terrain of the beach prior to excavation of Trench 23, looking east	88
Image 73:	Trench 23, excavation-in-progress with wooden support beam, looking east	89
Image 74:	Stratigraphic profile, east wall – Trench 23	90
Image 75:	Trench 25, excavation-in-progress, looking east	92
Image 76:	Stratigraphical profile, east wall – Trench 25	93
Image 77:	Trench 28, excavation-in-progress, looking south	94
Image 78:	Stratigraphic profile, east wall – Trench 28	95
Image 79:	Concrete flooring in Trench 31	96
Image 80:	Seawall locations laid out, looking west	97

I. INTRODUCTION

WWC Contracting contracted with Chrysalis Archaeological Consultants, Inc., (Chrysalis) on behalf of the City of New York – Department of Parks and Recreation (NYC Parks) to provide all Cultural Resource Management (Archaeological) services for the Reconstruction of the Pavilion at the end of Hylan Boulevard Adjacent to Satterlee Street in Conference House Park, Staten Island, Richmond County, New York Project (Contract Number: R006-213M; E-PIN: 8461780040001), also known as the “Staten Island Pavilion Project at Conference House Park” (the Project) (Map 01). The archaeological component of the Project was conducted at the behest of NYC Parks, who recognized the historic sensitivity of the area and requested a cultural resource management assessment. This report is a summation of the Phase IB archaeological field testing and monitoring that occurred intermittently in 2018 and 2019 and includes results and recommendations.

The project area is located within Conference House Park, a 227-acre area at the southern tip of Staten Island in the borough’s Tottenville neighborhood. The park is adjacent to the Ward Point Bend and Arthur Kill (Map 01). NYC Parks established the overall project area and defined the Area of Potential Effect (APE) in their Scope of Work (SOW) (Map 02).

The purpose of the Project is to reconstruct the existing Pavilion, make infrastructure and landscape improvements within the APE, and install new retaining walls and seawalls to prevent flooding. The Phase IB investigations summarized in this report were designed to determine the presence/absence of archaeological resources within the project area and to assess whether they would be adversely affected by project construction plans. The goal of the cultural resource management investigation was to determine whether significant (i.e. National Register eligible) resources were present in the APE and to provide mitigation recommendations, if necessary. The Phase IB Archaeological Work Plan (AWP) was submitted to the City of New York – Landmarks Preservation Commission (NYC LPC) and NYC Parks for review and was approved by these agencies in 2018 (Chrysalis 2018 – Appendix A).

The Park contains significant precontact Native American resources and human internments as well as seventeenth, eighteenth, and nineteenth century archaeological resources and architecture. The extant Conference House was the site of a historic peace conference during the Revolutionary War, resulting in its designation as an NYC LPC landmark and listing on the National and State Registers of Historic Places. The Park is also the site of the Ward’s Point Conservation Area, where past archaeological investigations have produced substantial evidence of pre-contact Native American activity.

A total of 11 standardized test pits (STPs) measuring 1.5’ by 1.5’ (0.5m by 0.5m) were excavated on two transects (A and B) as part of the Phase IB field testing of the APE. A majority of the field testing was in highly disturbed stratigraphy. Additionally, 39 construction trenches and 4 test pits were archaeologically monitored within the APE.

No further archaeological investigation is recommended for this Project. However, based on the known historical and archaeological significance of the Park, subsequent construction projects may be subject to archaeological investigations.

The Project was enacted in accordance with the National Historic Preservation Act of 1966, as amended, the Advisory Council on Historic Preservation’s “Protection of Historic and Cultural Properties” (36 CFR 800.4), and the NY SHPO’s Guidelines for Archaeological Projects, and it adheres to the revised 2018 Landmarks Preservation Commission’s “Guidelines for Archaeological Work in New York City.”

Alyssa Loorya, Ph.D., R.P.A., President, served as Principal Investigator for this project. Leah Mollin-Kling, M.A.A., R.P.A. served as Field Director and authored this report for Chrysalis. Alex Agran and Elissa Rutigiano served as Field Technicians for this project. Alyssa Loorya, Ph.D., R.P.A., and Lisa Geiger, M.A., R.P.A., edited this report.

Project Information

Project Name	Reconstruction of the Pavilion at the end of Hylan Boulevard Adjacent to Satterlee Street in Conference House Park, Staten Island, Richmond County, New York
Street Address	7414-7498 Hylan Blvd, Staten Island, NY 10307
Borough/Block/Lot	Staten Island/Block 7857/Lots 1, 80, 90
LPC PUID (If Yet Assigned)	
Applicant Name	
Lead Agency (Contact Person)	
Secondary Agencies (Contact Person)	



Map 01: USGS – Perth Amboy Quadrangle, 2016.



Map 02: Project area map (New York City Tax Map 2012).

II. SYNTHESIS OF PREVIOUS WORK

According to The New York State Office of Parks, Recreation and Historic Preservation Department's online Cultural Resource Information System (CRIS) and the Landmark Preservation Commissions' archaeological report holdings, twelve archaeological investigations of the Conference House Park and surrounds have been undertaken since 1980, some within the current APE (Map 03). The most recent project was a 2011 Phase IA Documentary Study by Historical Perspectives, Inc (HPI) which concluded that the pre-contact sensitivity for the Park is high (HPI 2011). In 2006, HPI also engaged in Phase IB/III testing of Satterlee Street to the north of its intersection with Hylan Boulevard (the eastern boundary of the current APE), which identified two Early- to Middle-Woodland pre-contact sites (HPI 2006). One of those sites is located just north of the gated entrance to the current APE.

Portions of the Project APE were included in a Phase IA assessment of portions of the current APE, undertaken by Arnold Pickman prior to the construction of the early-2000's pavilion at the end of the former Hylan Boulevard at the western extent of the APE (Pickman 2000). As the pavilion sits at the mouth of a large swale or marshy area, the area was determined to have low sensitivity for pre-contact resources. Pickman also summarized the extensive construction and demolition disturbances that the APE underwent in the twentieth and twenty-first centuries (Pickman 2000). However, given the wealth of pre-contact and historical archaeological resources recovered in other areas of the Park, Pickman recommended monitoring of the construction of the pavilion and limited testing in and around the pathway (Pickman 2000).

Subsequent projects – John Milner Associates (JMA) 2004 and 2005 excavations and the previously discussed HPI investigations – engaged in limited testing within the boundaries of the current APE. The testing that did coincide with the current APE yielded no significant archaeological resources and the stratigraphy encountered was heavily disturbed.

However, despite evidence of extensive modern disturbances and the lack of significant resources within the tested portions of the APE, the historic significance of Conference House and the results of archaeological investigations in other areas of the Park and adjacent street beds lead to a designation of high potentiality for the recovery of archaeological resources within the current APE, necessitating archaeological investigations of the current project.



Map 03: Visual representation of previously identified resources/archaeological sites relative to the APE; information compiled from the various assessments of the sensitivity of Conference House Park/Wards Point Conservation Area.

III. CONTEXT AND RESEARCH DESIGN

The APE is located in Conference House Park, an area of pre-contact and historical significance on the south shore of Staten Island, New York City, New York. Conference House Park is part of the Ward's Point Conservation Area, which contains the Ward's Point Archaeological Site, also referred to as Burial Ridge, to the south of the APE. The conservation area was listed on the National Register of Historic Places (NHRP) and the State Register of Historic Places (SRHP) in 1982. Burial Ridge was listed on the NHRP in 1993. The Conference House was designated a New York City Landmark in 1967.

Ward's Point Conservation Area encompasses all of Conference House Park and was listed on the National and State registers in part because of its potential to provide significant information regarding Native American history. Since 1858, an estimated 77 Native American burials, some with grave goods, have been recovered from excavations and investigations in various locations within the Park, including the current APE. However, the specifics from and references to the original source material for these finds were not included in any reviewed archaeological reports (Jacobson 1980, Pickman 1997, HPI 2011).

Ward's Point is the largest pre-contact archaeological site in New York City. Archaeological finds indicate that the area was the site of approximately 8000 years of human occupation beginning in the Early Archaic Period. Some of these finds were recovered from depths as shallow as 14" (0.35m) below ground surface (bgs). In addition to the above-mentioned burials, excavations have unearthed extensive shell deposits and at least 60 non-burial features (Pickman 1997). Most of the Native American materials and burials have been uncovered in the vicinity of the historic Conference House and in areas south of the current APE.

The Park also contains the extant and historic Conference or Billopp House, located just outside of the current APE to the northeast. The two and a half-story house was constructed between 1680 and 1688 by Captain Christopher Billopp, a British Navy officer. Although Billopp was British, the manor house was constructed in the Dutch style. The House remains the only surviving pre-Revolutionary War manor house in New York City.

The Billopp House is perhaps most famously associated with the Staten Island Peace Conference, from which it adopted its current name of Conference House. On September 11, 1776, Lord Richard Howe, as the King's representative, met with a delegation from the Continental Congress consisting of John Adams, Benjamin Franklin, and Edward Rutledge in the house to try and broker a quick end to hostilities. Peace could not be reached, however, and the Revolutionary War continued (Bradford 1966).

During the War, Billopp's grandson, Colonel Christopher Billopp, occupied the House and lead a local Tory faction. Upon conclusion of the War, the loyalist Billopps were subject to Confiscation Laws, and the family was forced to forfeit the estate, which was divided into nine farms and sold off. The parcel containing the Conference House was sold to Caleb Ward (HPI 2001).

Minimal development occurred in Conference House Park subsequent to the eighteenth century, especially as compared to the residential areas to the east of Satterlee Street - a key factor in the

high archaeological sensitivity of the park. To encourage development of the area in the 1920s, several roadways were planned in the vicinity of the Park, though most of these did not ultimately materialize. The lone exception was the Hylan Boulevard roadway, which extended Hylan Boulevard into the Park in the location of the current APE. The Hyland Boulevard extension now serves as a park pathway.

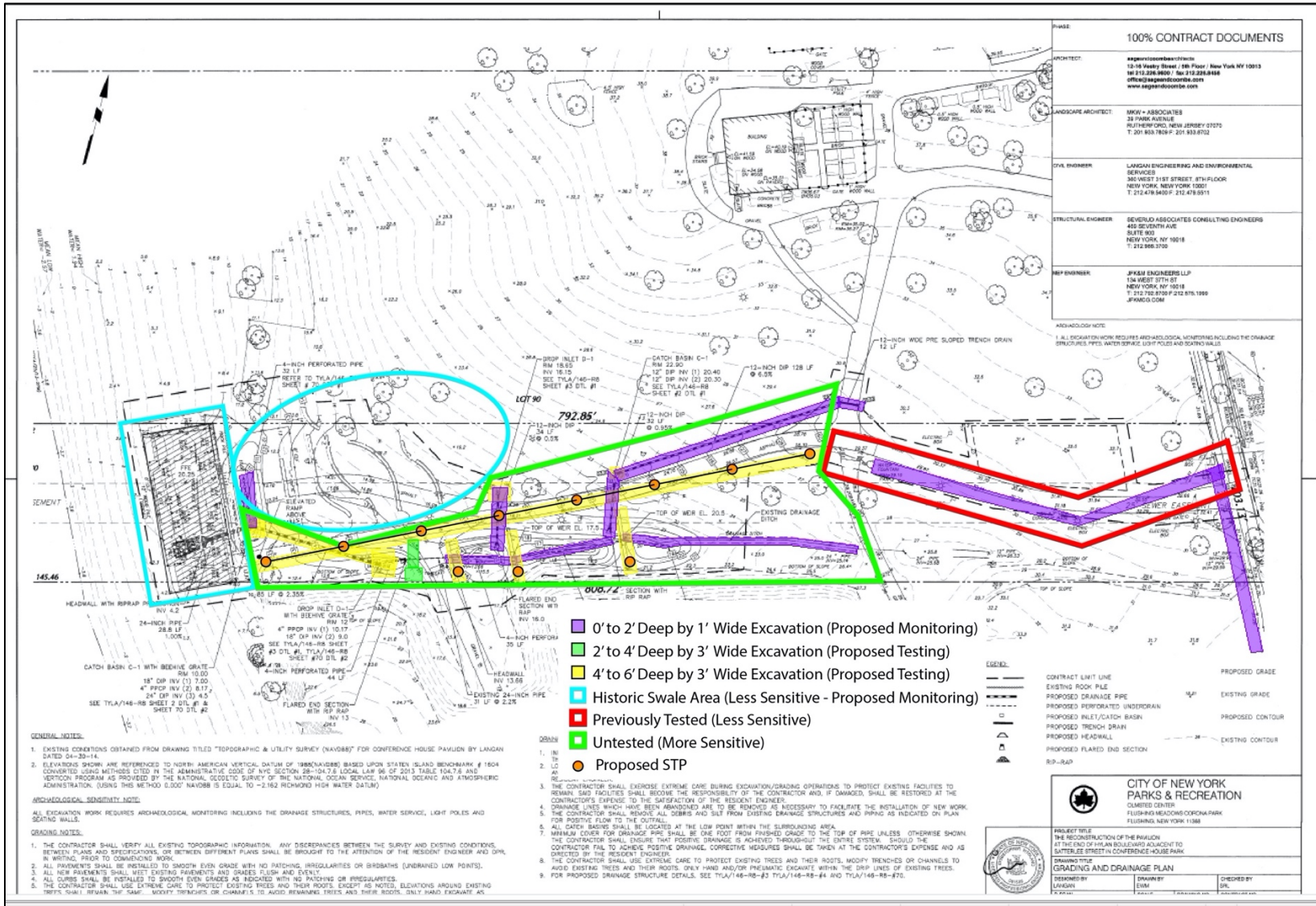
Ample evidence for extensive modern construction and demolition events inside of the current APE is provided by Pickman in his 2000 Phase IA report. Pickman notes that the pavilion area - already established as less sensitive for cultural resources due to its topography and environmental conditions - was further disturbed by the construction of the Albert Russel Pavilion in 1934 and its destruction in 1965 (Pickman 2000:5). The 1920s Hylan Boulevard extension was removed in 1984 and its grade lowered. In 2000, the former route of the Hylan Boulevard extension was paved over from the Pavilion area to Saterlee Street. This 8' wide pathway still exists. Additionally, light poles and a new electrical line were installed along the course of the new pathway.

Pickman determined that the eastern portion of the APE was more sensitive for archaeological resources because it is outside of the swale area. Additionally, Native burials were encountered in the eastern portion during the construction of the Hylan Boulevard extension (Pickman 2000:6). However, both the eastern and western parts of the APE underwent extensive disturbances when the extension was built in the 1920s, removed in the 1980s, and reinstalled as a blacktopped pathway in the 2000s. However, Pickman recommended archaeological monitoring of all project plans due to the historic value and sensitivity of the Park at large (Pickman 2000).

Chrysalis based the sensitivity valuations of the current APE on Pickman's determinations as well as information gleaned from the archaeological testing of the eastern portion of the APE by HPI and John Milner Associates. Though extensive modern disturbances are noted along the course of the old Hylan Boulevard extension and in the swale area in the western portion of the APE, the potential to encounter Native or historical cultural resources remains a possibility due to the high sensitivity of the surrounding Park.

The eastern portion of the current APE was considered least sensitive, as previous testing in this location yielded highly disturbed stratigraphy (Map 04). The western portion was considered more sensitive, and thus subject to archaeological shovel testing, due to the fact that this area had not yet been archaeologically tested. However, all portions of the APE were archaeologically monitored in deference to the historic value of the Park at large.

The scope of work for the current Project sought to make landscape and infrastructure improvements to the APE. New trees, shrubs and grass were planted, and lighting elements were installed. Several derelict utilities were removed and replaced throughout the APE. Drainage improvements included the installation of new water lines and catch basin and the relocation of hydrants and water valves. Existing asphalt and concrete walkways were removed and replaced. Overall, excavation varied throughout the project area from the surface to a depth of approximately eight feet bgs.



Map 04: AWP sensitivity and Phase IB testing and monitoring proposals (Chrysalis 2018 – Appendix A).

IV. PROJECT METHODS

Research Goals

Phase IB fieldwork is designed to ascertain the presence/absence of archaeological resources within a site determined by documentary study to have potential to include these resources. The goal is to determine whether significant (i.e., National Register [NR] eligible) resources are extant within the APE and to ascertain whether they could be adversely affected by project construction work.

Phase IB archaeological investigations were deemed necessary for the current project as Conference House Park is highly sensitive for pre-contact and historic archaeological resources. Questions as to the stratigraphical integrity and sensitivity of the Pavilion's pathway necessitated archaeological field testing of its western half. Subsequent construction excavations were archaeologically monitored.

Field Methods

A total of eleven 1.5' by 1.5' (0.5m square) standardized test pits (STPs) were excavated on two transects (A and B). As per the stipulations in the AWP, inter-transect STPs were placed every 50' (15m) and were excavated in arbitrary 3" (10cm) levels to a depth of 3' (1m). Map 05 shows the location of the proposed STPs from the approved AWP (Map 05) (Chrysalis 2018 – Appendix A).

All soils were screened through ¼" mesh screen and were described using the Munsell color system and standard texture classifications. Artifacts, that were initially recovered during screening were retained, with the exception of bulk materials such as concrete rubble, brick, large metal objects, ash coal, cinders, and slag. In the case of such materials, a sampling strategy was employed. Recovered artifacts were bagged according to their unique provenience and transported to the Chrysalis laboratory for processing and analysis. No significant artifacts were recovered from the project area as all material remains were highly fragmented, not *in situ* and/or significant in nature. Soil profiles were described, photographed in digital format, and illustrated by measured drawings in Imperial or Engineer's scale in plan and vertical perspective, as appropriate.

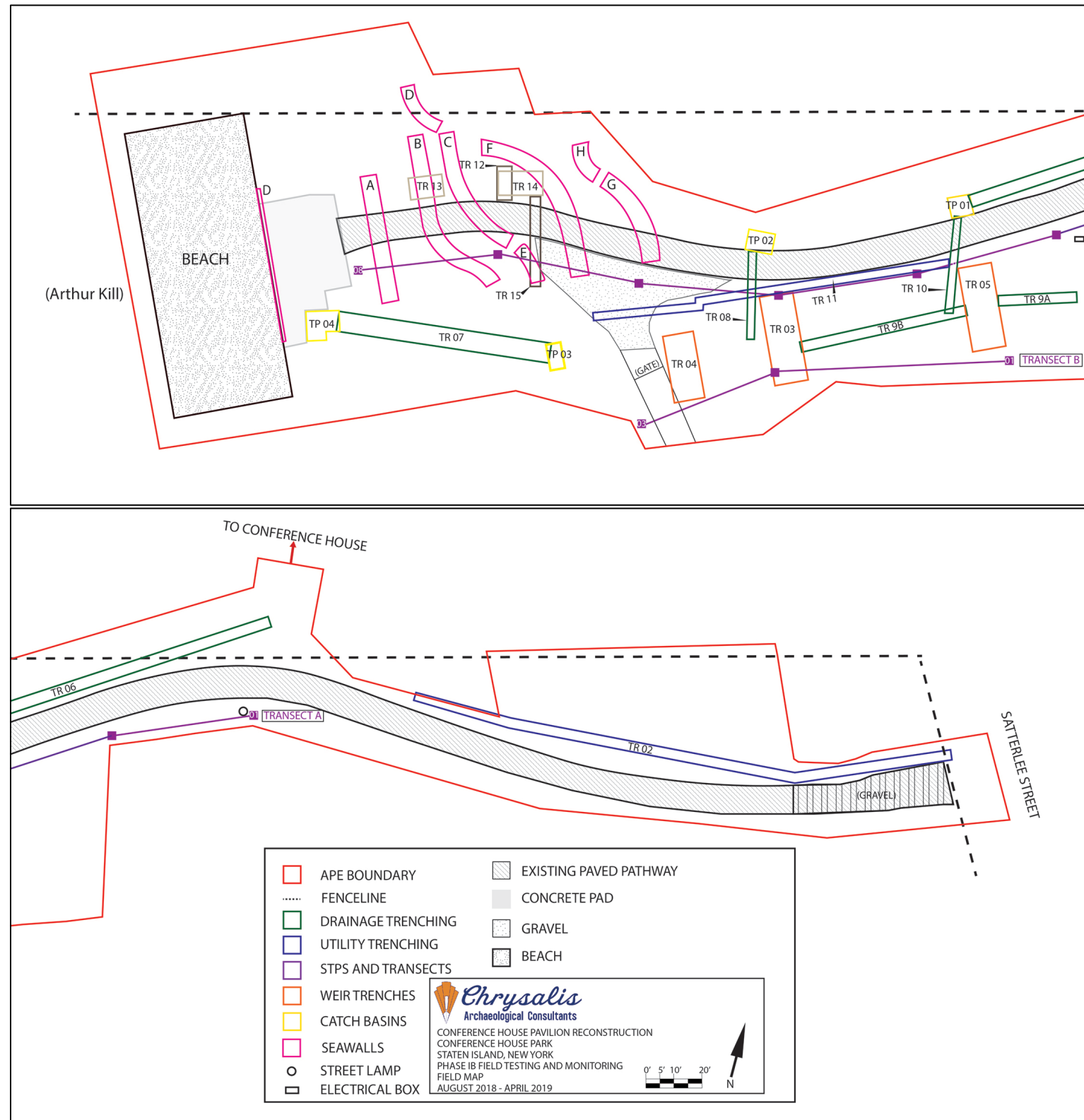
Phase IB archaeological monitoring of construction excavations and earth-disturbing activities (i.e. tree removals) occurred in various locations throughout the APE (Map 05).

