



Contract No. W912DS-07-D-0005

**U.S. Army Corps of Engineers
New York District**

PHASE IA CULTURAL RESOURCES INVESTIGATION

FOR ADMIRAL'S ROW SECTION

FORMER BROOKLYN NAVY YARD, BROOKLYN,

KINGS COUNTY, NEW YORK

OPRHP # 03PR05477

July 2008

Final Report

**PANAMERICAN CONSULTANTS, INC.
Buffalo Branch Office
2390 Clinton Street
Buffalo, New York 14227-1735**

Prepared for:

**TETRA TECH, INC.
451 Presumpscot Street
Portland, Maine 04103**

Under contract to:

**U.S. ARMY CORPS OF ENGINEERS
New York District
26 Federal Plaza
New York, New York 10278-0090**

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Management Summary

SHPO Project Review Number (if available): 03PR05477

Involved State and Federal Agencies: U.S. Army Corps of Engineers, U.S. Army National Guard Bureau

Phase of Survey: Phase IA Cultural Resources Investigation

Location Information:

Location: Admiral's Row, northeast corner of Flushing Avenue and Navy Street, Brooklyn Navy Yard

Minor Civil Division: Borough of Brooklyn

County: Kings County, New York

Survey Area (Metric & English): The survey area comprises approximately 6.07 acres on the north side of Flushing Avenue.

USGS 7.5 Minute Quadrangle Map: Brooklyn

Archaeological Survey Overview

Number & Interval of Shovel Tests: N/A

Results of Archaeological Survey

Number & name of historic sites identified: N/A

Number and name of sites recommended for Phase II/Avoidance: N/A

Results of Architectural Survey

Number of structures within project area: 21

Number of buildings/structures/cemeteries adjacent to project area: in a densely urban environment (New York City)

Number of identified eligible buildings/structures/cemeteries/districts: eight buildings (ten quarters) in Admiral's Row plus the Timber Shed

Report Author(s): R. Hanley, C. Longiaru, M. Steinback, J. Wah, M. Cinquino

Date of Report: July 2008

Abstract

Project Name: Phase IA Cultural Resources Investigation for Admiral's Row Section, Former Brooklyn Navy Yard, Brooklyn, Kings County, New York

Location, Size, and Boundaries of Project Area: 6.07 acres at northeast corner of Navy Street and Flushing Avenue

Purpose and Goals: Panamerican Consultants, Inc. (Panamerican) was contracted by Tetra Tech, Inc., Portland, Maine, and the U.S. Army Corps of Engineers, New York District (USACE) to conduct a Phase IA cultural resources investigation for the Admiral's Row section of the former Brooklyn Navy Yard in the Borough of Brooklyn (Kings County), New York. The U.S. Army National Guard Bureau (NGB) is responsible for transferring the Admiral's Row property from federal government's ownership and disposing of the property as per Public Law 100-202. The USACE is currently serving as the real estate agent assisting the NGB in complying with all federal regulations as they pertain to the undertaking. The City of New York, through an agreement with the Brooklyn Navy Yard Development Corporation, a not-for-profit organization that has a long-term lease with the City as the management and development administrators for the rest of the former navy yard, has expressed interest in acquiring the 6.07-acre parcel (USACE 2008). The completion of the Phase IA cultural resources investigation is part of the environmental review for disposal of the property.

The purpose of the archaeological component of the Phase IA investigation is to identify National Register-eligible (NRE) properties within the project's Area of Potential Effect and to assess sensitivity for archaeological sites (including buried resources) through background research, historical map review, and field reconnaissance. The investigation also attempted to determine if the original shoreline of Wallabout Bay extended to the project area and to identify the Navy Yard use of this area prior to the construction of the Admiral's Row residences.

The purpose of the architectural component of the Phase IA investigation is to identify NRE properties within the APE by conducting background research and field reconnaissance. The architectural investigation documented all buildings, structures and objects within the entire 6.07-acre project area (i.e., APE) in the southwest corner of the former Brooklyn Navy Yard.

Regulatory Basis: The NGB, as a federal agency, has management responsibilities concerning the protection and preservation of cultural resources on land it controls or uses. As an agency of the federal government, the Army has certain responsibilities regarding the identification and protection of the cultural resources that may be eligible for inclusion on the National Register of Historic Places (NRHP). As part of project planning, federal statutes and regulations require the identification of significant cultural resources that are eligible for the NRHP and mitigation of adverse impacts to such resources, if identified. The federal statutes and regulations authorizing the Army to undertake these responsibilities include Section 106 of the National Historic Preservation Act, as amended through 2004, the Abandoned Shipwreck Act of 1987, and the Advisory Council on Historic Preservation Guidelines for the Protection of Cultural and Historic Properties (36 CFR Part 800); as well as Army Regulation (AR) 2001, "Environmental Protection and Enhancement" (December 2007).

NYSHPO correspondence: Letter dated December 17, 2007 (Cumming 2007). New York State Historic Preservation Office Project Review number is 03PR05477.

Summary: Panamerican conducted a Phase IA investigation for the Admiral's Row project area under contract to Tetra Tech and USACE for NGB. Admiral's Row is located in the southwestern portion of the former Brooklyn Navy Yard along the north side of Flushing Avenue, east of Navy Street. It covers 6.07 acres and contains eight domestic structures (ten quarters) that were erected between ca. 1850 and ca. 1900, related outbuildings, and a timber shed that was reportedly constructed as early as 1833. Background research was conducted at numerous repositories and field reconnaissance was undertaken for this Phase IA cultural resource investigation that includes both archaeological and architectural components. In addition, the Phase IA was tasked with addressing questions raised by a previous investigation of the project area (Beardsley/Crawford & Stearns 2008), and included providing additional information on the existing Timber Shed/Brick Barn as well as evaluating it for eligibility for listing to the NRHP; determining the involvement of Thomas U. Walter in the design and/or construction of the Admiral's Row residences; and determining the original shoreline of Wallabout Bay and its extent in relation to the Admiral's Row project area (USACE 2008).