V. FIELD RESULTS

Phase IB Field Testing

A total of 11 STPs were excavated on two transects (A and B) during Phase IB field testing of the APE (MAP 05). Eight STPs were excavated on the A Transect, and three STPs were excavated on the B Transect. Transect A STPs were placed every 50' (15m) unless impacted by ground conditions. Transect B STPs were planned using the same interval, but actual distance varied as ground conditions heavily impacted placement. STP testing occurred only in the areas of supposed higher sensitivity, which was concentrated in the western half of the APE (Chrysalis 2018 – Appendix A). The A Transect extended along the southern edge of the old Hylan Boulevard extension. Transect B was located 30' (9m) further south along the south end of the APE.

Transect A and B terrain was homogenous, although the stratigraphy varied widely. The APE sloped downwards towards the Arthur Kill to the west. The terrain was mostly open, grassy fields with few trees. The area has been extensively modified in the twentieth and twenty-first centuries, as numerous surficial elements like gravel paths, utility boxes, and water management features are evident across the APE. For the most part, stratigraphy on both transects exhibited high levels of modern construction disturbance.



Map 05: Phase IB Field Map in two parts, west (left) half at top and east (right) half at bottom.

The soil series for the testable areas of the APE is largely Booton Loam, whose parent material is red-coarse loamy till derived from sedimentary rock (USDA 2019). As such, Munsell colors generally coincided with the 10YR spectrum for the O and A horizons and 7.5YR to 5YR for the subsoils. The soil horizons are generally: Ao or Oe over Ap or A1, followed by Be (no clay), Bt (accumulation of clay), Bx (compact), and Btx (compact clay) horizons. As the site sits near the water and beach, some subsoil layers included remnants of old beach. Numerous fill layers and redeposited subsoil horizons proliferated across the site, providing evidence for the stripping and grading activities that occurred along the course of the old Hylan Boulevard extension.

Transect A

Transect A began at the western edge of the untested, and thus potentially sensitive, area of the APE (Map 05). A-01 was placed next to an extant lamp post on the southern edge of the Hylan Boulevard extension. Transect A STPs were then placed off of A-01 on a 50' (15m) interval heading west. However, as Transect A abutted the existing roadway, modern disturbances in the form of electrical boxes and other utility features influenced the placement of some STPs (Image 01) (Map 05).



Image 01: Overview of Transect A.

The stratigraphy for most of Transect A was heavily disturbed by modern construction efforts. In some cases, excavation was discontinued due to a shallow water table, especially at the western end of the transect. Limited intact stratigraphical profiles and no significant cultural resources were encountered during Transect A archaeological excavation.

Due to the ground conditions, only two Transect A STPs (A-02 and A-03) were able to be excavated to the maximum depth of 3.3' (1m) below ground surface. The stratigraphy for both of these STPs was similar, featuring a developing Ao overlaying fill in the topmost layers and buried A horizons overlaying intact subsoils further down (Image 02) (Table 01). Variation in the compactness and proportion of clay in subsoils was noted across Transect A and the APE.

The majority of Transect A STPs featured heavily disturbed stratigraphic profiles, typified by A-05 (Table 02).

Table 01: Stratigraphic Profile East Wall – A-02.

STRAT	NAVD 88 DEPTH (BGS)	MUNSELL	SOIL TYPE	COMMENTS
Developing Ao	27' – 26.77' (0' – 0.23' bgs)	10YR 3/2 very dark grayish brown	Silt, trace sand	
Redeposited A and B soils	26.77' – 26.54' (0.23' – 0.46' bgs)	10YR 4/2 dark grayish brown mottled with 7.5YR 4/3 brown	Medium sand	With mica.
Buried A1	26.54' – 25.40' (0.46' – 0.6' bgs)	10YR 3/1 very dark gray	Fine-to-medium sandy loam	
Btx1	26.40' – 25.85' (0.6' – 1.15' bgs)	5YR 4/4 reddish brown	Loam	Compact
Btx2	25.85' – 25.40' (1.15' – 1.60' bgs)	7.5YR 3/3 dark brown dark brown	Loam	Compact
Bx1	25.40' – 24.77' (1.60' – 2.23' bgs)	5YR 4/4 reddish brown	Clay loam	Very compact with gravel.
Bx2	24.77' – 23.70' (2.23' – 3.30' bgs)	5YR 3/3 dark reddish brown	Silty clay	Compact



Image 02: Stratigraphic profile, east wall, A-02.

Table 02: Stratigraphic Profile – A-05.

STRAT	NAVD 88 DEPTH (BGS)	MUNSELL	SOIL TYPE	COMMENTS
Overburden	18.00 – 17.70 (0' – 0.30' bgs)	10YR 3/1 very dark gray mottled with 7.5YR 4/4 brown	Sandy loam	
Fill I	17.70' – 17.57' (0.30' – 0.43' bgs)	10YR 5/1 gray	Medium sand	With mica.

Redeposited subsoils	17.57' – 16.51' (0.43' – 1.24' bgs)	10YR 3/3 dark brown mottled with 7.5YR 4/4 brown and 10YR 2/1 black	Clay loam	
Btx1	16.51' – 16.36' (1.24' – 1.64' bgs)	5YR 4/4 reddish brown	Clay loam	Discontinued due to extreme compaction.

Stratigraphy became even more disturbed as Transect A headed further west towards the beach, and the elevation slowly decreased. No intact stratigraphic profiles were encountered in the last three Transect A STPs. Instead, a thick gravel layer was observed atop subsequent layers of fill and truncated subsoils (Images 03 and 04).



Image 03: End of Transect A (A-08), with modern surface disturbances.



Image 04: Excavation of A-08, with modern disturbances.

Transect B

Transect B was placed in the location of an existing water management system and in the future location of the Project's new weirs, which accounted for the shallow water tables across the transect (Image 05). Transect B STPs did not follow a strict 50' interval due to impediments from the existing drainage system and the area's use as the construction project's staging area. B-01 was the easternmost STP on the line, located in an open field directly south of the existing weir system. B-02 was placed 83' (25m) off of B-01 at 261°. B-03 was located 48' (13m) east, at 245° off of B-02.



Image 05: Overview of Transect B, with existing drainage system and modern disturbances.

None of the Transect B STPs were able to be excavated to the maximum depth of 3.3' (1m) below ground surface due either to a shallow water table or ground compaction. The soils encountered were highly disturbed save for B-02, which featured a thick hydric layer over compacted and clay-rich subsoil (Btx) (Image 06).



Image 06: B-02 east profile.

B-03 was the most highly disturbed STP on the transect, as Styrofoam and other modern trash was encountered to a depth of 13.09' NAVD 88 (1.31' bgs) (Table 03). The STP was located directly west of a gravel-filled pathway linking the Hylan Boulevard extension and a south-running path into the Park. The STP also abutted the construction fencing.

No undisturbed stratigraphical profiles and no significant cultural resources were encountered during Transect B archaeological excavation.

Table 03: Stratigraphic Profile – B-03.

STRAT	NAVD 88 DEPTH (BGS)	MUNSELL	SOIL TYPE	COMMENTS
Developing Ao	14.40 – 14.07' (0' – 0.33' bgs)	10YR 2/2 very dark brown	Fine Sandy silt	Extensive roots.
Fill II with redeposited subsoil	14.07' – 13.09' (0.33' – 1.31' bgs)	7.5YR 3/2 dark brown with pockets of 2.5Y 5/3 light olive brown	Sandy loam	Semi-angular rocks, gravel, Styrofoam and modern bottle glass, and oxidation.
Bt1	13.09' – 12.83' (1.31' – 1.57' bgs)	5YR 4/4 reddish brown	Clay loam	Discontinued due to water table.

Phase IB Monitoring

In addition to field testing, all construction excavation in the area of increased sensitivity as outlined in the AWP was subject to archaeological monitoring. A total of 39 trenches and 4 test pits were monitored as part of Phase IB activities. Trenching occurred for the installation of new utilities, seawalls, weirs, catch basins, water management elements, and concrete footings for a dock. Tree removals were also monitored; these removals did not expose undisturbed soils or any archaeologically significant materials.

Monitored trenching and excavation results are grouped in this report based on construction activity type, as follows:

- Utility Extension -Trench 02
- Weirs - Trenches 03, 04, 05, 09A, 09B, 37
- Catch Basins - Test Pits 1-3
- Water Piping - Trench 06
- Drainage Piping - Trench 07, Test Pit 4
- Catch Basin Connections - Trenches 08, 10
- Utility Connections - Trench 11
- Fire Hydrant Relocation - Trenches 12-15
- Beach Area Sonotube Excavation - Trenches 16-31
- Seawalls -Trenches 32-39

Archaeological monitoring occurred intermittently between August 2018 and September 2019. Of note, an initial trench was started outside of the APE and was monitored as Trench 01. Stratigraphy results from this trench are not included in this report, as it fell outside of the APE and archaeological sensitivity.

Utility Extension (Trench 02)

Trench 02 was a long, thin trench extending from the construction gate entrance at the Hyland Boulevard and Satterlee Street intersection and heading generally west into the APE on the north side of the Hylan Boulevard extension (Map 05). The trench measured 1' (0.3m) in width and varied between 2' (0.6m) and 2.5' (0.75m) in depth. The total length for the trench was 220.5' (67.2m). Trench 02 was segmented into two sections: the eastern third and the western two-thirds, based on course and stratigraphical profiles. The area containing Trench 02 is considered less sensitive, as it is within an area subject to previous archaeological testing (Map 05).

The eastern third of the trench closely followed the contours of the Hylan Boulevard extension, running for 54.5' (16.6m) at 258° (Image 07). This section of the trench exhibited the most disturbed stratigraphy, as numerous utilities and roadway elements were encountered, including a buried electrical pipe near the construction gate (Image 08) (Table 04).

Table 04: Stratigraphic Profile, Section 1, North Wall – Trench 02.

STRAT	NAVD 88 DEPTH (BGS)	MUNSELL	SOIL TYPE	COMMENTS
Developing Ao	32.66' – 32.46' (0' – 0.20' bgs)	10YR 2/2 very dark brown	Fine Sandy silt	
Redeposited B soils I	32.46' – 31.66' (0.20' – 1.00' bgs)	7.5YR 3/2 dark brown mottled with 7.5YR 4/6 strong brown	Sandy loam	Occasional semi-rounded, medium-to-small rocks.
Redeposited B soils II	31.66' – 30.26' (1.00' – 2.40' bgs)	7.5YR 4/3 brown mixed with 7.5YR 4/4 brown and pockets of Gley 1 5/10GY greenish gray	Sandy clay	Very compact with oxidation.



Image 07: Eastern section of Trench 02, excavation in progress.



Image 08: Stratigraphic profile, Section 1, north wall, Trench 02.

The second distinct profile was consistent across the western two-thirds of Trench 02, which cut into an adjacent open field starting at 54.5' (16.6m) west of the eastern edge of the trench at 285° for the remainder of its excavation (Image 09) (Map 05). The stratigraphy in this location was characterized by modern disturbance horizons overlaying intact subsoils (Image 10) (Table 05).



Image 09: Trench 02, Section 2, excavation in progress.

Table 05: Stratigraphic Profile, Section 2, North Wall – Trench 02.

STRAT	NAVD 88 DEPTH (BGS)	MUNSELL	SOIL TYPE	COMMENTS
Developing Ao	30.00' – 29.70' (0' – 0.30' bgs)	10YR 2/2 very dark brown	Fine Sandy silt	Extensive roots
Fill I	29.70' – 29.50' (0.30' – 0.50' bgs)	dark gray	Fine-to-medium sand	
Truncated Be	29.50' – 28.90' (0.50' – 1.10' bgs)	7.5YR 2.5/2 very dark brown	Fine Sandy silt	

Bt	28.90' – 28.00' (1.10' – 2.00' bgs)	7.5YR 4/4 brown	Clay loam	Some small cobbles
Btx	28.00' – 27.70' (2.00' – 2.30' bgs)	7.5YR 3/1 very dark gray	Clay loam	Very compact



Image 10: Stratigraphic profile, Section 2, north wall – Trench 02.

Feature 01 was discovered in the Trench 02 north wall, within the open field cut by this trench, at 122.7' (37.4m) from the eastern edge of Trench 2. Feature 01 was an in situ, buried wooden post and associated builder's trench of indeterminate age that was discovered along the northern wall of Trench 02 in the area farthest from the road (Image 11) (Figure 01).



Image 11: Feature 01 (highlighted) in situ, facing north.

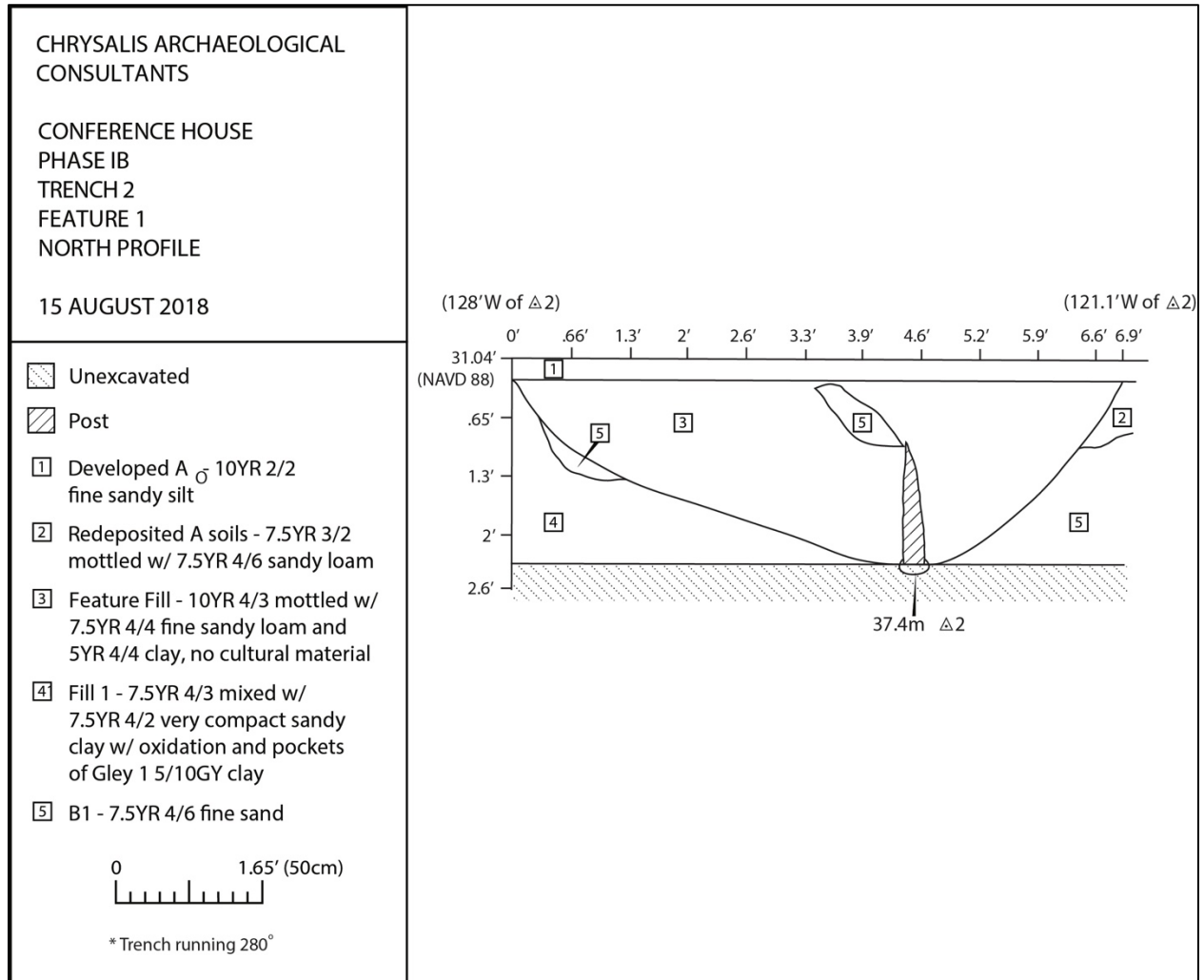


Figure 01: Feature 01 north profile.

The post extended from 31.31' NAVD 88 (28cm bgs) to 29.04' NAVD 88 (72cm bgs) and was 0.33' (10cm) in width. The post was surrounded by a much larger bowl-shaped builder's trench measuring 6.9' (2.1m) in length by at least 2.1' (0.63m) in depth, with the bottom at 29.04 NAVD 88. The builder's trench began immediately underneath the developing A₀ horizon and cut into disturbed B soils. Pockets of B soil was evident in profile directly atop the wooden post and outside of the builder's trench to the west (Image 12). No artifacts were uncovered in or around the feature. The feature was recorded, mapped, and photographed.



Image 12: Feature 01 (highlighted) in profile, Trench 02.

The stratigraphy of Trench 02 in the area to the east and west of the Feature 01 wooden post was highly disturbed, indicating low probability that additional fence posts exist intact in the area (Image 13). Additionally, a disarticulated segment of wooden fence post was discovered in construction fill just to the west of Feature 01, suggesting that the fence in this area was destroyed by modern construction (Image 14). No other features or cultural resources were recovered in Trench 02.



Image 13: Trench 02, excavation in progress to the west of Feature 01.



Image 14: Disarticulated wooden post in fill, Trench 02.

Weirs (Trenches 03, 04, 05, 9A, 9B, and 37)

Three trenches, Trench 03-05, were excavated near an existing drainage system to the south of the Hylan Boulevard extension in the western half of the APE (Map 05). The topography was an open field with few scattered trees, removed prior to excavation. The existing east-west running drainage system extended westward from the eastern construction fence line, bisecting the open field. Standing water proliferated in this area of the APE.

Trenches 03-05 were excavated for the installation of new weirs (Weirs A-C): Trench 03 corresponds to Weir A, Trench 04 to Weir C, and Trench 05 to Weir B (Map 05). Trenching for a new drainage pipe was placed along the course of the existing drainage system (Trenches 09A and 09B) (Image 15).

Trench 37, corresponding to Weir D, was excavated at the western edge of the elevated portion of the APE, as it abuts the beach and is not part of the weir system in the southern area of the APE (Map 05).

Stratigraphy varied across the Trenches 03, 04, and 05, the three weir trenches in the southern portion of the APE, though all exhibited evidence of modern disturbances. Disturbed stratigraphy

was also noted in Trench 37 to the west. No significant cultural resources were encountered in Trenches 03-05 and 37.



Image 15: Weir area pre-excavation, looking west.

Trench 03 was a north-south oriented rectangular trench measuring 12' by 32' (3.6m by 9.75m) at the surface, its large width due to safety stepping. It was excavated to 11.34' NAVD 88 (7' bgs). At 17.34' NAVD 99 (1' bgs), the trench measured 6' by 32' (1.8m by 9.75m). Trench 03 was placed in between the Hylan Boulevard extensions and the construction fencing surrounding the site (Image 16). An existing drainage system bisected the trench.



5

Image 16: Excavation in progress, Trench 03, looking east.

The stratigraphy of Trench 03 was variable and exhibited obvious disturbances, especially in the northern half due to the Hylan Boulevard extension roadway and existing drainage system. In the southern half, redeposited subsoils and fill layers overlaid intact substratum. What would have been the topmost intact subsoil layers in Trench 03 appear to have been previously stripped, some redeposited, possibly as a result of the construction of the existing weir and road (Image 17). The existing drainage system bowled out as much as 1' below the surrounding ground surface to 16.50' NAVD 88. The drainage included a rectangular concrete slab in a checked pattern to a depth of about 16.74' NAVD 88 (1.6' bgs) and an associated pipe (Image 18).



Image 17: Stratigraphic profile, west wall – Trench 03.



Image 18: Trench 03, post-excavation, looking north.

Trench 04 was located west of Trench 03 and was the westernmost weir trench. The trench measured 11' by 24' (3.35m by 7.3) and was excavated to a depth of 9.0' NAVD 88 (8' bgs). Like Trench 03, a 1.5' long and 1.8' (15.20' NAVD 88) deep safety step was utilized along the eastern wall to prevent caving, making the dimensions of the interior of the trench slightly smaller, at 8' (2.4m) in width. The stratigraphy of Trench 04 was highly disturbed in its northern half due to the weir and roadway, characterized by fill and redeposited B soils overlaying subsoil (Table 06). Like Trench 03, intact stratigraphy was evident in Trench 04's southern half (Image 19).



Image 19: Trench 04 post excavation, looking south.

Stratigraphical differences were also evident between the eastern and western walls of Trench 04, as the western half of the trench was within the footprint of the gravel pathway that connects the Park's interior with the Hylan Boulevard extension. The western wall was more demonstrably disturbed than its eastern counterpart and included a large drainage pipe in the northwest section of the wall (Image 20). No Ao or A1 horizons were evident. Along the eastern wall, intact stratigraphy was encountered in the southern portion of Trench 04. Highly disturbed stratigraphy was present in the northern half, as the trench approached the roadway.



Image 20: Western wall profile – Trench 04.

Table 06: Stratigraphic Profile West Wall – Trench 04.

STRAT	NAVD 88 DEPTH (BGS)	MUNSELL	SOIL TYPE	COMMENTS
Gravel	17.00' – 15.20' (0' – 1.8' bgs)	NA	NA	
Truncated Be	15.20' – 12.50' (1.8' – 4.5' bgs)	5YR 4/4 reddish brown	Silty fine to medium sand	0' to 15.5' north. Cobbles
Redeposited B soils	15.20' – 12.50' (1.8' – 4.5' bgs)	7.5YR 3/3 dark brown	Silty sand	15.5' to 24' north. Gravel and modern trash
Redeposited Subsoils	13.5' – 9.00' (3.5' – 8' bgs)	7.5YR 4/4 brown mottled with 10YR 5/4 yellowish brown and layers of 7.5YR 3/2 dark brown and 10YR 5/2 grayish brown with pockets of very dark gray coarse sand	Fine-to-medium sand	Only in northwest corner of trench. Includes pocket of C1 5YR 3/3 dark reddish brown wet sand.
Btx1	12.50' – 11.00' (4.5' – 6.0' bgs)	5YR 3/1 very dark gray	Clay loam	Very compact
Beach remnant	11.00' – 10.10' (6.0' – 6.9' bgs)	10YR 6/1 gray mixed with 10YR 5/3 brown and 2.5Y 6/3 light yellowish brown	Fine sandy clay	
C1	10.10' – 9.00' (6.9' – 8.0' bgs)	5YR 3/3 dark reddish brown	Medium sand	Rocks

Trench 05 was located east of Trench 03 and was the easternmost new weir excavation. The trench measured 8' by 30.125' (2.4m by 9.2m) and abutted the Hylan Boulevard extension on its northern boundary and the construction site fencing on its southern boundary. The stratigraphy of Trench 05 differed greatly from Trenches 03 and 04 due to the presence of a tree fell in the west wall and a much shallower water table. The shallow water table impacted the development of the subsoil layers, which exhibited evidence of water action (Image 21). Additionally, the trench frequently flooded during and after excavation, necessitating continual drainage via pumps.

As with the other two weir trenches, the stratigraphy of Trench 05 was increasingly disturbed in the northern half, with fill and redeposited subsoils proliferating (Table 07). In the southern half, intact subsoil horizons were mixed and banded due to continual water action as a result of the shallow water table. No significant cultural resources were encountered during the excavation of Trench 05.



Image 21: East wall profile, Trench 05.

Table 07: Stratigraphic Profile East Wall – Trench 05.

STRAT	NAVD 88 DEPTH (BGS)	MUNSELL	SOIL TYPE	COMMENTS
Developing Ao	20.50' – 20.16' (0' – 0.34' bgs)	10YR 2/2 very dark brown	Silty sandy loam	0' to 22.5' north.
Redeposited B soils	20.50' – 18.83' (0' – 1.67' bgs)	7.5YR 4/6 strong brown mixed with 5YR 4/4 reddish brown	Sandy clay	At surface from 24' to 31.125' north; extends across wall.
Disturbed B soils	18.83' – 15.50' (1.67' – 5' bgs)	5YR 4/4 reddish brown banded with 5YR 4/6 yellowish red and 5YR 3/3 dark reddish brown	Sandy clay	Only in southern 2/3 of trench. Banded due to water action.
C1	15.50' – 15.08' (5.0' – 5.42' bgs)	5YR 3/3 dark reddish brown	Medium sand	In remaining northern 1/3 of trench. Water table reached.

Three east-west trenches were excavated in between the weirs in order to install the main drainage pipe leading to the ocean. Two of the trenches were archaeologically monitored (Trenches 09A and 09B). Trench 09A was excavated to the east of Weir B (Trench 05) and Trench 09B was excavated in between Weir B (Trench 05) and Weir A (Trench 03). A third trench connecting Weir A (Trench 03) with Weir C (Trench 04) was excavated, but not monitored, and has no trench number.

Trench 09A measured 3.75' by 28' (1.1m by 8.5m) and was excavated to a depth of 18.6' NAVD 88 (3.4' bgs) on its eastern end and 16.1' NAVD 88 (4.4' bgs) on its western end. The area was already disturbed down to 2.5' bgs on its western end up and at the ground surface on its eastern end, as its course roughly corresponded to the existing drainage ditch (Image 22). Trench 9A connected to Trench 05 roughly halfway up its eastern wall, at 18' (5.5m) north of the southeast corner.



Image 22: Excavation-in-progress, Trench 09A, looking north.

The stratigraphy of Trench 09A varied considerably along its northern wall, though a top layer of modern disturbance extended across the trench to a depth of 2.5' bgs, which corresponds to 19.50' NAVD 88 on the eastern end and 18.0' NAVD 88 in the western end. The stratigraphy underneath the disturbance was different in three segments: from 0' at the trench's northwestern corner to 15'

(4.5m) to the east, from 15' to 21' (4.5m to 6.4m) east, and from 21' (6.4m) east to its northeastern corner (Image 23) (Table 08).

Table 08: Stratigraphic Profile North Wall – Trench 09A.

STRAT	NAVD 88 DEPTH (BGS)	MUNSELL	SOIL TYPE	COMMENTS
Fill 1	21' – 18.5' (0' – 2.5' bgs)	10YR 4/2 dark grayish brown	Loamy sand	Pebbles, cobbles and architectural debris.
Redeposited Sub I	18' – 16.1' (2.5' – 4.4' bgs)	7.5YR 4/6 strong brown mottled with 10YR 5/2 grayish brown	Sandy clay loam	Western edge to 15' east. Pebbles, cobbles and architectural debris.
Redeposited Sub II	18.5' – 17.1' (2.5' – 3.9' bgs)	5YR 4/4 reddish brown mottled with 10YR 5/2 grayish brown	Sand	15' to 21' east. Pebbles and cobbles.
Subsoil	19.5' – 18.6' (2.5' – 3.4' bgs)	5YR 4/4 reddish brown	Sand	21' to eastern edge. Pebbles and cobbles.



Image 23: Stratigraphic profile, North wall, center section – Trench 09A.

Trench 09B, located in between Trench 05 and Trench 03 in the weir area, measured 3.75' by 65' (1.1m by 19.8m). The land sloped upwards to the east, resulting in excavation depths ranging from

14.0' NAVD 88 (3.5' bgs) in the west to 18' NAVD 88 (2.5' bgs) in the east. Similar to Trench 09A, 09B exhibited differing stratigraphy along its course, although much of it was disturbed (Image 24) (Table 09). However, a layer of intact subsoil was extant in the eastern half of the trench. No significant cultural resources were encountered during the excavation of Trench 09B.

Table 09: Stratigraphic Profile North Wall – Trench 09B.

STRAT	NAVD 88 DEPTH (BGS)	MUNSELL	SOIL TYPE	COMMENTS
Developing Ao	17.5' – 17.0' (0' – 0.5' bgs)	10YR 2/2 very dark brown	Loamy sand	Western section.
Developing A1	17.0' – 16.5' (0.5' – 1.0' bgs)	10YR 3/2 very dark grayish brown	Sandy loam	Western section.
Fill I	16.5 – 14.0' (1.0' – 3.5' bgs)	7.5YR 4/3 brown	Clay sandy loam	Western section. Pebbles, cobbles, architectural debris, and ceramic sewer pipe fragments.
Fill II	16.7' – 15.8' (2.3' – 3.2' bgs)	7.5YR 4/6 strong brown	Sand	18' to 36' east. Pebbles, cobbles, architectural debris, and ceramic sewer pipe fragments.
C	20.0' – 18.0' (0.5' – 2.5' bgs)	5YR 4/4 reddish brown	Sand	36' to 65'. Pebbles and cobbles.



Image 24: Stratigraphic profile, North wall, western section – Trench 09B.

Trench 37 was excavated for the installation of Weir D, which was the westernmost trench in the upper area of the APE and abutted its boundary with the beach (Map 05). The trench measured 54.92' by 4.5' to 6.5' (16.7m by 1.4m to 2m). The trench was placed inside of the concrete pad that lay across the top of the wall separating the beach from the rest of the site. The trench was excavated to a depth of 6.17' NAVD 88 (6' bgs), all within disturbed soils and fill (Table 10). No significant cultural resources were encountered during the excavation of Trench 37.

Table 10: Stratigraphic Profile East Wall – Trench 37.

STRAT	NAVD 88 DEPTH (BGS)	MUNSELL	SOIL TYPE	COMMENTS
Concrete	12.17' – 9.47' (0' – 2.7' bgs)	NA	NA	
Fill I	9.47' – 7.77' (2.7' – 4.4' bgs)	7.5YR 4/4 brown	Loamy fine-to-coarse sandy clay	Rocks and gravel.
Fill II	7.77' – 6.17' (4.4' – 6.0' bgs)	7.5YR 4/4 brown mixed with 10YR 4/1 dark grey and 10YR 5/2 grayish brown	Loamy fine-to-coarse sandy clay	Gravel, rocks, and pebbles.

Catch Basins (Test Pits 1-3)

Test Pit 1 (TP 1), Test Pit 2 (TP 2), and Test Pit 3 (TP 3) were excavated for the installation of catch basins.

TP 1 corresponded to Catch Basin 1 and was a 9' by 9' (2.7m by 2.7m) square pit located north of the Hylan Boulevard extension and Trench 05 (Image 25). The pit was highly disturbed, likely the result of its proximity to the roadway (Table 11). Two distinct layers of redeposited subsoil were observed in the northern wall of the trench, indicating that this area was subject to soil stripping and redeposition of materials at some point, likely when the roadway was constructed in the 1920s (Image 26). The trench was excavated to a depth of 16.5' NAVD 88 (6.5' bgs).



Image 25: Catch Basin 1/TP 1 pre-excavation, looking south with Trench 05 in background.



Image 26: Stratigraphic profile, north wall profile – TP 1.

Table 11: Stratigraphic Profile North Wall – TP 1.

STRAT	NAVD 88 DEPTH (BGS)	MUNSELL	SOIL TYPE	COMMENTS
Developing Ao	23.0' – 22.75' (0' – 0.25' bgs)	10YR 2/2 very dark brown	Fine Sandy silt	
Redeposited Sub I	22.75' – 20.37' (0.25' – 2.63' bgs)	7.5YR 3/3 dark brown	Silty sand	Gravel
Redeposited Sub II	20.37' – 18.25' (2.63' – 4.75' bgs)	7.5YR 3/3 dark brown mixed with 7.5YR 4/6 strong brown and 10YR 5/2 grayish brown	Sandy loam	Gravel
Beach Remnant	18.25' – 17.0' (4.75' – 6.00' bgs)	10YR 6/1 gray mixed with 10YR 5/3 brown and 2.5Y 6/3 light yellowish brown	Fine Sandy clay	
C1	17.0' – 16.5' (6.00' – 6.50' bgs)	5YR 3/3 dark reddish brown	Medium sand	Cobbles

TP 2 was excavated for the installation of Catch Basin 2 on the north side of the roadway and just north of Trench 03 (Image 27). The trench measured 7.3' (2.2m) on its east-west axis and 9.6'

(2.9m) on its north-south axis. The trench was excavated to a depth of 14.85' NAVD 88 (4' bgs), all disturbed soils with modern trash (Image 28) (Table 12).



Image 27: Location of TP 2 (highlighted) with Trench 03 on left, looking west.

Table 12: Stratigraphic Profile, East Wall – TP 2.

STRAT	NAVD 88 DEPTH (BGS)	MUNSELL	SOIL TYPE	COMMENTS
Developing Ao	18.85 – 18.55' (0' – 0.30' bgs)	10YR 2/2 very dark brown	Sandy loam	
Developing A1	18.55' – 17.45' (0.30' – 1.40' bgs)	10YR 3/2 very dark grayish brown	Sandy loam	Modern trash, asphalt and timber chunks, plastic, pebbles and cobbles.
Fill I	17.45' – 16.55' (1.40' – 2.30' bgs)	7.5YR 4/6 strong brown	Sandy loam	Modern trash, asphalt and timber chunks, plastic, pebbles and cobbles.
Fill II	16.55 – 14.85' (2.30' – 4.0' bgs)	7.5YR 4/3 brown	Sandy loam	Modern trash, asphalt and timber chunks, plastic, pebbles and cobbles.



Image 28: Stratigraphic profile, east wall – TP 2.

TP 3 was located on the southern side of the roadway and 35' (10.6m) west of the western wall of Trench 04 (Image 29). The trench was oriented northwest by southeast, measuring 4.5' by 8' (1.4m by 2.4m) and was excavated to a depth of 7.9' NAVD 88 (4.8' bgs). Intact stratigraphy was encountered at 2' bgs, though no significant cultural materials were recovered (Image 30) (Table 13).



Image 29: Location of TP 3, looking east.

Table 13: Stratigraphic Profile, West Wall – TP 3.

STRAT	NAVD 88 DEPTH (BGS)	MUNSELL	SOIL TYPE	COMMENTS
Developing Ao	12.7' – 12.4' (0' – 0.30' bgs)	10YR 2/2 very dark brown	Loamy sand	
Redeposited Subsoil	12.4' – 10.7' (0.30' – 2.0' bgs)	7.5YR 3/3 dark brown	Loamy sand	Stone slab fragments and architectural debris; cobbles and pebbles.

Fill I	10.7' – 9.7' (2.0' – 3.0' bgs)	7.5YR 3/1 very dark gray with 7.5YR 5/8 strong brown and Gley 2 6/5B bluish gray	Sandy clay	
Truncated Bt	9.7' – 7.9' (3.0' – 4.8' bgs)	5YR 4/4 reddish brown	Clay loam	



Image 30: Stratigraphic profile, west wall – TP 3.

Water Piping (Trench 06)

Trench 06 was a long and thin east-west running trench excavated for the installation of a 1” water pipe and a 12” drainage pipe connecting Catch Basin 1 (TP 1) to Trench 02 on the north side of the roadway (Images 31 and 32) (Map 05). The trench measured 4’ by 150’ (1.2m by 45.7m) and was excavated to a depth of 4.5’ bgs, which corresponded to 24.24’ NAVD 88 on the eastern end and 18.5’ NAVD 88 on the western end. No intact stratigraphy or significant cultural resources were encountered in Trench 06 (Image 33) (Table 14).



Image 31: Trench 06 pre-excavation, looking east.



Image 32: Trench 06 excavation in progress, with Catch Basin 1 in foreground, looking east.



Image 33: South wall profile, Trench 06.

Table 14: Stratigraphic Profile South Wall, West End – Trench 06.

STRAT	NAVD 88 DEPTH (BGS)	MUNSELL	SOIL TYPE	COMMENTS
Developing Ao	23.00' – 22.83' (0' – 0.17' bgs)	10YR 2/2 very dark brown	Fine Sandy silt	
Developing A1	22.83' – 22.25' (0.17' – 0.75' bgs)	7.5YR 3/2 dark brown	Sandy loam	
Redeposited Sub I	22.25' – 20.5' (0.75' – 2.5' bgs)	7.5YR 3/3 dark brown	Silty sand	Gravel, modern trash.
Redeposited Sub II	20.5' – 18.6' (2.5' – 4.4' bgs)	7.5YR 3/3 dark brown mixed with 7.5YR 4/6 strong brown and 10YR 5/2 grayish brown	Sandy silt	Modern trash

Drainage Piping (Trench 07 and Test Pit 4)

Trench 07 was located to the south of the roadway and in between the weir section and the beach (Image 34) (Map 04). The trench was excavated for the installation of a drainage pipe connecting Catch Basin 3 (TP 3) to the beach. The new pavilion ramp was installed above the trench after its excavation and backfill. Trench 07 was also located in the area of lowest elevation in the APE save for the beach and, as a result, had a shallow water table and was frequently flooded due to rain (Image 35).



Image 34: Trench 07 pre-excavation, looking west.



Image 35: Trench 07, excavation in progress, looking west.

The trench generally measured 7' wide by 77' long (2.1m wide by 23.5m) and was excavated to a depth of 7.1' NAVD 88 (5.5' bgs) on the eastern end and 6.13' NAVD 88 (6.2' bgs) on the western end. No significant cultural resources were encountered during the excavation of Trench 07 (Image 36) (Table 15).



Image 36: South wall profile, Trench 07.

Table 15: Stratigraphic Profile South Wall – Trench 07.

STRAT	NAVD 88 DEPTH (BGS)	MUNSELL	SOIL TYPE	COMMENTS
Developing Ao	12.6 – 11.8' (0' – 0.8' bgs)	10YR 2/2 very dark brown	Fine Sandy silt	
Concrete drainage feature	11.8' – 11.4' (0.8' – 1.2' bgs)	NA	NA	
Redeposited Sub I	11.4' – 9.3' (1.2' – 3.3' bgs)	7.5YR 4/4 dark brown mixed with 10YR 5/8	Fine sand	With pebbles and pocket of 2.5Y 3/1 Fine sand with clay near edge of Catch Basin 3.
Bt1	9.3' – 7.1' (3.3' – 5.5' bgs)	5YR 4/4 reddish brown	Sandy clay trace silt	Gravel and rocks.

At 71.5' (21.8m) west of the Catch Basin 3, the trench was widened, deepened, and changed direction for the installation of a catch basin near the edge of the upper level of the project area adjacent to the beach (Map 05). This new section was designated Test Pit 4 (TP 4) (Image 37).



Image 37: TP 4, excavation in progress, looking west.

TP 4 measured 14.9' (4.5m) east-west by 10.5' (3.2m) north-south and was excavated to a depth of 2.33' NAVD 88 (10' bgs). An existing catch basin or drainage element was present 3.3' (1m) south of the southern wall of TP 4. Disturbed soils and fill predominated the stratigraphic profile of TP 4 until a layer of intact 5YR 4/6 sandy clay subsoil with large rocks and pebbles emerged at 8.43' NAVD 88 (3.9' bgs) (Image 38). No significant cultural resources were encountered during the excavation of TP 4.



Image 38: South wall profile, TP 4.

Catch Basin Connections (Trenches 08 and 10)

Trenches 08 and 10 were north-south oriented trenches connecting the catch basins on the northern side of the roadway to the weir drainage system. Trench 08 connected Catch Basin 2 (TP 2), and Trench 10 connected Catch Basin 1 (TP 1) with the weir drainage system.

Trench 08 began at Catch Basin 2 and extended south at 185° across the roadway and into the open area to the west of Weir A (Image 39) (Map 05). Two of the east-west running drainage trenches (Trenches 09A and 09B) connecting the weirs were archaeologically monitored, save for the specific section that Trench 08 connected to between Weir A and C, which was not given a trench number.



Image 39: Trench 08, excavation in progress, looking south.

Trench 08 measured 4' by 37' (1.2 by 11.3m) and was excavated to a depth of 3.2' bgs, which corresponded to 15.65' NAVD 88 on its northern end 10.8' NAVD 88 on its southern end. Trench 08 was the first of the project to bisect the Hylan Boulevard extension roadway, which is 14.4' (4.4m) wide. Trench 08's highly disturbed stratigraphy represented the roadway construction efforts (Image 40) (Table 16). To the south of the roadway, two east-west running, buried utility pipes were also encountered at 11.8' NAVD 88 (2.2' bgs) and 11.7' NAVD 88 (2.3' bgs), respectively. No culturally significant resources were encountered during excavation of Trench 08.



Image 40: East wall profile, Trench 08.

Table 16: Stratigraphic Profile East Wall, at Roadway – Trench 08.

STRAT	NAVD 88 DEPTH (BGS)	MUNSELL	SOIL TYPE	COMMENTS
Asphalt	19.0 – 18.6' (0' – 0.4' bgs)	NA	NA	Top layer of road
Fill	18.6' – 17.6' (0.4' – 1.4' bgs)	NA	Gravel	
Truncated subsoil	17.6' – 15.8' (1.4' – 3.2' bgs)	5YR 3/3 dark reddish brown	Clay loam	

Trench 10 began at Catch Basin 1 (TP 1) and extended southwards at 170° across the roadway and into the open area to the west of Weir B before ultimately connecting to Trench 09B (Image 41) (Map 05). The trench measured 3.45' by 25.3' (1.05m by 7.7m) and was excavated to a depth of 4' bgs, which corresponds to 19' NAVD88 on the northern end and 16' NAVD 88 on the southern end. The stratigraphy was similar to that of Trench 08 and featured no intact horizons (Image 42) (Table 16). A buried east-west running electrical utility pipe was found just south of the roadway

at 20.5' NAVD 88 (2' bgs). No significant cultural resources were encountered during Trench 10 excavation.



Image 41: Trench 10, excavation in progress, looking south.



Image 42: East wall profile, Trench 10.

Utility Connections (Trench 11)

Trench 11, excavated for the installation of 1" copper pipe, followed the southern edge of the Hylan Boulevard extension, beginning at the western edge of Trench 10 in the weir area and extending for 127' at 258° towards the water (Image 43) (Map 05). Trench 08 bisected Trench 11 at 71.75' (21.9m) west of its starting point. Trench 11's width was generally 3' (.9m), though its course was altered near Weir C (Trench 04) to accommodate an electrical box. The stratigraphy of the trench was highly disturbed (Image 44) (Table 17). The trench was excavated between 18' NAVD 88 (4' bgs) on its eastern end and 12.4' NAVD 88 (3' bgs) on its eastern end.