Field and Recordation Methods: Pedestrian (i.e., walkover) reconnaissance was conducted across the entire project area. Detailed notes of observations and photographs were taken to document current conditions. Numerous research repositories were visited as part of the background investigation.

Evaluations and Impacts: The entire project area has potential to yield archaeological cultural remains from the prehistoric through historic periods. Therefore, a Phase IB archaeological investigation is recommended. Subsurface testing is recommended to determine the presence or absence of buried cultural resources.

The Phase IA architectural investigation concurs with the recommendations from the Beardsley/Crawford & Stearns report which concluded that the Timber Shed "appears to be Nationally [sic] significant under all four NRHP criteria (A-D)" as part of the "primary compound of senior officer residential quarters within the historic Brooklyn Navy Yard. The 'Timber Shed' is significant as part of the group of buildings and the oldest one making up the historic Brooklyn Navy Yard Admiral's Row area" (2008:183). The Phase IA investigation further concurs that the Timber Shed is individually NRE.

The NYSHPO acknowledged Beardsley/Crawford & Stearn's comprehensive analysis of the historic structures and their condition and concurred with the recommendation that the buildings at Admiral's Row (B, C, D, E, F, G, H, I, K and L) remain eligible for listing in the State and National Registers of Historic Places. NYSHPO further concurred that these buildings contribute to a NRE district.

Research conducted for the Phase IA study revealed that the outbuildings associated with Admiral's Row were constructed in 1919 as detached garages with access from Park Street. As such, the outbuildings are now of sufficient age to be re-evaluated as contributing elements to the Admiral's Row Historic District. Further, the garages represent the continued occupation and improvements of the residential area Admiral's Row in the early twentieth century. The tennis court (built 1918) and shower room building (built 1952) located opposite the eastern part of Admiral's Row should also be re-evaluated for their association with the residential and recreational history of Admiral's Row.

Correspondence with national repositories having holdings associated with Thomas U. Walter (i.e., The Athenæum of Philadelphia and The Architect of the Capitol, Washington D.C.)

found no evidence associating Walter with the Officers' Quarters in Admiral's Row, although he was involved with the Marine's Barracks at the Brooklyn Navy Yard.

The geomorphological investigation revealed that nineteenth-century and twentieth-century fill extended to a depth of no less than 7.5 feet (2.3 meters) in one area adjacent to the project area and to greater than 12 ft (3.6 m) in another. Neither buried organic soils nor thick, dark surface horizons typical of tidal marshes and soils formed in saturated, anaerobic settings were described in any of the borings (Geismar and Oberon 1995, 1996). Historical maps of the project area illustrated the area as within tidal marshes with a winding drainageway at the southwestern corner of Wallabout Bay, which was impacted in the eighteenth century by the construction of Remsen's mill dam and flooding by the mill pond. The Wallabout Pond was filled by 1854.

Table of Contents

Management Summary.....	iii
Abstract.....	v
List of Figures and Tables.....	xi
1.0 Introduction	1-1
2.0 Methodology	2-1
2.1 Archaeological Research Design	2-1
2.1.1 Objectives.....	2-1
2.1.2 Properties Investigated and Recorded	2-1
2.1.3 Methodology.....	2-1
2.2 Architectural Research Design.....	2-2
2.2.1 Objectives.....	2-2
2.2.2 Properties Investigated and Recorded	2-2
2.2.3 Methodology	2-2
3.0 Background Research	3-1
3.1 Site Files and Records Review	3-1
3.2 Environmental Setting	3-4
3.3 Culture History.....	3-4
3.3.1 Prehistoric Period	3-4
3.3.2 Historic Period	3-11
3.4 Historical Map Analysis	3-23
4.0 Archaeological Investigation	4-1
4.1 Archaeological Field Reconnaissance	4-1
4.2 Geomorphology.....	4-13
5.0 Architectural Field Investigation	5-1
6.0 Timber Shed	6-1
6.1 Phase IA Field Investigation.....	6-1
6.2 Description	6-5
6.3 Twentieth Century Modifications	6-15
6.4 Existing Condition.....	6-21
6.5 Significance.....	6-21
7.0 Officers' Quarters, Admiral's Row	7-1
7.1 Quarters K and L	7-1
7.2 Quarters H and C	7-8
7.3 Quarters B.....	7-17
7.4 Quarters D.....	7-27
7.5 Quarters E, F and G	7-39
7.6 Quarters I	7-46
8.0 Park Street and Park Avenue	8-1

9.0	Quarters J	9-1
10.0	Miscellaneous Facilities	10-1
11.0	Conclusions and Recommendations	11-1
11.1	Archaeological Investigation.....	11-1
11.1.1	Prehistoric and Early Historic Sensitivity	11-1
11.1.2	Revolutionary War Period Sensitivity	11-1
11.1.3	Nineteenth and Twentieth Century Archaeological Sensitivity	11-1
11.1.4	Recommendations.....	11-2
11.2	Architectural Investigation	11-6
12.0	References.....	12-1
Appendices		
	Appendix A: Supporting Documentation	
	Appendix B: Vitae	
	Appendix C: Scope of Work	

List of Figures and Tables

FIGURE	PAGE
1.1 The Admiral's Row project area within the former Brooklyn Navy Yard, Brooklyn, Kings County, New York	1-2
1.2 The Admiral's Row APE showing locations of buildings, structures and roads.....	1-3
3.1 Location of prehistoric and contact period Native American sites in Kings County.....	3-2
3.2 Approximate location of the project area (in red) as shown in 1767	3-16
3.3 Approximate location of project area superimposed over tidal flats and mid-nineteenth century location of the Navy Yard as well as locations of POW burials, structures and prison ships	3-18
3.4 Approximate location of the project area showing bridge over millpond/marsh area in 1835	3-20
3.5 The approximate project area as rendered on Hooker's 1827 Plan of the Village of Brooklyn.	3-24
3.6 The approximate project area shown in 1834	3-25
3.7 The approximate location of the project area in 1838	3-26
3.8 The approximate location of the project area shown in 1845.....	3-27
3.9 The approximate location of the project area in 1854	3-28
3.10 The approximate location of the project area in 1864	3-29
3.11 The approximate location of the project area in the late 1870s.....	3-30
3.12 The outline of the U.S. Navy Yard and location of the project area on the Sanborn index map	3-31
3.13 The location of the project area and structures and streets within it in 1904	3-32
4.1 Photograph locations relative to buildings, structures and roads.....	4-2
4.2 A view of the front yards along the Admiral's Row buildings and Flushing Avenue, facing east.....	4-3
4.3 View of a yard between Buildings D and E, facing north	4-3
4.4 A view of the front yards of Buildings E, F, and G, facing east.	4-4
4.5 View of a yard behind and between Buildings L and H, facing south-southeast.....	4-4

4.6	A view of the back yard and covered walkway of Building B, facing west.....	4-5
4.7	View of fallen branches and chain link fences in the yards behind Buildings E, F and G, facing east.....	4-5
4.8	Higher ground across the open lot north of the Timber Shed, facing west.	4-6
4.9	Sparse vegetation and scattered trash across the open lot north of the Timber Shed, facing south.	4-6
4.10	Garbage and debris in the open lot north of the Timber Shed, facing northeast.....	4-7
4.11	Rubble push-piles north of the Timber Shed, facing east.	4-7
4.12	Saplings growing across the former Parade Ground, facing south.	4-8
4.13	A concrete platform along the south side of the former Parade Ground, facing north-northwest.	4-9
4.14	A sign warning of the presence of PCBs on the west side of Building 198, facing east	4-9
4.15	View of a monitoring well in the former parade ground, west of Building 198, facing down.	4-10
4.16	Exposed fill in the former parade ground, facing down	4-10
4.17	Modern garbage scattered across the former parade ground, facing north.	4-11
4.18	A view along Park Street, facing west.....	4-11
4.19	A view along Park Avenue showing fill piles along its eastern side, facing south.....	4-12
4.20	A sinkhole at the north end of Park Avenue exposing part of a former brick pavement, facing north.....	4-12
6.1	East elevation of Building 16 (Timber Shed) from Park Street, ca. 1925.....	6-2
6.2	East elevation of Building 16 (Timber Shed) facing southwest from north end of building.....	6-3
6.3	Building 15, the northern timber shed, facing northwest.....	6-4
6.4	“Plan & Elevations of Timber Shed, 1854”	6-7
6.5	Plan No. F16-S-3. “Plan of the Timber Sheds at the U.S. Navy Yard N York to be erected under the appropriations of 1830–1831”	6-8
6.6	Drawing No. F16 S2. “Details of Timber Shed”	6-9

6.7	Plan & Elevations of Building No. 16 Timber Shed, U.S. Navy Yard N.Y., March 1873	6-10
6.8	"Timber Shed, Bldg 16, Looking S. from 4th door from North End," November 16, 1914	6-11
6.9	"Timber Shed, Bldg 16, Looking N. from South End," November 16, 1914	6-11
6.10	"Timber Shed, Bldg 16, Looking W. Across Shed Near Center," November 16, 1914	6-12
6.11	"Timber Shed, Bldg 16, Looking S.W. Near S. End," October 26, 1916	6-12
6.12	"Timber Shed, Bldg 16, Timber Gang at N. of Bldg. Looking W.," November 6, 1914	6-13
6.13	"Front End View Piles on Park Ave.," January 8, 1920	6-13
6.14	"Piles Fronting on Park Street," January 8, 1920	6-14
6.15	"Piles Fronting on Park Street," January 8, 1920	6-14
6.16	Building No 16 Alteration for Fire Walls Plans, Sections & Details	6-16
6.17	A planned addition for the Sands Street Gate, which connected to the northern end of Building 16	6-17
6.18	The east elevation of the Sands Street entrance (Building 200), facing west from Gate Avenue, circa 1966.....	6-18
6.19	Navy Street elevation of Sands Street entrance with south wing at right, facing northeast	6-18
6.20	Southern elevation of Sands Street entrance which is where Building No. 16 connected with the south wing of the gate, facing north	6-19
6.21	"Building No. 16 Protective Canopy," Drawing No 7536; no date. Plan for a protective canopy over skating rink at south end of Building 16 (Timber Shed)	6-20
6.22	Navy Street and Timber Shed, facing north from Flushing Avenue	6-25
6.23	West elevation of Timber Shed, facing northeast.....	6-25
6.24	Detail of north elevation of Timber Shed at left	6-26
6.25	West elevation of Timber Shed from Navy Street, facing east.....	6-26
6.26	North elevation of Timber Shed, facing south, from the Timber Shed's demolished northern section	6-27