Image 43: Trench 11, overview, looking west.

Table 17: Stratigraphic Profile North Wall, Center – Trench 11.

STRAT	NAVD 88 DEPTH (BGS)	MUNSELL	SOIL TYPE	COMMENTS
Asphalt	17.5' – 17.25' (0' – 0.25' bgs)	NA	NA	Top layer of road.
Fill	17.25 – 15.83' (0.25' – 1.67' bgs)	10YR 4/2 dark grayish brown	Coarse sand	
Truncated subsoil	15.83 – 14.0' (1.67' – 3.5' bgs)	5YR 4/4 reddish brown	Sandy clay	



Image 44: South wall profile, Trench 11.

Fire Hydrant Relocation (Trenches 12-15)

Trenches 12-15 were excavated to the north of the roadway in the vicinity of the seawalls for the installation of a fire hydrant and associated elements (Map 05). The fire hydrant relocation trenches are located within the less sensitive historic swale area on the AWP map (Map 04).

Trench 12 was located near the construction trailers on the western edge of the APE right before the beach (Image 45). The trench's southern wall almost abutted the northern edge of the Hylan Boulevard extension. The trench was excavated to expose an east-west running water utility pipe that connected to the extant fire hydrant to the west, which was discovered at 11.75' NAVD 88 (3.25' bgs) at 5' (1.5m) north of the southern wall of Trench 12. The trench measured 12' by 5' (3.7m by 1.5m) and was excavated to a depth of 11' NAVD 88 (4' bgs). No undisturbed stratigraphy or significant cultural resources were encountered during the excavation of Trench 12 (Image 46) (Table 18).



Image 45: Trench 12, excavation in progress, looking southeast.

Table 18: Stratigraphic Profile West Wall – Trench 12.

STRAT	NAVD 88 DEPTH (BGS)	MUNSELL	SOIL TYPE	COMMENTS
Fill	15.0 – 11.0' (0' – 4.0' bgs)	7.5YR 4/3 brown mottled with 10YR 3/2 very dark grayish brown, 10YR 5/4 yellowish brown and some 5YR 4/4 reddish brown	Sandy clay, sandy loam, and sand	Pebbles and cobbles.



Image 46: West wall profile, Trench 12.

Trench 13, measuring 7.67' by 12' (2.3m by 3.7m), was excavated to the west of Trench 12 to expose piping and elements associated with the existing fire hydrant (Image 47). A valve was uncovered 3' (.9m) east of the hydrant at a depth of 11' NAVD 88 (3.5' bgs), and a series of supporting tie-ins that anchored the fire hydrant against water pressure was uncovered to the east of the valve at a depth of 10.16' NAVD 88 (4.34' bgs). The water main exposed in Trench 12 was also found in Trench 13 as it connected to the fire hydrant elements (Image 48). No intact stratigraphy or significant cultural resources were encountered during Trench 13 excavation (Image 49) (Table 19).



Image 47: Trench 13, pre-excitation.



Image 48: Fire hydrant elements exposed, Trench 13.

Table 19: Stratigraphic Profile North Wall – Trench 13.

STRAT	NAVD 88 DEPTH (BGS)	MUNSELL	SOIL TYPE	COMMENTS
Ao	14.5 – 14.33' (0' – 0.17' bgs)	10YR 2/2 very dark brown	Fine sandy silt	Some angular gravel
Fill I	14.33 – 13.0' (0.17' – 1.5' bgs)	10YR 3/4 dark yellowish brown mixed with 7.5YR 3/2 dark brown	Sandy loam	
Redeposited Subsoil	13.0 – 11.83' (1.5' – 2.67' bgs)	5 YR 4/4 reddish brown	Medium sandy-loam	Pea gravel and some wooden planks surrounded by 10YR 2/1
Fill III	11.83' – 9.83' (2.67' – 4.67' bgs)	7.5YR 4/2 brown mottled with 10YR 3/1 very dark gray	Fine sandy silt	
Truncated Subsoil	9.83' – 8.83' (4.67' – 5.67' bgs)	7.5YR 4/4 brown	Sandy clay	



Image 49: North wall profile, Trench 13.

The western wall of Trench 14 was located 19' (5.8m) east of the eastern wall of Trench 13. The trench was excavated to further uncover the water main found in Trenches 12 and 13, in order to relocate the existing fire hydrant (Map 05). Trench 14 measured 16' by 8.67' (4.9m by 2.6m), and it overlapped with Trench 12 in its western half.

The stratigraphy near the surface of Trench 14 outside of its overlap with Trench 12 was highly disturbed, in part because this area was used as a staging location for construction vehicles and supplies (Image 50). Subsurface disturbances were also noted, though a truncated Bt subsoil layer with remnants of old beach was found underneath the water main at a depth of 10.16' NAVD 88 (4.84' bgs) (Image 51) (Table 20). However, the stratigraphy in this location has been obviously

disturbed by the original installation of the water pipe, and the area was most likely largely stripped of its natural soils. No significant cultural resources were encountered during Trench 14 excavation.



Image 50: Trench 14, post-excavation, looking east.

Table 20: Stratigraphic Profile North Wall – Trench 14.

STRAT	NAVD 88 DEPTH (BGS)	MUNSELL	SOIL TYPE	COMMENTS
Disturbed A	15 – 13.75' (0' – 1.25' bgs)	10YR 3/4 dark yellowish brown mixed with 7.5YR 3/2 dark brown	Sandy loam	

Redeposited Subsoil	13.75 – 12.33' (125' – 2.67' bgs)	5YR 4/4 reddish brown	Sandy loam	
Redeposited Subsoil	12.33 – 10.17' (2.67' – 4.83' bgs)	7.5YR 4/2 brown	Fine sandy silt	Modern trash and wooden beams.
Truncated Bt with old beach	10.17' – 9.0' (4.83' – 6.00' bgs)	7.5YR 4/4 brown with 7.5YR 5/1 grey	Fine sandy clay	



Image 51: North wall profile, Trench 14.

Trench 15 was the only north-south oriented trench associated with the relocation of the existing fire hydrant (Image 52). The trench was excavated to connect the new location of the fire hydrant in Trench 14 to the main drainage line (Trench 07) on the south side of the roadway. The trench eventually connected with Trench 07, although Chrysalis was not on hand to monitor this activity. The dimensions of the portion of Trench 15 that was monitored were 3.67' by 32' (1.1m by 9.75m).



Image 52: Trench 15, excavation in progress, looking south with Trench 14 in foreground.

Trench 15 was bisected by the Hylan Boulevard extension starting at 6.42' (1.95m) south (180°) of the northern edge of the trench. The roadway here was approximately 15' (4.6m) in width. A buried electrical line was encountered 28.9' (8.8m) south of the northern edge of Trench 15 at a depth of 12.5' NAVD 88 (3' bgs). The northern stratigraphic profile of the trench was similar to Trench 14 (Image 53) (Table 21). The roadway stratigraphy was similar to Trenches 08 and 10, and the stratigraphy on the south side of the roadway was highly disturbed.

Table 21: Stratigraphic Profile East Wall, Northern Section – Trench 15.

STRAT	NAVD 88 DEPTH (BGS)	MUNSELL	SOIL TYPE	COMMENTS
Disturbed A	15.0 – 14.25' (0' – 0.75' bgs)	10YR 3/4 dark yellowish brown mixed with 7.5YR 3/2 dark brown	Sandy loam	
Redeposited Subsoil	14.25 – 12.25' (0.75' – 2.75' bgs)	5YR 4/4 reddish brown	Sandy loam	
Redeposited Subsoil	12.25 – 11.16' (2.75' – 3.84' bgs)	7.5YR 4/2 brown	Fine sandy silt	Modern trash and wooden beams.
Truncated Bt with old beach	11.16 – 10.5' (3.84' – 4.50' bgs)	7.5YR 4/4 brown with 7.5YR 5/1 grey	Fine sandy clay	



Image 53: East wall profile, northern section Trench 15.

Beach Area Sonotube Excavation (Trenches 16-31)

The beach area on the western edge of the APE was subject to two separate excavation events to insert Sonotubes: seven trenches (Trenches 16-22) were excavated along the western edge of the beach and nine (Trenches 23-31) further into the beach interior. Sonotubes are concrete forms that were used to aid in the installation of secondary dock supports. Excavation to install these forms required relatively small trenches compared to the weir and water pipe trenches on site, generally measuring around 5' by 8' (1.5m by 2.4m)

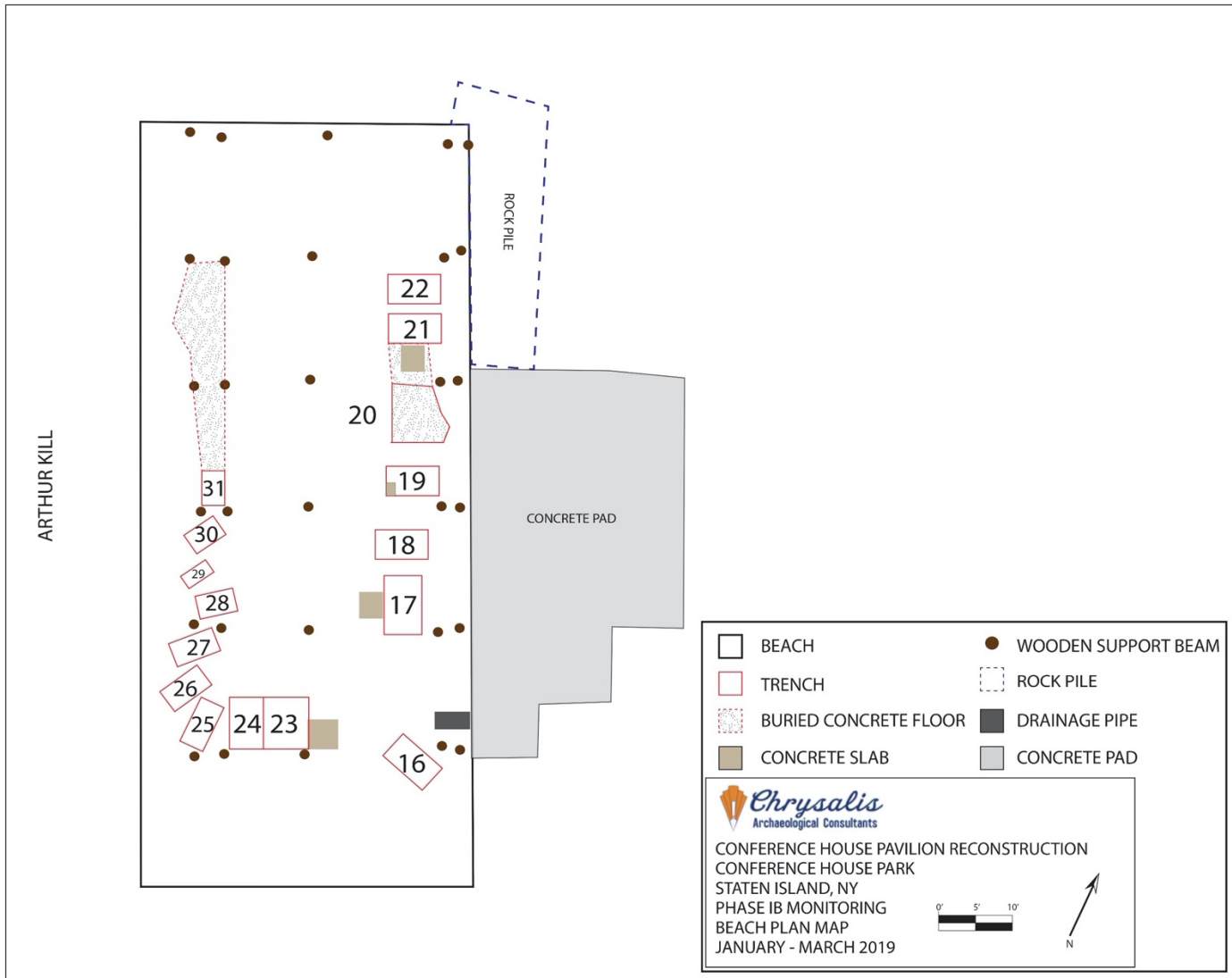
The beach sat at the lowest elevation in the APE and sloped gently downward towards Arthur Kill, a tidal strait separating Staten Island from New Jersey. On its western edge, the beach was separated from the upper level of the site by a wall measuring 5.75' in depth and was topped with a concrete pad (Image 54). The main wooden supports for the old pavilion were kept in place and used for the new pavilion. The beach area is considered low-sensitivity (Map 06) (Chrysalis 2018).



Image 54: Beach area pre-excitation, facing southwest.

Much of the beach exhibited modern and historic disturbances. Concrete slabs were evident in multiple locations on the surface of the beach, and others were found during excavation. No significant cultural resources were encountered during excavation of Trenches 16-31 within the beach area.

Seven of these trenches (Trenches 16-22) were excavated for the installation of Sonotubes along the western edge of the beach as it abutted the concrete-topped wall (Image 55).



Map 06: Beach Field Map



Image 55: Trenches 16-23, post-excavation.

In preparation for this excavation event, a thick layer of accumulated modern construction debris and fill was removed along the existing concrete wall in the northern section of the excavation area in order to access the beach surface (Image 56). The depth of this layer of debris varied, as current construction efforts impacted much of the western edge of the beach. A shallow water table obscured the stratigraphy of many of the trenches at 4 to 4.5' bgs.



Image 56: Construction debris and fill removal, beach area.

Trench 16 was the southernmost Sonotube trench and measured 4' by 7' (1.2m by 2.1m) and was oriented roughly northwest to southwest at 322°. The trench was placed in the vicinity of the main drainage pipe from Trench 07 in the upper level of the APE (Image 57). Trench 16 was one of the deepest beach trenches, excavated to -1.5 NAVD 88 (8' bgs) (Table 22) (Image 58). A disturbed layer overlaid intact beach deposits.



Image 58: Trench 16, post-excavation.

Trenches 17 and 18 were placed further north of Trench 16, along the wall separating the beach from the upper level of the APE. Trench 17, which measured 8' by 5' (2.4m by 1.5m), abutted a previously installed wooden-beam dock support in its southeastern corner, and a buried concrete slab was discovered along its western edge (Image 59). Trench 18, measuring 4' by 7' (1.2m by 2.1m), was placed 2' (.6m) to the north of Trench 17 and an area in between dock supports (Image 60). No buried slabs were encountered in Trench 18.



Image 59: Trench 17, excavation in progress.



Image 60: Trench 18, post-excitation.

Both trenches exhibited similar stratigraphy, although the maximum depth achieved in both was obscured due to a shallow water table encountered at 1.92' NAVD 88 (4.5' bgs) (Table 23). A shallow water table obscured the stratigraphy of many Sonotube installation trenches at around 4 to 4.5' bgs (Image 61).

Table 23: Stratigraphic Profile North Wall – Trench 18.

STRAT	NAVD 88 DEPTH (BGS)	MUNSELL	SOIL TYPE	COMMENTS
Disturbed	6.42 – 1.92' (0' – 4.5' bgs)	5YR 4/6 yellowish red with pockets of 10YR 6/1 gray	Very-fine sand	Compact
NA	1.92'+ (4.5'+ bgs)	NA		Obscured due to water table.



Image 61: High water table in Trenches 19 and 20.

Trench 19 measured 5' by 8' (1.5m by 2.4m) and was placed 4.5' (1.4m) north of the northern wall of Trench 18. The stratigraphy was all modern fill, and the buried remnants of a concrete slab embedded with old, square rebar was discovered in the western half of the trench at 7.84' (2.38m) west of the concrete wall separating the beach from the upper level of the APE (Image 62). The concrete slab was not anticipated by the construction crew, and Trench 19 was discontinued after its discovery at a depth of 2.22 NAVD 88 (4.2' bgs). Additionally, the water table was encountered at 2.42' NAVD 88 (4.0' bgs), slightly obscuring the stratigraphy.



Image 62: Old rebar and concrete slab in Trench 19.

Trench 20 was also abandoned due to unanticipated concrete impediments. A layer of unanticipated asphalt was discovered in Trench 20 at a depth of 5.42' NAVD 88 (1' bgs) (Image 63). The excavator was able to cut through this layer, although a second, impenetrable cement floor was encountered at 2.25' NAVD 88 (4.17' bgs) (Image 64).



Image 63: Asphalt layer, Trench 20.



Image 64: Discovery of second concrete layer during excavation of Trench 20.

The dimensions of the trench were widened further north to try and find the edges of the second cement floor (Image 65). Though slightly amorphous, the trench's final dimensions generally measured 10' by 7' (3m by 2.1m). Another buried concrete slab was discovered 8' (2.4m) north of the southern wall of Trench 20 at a depth of 5.17' NAVD 88 (1.25' bgs) as the trench was being widened (Image 66). Ultimately, the edges of the second cement floor were not found in Trench 20, and its excavation was discontinued. No intact stratigraphy or significant cultural resources were encountered in Trench 20.



Image 65: Widening of Trench 20.



Image 66: Concrete slab found in widened portion of Trench 20.

The first asphalt layer found in Trench 20 was also encountered in Trenches 21 and 22, although the second, impenetrable layer was not. As a result, both trenches were able to be excavated to -0.37' NAVD 88 (6.42' bgs), although the stratigraphy was obscured by the water table (Images 67 and 68). In both Trenches 21 and 22, several layers of disturbed beach fill sat atop a layer of intact beach sand (Table 24). No significant cultural resources were encountered during the excavation of Trenches 21 and 22.



5

Image 67: Trench 21, post-excavation.



Image 68: Trench 22, post-excavation.

Table 24: Stratigraphic Profile East Wall – Trench 21.

STRAT	NAVD 88 DEPTH (BGS)	MUNSELL	SOIL TYPE	COMMENTS
Runoff	6.05' – 5.05' (0' – 1.0' bgs)	NA	NA	Materials accumulated from runoff from the upper level of the APE.
Asphalt	5.05' – 3.71' (1.0' – 2.34' bgs)	NA	NA	
Gravel	3.71' – 1.88' (2.34' – 4.17' bgs)	NA	NA	
Beach I	1.88' – -0.37' (4.17' – 6.42' bgs)	5YR 4/6 yellowish red	Sand	

Nine trenches (Trenches 23-31) were excavated in the interior of the beach, interspersed between the main wooden support beams and directly underneath the raised concrete foundation of the new pavilion for the installation of secondary supports (Map 06). Trenches 23-25 were placed along the southernmost line of east-west oriented main wooden support beams (Image 69). Trenches 26-

31 pivoted direction and ran south to north along the western edge of the main support beams (Image 70). Additional trenches were planned along the northern section of the east-west oriented Sonotubes (Image 71), though excavation was discontinued in this area after the discovery of an impenetrable concrete flooring in Trench 31.



Image 69: Trenches 23-25, along the southernmost line of east-west oriented main wooden support beams.



Image 70: Trenches 26-31, running south to north along the western edge of the main support beams.



Image 71: Unexcavated area due to concrete flooring.

Trench 23, which measured 7' by 4.5' (2.1m by 1.4m), was the first to be excavated in the interior of the beach and was located west of the site's main drainage pipe and northwest of Trench 16 (Image 72). The southeast corner of Trench 23 abutted the first line of main wooden support beams (Image 73). A concrete slab visible on the surface of the beach was also visible in profile to a depth of 2.4 NAVD 88 (3.5' bgs) in the west wall of Trench 23 (Image 74). Fill layers surrounded the concrete slab, though intact beach deposits were encountered starting at 2.4 NAVD 88 (3.5' bgs) and extending to the bottom of the trench at -2.6' NAVD 88 (8.5' bgs) (Table 25). The tide was low during excavations for Trenches 23 and 24 in this area, allowing for deeper excavation and a more complete stratigraphic profile to be observed. Trench 24, which was placed directly west of Trench 23, shared a similar stratigraphy, though without the concrete slab.



Image 72: Terrain of the beach prior to excavation of Trench 23, looking east.



Image 73: Trench 23, excavation-in-progress with wooden support beam, looking east.



Image 74: Stratigraphic profile, east wall – Trench 23.

Table 25: Stratigraphic Profile East Wall – Trench 23.

STRAT	NAVD 88 DEPTH (BGS)	MUNSELL	SOIL TYPE	COMMENTS
Fill I	-1.0' – -5.0' (0.0' – 4.0' bgs)	NA	NA	In profile in area north of concrete slab. Modern trash, construction debris, shell, gravel, pieces of drainage matting and wooden beams, plastic, angular rocks.
Concrete slab	-1.0' – -2.5' (0.0' – 3.5' bgs)	NA	NA	Along southern 2/3 of east wall.
Remnant Beach I	-2.5' – -1.10' (0.0' – 4.0' bgs)	5YR 4/6 yellowish red	Medium sand	Directly underneath concrete slab
Beach II	0.10' – -1.10' (4.0' – 5.0' bgs)	Gley 1 5/5GY greenish grey with Gley 2 3/5B very dark bluish grey	Very fine sand	
Beach III	1.10' – -0.6' (5.0' – 6.5' bgs)	5YR 4/4 reddish brown	Fine sand with clay	
Beach IV	-0.6' – -1.6' (6.5' – 7.5' bgs)	5YR 3/1 very dark grey	Sand with clay	Pebbles
Beach V	-1.6' – -2.6' (7.5' – 8.5' bgs)	5YR 3/3 dark reddish brown	Sand with clay	Pebbles

Trench 25 was the last east-west oriented trench in the interior of the beach; all subsequent trenches were oriented north-south. The eastern wall of Trench 25 almost directly abutted the western wall of Trench 24 (Image 75). The stratigraphy of Trench 25 was slightly obscured by a shallow water table, which was encountered at 1.5' NAVD 88 (3' bgs) (Table 26) (Image 76). A layer of shell and poorly sorted rocks, pebbles and cobbles was found between 1.5' NAVD 88 (2.5') and 0.5' NAVD 88 (3.5' bgs) in Trench 25. This may be the result of water action from the tides and/or from continual drainage from the upper level of the site. Trenches 26 and 27 had very similar stratigraphy and water table depths.



Image 75: Trench 25, excavation-in-progress, looking east.

Table 26: Stratigraphic Profile, East Wall – Trench 25.

STRAT	NAVD 88 DEPTH (BGS)	MUNSELL	SOIL TYPE	COMMENTS
Fill I	4.5' – 2.0' (0' – 2.5' bgs)	NA	NA	Modern trash, construction debris, increased shell, gravel, pieces of drainage matting and wooden beams, plastic wrap, angular rocks.
Drainage I	2.0 – 1.5' (2.5' – 3.0' bgs)	NA	NA	Shell and poorly sorted rocks, pebbles and cobbles.
Beach III	1.5 – -1.5' (3.0' – 6.0' bgs)	5YR 4/4 reddish brown	Fine sand with clay	
Beach IV	-1.5 – -2.0' (6.0' – 6.5' bgs)	5YR 3/1 very dark grey	Sand with clay	Pebbles
Beach V	-2.0 – -4.0' (6.5' – 8.5' bgs)	5YR 3/3 dark reddish brown	Sand with clay	Pebbles



Image 76: Stratigraphical profile, east wall – Trench 25.

The topmost fill layer, present in all trenches in the interior of the beach, and the water table were both slightly deeper in Trench 28 than surrounding trenches, though this may have been the result of a change in the tide. Trench 28 was excavated to -4.5' NAVD 88 (9' bgs), making it the deepest trench in the interior of the beach (Image 77). The top layer of fill had an increased amount of modern trash in it, including Styrofoam, and the remnants of a drainage matt were found at 2.5' NAVD 88 (2' bgs) (Table 27) (Image 78). The water table was encountered at -0.5' NAVD 88 (5' bgs), at which point a thin layer of poorly sorted shell, rocks, pebbles, and cobbles was encountered. Once the water table was encountered, precise measurements and observations of the trench's stratigraphy were made impossible. Trenches 29 and 30 shared similar stratigraphy and water table depth with Trench 28.



Image 77: Trench 28, excavation-in-progress, looking south.

Table 27: Stratigraphic Profile East Wall – Trench 28.

STRAT	NAVD 88 DEPTH (BGS)	MUNSELL	SOIL TYPE	COMMENTS
Fill I	4.5' – -0.5' (0' – 5.0' bgs)	NA	NA	Modern trash and drainage matting. Water table found at 5' bgs.
Beach I	-0.5' – (5.0+ bgs)	5YR 4/6 yellowish red	Coarse sand	Wet



Image 78: Stratigraphic profile, east wall – Trench 28.

Trench 31 was the northernmost trench excavated for this round of Sonotube installations, although more were planned further north. Trench excavations were halted due to the presence of impenetrable concrete flooring found in Trench 31 at a depth of 0.0' NAVD 88 (4.5' bgs) (Image 79). Trench 31 actually had two concrete layers. The first layer, found at 1.5' NAVD 88 (3' bgs), was able to be removed. Both concrete layers were similar to those found in Trench 20. The stratigraphy above and between the concrete floors was all fill or disturbed beach deposits. No intact stratigraphy or significant cultural resources were encountered during the excavation of Trench 31.



Image 79: Concrete flooring in Trench 31.

Seawalls (Trenches 32-39)

Trenches 32-36 were excavated in the northwestern section of the APE for the installation of seawalls A-H to prevent flooding (Map 05). The seawalls were located within the less sensitive historic swale area on the AWP map (Map 04). Trench 32 corresponds to Seawall A, Trench 33 to Seawall B, Trench 34 to Seawall C, Trench 35 to Seawall D, Trench 38 to Seawall E, Trench 36 to Seawall G, and Trench 39 to Seawall H. No significant cultural resources were encountered during the excavations of the seawall trenches.



Image 80: Seawall locations laid out, looking west.

Trench 32 was excavated for the installation of Seawall A, the westernmost seawall. The trench measured 8' by 42.5' (2.4m by 13m) and was excavated to a depth of 8' NAVD 88 (5' bgs). The trench began on the northern side of the roadway and extended south for 24.5' (7.5m) where it intersected with the Hylan Boulevard extension. An east-west running buried electrical line was encountered at 10.70' NAVD 88 (2.3' bgs) near the northern wall of the trench. The stratigraphy was highly disturbed along its entire course, with the roadway profile similar to that found in other bisecting trenches across the site. (Table 28)

Table 28: Stratigraphic Profile West Wall – Trench 32.

STRAT	NAVD 88 DEPTH (BGS)	MUNSELL	SOIL TYPE	COMMENTS
Developing Ao	13.0' – 12.66' (0' – 0.34' bgs)	10YR 2/2 very dark brown	Silty coarse sand	
Fill I	12.66' – 11.42' (0.34' – 1.58' bgs)	10YR 3/4 dark yellowish brown	Silty coarse sand	Modern trash, pebbles, cobbles, and gravel.

Redeposited Bt/Fill	11.42' – 9.42' (1.58' – 3.58' bgs)	5YR 4/6 yellowish red with pockets of 2.5Y 4/2 dark grayish brown	Sandy clay; clay.	Electrical pipe.
Fill II	9.42' – 8.42' (3.58' – 4.58' bgs)	2.5Y 4/2 dark greyish brown	Silty sandy clay	Cement chunks, pebbles, cobbles, and semi-angular rocks.
Fill III	8.42' – 8.0' (4.58' – 5.0' bgs)	5YR 4/4 reddish brown mottled with 10YR 3/4 dark yellowish brown, 7.5YR 4/4 brown and green clay	Clay	Concrete chunks.

Trench 33 was excavated for the installation of Seawall B, the seawall east of Seawall A. Seawall B ran south in a straight line from the northern section of the APE before bending southeast after its intersection with the roadway. The trench measured 9' by 30' (2.7m by 9.1m). Most of the stratigraphy of Trench 33 was disturbed, with the northern section of Trench 33 located within dimensions of backfilled Trench 12 and/or 14 and the middle section located in the roadway (Table 29). The trench was excavated to a depth of 9.5' NAVD 88 (5' bgs) in the north, 9.89' NAVD 88 (4' bgs) in the middle, and 10.0' NAVD 88 (4' bgs) in the south. The Hylan Boulevard extension roadway profile was typical for the area.

Table 29: Stratigraphic Profile West Wall, Northern Section– Trench 33.

STRAT	NAVD 88 DEPTH (BGS)	MUNSELL	SOIL TYPE	COMMENTS
Developing Ao	14.5' – 14.16' (0' – 0.34' bgs)	10YR 2/2 very dark brown	Silty coarse sand	
Backfill	14.16 – 9.5' (0.34' – 5' bgs)	NA	NA	Trench 12/14

Trench 34 was excavated for the installation of Seawall C. The trench measured 8' by 45.92' (2.4m by 14m). The trench began in the northwest area of the APE and extended for 16.2' (4.9m) at 161° before hitting the roadway and diverting to the southeast. The southern edge of the trench was within the roadway. No intact stratigraphy or significant cultural resources were encountered during the excavation of Trench 34 (Table 30).

Table 30: Stratigraphic Profile West Wall, Roadway– Trench 34.

STRAT	NAVD 88 DEPTH (BGS)	MUNSELL	SOIL TYPE	COMMENTS
Asphalt	14.66' – 14.49' (0' – 0.17' bgs)	NA	NA	
Fill I	14.49' – 13.41' (0.17' – 1.25' bgs)	NA	Gravel	Drainage matt.
Fill II	13.41' – 11.26' (1.25' – 3.4' bgs)	7.5YR 4/3 brown	Sandy clay	Modern trash.

Trench 35 was excavated for the installation of Seawall D, east of Seawall C. Most of the trench was located within the roadway, and its stratigraphy was similar to that of Trench 34 (Table 30), with the exception of a water table found at 10.88' NAVD 88' (4' bgs). No intact stratigraphy or significant cultural resources were encountered during Trench 35 excavation.

Trench 36 was excavated for the installation of Seawall G, to the east of Seawall F and just south of Seawall H. The trench measured 8.5 by 32' (2.6m by 9.8m). The stratigraphy of Trench 36 was similar to Trenches 34 and 35, as it was primarily within the roadway (Table 30). The water table was found at 13.38' NAVD 88 (3.1' bgs). No intact stratigraphy or significant cultural resources were encountered during the excavation of Trench 36.

Trench 38 was excavated for the installation of Seawall E, the northernmost seawall, and measured 8' by 15.5' (2.4m by 4.7m). No intact stratigraphy or significant cultural resources were encountered during the excavation of Trench 38. Trench 39 was excavated for the installation of Seawall H and measured 8' by 16' (2.4m by 4.9m). No intact stratigraphy or significant cultural resources were encountered during the excavation of Trench 39.

VI. LABORATORY RESULTS

No significant cultural resources were encountered or recovered during Phase IB archaeological testing and monitoring of The Reconstruction of the Pavilion at the end of Hylan Boulevard Adjacent to Satterlee Street in Conference House Park Project.

VII. CONCLUSIONS

A total of 39 construction trenches and 4 construction test pits were archaeologically monitored as part of the Project Phase IB field testing. In addition, 11 standardized test pits (STPs) were archaeologically excavated along two transects (A and B) in the southern portion of the previously untested area of the APE.

Feature 01, a single fence post and associated builder's trench, was encountered in Trench 2 in an open field to the north of the Hylan Boulevard pathway in the eastern portion of the APE and south of the Conference House. No associated artifacts were recovered from the surrounding feature fill, and no definitive date could be ascribed to the post. Highly disturbed stratigraphy surrounded the feature to the east and west, and a fragment of wooden fence post was discovered in modern fill to the west of the post, indicating that most this portion of the APE was disturbed. However, intact stratigraphy may exist to the north of Trench 2.

No other significant cultural resources were encountered during Phase IB testing and monitoring of Project construction activities. Any exposed artifacts were from highly disturbed and mixed contexts reflecting late twentieth century disturbances. These non-significant material remains were not retained as per the approved Archaeological Work Plan.

Stratigraphical information across the tested areas of the APE support Pickman's (2000) conclusions that this portion of the Park is highly disturbed due to the construction, destruction, and reinstallation of the Hylan Boulevard extension, associated utilities, and the pavilions in the beach area over the course of the twentieth and twenty-first centuries. While intact stratigraphy was noted in many of the trenches, test pits, and STPs, the full stratigraphical profiles indicated extensive stripping and grading activities across the site. As a result, it appears as though archaeologically-rich deposits and horizons in the APE have been previously disturbed and/or removed entirely by stripping. No significant archaeological resources are expected to remain in the tested areas of the APE.

Based on the information gleaned from Phase IB field testing, no National Register-contributing portions exist within the tested areas of the APE, and Project work is not expected to have adverse effects on any significant cultural resources.

VIII. RECOMMENDATIONS

Chrysalis does not recommend additional cultural resource management efforts for The Reconstruction of the Pavilion at the end of Hylan Boulevard Adjacent to Satterlee Street in Conference House Park Project.

However, future construction projects in the open field in which Feature 01 was found should be subject to archaeological investigations, as intact stratigraphy and/or cultural resources may exist to the north.

Additionally, echoing Pickman (2000), future project plans in the Park should be subject to cultural resource management investigations due to the established historic value and archaeological sensitivity of the Park at large.

IX. REFERENCES

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2016 USGS US Topo 7.5-minute map for Perth Amboy. USGS – National Geospatial Technical Operations Center (NGTOC).

X. APPENDICES

APPENDIX A:
Complete Subconsultant Reports

Work Plan

Chrysalis Archaeological Consultants, Inc.

- 2018 Phase IB Archaeological Monitoring Plan Unanticipated Discoveries Plan and Human Remains Protocol for the Reconstruction of the Pavilion at the End of Hylan Boulevard Adjacent to Satterlee Street in Conference House Park, Staten Island, Richmond County, New York Project (Contract Number R006-213M; E-PIN: 84617800400001 and NY SHPO Number: 14PR02557) also known as the “Staten Island Pavilion Project at Conference House Park.” Report on file with the New York State Office of Parks, Recreation and Historic Preservation (NY SHPO), Albany, New York and the City of New York – Landmarks Preservation Commission (NYC LPC), New York, New York.



To: City of New York - Landmarks Preservation Commission
City of New York – Department of Parks and Recreation
WWC Contracting

From: Alyssa Loorya, Ph.D., R.P.A., and Christopher Ricciardi, Ph.D., R.P.A.

Re: Phase IB Archaeological Monitoring Plan, Unanticipated Discoveries Plan and Human Remains Protocol for the Reconstruction of the Pavilion at the end of Hylan Boulevard Adjacent to Satterlee Street in Conference House Park, Staten Island, Richmond County, New York Project (Contract Number R006-213M; E-PIN: 8461780040001 and NY SHPO Number: 14PR02557) also known as the “Staten Island Pavilion Project at Conference House Park”

Date: August 8, 2018 (FINAL REVISED)

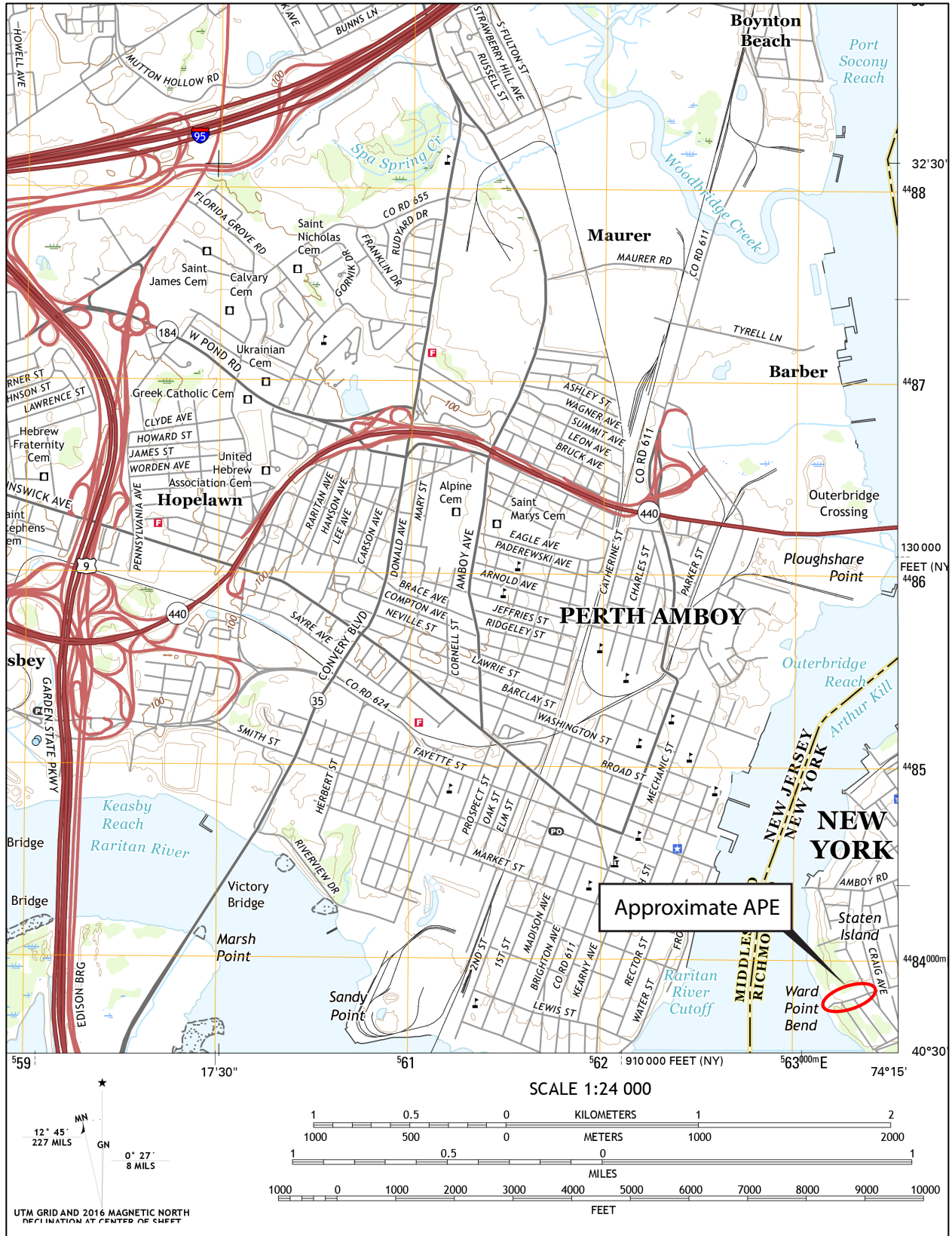
INTRODUCTION

WWC Contracting is the engineering contractor for the Reconstruction of the Pavilion at the end of Hylan Boulevard Adjacent to Satterlee Street in Conference House Park, Staten Island, Richmond County, New York Project (Contract Number R006-213M; E-PIN: 8461780040001 and NY SHPO Number: 14PR02557) also known as the “Staten Island Pavilion Project at Conference House Park”, being undertaken by the City of New York – Department of Parks and Recreation (NYC Parks). The project area is located within Conference House Park, a 227-acre area at the southern tip of Staten Island in the borough’s Tottenville neighborhood. The park is adjacent to the Ward Point Bend and Arthur Kill (Map 01). The park contains significant 17th century architecture and was the site of a historic peace conference during the Revolutionary War, resulting in its designation as a LPC landmark and listing on the National and State Registers of Historic Places. The park is also the site of the Ward’s Point Conservation Area, where past archaeological investigations have produced substantial evidence of Native American activity.

Chrysalis Archaeological Consultants, Inc. (Chrysalis) has been retained as the archaeological contractor to provide all Phase IB Cultural Resource Management (CRM) /Archaeological services as part of the overall project.

This document includes the Archaeological Work Plan, the Archaeological Unanticipated Discoveries Plan, and the Human Remains Protocol for the project. It is provided to the City of New York – Landmarks Preservation Commission (NYC LPC), the Cultural Resources Regulatory Agency and the NYC Parks for review, approval, and implementation. It describes the procedures

and tasks to be performed as part of the Cultural Resources portion of the project and what is to occur in the event that archaeological and/or human remains are exposed when the project archaeologist is not on site. The overall project area was established by NYC Parks; the Area of Potential Effect (APE) is the construction footprint of the area (Map 02).



Map 01: USGS – Perth Amboy Quadrangle, 2016.



Map 02: Project area map (New York City Tax Map 2012).

The purpose of the overall cultural resources project guided by this Archaeological Work Plan, Unanticipated Discoveries Plan, and Human Remains Protocol is to: 1) detail the protocols that will be undertaken during archaeological monitoring of construction excavation; 2) detail protocols to be followed in the event that unanticipated archaeological resources are exposed by the construction contractor when the archaeological monitor is not on site; 3) detail protocols to be followed in the event that either fragmentary or *in situ* human remains are discovered during any phase of the project; 4) detail the steps to be followed regarding laboratory analysis and reporting of the project; and 5) outline the lines of communication and protocols that will be employed throughout the process.

The archaeological tasks required for this project include:

1. Preparation and development of an Archaeological Work Plan, an Archaeological Unanticipated Discoveries Plan, and a Human Remains Discovery Protocol based on the current Scope of Work provided by WWC and NYC Parks.
2. Undertake Archaeological Monitoring based upon the Scope of Work (SOW) produced by NYC Parks.
3. Outline procedures and protocols to be followed by the project if material and/or human remains are exposed during the course of the project when Archaeological Monitoring is not occurring¹.
4. If cultural resources, material and/or human are uncovered, conduct Archaeological Monitoring and/or Testing of the specific area based on the determination of the potential significance of the find.
5. Undertake all required laboratory analysis of recovered material remains, including following all required guidelines regarding the final disposition of the material remains.
6. Conduct recordation and analysis of any human skeletal remains if discovered throughout the project APE.
7. Produce a draft and final report of the results.
8. Based on the results of what is uncovered in the field, develop either Phase II or Phase III Mitigation Plans, if needed.
9. Provide all additional related cultural resource management services that may arise, including participation in project delivery team meetings and consultation with review agencies and interested parties.