6.27	North elevation of Timber Shed, facing southwest, from near foot of Park Street	6-27
6.28	Detail of northeast corner of Timber Shed, at left, facing south-southeast	6-28
6.29	Detail of interior of northeast corner of Timber Shed, at right facing north.....	6-29
6.30	Quarters K at left and the east elevation of Timber Shed at right, facing south	6-30
6.31	East elevation of Timber Shed from south end of building, facing north-northwest	6-30
6.32	Northernmost bay on east elevation, facing southwest.....	6-31
6.33	Detail of window opening on east elevation, facing west	6-32
6.34	Detail of roof—wall juncture on east elevation, facing southeast.....	6-33
6.35	Detail of paired windows on attic story of east elevation, facing west.....	6-33
6.36	South elevation of Timber Shed, facing northwest.....	6-34
6.37	Detail of east entry bay on south elevation of Timber Shed, facing north	6-34
6.38	Window openings on ground floor of south elevation of Timber Shed, facing north	6-35
6.39	Detail of round-arch window opening, with intact wooden shutters and hardware, south elevation of Timber Shed, facing north.....	6-35
6.40	East entry bay with double-leaf doors, south elevation of Timber Shed, facing north	6-36
6.41	West elevation of Timber Shed at right and interior of brick fence at left, facing north	6-37
6.42	Detail of window opening at south end of west elevation of Timber Shed, facing southeast.....	6-38
6.43	Interior of north end of the Timber Shed, east wall, facing southeast	6-39
6.44	Interior of north end of the Timber Shed, west wall, facing southwest	6-39
6.45	Interior of north end of the Timber Shed, facing south from east bay	6-40
6.46	Interior of north end of the Timber Shed, facing southeast	6-41
6.47	Interior of south end of the Timber Shed, facing west.....	6-42
6.48	Interior of south end of the Timber Shed, facing west-northwest.....	6-42
6.49	Interior of south end of the Timber Shed, facing north toward east entry bay on south elevation	6-43

6.50	Interior of south end of the Timber Shed, facing north-northwest	6-44
6.51	Detail of ceiling, interior of south end of the Timber shed	6-45
6.52	Interior of south end of the Timber Shed, facing north from west bay on south elevation.....	6-46
6.53	Interior of south end of the Timber Shed, facing northeast from west bay on south elevation.....	6-47
7.1	Quarters K-L street elevation, facing north	7-2
7.2	South elevation and east elevation of Quarters L, facing west-northwest.....	7-2
7.3	Quarters K-L, entrance detail, facing north. Note collapsed cornice	7-3
7.4	Quarters K, west elevation, facing north-northeast	7-3
7.5	Quarters K, rear elevation, facing east-southeast.....	7-4
7.6	Quarters K-L, rear elevation and backyard	7-5
7.7	Quarters L, east elevation, facing southwest	7-6
7.8	“Alterations and Repairs to Quarters K and L,” July 5, 1934; New York Navy Yard: 1900-1945; Record Group 181-B; NARA—Northeast Region (NYC). Photograph FKC4	7-7
7.9	Building 450, concrete block garage associated with Quarters L, facing south	7-7
7.10	Quarters H, west elevation, facing northeast	7-9
7.11	Quarters H & C, street elevation, facing north	7-10
7.12	Quarters H & C, street elevation, facing northwest	7-10
7.13	Quarters H, west elevation, facing southeast.....	7-11
7.14	Quarters H, rear elevation and backyard, facing south.....	7-11
7.15	Quarters C, detail of façade, facing north	7-12
7.16	Quarters C, east wing, facing north-northwest.....	7-13
7.17	“Repairs to Quarters – House C,” November 4, 1912.....	7-14
7.18	“Houses C & H [51], Repairs Looking N.W.,” December 14, 1912.....	7-14
7.19	Interior of Quarters C from entrance, facing north	7-15

7.20	Building 452, Garage on Park Street associated with Quarters “H,” facing south.....	7-16
7.21	Building 639, Garage on Park Street associated with Quarters “C,” facing south.....	7-16
7.22	Quarters B, facing northeast	7-18
7.23	Quarters B, facing northwest.....	7-19
7.24	Detail from: “Quarters B, D, H C, K L, Looking Northwest,” March 8, 1904	7-19
7.25	“Repairs to Quarters-House B,” November 4, 1912	7-20
7.26	“House B (52), Looking W. Repairs,” January 6, 1913	7-21
7.27	A later Guard House in front of Quarters B. Photograph No. FB N5; “House B (52), Looking N.W. Repairs,” January 6, 1913.....	7-22
7.28	Quarters B, detail of rear elevation, facing southwest.....	7-22
7.29	Quarters B, covered walkway facing south	7-23
7.30	Building 463, garage associated with Quarters B, located on northeast corner of lot, facing north.....	7-23
7.31	Building 463, garage associated with Quarters B, located on northeast corner of lot, facing southeast	7-24
7.32	Quarters B from Park Street, facing south	7-25
7.33	Drawing FB S3. “Floor Plans Quarters ‘B’,” no date	7-26
7.34	Drawing F571-S446. “Quarters B Entrance Improvement Driveway,” Plan revised August 19,1958	7-26
7.35	Quarters D, facing northeast	7-28
7.36	Quarters D, facing northwest	7-28
7.37	Quarters D, entranceway, facing northeast.....	7-29
7.38	Quarters D, west elevation, facing southeast.....	7-30
7.39	Quarters D, east elevation, facing northwest	7-31
7.40	Quarters D, rear elevation, facing south	7-32
7.41	“Repairs to Quarters House D,” November 4, 1912. Shows Quarters D prior to application of stucco.....	7-33
7.42	“House D (53). Repairs, looking northwest,” December 12, 1912.....	7-33

7.43	“Extension Quarters D,” June 6, 1930.....	7-34
7.44	“Extension Quarters D,” July 10, 1930	7-34
7.45	Interior stairway of Quarters D	7-35
7.46	Interior of Quarters D	7-36
7.47	Interior of Quarters D	7-37
7.48	Building 464, garage associated with Quarters D, facing north	7-38
7.49	Building 464, garage associated with Quarters D, facing southeast.....	7-38
7.50	Quarters E, F and G, facing northeast	7-40
7.51	Quarters E, F and G, facing north	7-40
7.52	Quarters E, F and G, facing northwest.....	7-41
7.53	“Houses E, F & G (54), Repairs, Looking northwest,” December 14, 1912	7-41
7.54	“Repairs to Cornice on Quarters E-F & G.” June 6, 1930	7-42
7.55	“Repairs to Cornice Quarters E-F-G,” July 7, 1930“	7-42
7.56	“Alterations and Repairs to Quarters G [east side],” July 2, 1934	7-43
7.57	“Alterations and Repairs to Quarters G,” July 2, 1934	7-43
7.58	West elevation of Quarters E, facing east-northeast.....	7-44
7.59	Quarters E, F, and G, facing southeast.....	7-45
7.60	Quarters E, F, and G, facing south	7-45
7.61	Quarters I, facing northeast.....	7-46
7.62	Quarters I, facing north	7-47
7.63	Quarters I, facing northwest	7-47
7.64	“House I (55) Repairs Looking N.W,” December 14, 1912	7-48
7.65	“House I (55) Looking N.W. Repairs,” January 6, 1913	7-49
7.66	Quarters I, facing east.....	7-50
7.67	Quarters I, rear elevation, facing south	7-50

7.68	Quarters I, east elevation, facing south.....	7-51
7.69	Quarters I, interior, facing south.....	7-52
7.70	Quarters I, interior, facing southeast.....	7-53
7.71	Quarters I, interior, facing south.....	7-54
7.72	Building 437, associated with Quarters I, located on northeast corner of the lot, facing southeast.....	7-55
7.73	Buildings 438, associated with Quarters I, located on northeast corner of the lot, facing southeast.....	7-56
7.74	Drawing No F-438-SX. "Building No. 438 Quarters I Garage Repairs Plans, Elevations & Details," June 6, 1955.....	7-57
8.1	Park Street, facing west. Note: Tennis Court at right.....	8-1
8.2	Park Street facing east from Building 198.....	8-2
8.3	Park Street facing west from Building 198.....	8-2
8.4	Detail of poured concrete sidewalk and curb located between Building 438 (at right) and 437, facing east.....	8-3
8.5	Park Street from Park Avenue, facing east.....	8-3
8.6	Raised poured concrete platform located on south side of the former Parade Ground, on the north side of Park Street, facing northwest.....	8-4
8.7	Facing west from terminus of Park Street at Park Avenue.....	8-4
8.8	Former Parade Ground from intersection of Park Street and Park Avenue, facing northeast.....	8-5
8.9	Former Parade Ground from intersection of Park Street and Park Avenue, facing northeast.....	8-5
8.10	Park Avenue from Park Street, facing north.....	8-6
8.11	Park Avenue from north end of the project area, facing north.....	8-6
9.1	Quarters J, south elevation (façade), facing northeast from Park Avenue.....	9-1
9.2	Quarters J, south elevation (façade), facing northwest.....	9-2
9.3	Quarters J, west elevation, facing east.....	9-2
9.4	Quarters J, east elevation, facing west.....	9-3

9.5	Quarters J, rear elevation with shed roof addition and exterior chimney, facing west.....	9-3
9.6	Quarters J, detail of entrance on south elevation facing north.....	9-4
9.7	Quarters J, interior from side entrance facing southwest.....	9-4
9.8	Quarters J, interior from side entrance facing west.....	9-5
9.9	Drawing No. F1000-S298. "Nine Quarters Shore Station Proj. 3ND-569"	9-6
10.1	East elevation of the brick wall along Navy Street from near the northwest corner of the project area, facing south. Note trees along base of wall	10-2
10.2	Detail of brick masonry of wall showing common bond construction	10-2
10.3	Juncture of Flushing Avenue (at left) and (at right) Navy Street wall sections in front of the Timber Shed	10-3
10.4	Detail of tree growing through brick pier next to north end of Timber Shed, facing southwest	10-3
10.5	Building 135, a flag pole, was constructed in 1943 as a permanent structure (Property Record Card No 2-004432)	10-4
10.6	Building 198 (Shower Room), located next to southwest corner of Tennis Court, facing northwest	10-5
10.7	Building 198 (Shower Room), east elevation, facing north	10-6
10.8	Building 198 (Shower Room), facing northeast.....	10-6
10.9	Building 198 (Shower Room), rear and west elevations, facing southeast	10-7
10.10	Remnant of flagstone walkway on west side of Building 198, facing north.....	10-7
10.11	Unidentified metal structure located behind Building 198, facing east.....	10-8
10.12	Building 429: Public Works Maintenance Building	10-9
10.13	Building 429, Public Works Maintenance Building, located behind Quarters E, F and G, facing west	10-9
10.14	Tennis Court (Building 710), from Park Street, facing northeast.....	10-10
10.15	Tennis Court (Building 710), from northwest corner of court, facing southeast	10-11
10.16	Wooden benches next to the northwest corner of the tennis court, facing south.....	10-11