¹ NYC Parks has recommended Archaeological Monitoring for this project. Chrysalis stresses that no earth disturbing activities (e.g. excavation) should take place without the presence of an archaeologist on site

PROJECT DESCRIPTION

Proposed construction activity that this project will monitor includes the removal and reconstruction of the existing Pavilion and installation of a new retaining wall and seawalls. The proposed scope of work also includes landscape and infrastructure improvements within the APE. New trees, shrubs and grass will be planted, and lighting will be installed. Several utilities will be removed and replaced throughout the APE. Drainage improvements will include new water lines, catch basins, and relocation of hydrants and water valves. The existing asphalt and concrete walkways will be removed and replaced. Overall, excavation will vary throughout the project area from the surface to a depth of approximately four (4') feet below ground surface (bgs).

CULTURAL RESOURCE REGULATIONS

For cultural resources and structures, the National Historic Preservation Act (NHPA) and the Advisory Council on Historic Preservation (ACHP) define, under ‘Section 106 Regulations’, that federal agencies (and other governmental agencies using federal funds) must consider the effects of their actions on any properties listed on, or determined eligible for listing on, the National Register for Historic Places (NR). Likewise, the State Historic Preservation Act (SHPA) and the (New York) City Environmental Quality Review Act (CEQRA) require that agencies must consider the effects of their actions on any properties listed on, or determined eligible for listing on, the State and City Register for Historic Places.

The proposed work will be conducted in accordance with NYC LPC guidelines for such projects (New York Archaeological Council [NYAC 1994; 2000; 2002]) and the National Historic Preservation Act of 1966, as amended, and the Advisory Council on Historic Preservation’s “Protection of Historic and Cultural Properties” (36 CFR 800). The cultural resources specialists who will perform this work will satisfy the qualifications specified in 36 CFR 61, Appendix A as well as those outlined in the Landmarks Preservation Commission Guidelines for Archaeological Work in New York City (2002).

In the event that Native American material or human remains are exposed and/or recovered it is the responsibility of the project proponent, NYC Parks, to inform and consult with the local Native American tribes who have historic ties to the project area in accordance with the New York City Archaeological Guidelines and Section 106 of the National Historic Preservation Act (1966 as amended). The Native American Tribes with ties to this area include:

- Delaware Nation
- Delaware Tribe
- Shinnecock Indian Nation
- Unkechaug Nation
- Stockbridge-Munsee Community Band of Mohican Indians

In addition, if any indication of significant, *in situ*, Native American material and/or human remains are uncovered during the project, all work will immediately cease and the project will begin formal consultation with the Tribes.

SUMMARY OF ARCHAEOLOGICAL SENSITIVITY

The APE is located within the larger Conference House Park, an area of significant pre-historic and historic sensitivity in New York City. Conference House Park is part of the Ward's Point Conservation Area, which also contains the Ward's Point Archaeological Site, also known as Burial Ridge, to the south of the APE. The conservation area was listed on the National Register of Historic Places (NHRP) and the State Register of Historic Places (SRHP) in 1982. Burial Ridge was listed on the NHRP in 1993.

Ward's Point Conservation Area encompasses all of Conference House Park and was listed on the National and State registers in part because of its potential to provide significant information regarding Native American history of the area. According to the reviews by Jacobson (1980) and Pickman (1997), the first evidence of Native American occupation was discovered in 1858 when several complete human skeletons and other remains were uncovered during the excavation for the Cole House, south of the APE (Maps 06 and 07). Five years later during excavation for an addition to the house, 20 more human skeletons were unearthed. Since that first discovery, it is estimated that a total of at least 77 Native American burials, some with grave goods, were recovered from the park, including within the APE during excavation for Hylan Boulevard west of Satterlee Street in the 1920's. Although, the reviewed reports indicate there were discoveries of human remains within the APE, specifics from, and references to, the original source material for these finds, were not included (Jacobson 1980, Pickman 1997, HPI 2011). The review of previous Phase IA's also notes discoveries at the end of Hylan Boulevard, adjacent to the current Pavilion structure. However, details regarding the nature and extent of these findings were also not provided with any detail (see Jacobson 1980, Pickman 1997).

Ward's Point represents the largest prehistoric archaeological site in New York City. Archaeological finds indicate that the area was the site of approximately 8000 years of human occupation, beginning in the Early Archaic Period. Some of these Native American finds, including shell middens and lithics, were recovered from depths as shallow as 14" bgs. In addition to the above-mentioned burials, excavations have unearthed extensive shell deposits and at least 60 non-burial features (Pickman 1997). While most of the Native American materials and burials have been uncovered in the vicinity of the Conference House and south of the APE, the relatively undisturbed nature of the APE indicates that there is a potential that any proposed excavation could also uncover more cultural materials (Map 07).

The park is also the site of the seventeenth century house that is today known as the Conference House, or Billopp House, located to the northeast of the APE. The two and a half-story house was constructed between 1680 and 1688 by Captain Christopher Billopp to serve as the manor of his estate, Bentley. Although Billopp was British, the manor house was constructed in the Dutch style. During the Revolutionary War, the house was occupied by Billopp's grandson, Colonel Christopher Billopp, leader of a local Tory faction. On September 11, 1776, following repeated efforts on the part of the British to broker a peaceful end to the war, Lord Richard Howe as the King's representative, met with a delegation from the Continental Congress consisting of John Adams, Benjamin Franklin, and Edward Rutledge. The delegation was only authorized to accept a deal that included independence for the colonies while Lord Howe was authorized to approve almost any deal excluding state's independence. As a result, peace could not be reached and the

War continued (Bradford 1966). The Billopps remained loyalists throughout the war. When the war was over and the British were driven out of New York City, the Billopps faced forfeiture of the estate. The estate was divided into nine farms and sold off with the parcel containing the Conference House being sold to Caleb Ward (HPI 2001). The Conference House was designated a New York City Landmark in 1967.

Conference House Park has seen minimal development since European settlement. In addition to the Conference House, a few extant nineteenth century structures were constructed within the park. It is likely that some additional non-extant nineteenth century structures also existed, however development within the park has been minimal compared to the residential areas east of Satterlee Street, a key factor in the high archaeological sensitivity of the park. In the 1920's, several roads were planned to encourage real estate development, however much of the development did not materialize and these roads were never paved. An exception was the former Hylan Boulevard roadway, an extension of Hylan Boulevard into the park. Previous reports indicate that the APE would likely have been disturbed by the construction of the roadway and its subsequent removal in the 1980's (Pickman 1997 and 2000). Other more recent ground disturbances within the park include the installation of drainage systems and other infrastructural elements throughout the park.

Previous Work in the APE

A Phase IA assessment of the sensitivity of the western portion of the APE was completed prior to construction of the current pavilion at the end of the former Hylan Boulevard (see Pickman 2000). The site of the pavilion was determined to have low sensitivity for archaeological resources. The pavilion site was at the mouth of a large swale area that began approximately 150 feet south of Conference House and extended west towards Arthur Kill. This swale is represented on early-twentieth century topographic maps as a marshy area and would likely have been unsuitable for Native American occupation. However, Pickman also determined that the proposed pathway for the new pavilion, extending east towards Satterlee, was probably more sensitive and could be undisturbed by twentieth century activities. The report recommended monitoring of the construction of the pavilion and limited testing in the pathway (Pickman 2000).

Taking into consideration the overall sensitivity of the region and the recommendation of Pickman, later projects would undertake limited testing within the APE. In 2004, John Milner Associates excavated three shovel test units (STU) in the eastern part of the APE² as part of a larger Phase IB project within the park (Milner 2004). The STUs were placed along the former Hylan Boulevard, from Satterlee Street to approximately 250' west. The maximum depth reached during testing was 34" bgs. Fill deposits were encountered in all the test units. The STUs produced a low density of artifacts, yielding primarily modern debris mixed with a few 19th century artifacts. The results of the STUs justified no further hand excavation was necessary and subsequent archaeological monitoring would be sufficient in the APE. Milner monitored excavation of a trench whose southern end transected the APE at approximately where the former Hylan Boulevard intersects with the pathway leading north to the Conference House. Monitoring only identified similar

² For clarification, "APE" in this section refers to the APE as determined by Parks for the current proposed construction for which this Plan is being prepared. APE does not refer to the area of potential effect of the previous projects being discussed.

artifacts in the back dirt, which were not collected. No burials or other archaeological features were encountered during any of the testing within the APE.

Despite past ground disturbances, and lack of significant resources encountered within a portion of the APE, previous archaeological investigations still yielded cultural resources throughout the park as well as in the adjacent street beds where there was higher potential for modern disturbances to impact those resources (Table 1). As mentioned previously, although they were poorly documented, there are reports of human remains being recovered from the APE in the past. Because modern disturbances do not automatically preclude the possibility of recovering cultural resources, and considering that excavation is planned to extend at least 6' bgs in some areas, it is plausible that portions of the APE can still yield cultural resources as did the other investigated areas (HPI 2006). Therefore, the APE is determined to have high potential for the further recovery of archaeological resources.

PREVIOUS ARCHAEOLOGICAL INVESTIGATIONS

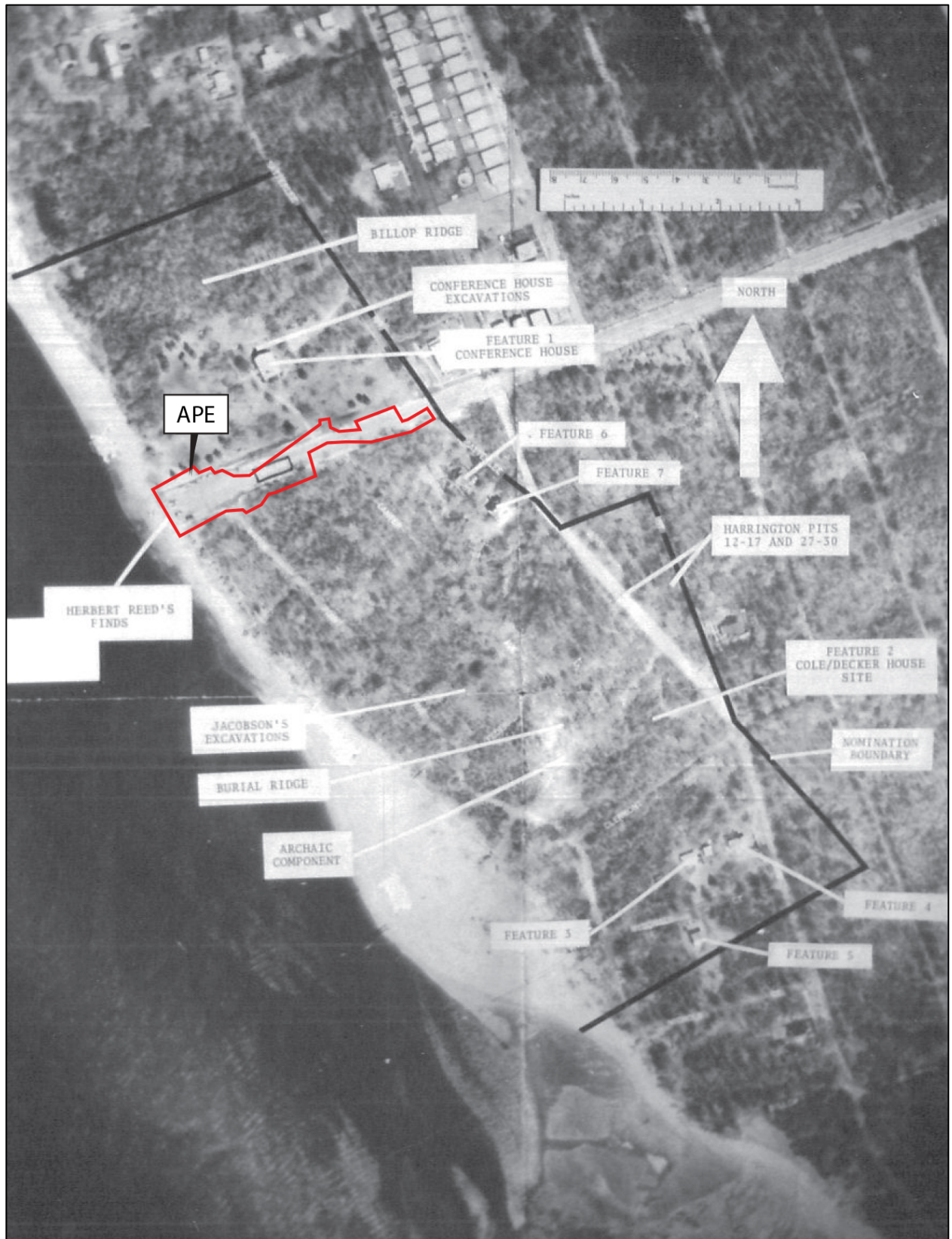
Table 1: Summary of previous investigations of Conference House Park (data from HPI 2011).

YEAR	AUTHOR	TITLE	RELEVANT FINDINGS
1980	Jacobson, Jerome	Burial Ridge, Tottenville, Staten Island, N.Y.: Archaeology of New York City's Largest Prehistoric Cemetery	Summarized early archaeological investigations of Conference House Park and identified 11 major areas of prehistoric findings. Determined that at least 77 Native American burials were excavation so far. Findings led to the listing of Ward's Point Conservation District on the NRHP.
1984	Pickman, Arnold and Rebecca Yamin	Oakwood Beach Water Pollution Control Project, Phase I Cultural Resources Survey.	Twenty-four STPs excavated west of Satterlee Street, between Hyland Boulevard and northern edge of Biddle property. Shell and lithic artifacts recovered with a high concentration of lithic materials particularly around the driveway of the Conference House. lithic artifacts also recovered south of Hylan Boulevard between Satterlee and Massachusetts Streets.
1985	Winter, Frederic	Tottenville, Staten Island, Blocks 7923, 7924, 7925, 7936: Report of Test Excavation for the City of New York Department of Real Property"	204 STPs were excavated, producing only 1 lithic flake. However, 5 STPs revealed evidence of shell deposits.

YEAR	AUTHOR	TITLE	RELEVANT FINDINGS
1988	Pickman, Arnold and Rebecca Yamin	Conference House Park, Staten Island, New York, Archaeological Sensitivity Zones	Identified archaeological sensitivity zones in connection with a Master Plan for Conference House Park
1991	Baugher et al. 1991	An Archaeological Investigation: The Conference House Park Site, Staten Island, New York	High concentrations of prehistoric and historic artifacts within 5' of the north wall of the Conference House. The historic materials were from highly stratified deposits and could be linked to specific occupants of the house. The intact nature of these finds suggested that any future construction activity in the vicinity of the house should be subject to archaeological investigation.
1997	Pickman, Arnold	Archeological and Historical Intensive Documentary Research, Conference House Park, Staten Island, New York. NYC Parks/Pre-CEQR R	Determined prehistoric sensitivity of Conference House Park. Identified areas west of Satterlee Street as highly sensitive for prehistoric sites (Zone I); the area south of Clermont Avenue as moderately sensitive for prehistoric sites (Zones II 7 and III); and areas south of Billop Avenue as not sensitive due to land filling (Zone IV).
2000	Pickman, Arnold	Construction of a Pavilion, Conference House Park, Staten Island, New York, Contract No. R-006-100M	Pavilion site determined to have low sensitivity for archaeological resources due to historic swale and changes in grade over time. Areas of the proposed associated pathway were probably more sensitive and could be undisturbed. The report suggests monitoring of the construction of the pavilion and limited testing in the pathway.
2001	HPI, Inc.	Phase 1A Cultural Resources Sensitivity Evaluation South Richmond Drainage Plans: Conference House Park Watershed, South Richmond, Staten Island, New York.	Due to the significance and sensitivity of the Landmark, the relatively undisturbed roadbeds that surround the Landmark boundaries, and the informant data of a continuation of Native American materials recovered east of the bordering streets, street corridors within the Conference House Park Watershed that directly border the Park are considered highly sensitive for Native American materials

YEAR	AUTHOR	TITLE	RELEVANT FINDINGS
2004	John Milner Associates	Archeological Investigations: Conference House Park Staten Island, New York	Confirmed presence of extensive prehistoric archeological deposits in most of the areas tested. These yielded a substantial number of artifacts and faunal material associated with the historic period occupation of the Conference House, Wood/Leven, and Apka Ward Houses. Recommendations concluded that where future ground disturbance cannot be avoided, further archeological investigations should be conducted. Such investigations should be carried out well in advance of construction, so that construction plans can be modified, if necessary, to avoid impacting significant archeological resources.
2005	John Milner Associates	Archeological Investigations: Conference House Park Staten Island. Addendum Report: Biddle House and Wood/Leven House Landscape Improvements.	Excavations around the Wood/Leven and Biddle Houses west of Satterlee Street. The first controlled archaeological investigation at the Billops Ridge Site, west of Satterlee Street.
2006	HPI, Inc.	Phase 1B/2 Archaeological Reconnaissance Survey and Phase 3 Archaeological Mitigation/Monitoring, South Richmond Drainage-Conference House Park Watershed, Installation of Storm Water Drains, Sanitary Sewers, and Water Mains along Swinnerton Street, Clermont Avenue, Massachusetts Street, Hylan Boulevard and Satterlee Street, Richmond County, New York.	Pre-contact and historic period archaeological found remain beneath residential streets immediately east of Satterlee Street

YEAR	AUTHOR	TITLE	RELEVANT FINDINGS
2011	HPI, Inc.	Phase IA Archaeological Documentary Study New York City Department of Environmental Protection Wards Point Infrastructure Improvements Amboy Road from Wards Point Avenue to U.S. Pierhead and Bulkhead Line Staten Island, Richmond County, New York	Noted it was possible that pre-contact resources could survive within the upland portion of the project site, between the present terminus of Amboy Road and the beach. Determined the pre-contact archaeological sensitivity for the APE to be high.



Map 06: APE relative to previously identified sites and archaeological features (US-DOI 1982).



Map 07: Visual representation of previously identified resources/archaeological sites relative to the APE; information compiled from the various assessments of the sensitivity of Conference House Park/Wards Point Conservation Area.

PHASE IB ARCHAEOLOGICAL PLAN PROTOCOLS

Phase IB fieldwork is designed to ascertain the presence/absence, type, and extent of archaeological resources within a site. Its ultimate goal is to determine whether significant (i.e., National Register [NR] eligible) resources that could be adversely affected by project construction are present within the APE. The entire Conference House Park is already included in the National Register; any NR eligible resources encountered within the proposed project would add to the significance of the area as contributing factors to eligibility.

The following sets forth the plan for Phase IB archaeological monitoring and testing for the Staten Island Pavilion Project at Conference House Park. It describes additional mitigation measures that will be undertaken should archaeological resources be encountered during the archaeological investigations, including artifact analysis such as laboratory work, written reports, and further documentary research, if necessary.

ARCHAEOLOGICAL MONITORING

Archaeological monitoring is defined as “the observation of construction excavation activities by an archaeologist in order to identify, recover, protect and/or document archaeological information or materials” (NYAC 2002:2). Modern utilities and unknown subsurface impediments exist within the APE, while topography and geomorphology assessments suggest lower sensitivity in the western portion of the APE where the land was likely characterized by swale. Additionally, while the area is known to be sensitive for the recovery of archaeological resources, previously tested portions of the APE yielded no significant resources. Therefore, in the parts of the APE determined to have lower sensitivity or will not extend beyond 2’ bgs, monitoring is proposed as an effective form of archaeological investigation that will allow a more efficient investigation of the larger, potentially disturbed area (Map 08).

For this project site, the Area of Potential Effect (APE) has been determined by NYC Parks. All monitoring activities will be in compliance with NYC LPC’s Guidelines for Archaeological Work in New York City (LPC 2002) and NYAC’s Guidelines for the Use of Archaeological Monitoring (NYAC 2002). The archaeologist(s) will maintain drawings, photographs, and descriptions of all encountered resources as well as an up-to date log of all monitoring activities, including the date, time, and duration of all monitoring episodes, accompanied with a description of the activity being monitored.

Given the area’s well-known sensitivity for prehistoric and historic resources, archaeological monitoring will occur during ALL construction excavation along Hylan Boulevard, between Satterlee Street and the Arthur Kill shoreline, even in areas previously tested by Chrysalis prior to the start of construction. Monitoring will occur until the final construction depths are reached in all archaeologically sensitive areas and/or if the archaeological monitor determines the excavation to have reached sterile soil (with regard to potential archaeological deposits and resources).

An archaeological monitor is required for each excavation area as noted. If excavations requiring archaeological monitoring are occurring simultaneously in more than one area at a time, additional archaeological monitors will be required to ensure that each excavation area is monitored in

accordance with the protocols. The project will provide at least 24 hours' notice prior to the beginning of excavation work in any areas that require archaeological monitoring so that adequate staffing resources can be provided.

In the event that archaeological deposits or feature are encountered, the archaeologist(s) will be permitted to temporarily halt excavation to examine the soil and potential resource(s) in the trench more closely. The archaeologist will be permitted to halt excavation for a period of up to 24 hours to allow time for photography, drawing of plan views and profiles, screening of removed soil for artifacts, removal of soil samples, hand excavation, and any other actions deemed necessary to determine the nature, extent, and potential significance of the discovery. The archaeologist will determine the level of documentation for each discovery.