11.1	Suggested Phase IB geomorphological survey locations relative to historic map- documented shoreline locations	11-4
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TABLE

3.1	Previously identified archaeological sites within one mile of the project area	3-1
5.1	Reported dates of construction of buildings in Admiral's Row	5-3
11.1	Summary of Phase IB Investigation Recommendations	11-3

1.0 Introduction

Panamerican Consultants, Inc. (Panamerican) was contracted by Tetra Tech, Inc., Portland, Maine, and the U.S. Army Corps of Engineers, New York District (USACE) to conduct a Phase IA Cultural Resources Investigation for the Admiral's Row section of the former Brooklyn Navy Yard in the Borough of Brooklyn (Kings County), New York (Figure 1.1). Admiral's Row is located in the southwestern portion of the former navy yard along the north side of Flushing Avenue, east of Navy Street. It covers 6.07 acres and contains eight domestic structures/ten quarters that were reportedly erected between ca. 1850s and ca. 1900, related outbuildings, and a timber shed that was reportedly constructed ca. 1833 (Figure 1.2).

The Brooklyn Navy Yard closed in 1966 and was sold to the City of New York. The approximately six-acre Area of Potential Effect (APE) that contains the Admiral's Row project area, however, remained the property of the U.S. Department of the Navy. The Admiral's Row property was later transferred to the Department of the Army and, at the time of the transfer, it was anticipated that it would be licensed to the New York Army National Guard. The U.S. Congress subsequently authorized the Army to dispose of the property. "The City [of New York], through an agreement with the BNYDC [Brooklyn Navy Yard Development Corporation], a not-for-profit organization that has a long term lease with the City as the management and development administrators for the rest of the former Navy Yard, has expressed interest in obtaining the property. Their current proposal is to redevelop the property for use as a supermarket, with a parking lot, and to construct a new light industrial building for manufacturing purposes" (USACE 2008:2). USACE is serving as real estate agent for the U.S. Army National Guard Bureau (NGB) assisting in the compliance with all federal regulations pertinent to the disposition of the property from federal ownership per Public Law 100-202 (USACE 2008; Beardsley/Crawford & Stearns 2008).

The U.S. Army, as a federal agency, has management responsibilities concerning the identification, protection and preservation of cultural resources on land it controls or uses. Federal statutes and regulations require the Army to identify and evaluate significant cultural resources on these properties, and include: National Historic Preservation Act of 1966, as amended (16 U.S.C. 470 *et. seq.*) through 2000 (which includes Section 106 compliance); National Environmental Policy Act of 1969 (42 U.S.C. 4321 *et. seq.*); Archeological and Historic Preservation Act of 1974 (16 U.S.C. 469-469c); Curation of Federally-Owned and Administered Collections, September 12, 1990 (36 CFR 79); the Advisory Council on Historic Preservation Guidelines for the Protection of Cultural and Historic Properties (36 CFR Part 800); as well as Army Regulation (AR) 2001, "Environmental Protection and Enhancement" (December 2007). The investigation was also conducted according to the New York Archaeological Council's Standards for Archaeological Investigations and New York State Historic Preservation Office (NYSHPO) Guidelines.

The field investigation was conducted in March and April 2008. Senior Archaeologist Mr. Robert J. Hanley, M.A., RPA, was co-principal investigator; Senior Architectural Historian Ms. Christine Longiaru, M.A., was co-principal investigator and conducted the architectural investigation; Senior Historian Mr. Mark A. Steinback, M.A., was project historian; Dr. John Wah was project geologist, and Senior Archaeologist Dr. Michael A. Cinquino, RPA, served as project director.