If more than 24 hours is required to document a deposit or feature, then the archaeologist will notify and consult with the WWC' Project Manager of the additional time needed. Additional documentary research may be also necessary in order to further understand the potential significance of deposits or features.

If work stoppages occur, the construction contractor may relocate to an area or task where archaeological monitoring is not required. However, if excavation is to occur in another potentially sensitive area, the archaeological team will provide additional staff, within a minimum mutually agreed upon notification period for staffing changes, to monitor this additional area while work documenting the cultural resource occurs.

If the resources encountered are deemed significant, it will be necessary to consult with NYC LPC and NYC Parks.

If the resources encountered do not appear potentially significant, the on-site professional archaeologist will notify the appropriate construction personnel, and construction may resume.

ARCHAEOLOGICAL TESTING

Documented resources recovered during previous archaeological investigations were encountered as shallow as 14" bgs. However, finds at this depth within the APE are unlikely due to the presence of modern utility disturbances as well as the early-twentieth century construction of the former Hylan Boulevard and its subsequent removal. Depths beyond 2' bgs are less likely to have been disturbed by these utilities and therefore, testing will be isolated to areas where excavation is planned to extend beyond 2' bgs. These proposed testing areas include the work areas south of the historic swale area and beginning approximately 250' west of Satterlee Street. The approximate locations of the STPs are displayed (Map 08).

Chrysalis will excavate a series of 1.5' wide shovel test pits (STP) along the proposed construction excavation path of the former Hylan Boulevard at standard 50' intervals (Map 08 – yellow areas). STPs will be manually excavated by natural soil stratigraphy or arbitrary 3.5" increments. All soils will be screened through ¼" mesh and documented according to standard archaeological procedures. Soils will be identified using Munsell standard soil classifications system.

CONSTRUCTION SEQUENCING

It is the request of the project to proceed with construction excavation activities while the areas slated for archaeological testing are excavated concurrently. The construction plan will be sequenced to ensure that work continues on the project while the archaeological team conducts the testing portion of the project. All areas of the project area are subject to the Unanticipated Discoveries Plan to ensure that if unanticipated resources are recovered, they can be handled by the archaeological team. This sequence of events will ensure the project remains on schedule and within the existing Park Scope of Work.

The contractor intends to begin excavation in designated areas. The first task to be performed is to dig 4 feet down for the two concrete weir walls and concrete headwall which is located on the marshy south side of the APE. The footing will be poured at this depth. Then next task to perform is the 2' deep trenching of the 12" ductile iron pipe which leads to the drainage ditch running perpendicular to the weir walls and headwall. The 18" ductile iron pipe requires a trench 3-4 feet thick through the marshy area and will run from the drainage ditch the headwall flowing out toward the water. All of these activities are outside of the archaeologically sensitive areas and are only subject to the Unanticipated Discoveries Plan.

GENERAL METHODOLOGY

During all excavation, the construction contractor will provide assistance to the archaeological team, as needed. This may include, but is not limited to, pumping water from excavation areas, providing additional shoring to trenches, meeting all OSHA regulations, and machine excavation of non-sensitive levels to further reveal resource(s). Construction personnel will allow the archaeologist access to the excavation area at a maximum of 60-minute intervals, as requested, to enter and observe soils and stratigraphy within the excavation area.

If excavation depths extend below 1.5m (5'), archaeologists will observe the excavation from the street level and may request specific soil deposits be temporarily piled beside the excavation in order to more closely examine them. It may be necessary to temporarily halt excavation to enter the construction excavation area in order to observe the deeper deposits.

In the event that archaeological deposits or features are encountered, professional standards for excavation, screening, recording of features and stratigraphy, labeling, mapping, photographing, and cataloging, as outlined in Federal, State and City archaeological regulations as detailed in the Cultural Resource Regulations section of this Plan³, will be applied. If intact deposits or features are identified below 1.5m (5'), all health and safety concerns will be addressed prior to the archaeologists entering the confined space to examine the deposits.

³ As detailed in the National Historic Preservation Act of 1966, as amended, and the Advisory Council on Historic Preservation's "Protection of Historic and Cultural Properties" (36 CFR 800); 36 CFR 61, Appendix A, NY SHPO (New York Archaeological Council [NYAC 1994; 2000; 2002]) and NYC LPC's Guidelines for Archaeological Work in New York City (2002).

Documentation of archaeological deposits may require soil sampling or the hand excavation of features, cultural layers or test units. Screening of soils from the excavation will be based upon the judgment of the archaeologist. Soils will be screened through ¼ inch-mesh screen and excavated by natural strata or in pre-determined controlled levels. Soils from both the trenches and units will be described using the Munsell color system and standard texture classifications. All artifacts recovered during screening will be retained, with the exception of bulk materials such as concrete rubble, brick, large metal objects, ash coal, cinders, and slag. In the case of such materials, a sample will be described from each provenience and the remainder will be quantified and discarded in the field. Recovered artifacts will be bagged according to their unique provenience and transported to the laboratory for processing and analysis. A provenience log, recording the depth and location of recovered artifacts, will be created along with an artifact catalog. Soil profiles, cultural features, etc. will be described, photographed in digital format and illustrated by measured drawings in metric or Engineers scale in plan and vertical perspective, as appropriate.

NYC LPC and NYC PARKS may be consulted to determine if further archaeological field-testing and/or mitigation is necessary if additional archaeological resources/sites are identified during construction monitoring. All work will cease around the discovery until evaluation (Phase II) and, if necessary, mitigation through data recovery (Phase III) is completed. A scope of work for the potential Phase II and/or III work will be developed in consultation with NYC LPC and NYC PARKS and implemented prior to further construction to retrieve significant information before all or part of the site is impacted by construction. Preparation of a scope of work for potential Phase II and/or Phase III investigation may cause a delay in construction, given the requirement for agency review and approval prior to initiating those tasks.

The project will provide a protected area within the project site or field office to temporarily store equipment and/or material remains recovered from the excavation trenches. Material remains may require temporary storage prior to transportation to Chrysalis' laboratory facility.

IF SIGNIFICANT ARCHAEOLOGICAL DEPOSITS ARE FOUND

If archaeological resources are encountered that the on-site archaeologist determines to be potentially significant, e.g. appearing to meet National Register eligibility criteria for contribution to Conference House Park's National Register listing and as a contributing resource to the larger Ward's Point National Conservation Area, the archaeologist will notify all project shareholders, including, but not limited to, WWC, NYC LPC and NYC PARKS. NYC LPC and NYC PARKS will be consulted to determine if further archaeological field-testing and/or mitigation is necessary. If no additional testing is required, the archaeologist will notify the construction contractor/manager that work may resume once documentation of the resource(s) has been completed. The specific time required for the documentation effort will be coordinated with the project team. The construction contractor should plan, schedule, and execute their work in a manner such that work stoppages will not result in a total shutdown of any construction work.

LARGE SCALE DISCOVERIES

In the event of a significant large-scale discovery, defined as a significant discovery containing a large volume of materials, human remains⁴, and/or features that will require additional archaeological excavation for data recovery, all project shareholders including WWC, NYC LPC and NYC PARKS, will be consulted to develop a path forward meeting the needs of the potential discovery. Following this consultation, it may be recommended that additional archaeological measures and resources be employed. This may include, but is not limited to, additional staffing, specialist consultants and expanded archaeological testing/excavation such as Phase II or III data recovery.

The ability to bring in additional archaeological staff and resources would allow for a more expeditious approach toward the recovery and documentation of any large-scale discoveries.

In the event of a large-scale discovery the following procedures will be followed:

1. Upon discovery, Chrysalis will halt excavation and notify WWC, who will, in turn, notify NYC PARKS. Chrysalis will notify NYC LPC.
2. A meeting will be held to discuss how to best address the discovery. If NYC LPC determines that extensive excavation and recovery are required (i.e. Phase II or Phase III Mitigation), Chrysalis will create a SOW for the specific tasks outlined at the meeting, to include time and budget, within ten business days. The SOW will be provided to WWC and NYC PARKS for approval.
3. Upon written approval from WWC, Chrysalis will bring in the additional resources required to complete the specific task(s).
4. Once the agreed upon tasks of the SOW are completed, any additional resources and services will no longer be required unless further along in the project additional large-scale discoveries are made.

HUMAN REMAINS

Special consideration and care is required if human remains are uncovered. Any action related to the discovery of human remains is subject to the statute law as defined in the *Rules of the City of New York*, Title 24 - Department of Mental Health and Hygiene, specifically Title 24, Title V, Article 205. In addition, the NYC LPC regulations regarding human remains and the New York Archaeological Council's (NYAC) policy on the discovery of human remains and items of cultural patrimony as defined by Section 3001 of the Native American Graves Protection and Repatriation Act (NAGPRA) will be taken into consideration – providing they do not conflict with the City of New York statute regulations.

⁴ Detail associated with the discovery of human remains are outline below in the Human Remains Protocol.

In the event that any intact, *in situ*, or fragmentary human remains are uncovered, Chrysalis will notify WWC, who will in turn notify NYC PARKS. Chrysalis will also coordinate with NYC LPC and all regulations, described above, will be adhered to. This includes contacting the local Police Precinct; coordination with the NYC Office of the Medical Examiner (OME); and retaining a funeral director, as only funeral directors are authorized to transport human remains within New York City. If Native American remains are encountered, Chrysalis will consult with an appropriate prehistorian.

ARTIFACT ANALYSIS AND CURATION

All artifacts will be cleaned, catalogued and stored in archival safe materials. Pre-contact and historic artifacts will be analyzed in terms of material type, form, function, and temporal attributes as appropriate (e.g., Noël Hume 1969, South 1977, Miller 1991). Detailed analysis will include the identification of the Terminus Post Quem (TPQ) of artifacts for each context and generation of mean beginning and end dates for assemblages. This information will be used to establish context and to determine whether such assemblages represent primary or secondary deposits.

Any artifact collection removed from the project site will be the property of the project site owner, in accordance with NYC LPC guidelines. It is the responsibility of NYC PARKS to arrange for the long-term curation of the collection in an appropriate facility. It should be noted that the New York City Archaeological Repository (NYCAR) may accept significant and representative materials recovered from the site for curation based upon coordination following the completion of the analysis of the material remains. If there are any significant deposits that may be curated, the material remains must be prepared in accordance with NYC LPC's curation guidelines (in process) and/or the standards of the receiving repository. The artifacts will be returned to the project for transmittal to the long-term curation facility upon completion of the laboratory analysis and with the submission of the final report. There may be archaeological materials and deposits recovered that the NYCAR will not accept for curation. These materials will be returned to NYC PARKS. It is the responsibility of NYC PARKS to arrange for their storage, curation with another facility or final disposition. The archaeological team will prepare any materials not being delivered to the NYCAR for long-term storage according to current archaeological standards. There is a possibility that the project may not recover material remains deemed significant for curation. In that event, it is the responsibility of the NYC PARKS to determine and facilitate what is to become of the collection.

If significant Native American remains are recovered, as outlined in the Scope of Work provided by NYC Parks, a Native American Material Remains specialist may be engaged with prior written approval from the project.

REPORT RESULTS

A report detailing the results of the monitoring, analysis, additional background and/or documentary research, and field efforts will be prepared according to NYC LPC standards. In addition, the report will include recommendations regarding the potential National Register eligibility of any documented artifact deposits and/or features contributing to the larger Ward's Point National Conservation Area and recommendations for additional investigation or mitigation, as necessary. A digital, preliminary draft report will be submitted to WWC and NYC PARKS for initial review. Upon approval, the formal draft report will be submitted in printed form to NYC LPC. Upon approval from NYC LPC, two printed copies will be provided to NYC LPC for their records. Digital copies will be provided to all other parties unless printed copies are requested.

ARCHAEOLOGICAL AWARENESS

Due to the sensitivity and nature of the site, construction personnel will be relied upon to work with the archaeological team in the identification of archaeological resources, deposits, and features. This plan should be provided to the onsite construction foreman to ensure the construction contractor understands the nature of the archaeological significance of the area and the procedures of this combined Archaeological Monitoring Unanticipated Discoveries Plan.

COORDINATION

At the request of NYC Parks, twice a week, Chrysalis will email updates to Parks (to Ms. Young, Ms. Moriel and Ms. Merkl) and to NYC LPC (Ms. Sutphin and Ms. Striebel-MacLean). WWC will also be included in all communications.

UNANTICIPATED DISCOVERIES PLAN

The Archaeological Unanticipated Discoveries Plan is to be used as a guide for construction personnel throughout the construction project when an archaeologist is not on-site monitoring construction activities. However, it is recommended that NO excavation or ground disturbing activities should take place without an archaeologist present.

Unanticipated Discoveries are defined as any the exposure of any cultural resources, including human remains, during construction in any portion of the project site not monitored by the archaeologist. Cultural resource discoveries that require immediate reporting and notification to the archaeological team and the construction coordinator include, but are not limited to, human remains and recognizable, potentially significant concentrations of artifacts, features, or other evidence of human occupation. All project team members and construction foremen should be made aware of this plan.

WWC will coordinate with the professional archaeologist for implementation of the Unanticipated Discoveries Plan. The WWC Resident Engineer (WWC RE) will obtain, review, and file on site this Unanticipated Discoveries Plan. The WWC RE will initiate implementation of the Unanticipated Discoveries Plan by sponsoring an awareness session with the archaeologist, on-site construction management personnel, equipment operators, and laborers.

Cultural resource discoveries that require reporting and notification to the WWC RE include (but are not limited to):

1. Any human remains or other evidence of burials.
2. Any recognizable, potential concentrations of artifacts, features, faunal material (animal bones) or other evidence of human occupation.
3. Building or other structural foundations. These may be constructed of wood, stone or brick. It is possible that artifact deposits exist within these features. Foundation walls may be intact, but often only sections of a wall are uncovered and/or remain.

In the event that unanticipated archaeological resources are found during construction in any portion of the project site, the following procedures will be followed:

1. If an unanticipated discovery of artifacts or historic structural remains, as defined above, occurs during construction, all work will immediately stop in the area of the find to protect the integrity of the find. Work may not resume in the area of the find until the archaeologist and the WWC RE has granted clearance.
2. The construction foreman will immediately notify the designated on-site WWC RE of the find. The WWC RE will instruct the construction foreman to flag and fence off the area of the discovery to ensure safety and avoidance of impacts.

3. The WWC RE will immediately notify NYC PARKS and the archaeologist of the find. The notification will include the specific location of the discovery within the disturbed area of the project site and the nature of the discovery. The WWC RE will identify the location and date of the discovery on the project plans.
4. The archaeologist will coordinate an on-site archaeological consultation to evaluate the find. A reasonable amount of time must be given to the archaeologist to not only arrange to arrive to site (generally within 24 hours, but not more than 48 hours) but to complete the assessment of the discovery (generally within 24 of arriving on site). These timeframes may vary based on the nature of the discovery (i.e. size, complexity, etc).
5. The archaeologist will conduct an on-site assessment of the find. If necessary, the archaeologist will coordinate with the WWC RE to direct the contractor to further flag or fence off the archaeological discovery location and direct the contractor to continue work in another portion of the project area. The contractor will not restart work in the area of the identified archaeological resource until the WWC RE has granted clearance, after receiving word from the archaeologist that the archaeological resource has been fully examined.
6. The archaeologist will then promptly notify the WWC RE and NYC PARKS of the preliminary significance, if any, of the find.

If the discovery is determined to lack potential significance by the archaeologist, the WWC RE will grant clearance to the contractor to resume work.

If the unanticipated find is determined to be potentially significant, the following procedures will be followed:

1. The archaeologist will promptly notify WWC, NYC PARKS, and NYC LPC of the find. This notification will explain why the archaeologist believes the resource to be significant and define a Scope of Work (SOW) for further evaluating the significance of the resource and project effects on it. All work to evaluate significance will be confined to the area of potential effect.
2. The archaeologist will conduct a more detailed assessment of the discovery's significance and the potential effect of construction.
3. The archaeologist will document the find in accordance with all existing City, State and Federal guidelines for Archaeological Research.
4. WWC will notify other parties, as directed by NYC LPC, or as indicated by City/State law.

5. If the find is determined to be significant, and continuing construction may damage more of the resource, then the archaeologist, WWC and NYC PARKS will consult with NYC LPC, and other project shareholders regarding further mitigation and appropriate measures for recovery and/or appropriate measures for site treatment. These measures may include:
 - Formal archaeological evaluation of the site
 - Visits to the site by NYC LPC and other parties
 - Preparation of a mitigation plan for approval by NYC LPC
 - Implementation of the mitigation plan
 - Approval to resume construction following completion of the fieldwork component of the mitigation plan

6. If the find is determined to be isolated or completely disturbed by previous construction activities, the archaeologist will consult with the WWC RE, NYC PARKS, and NYC LPC and will request approval to resume construction, subject to any further mitigation that may be required by NYC LPC.

7. The WWC RE will notify the Construction Contractor of clearance to resume work.

CONTACT INFORMATION:

Chrysalis Archaeological Consultants, Inc.
Alyssa Loorya, Ph.D., R.P.A., Principal Investigator
Chrysalis Archaeological Consultants, Inc.
4110 Quentin Road
Brooklyn, New York 11234-4322
(718) 645-3962 or (347) 922-5581
Email: aloorya@chrysalisarchaeology.com

WWC Contracting
Rich Martiucci, Patrick Sobota and Nick Aronoff, Project Managers
WWC Contracting
356 Meredith Avenue
Staten Island, New York 10314-3614
Phone: (718) 698-9577
Email: RichM@wwcontracting.com, PatrickS@wwcontracting.com and
NickA@wwcontracting.com

Hill International
Adam Silberman, Project Manager
Email: AdamSilberman@hillintl.com

City of New York – Department of Parks and Recreation
Vladimir Biba and Sybil Young
City of New York – Department of Parks and Recreation
Phone: (718) 760-6421
Email: VLadimir.Biba@parks.nyc.gov and Sybil.Young@parks.nyc.gov

City of New York – Landmarks Preservation Commission
Amanda Sutphin, Director of Archaeology
City of New York – Landmarks Preservation Commission
Municipal Building
One Center Street – 9th Floor
New York, New York 10007
(212) 669-7823
Email: asutphin@lpc.nyc.gov

City of New York – Office of the Medical Examiner
Bradley Adams
City of New York – Office of the Medical Examiner
520 1st Avenue
New York, New York 10016-6499
(212) 447-2760 or (646) 879-7873
Email: badams@ocme.nyc.gov

City of New York – Police Department
New York City Police Department
123 Precinct
116 Main Street,
Staten Island, New York 10307
Phone: (718) 948-9311

HUMAN REMAINS PROTOCOL

Special consideration and care is required if human remains are uncovered. Any action related to the discovery of human remains is subject to the statute law as defined in the *Rules of the City of New York*, Title 24 - Department of Mental Health and Hygiene, specifically Title 24, Title V, Article 205. In addition, the NYC LPC (Appendix A) regulations regarding human remains and the New York Archaeological Council's (NYAC) policy on the discovery of human remains and items of cultural patrimony as defined by Section 3001 of the Native American Graves Protection and Repatriation Act (NAGPRA) will be taken into consideration – providing they do not conflict with the City of New York statute regulations.

As human remains have been recovered from sites adjacent to the current project area (Map 07), this Human Remains Protocol has been drafted to provide a clear process for all project participants to follow in the event that human remains are exposed during the current project. This protocol is applicable to all instances when potential human remains are exposed, both when the archaeological team is on site and when the archaeological team is not on site.

Given the area's well-known sensitivity for human remains, archaeological monitoring will occur during ALL construction excavation along Hylan Boulevard, between Satterlee Street and the Arthur Kill shoreline. Monitoring will occur until the final construction depths are reached in all excavation areas and/or if the archaeological monitor determines the excavation to have reached sterile soil (with regard to potential archaeological deposits and resources).

An archaeological monitor is required for each excavation area as noted. If excavations requiring archaeological monitoring are occurring simultaneously in more than one area at a time, additional archaeological monitors will be required to ensure that each excavation area is monitored in accordance with the protocols. The project will provide at least 24 hours' notice prior to the beginning of excavation work in any areas that require archaeological monitoring so that adequate staffing resources can be provided.

As per New York City law (Title 24, Title V, Section 205.1 (a)) a burial is defined as a “means (of) interment of human remains in the ground or in a tomb, vault, crypt, cell or mausoleum, and includes any other usual means of final disposal of human remains other than cremation” (Rules of the City of New York 2015). For the purposes of this project and as per New York City law (Title 24, Title V, Section 205.1 (c)), human remains are defined as “any part of the dead body of a human being but does not include human ashes recovered after cremation” (Rules of the City of New York 2015). This includes any bone fragments, a single bone or tooth, partial skeleton, etc.

As per New York City law (Title 24, Title V, Section 205.7) a permit must be obtained for the disinterment of any human remains. A funeral director must obtain this permit. No human remains may be removed from the ground, from the area where they are first exposed, until this permit has been obtained. No construction work can occur in this area while the permit is being obtained and until the archaeologist, in consultation with NYC LPC, gives clearance for work to proceed.

In any area that human remains are discovered, the WWC RE and/or the on-site Construction Foreman or Supervisor will flag or fence off the area of the discovery, taking all practical measures to protect the discovery from damage and disturbance.