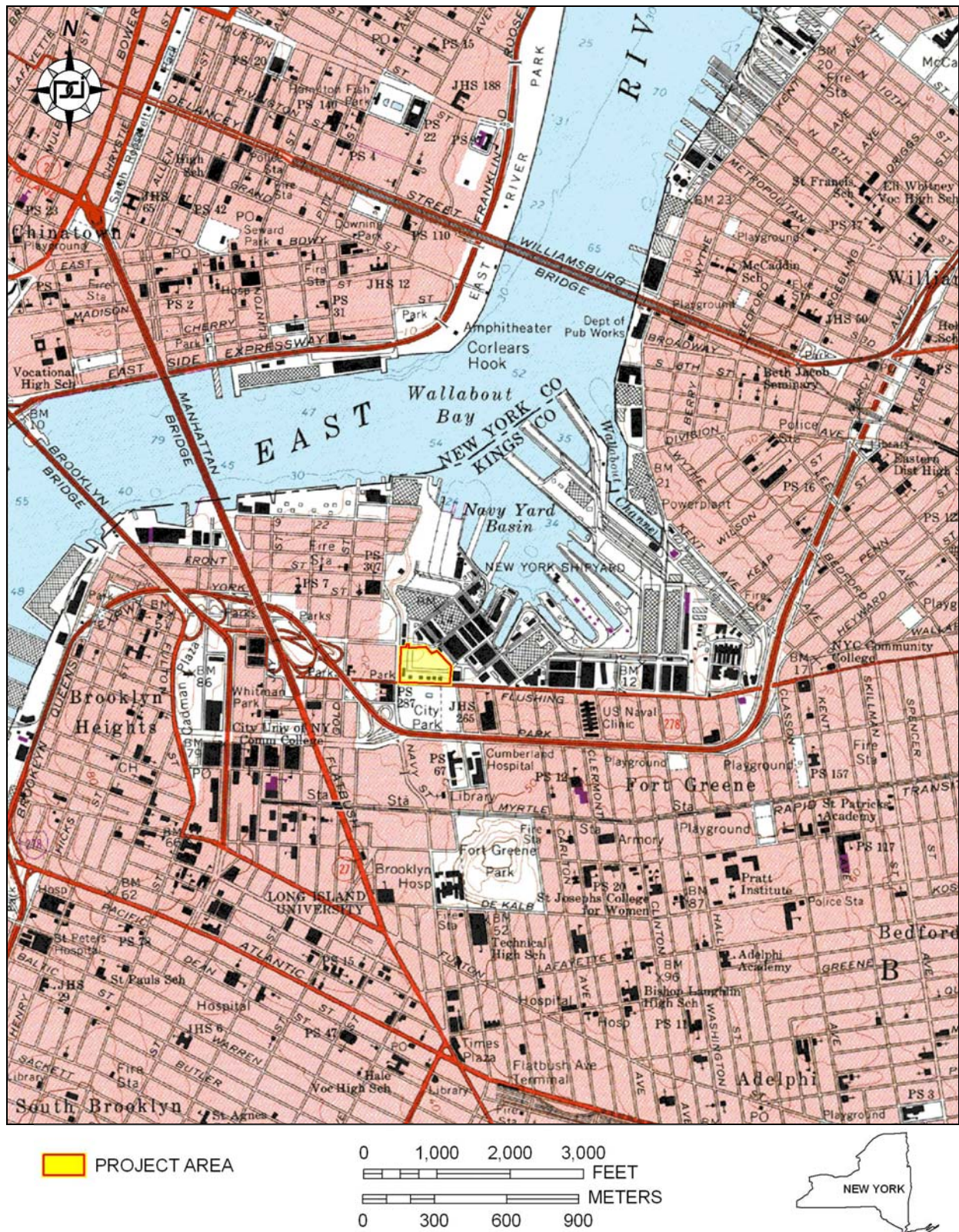


Figure 1.1. The Admiral's Row project area within the former Brooklyn Navy Yard, Kings County, New York (USGS Brooklyn, NY 1980).

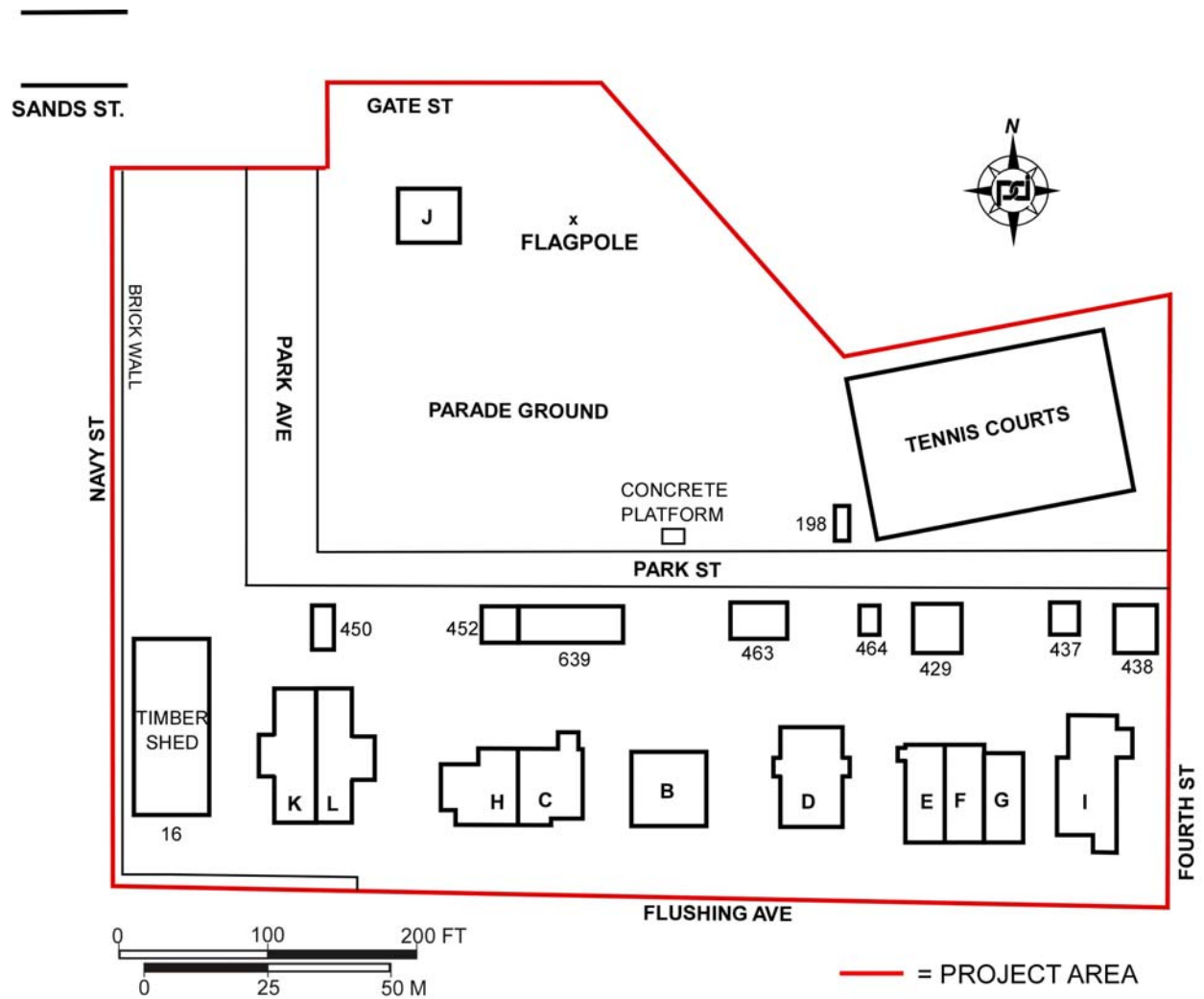


Figure 1.2. The Admiral's Row APE showing locations of buildings, structures and roads. Brooklyn Navy Yard, Kings County, New York.