The Construction Contractor should plan to move to another location if human remains are exposed, as work will need to be temporarily halted in the area of the remains. If the contractor moves to an area that requires archaeological monitoring, additional archaeological personnel will be required on site.

Initial Protocol

- If suspected human remains are exposed, the archaeologist in conjunction with the WWC RE and/or the on-site Construction Foreman or Supervisor will immediately halt all work in the area of the discovery.
- If suspected human remains are exposed in an area when the archaeologist is not on site, the WWC RE and/or the on-site Construction Foreman or Supervisor will immediately halt all work in the area of the discovery and notify the archaeologist. The archaeologist will return to site within 24 hours of notification. The WWC RE and/or the on-site Construction Foreman or Supervisor will cover and protect the discovery from any further disturbance.
- The archaeologist (once on site) will enter the construction area to inspect the discovery. Chrysalis' Forensic Anthropologist may be called to site to make a determination if the skeletal remains are human or not.
- If the identified skeletal material is not human, the archaeologist will inform the WWC RE and/or the on-site Construction Foreman or Supervisor that work may continue.
- If the skeletal material is human, the archaeologist will inform the WWC RE and/or the on-site Construction Foreman or Supervisor that work must cease in the area, and the full remainder of the human remains protocol will be implemented.

Human Remains Protocol

At all times, human remains must be treated with the utmost dignity and respect. The following procedures will be followed once it is confirmed that human remains have been exposed:

1. The WWC RE will notify the NYC PARKS. The archaeologist will notify NYC LPC.
2. The WWC RE will immediately notify the New York City Police Department (NYPD) and the archaeologist will notify the Medical Examiner's office (OME) of the find. The project will cooperate with the OME and NYPD, providing access to the site if required.

3. Once the NYPD and OME have determined they have no concerns regarding the discovery⁵, the WWC RE will direct the archaeological team to proceed with an initial assessment of the remains, including if the remains represent an intact burial, multiple burials, or partial skeleton or fragmentary skeletal remains, and the potential effect of construction.
4. Chrysalis will draft a Memorandum to NYC PARKS and NYC LPC detailing the discovery, including recommendations as to how to proceed.
5. It is the preference of NYC LPC that human remains, if possible, remain *in situ*, and a project redesign be initiated. If removal is required, permits from the City of New York Department of Health and Mental Hygiene (DOH) are necessary for the disinterment and disposition of any human remains. Permits are required for intact burials, partial burials, and fragmentary remains.
6. Only a funeral director can obtain the permits from DOH. Chrysalis will contact and coordinate with the Funeral Director to obtain all necessary permits⁶.
7. The WWC RE will notify any parties, including next of kin, if known, as directed by the NYC LPC or as indicated by City/State law.
8. Once the proper permits have been obtained, the archaeological team will proceed as appropriate depending on the context of the discovery and based on consultation with NYC LPC.

Protocol for Fragmentary Human Remains

If the exposed skeletal remains are determined to be fragmentary and do not represent a partial or intact skeleton, the following procedures will be implemented:

1. Chrysalis will begin a detailed archaeological assessment of the discovery. This may include photography, scaled drawings and eventual removal of the remains. Only the archaeologist or Forensic Anthropologist may excavate identified human remains.
2. Once this is completed and the fragmentary remains have been removed, the archaeologist will further investigate the area to assess if any additional remains are present.

⁵ NYC Department of Health requires that this be obtained in writing.

⁶ The permit requires that the descendant of the deceased or descendant organization be identified. Additional research may be required to identify the descendant organization prior to obtaining the permit. In the case of Native American burials Tribal coordination will be required.

3. If no further human remains are present, the archaeologist will notify the WWC RE and/or the on-site Construction Foreman of Supervisor that work may continue.

Protocol for Partial Burials or Intact and in situ Human Remains

If it is determined that intact interments are present and may be disturbed by continuing construction, the archaeologist will consult with the NYC LPC and the project regarding additional measures to avoid or mitigate further damage, which may include preservation in place and project redesign. If redesign is not a viable option, the following protocol will be followed:

1. Chrysalis' Forensic Anthropologist will further assess the burial and begin documentation. Only the archaeologist or Forensic Anthropologist may excavate human remains that have been identified.
2. Chrysalis will consult with NYC LPC and the project regarding potential additional mitigation measures;
3. Chrysalis will prepare and submit a mitigation plan for the disinterment, documentation and analysis of the human remains. This will be submitted to NYC LPC for approval.
4. Any disinterment will be conducted by and/or under the supervision of the Forensic Anthropologist following the procedures detailed in the mitigation plan.
5. Depending on the scale of the discovery, additional archaeological personnel may be required to assist with archaeological tasks on site.
6. If any burials are to remain *in situ*, the project will assist as necessary in ensuring they are protected.

Once an area has been documented and cleared of human remains that are to be disinterred or any burials to remain *in situ* are appropriately protected, the archaeologist and the WWC RE will inform the project that construction may resume.

All human remains will be brought to the Chrysalis' laboratory facility in Brooklyn, NY. Final disposition of the remains following conclusion of the project will be arranged with the project and follow all guidelines as set forth by DOH requirements and the project permit.

CONTACT INFORMATION:

Chrysalis Archaeological Consultants, Inc.
Alyssa Loorya, Ph.D., R.P.A., Principal Investigator
Chrysalis Archaeological Consultants, Inc.
4110 Quentin Road
Brooklyn, New York 11234-4322
(718) 645-3962 or (347) 922-5581
Email: aloorya@chrysalisarchaeology.com

WWC Contracting
Rich Martiucci, Patrick Sobota and Nick Aronoff, Project Managers
WWC Contracting
356 Meredith Avenue
Staten Island, New York 10314-3614
Phone: (718) 698-9577
Email: RichM@wwcontracting.com, PatrickS@wwcontracting.com and
NickA@wwcontracting.com

Hill International
Adam Silberman, Project Manager
Email: AdamSilberman@hillintl.com

City of New York – Department of Parks and Recreation
Vladimir Biba and Sybil Young
City of New York – Department of Parks and Recreation
Phone: (718) 760-6421
Email: VLadimir.Biba@parks.nyc.gov and Sybil.Young@parks.nyc.gov

City of New York – Landmarks Preservation Commission
Amanda Sutphin, Director of Archaeology
City of New York – Landmarks Preservation Commission
Municipal Building
One Center Street – 9th Floor
New York, New York 10007
(212) 669-7823
Email: asutphin@lpc.nyc.gov

City of New York – Office of the Medical Examiner
Bradley Adams
City of New York – Office of the Medical Examiner
520 1st Avenue
New York, New York 10016-6499
(212) 447-2760 or (646) 879-7873
Email: badams@ocme.nyc.gov

City of New York – Police Department
New York City Police Department
123 Precinct
116 Main Street,
Staten Island, New York 10307
Phone: (718) 948-9311

REFERENCES

Baugher, Sherene, Edward J. Lenik, Robert W. Venables, Kate T. Morgan, and Judith M. Guston
1991 An Archaeological Investigation: The Conference House Park Site, Staten Island, New York. Report prepared for the Conference House Association.

City of New York – Landmarks Preservation Commission.

2002 Guidelines for Archaeological Work in New York City. Report on file with the City of New York – Landmarks Preservation Commission. New York, New York.

Historical Perspectives, Inc.

2001 Phase 1A Cultural Resources Sensitivity Evaluation South Richmond Drainage Plans: Conference House Park Watershed, South Richmond, Staten Island, New York. Prepared for Allee King Rosen & Fleming, Inc. Report on file with the City of New York – Landmarks Preservation Commission. New York, New York.

2003 Phase 1B Archaeological Field Testing of CHP-1 and CHP-2 Conference House Park, Staten Island, New York. CEQR No. 01DEP004R. Prepared for Allee King Rosen & Fleming, Inc. Report on file with the City of New York – Landmarks Preservation Commission. New York, New York.

2006 Phase 1B/2 Archaeological Reconnaissance Survey and Phase 3 Archaeological Mitigation/Monitoring, South Richmond Drainage-Conference House Park Watershed, Installation of Storm Water Drains, Sanitary Sewers, and Water Mains along Swinnerton Street, Clermont Avenue, Massachusetts Street, Hylan Boulevard and Satterlee Street, Richmond County, New York. Report on file with the City of New York – Landmarks Preservation Commission. New York, New York.

Jacobson, Jerome.

1960 Ward's Point, Tottenville, and its Clues to the Prehistory of Coastal New York. MA Thesis. Columbia University, New York, NY.

1980 Burial Ridge, Tottenville, Staten Island, N.Y.: Archaeology of New York City's Largest Prehistoric Cemetery. The Staten Island Institute of Arts and Sciences.

John Milner Associates

2004 Archeological Investigations: Conference House Park Staten Island, New York. Prepared for Padilla Construction Services, Inc. and New York Department of Parks and Recreation. Prepared by John Milner Associates, Inc., West Chester, PA.

2005 Archeological Investigations: Conference House Park Staten Island. Addendum Report: Biddle House and Wood/Leven House Landscape Improvements. Prepared for Padilla Construction Services, Inc. and New York Department of Parks and Recreation. Prepared by John Milner Associates, Inc., Croton-on-Hudson, NY.

New York Archaeological Council.

- 1994 Standards for Cultural Resource Investigations and the Curation of Archaeological Collections in New York State. Report on file with the New York State Office of Parks, Recreation and Historic Preservation. Albany, New York.
- 2000 Cultural Resource Standards Handbook: Guidance for Understanding and Applying the New York Standards for Cultural Resource Investigations. Report on file with the New York State Office of Parks, Recreation and Historic Preservation. Albany, New York.
- 2002 Guidelines for the Use of Archaeological Monitoring as an Alternative to Other Field Techniques. Report on file with the New York State Office of Parks, Recreation and Historic Preservation. Albany, New York

Pickman, Arnold.

- 1997 Archeological and Historical Intensive Documentary Research, Conference House Park, Staten Island, New York. NYC Parks/Pre-CEQR R. Prepared for Jackson & Kin/South Street Design Company and New York Department of Parks and Recreation, On file, New York City Landmarks Preservation Commission, New York.
- 2000 Construction of a Pavilion, Conference House Park, Staten Island, New York, Contract No. R-006-100M, Archeological Sensitivity Assessment. Prepared for City of New York Department of Parks and Recreation, New York.

Pickman, Arnold, and Rebecca Yamin.

- 1988 Conference House Park, Staten Island, New York, Archaeological Sensitivity Zones. Report prepared for Jackson and Kihn.

United States - Department of the Interior

- 1966 "Billopp (Conference) House" National Survey of Historic Sites and Buildings form 10-317, February, 1966.
- 1977 "Conference (Billopp) House" National Register of Historic Places Inventory-Nomination Form, form 10-300, November, 1975.
- 1982 "Ward's Point Conservation Area (A085-01-0030)" National Register of Historic Places Inventory- Nomination Form, form 10-900

Appendix A:
The City of New York – Landmarks Preservation Commission
Human Remains Protocol

**The City of New York -
Landmarks Preservation Commission**

Human Remains Discovery Protocol*

7.0 Burials and Human Remains

Human remains should be treated with great care and respect. Human remains are encountered as primary burials or as fragmentary remains. Primary burials are burials which have not been disturbed since interment or which have been only potentially disturbed. They may contain remains of coffins, complete skeletons, and artifacts associated with the burial such as shroud pins, buttons, or jewelry. Disarticulated bones, and fragments of bones, are considered to be fragmentary remains. Whenever proposed work will occur in an area, such as the African Burial Ground or in a cemetery, where human remains are likely to be encountered, the LPC should be contacted as early as possible in the planning stages so that an appropriate project specific protocol governing the work can be developed. Projects requiring Federal or State review must contact the OPHRP. They should also be contacted for questions about the Native American Graves Protection and Repatriation Act (NAGPRA).

7.1 Preservation of Primary Burials in Place

As a general policy, the LPC recommends that primary burials be left in place and that projects be redesigned to avoid disturbing them. The project must be planned in a manner that attempts to avoid disturbing primary burials. In the Scope of Work, the archaeologist must document the location of known graves, whether marked or unmarked, using such references as the plans of the cemetery, historic descriptions, photos, and other sources. In cases where documentation does not exist, remote sensing technology may be warranted.

7.2 Professional Archaeological Oversight

Professional archaeological staff must be present for all phases of excavation in an area that may contain human remains. Areas with potential for graves must be hand excavated by the archaeological staff; all construction work within an area that may contain human remains should be at least monitored.

7.3 Use of a Physical Anthropologist

A physical anthropologist must be available to come to the field as needed to identify and appropriately treat any human remains that may be encountered as defined in the Scope of Work. This individual should have a graduate degree in a relevant field and significant research experience with human remains found in archaeological contexts. The LPC maintains a list of physical anthropologists and will provide it upon request. The LPC will review the qualifications of any individual who is not on the list to ensure that he/she has sufficient experience. Note, that there are some individuals who may be both a qualified archaeologist and a physical anthropologist. In this instance, only one such professional is needed for the project. In all others, at least two professionals, the archaeologist and the physical anthropologist will be needed. The Scope of Work must describe the type and extent of physical anthropological study. It must also define the reporting obligations of the archaeologist and the physical anthropologist. The physical anthropologist should submit a scope for analysis to the LPC after fragmentary human remains

have been found. This analysis should, when possible, identify the minimum number of individuals these bones may represent, sex, age, cause of death, pathology, etc. The Commission recommends that these remains be reinterred in consultation with descendent communities and interested parties.

7.4 Disposition of Human Remains

The projects' Scope of Work must include the applicant's protocol for temporary and permanent disposition of human remains found in the course of the project. The protocol should designate how and where remains will be temporarily stored, what the consultation process with descendent communities and interested parties will be, plans for curation, and for permanent disposition (e.g., reburial on or off the site). Applicants should note that LPC will need to review and approve any proposal to put an exterior marker or memorial in a designated historic district, scenic landmark, or individual landmark.

7.5 Memorandum of Agreement

The Scope of Work should also include an MOA between the contractor and the archaeologist(s) which outlines the rights and obligations of each party in regard to stopping the excavation, completing the fieldwork in a timely manner, making changes in the construction work, maintaining workplace safety, and notification.

7.6 Unanticipated discovery of human remains

When human remains are unexpectedly found in the City, the New York Police Department ("NYPD") and Medical Examiner's Office ("ME") must be contacted immediately. They will determine the appropriate action. If the human remains are found on a project which has been reviewed by the LPC, the LPC must be notified as well as the NYPD and ME.

*Taken from:

City of New York – Landmarks Preservation Commission.

2002 Landmarks Preservation Commission Guidelines for Archaeological Work in New York City. City of New York – Landmarks Preservation Commission. New York, New York.

APPENDIX B:
Project Personnel

Alyssa Loorya, Ph.D., R.P.A. |
President, Principal Investigator



Ms. Loorya is founder and president of Chrysalis Archaeological Consultants. For nearly twenty years she has worked in cultural resource management and public education devoted to preserving cultural resources and communicating their value to local communities. She has completed over sixty technical and academic reports and has delivered dozens of presentations concerning preservation compliance, New York City historical development, and educational curricula. Her extensive experience lends itself to her roles in developing and executing research and excavation plans, project management, regulatory compliance and report production.

PROJECTS BY STATE

New York:

102 Franklin Avenue, Brooklyn, NY, Phase IA, 2006
147 Hicks Street, Brooklyn, NY, Phase IB, 1998
156 Rivington Street, New York, NY, Phase IA, 2012
210 Broad Street, Staten Island, NY, Phase I 2009
221 Main Street, Sag Harbor, NY, Phase IA, 2016
246 Front Street, New York, NY, Phase I, 2012
265 Front Street, Brooklyn, NY, Phase I, 2016
275 Myrtle Avenue, Brooklyn, NY, Phase IA, 2016
311 Broadway, New York, NY, Phase IA, 2005
404 Littleworth Lane, Sea Cliff, NY, Phase IB 2016
50 Bowery, New York, NY, Phase I, 2014
63-65 Columbia Street, Brooklyn, NY, Phase IA, 2004
79 Christopher Street, New York, NY, Phase IB, 2008
Alcoa Powerhouse, Massena, NY, Phase IA, 2016
Artesian Way, Nissequogue, NY, Phase II, 2016
Bartow-Pell Mansion; Bronx, NY, Phase IB, 1993, 2004, 2008, 2012
Bronx River Greenway, Bronx, NY, Phase IB, 2016
Brooklyn Navy Yard, Brooklyn, NY, Phase IB, 2017-present
Carl's River, Babylon, NY, Phase IA, 2017
Chambers Street, New York, NY, Phase I, 2005
Charles Point Waterfront Trail, Peekskill, NY, Phase IB, 2016
City Hall Park, Fuel Cell Project, New York, NY, Phase IB, 2013
City Hall Park, New York, NY, Phase IB, II, 2012
City Island Bridge, Bronx, NY, Phase IB, 2014-present
Columbus Park, New York, NY, Phase I, 2007
Conference House Park, Staten Island, NY, Phase IB, 2018-present
DEP Water Tunnel - Shaft 4, NY, Phase IB, 2013

AREAS OF EXPERTISE

National Historic Preservation Act
Section 106 Compliance
Material Collections Analysis
Archaeological Survey and Excavation
Public Outreach

EDUCATION

Ph.D., Anthropology and Archaeology:
2018, CUNY Graduate School

M.A., Anthropology and Archaeology:
1998, Hunter College

CERTIFICATIONS

Register of Professional Archaeologist
10-Hour OSHA Construction Safety
30-Hour OSHA Construction Safety
40-Hour OSHA HAZWOPER
SWAC - Secure Worker Access
Consortium

PROFESSIONAL EXPERIENCE

2001-Present: Chrysalis Archaeological
Consultants
2006-2010: URS Corporation, Principal
Investigator
2007-2010: Gray & Pape, Supervisory
Consultant

CONTACT INFORMATION

aloorya@chrysalisarchaeology.com

New York Headquarters
4110 Quentin Road
Brooklyn, NY 11234-4322
Phone: 718.645.3962

Brooklyn Laboratory
3604 Quentin Road
Brooklyn, NY 11234
www.chrysalisarchaeology.com

Rhode Island Regional Office
One Richmond Square – Suite 121F
Providence, RI 02906-5139
Phone: 401.499.4354

Leah Mollin-Kling, M.A., R.P.A. | Field Director

Ms. Mollin-Kling has over ten years of experience working in all phases of archaeological excavation. Her specializations include both prehistoric and historic contexts in the Middle Atlantic and New England regions. Her professional focus centers on historic urban infrastructure and consumer culture. She has extensive knowledge of field methodologies for prehistoric and historic sites.

SELECTED PROJECT EXPERIENCE BY STATE

New York

Artesian Way – Phase IB (2018)

Nissequogue, NY

Field Director for Phase IB testing of Mid-Archaic to Early-Woodland Native site in Long Island.

Hart Island– Pre-Phase (2018)

Bronx, NY

Ongoing collection of nineteenth-century human remains in areas of extreme erosion in lead-up to large-scale project in 2019.

Newtown Playground – Phase IB testing and Monitoring (2018)

Queens, NY

Field Director for Phase IB project involving human and archaeological remains.

Washington Square Park – Monitoring (2017-2018)

New York, NY

Monitoring construction of water utility pipes around Washington Square Park in Manhattan for human and archaeological remains.

Forge River Watershed Project – Phase Ib (2017)

Brookhaven, NY

Principal Investigator for Phase Ib excavations in various locations in Brookhaven, Long Island, NY for Hurricane Sandy recovery efforts.

Myrtle Avenue – Monitoring/Phase II (2017)

Brooklyn, NY

Monitored construction activities and performed Phase II field testing of remains of mid-nineteenth century row houses in Fort Greene, Brooklyn, NY.

Brooklyn Navy Yard Annex – Phase Ib (2017)

Brooklyn, NY

Monitored mechanical excavation of test pits in the vicinity of historic structures and cemetery in the Brooklyn Naval Yard Annex.



AREAS OF EXPERTISE

Archaeological Survey and Excavation
Public Outreach and Education
Historic Materials Identification

EDUCATION

M.A.A., Applied Anthropology: 2009,
University of Maryland, College Park

B.A., Archaeology: 2005, Boston University

CERTIFICATIONS

OSHA 10 Hour

HAZMAT 40 Hour

LIRR Safety

Fireguard

PROFESSIONAL EXPERIENCE

2017 – Present: Chrysalis Archaeological
Consultants

2016-2017: Geoaerchology Research
Associates

2014-2016: Public Archaeology Laboratory

2009-2011: John Milner Associates

2006-2007: Public Archaeology Laboratory

PROFESSIONAL ORGANIZATIONS

Register of Professional Archaeologists
(RPA)

Society for Historic Archaeology (SHA)

New York State Archaeological Association
(NYSAA)

Professional Archaeologists of New York City
(PANYC)

CONTACT INFORMATION

lmollinkling@
chrysalisarchaeology.com

New York Headquarters
4110 Quentin Road
Brooklyn, NY 11234-4322
Phone: 718.645.3962

Brooklyn Laboratory
3604 Quentin Road
Brooklyn, NY 11234
www.chrysalisarchaeology.com

Rhode Island Regional Office
One Richmond Square – Suite 121F
Providence, RI 02906-5139
Phone: 401.499.4354