2.0 Research Design

2.1 ARCHAEOLOGICAL RESEARCH DESIGN

2.1.1 Objectives. The purpose of a Phase IA archaeological cultural resources investigation is to identify National Register-Eligible (NRE) properties within the project's Area of Potential Effect and to assess sensitivity for archaeological sites (including buried resources) through background research, historical map review, and field reconnaissance, per NYSHPO guidelines. The investigation also attempted to determine if the original shoreline of Wallabout Bay extended to the project area and to identify the Navy Yard use of this area prior to the construction of the Admiral's Row residences.

2.1.2 Properties Investigated and Recorded. Phase IA archaeological investigation was conducted within the entire 6.07-acre project area (i.e., APE). This area includes the lots/yards surrounding the extant buildings of Admiral's Row and the timber shed, the former parade ground, and portions of Park Street and Park Avenue (First Avenue) (see Figure 1.2).

2.1.3 Methodology. To achieve the project objectives, the Phase IA archaeological investigation involved thorough background research, historical map review, field reconnaissance, and a geomorphological sensitivity assessment.

Background Research. Background research included a review of historical documents, historical maps, environmental studies, and previous reports pertinent to the project area. Repositories visited include the New York State Historic Preservation Office¹, the New York City Landmarks Preservation Commission, The Brooklyn Navy Yard Development Corporation Archives, the Brooklyn Historical Society, the Brooklyn Public Library, the New York Historical Society, and the New York Public Library. Historical documents reviewed included numerous maps of the project area (e.g., insurance maps, atlases, topographic maps, utilities), local, regional and installation histories, cultural resources reports, and historical photographs. Information from these sources was used to assess archaeological sensitivity and to create a context for evaluating the significance of properties and structures encountered. The review of previous investigations, such as cultural resource management reports, was also an important part of the background research. Such sources include various methodological approaches, interpretations, and recommendations regarding properties in or adjacent to the project area. Background research focused on the APE, but review of site files and previous research also included the surrounding area. Results of the background research are presented as Section 3.0 of this report.

Field Reconnaissance. Walkover reconnaissance was conducted to identify any exposed cultural resources or soil disturbances (e.g., fill deposition, soil stripping). Archaeological sensitivity is also assessed by comparing background results with field observations. Map documented landscapes are compared with field observations to help determine the degree of modifications (i.e., potential disturbance). Photographs were taken to document the APE including pertinent views of cultural features, environmental setting and disturbances affecting archaeological sensitivity.

¹ Both the New York State Office of Parks, Recreation and Historic Preservation and the New York State Historic Preservation Office will be identified as NYSHPO for consistency throughout the report.

Geomorphological Assessment. Pertinent historical (e.g., maps) and modern documents (e.g., USDA Soil Survey) were reviewed to determine the original, natural setting of the project area as it relates to an interpretation of its sensitivity for prehistoric and early historic archaeological resources. This approach will assess the sensitivity and potential of areas within the APE that may contain buried cultural resources.

2.2 ARCHITECTURAL RESEARCH DESIGN

2.2.1 Objectives. The purpose of the Phase IA architectural investigation is to identify NRE properties within the project APE by conducting background research and field reconnaissance. Phase IA architectural investigation documented all buildings, structures and objects within the entire 6.07-acre project area (i.e., APE) in the southwest corner of the Brooklyn Navy Yard, per NYSHPO guidelines (see Figure 1.1).

2.2.2 Properties Investigated and Recorded. The Phase IA report documents the extant buildings of Admiral's Row and their associated outbuildings, the timber shed, the tennis court and shower room building, Quarters J, a flagpole, the former parade ground, and landscape features along Park Street and Park Avenue (First Avenue). The study area is bounded by Flushing Avenue to the south, Navy Avenue to the west, and to the north and east by the Brooklyn Navy Yard Industrial Park (see Figure 1.2).

The recent Beardsley/Crawford and Stearns report of Admiral's Row (2008) raised several questions that have been addressed in the Phase IA report. Research tasks and questions include more detailed information on the existing Timber Shed/Brick Barn building – to provide information that may help to determine if the structure is potentially eligible for inclusion in the National Register of Historic Places as well as determining, if possible, the involvement of Thomas U. Walter in the design and/or construction of the Admiral's Row residences (USACE 2008).

2.2.3 Methodology. To achieve the project objectives, the Phase IA architectural investigation involved background research, historical map review, and field reconnaissance. Assessments were made in accordance with National Register Historic Places (NRHP) criteria. For a building or structure to be considered eligible for listing in the National Register, it must be evaluated within its historic context and shown to be significant for one or more of the four Criteria of Evaluation (36 CFR 60) as outlined in *How to Apply the National Register Criteria for Evaluation* (Bulletin 15, NPS 2002). All structures examined as part of this investigation were identified and evaluated in the field with reference to these criteria:

Criterion A: (Event) Properties that are associated with events that have made a significant contribution to the broad patterns of our history; or

Criterion B: (Person) Properties that are associated with the lives of persons significant in our past; or

Criterion C: (Design/Construction) Properties that embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or

Criterion D: (Information Potential) Properties that have yielded, or may be likely to yield, information important in prehistory or history (*NPS Bulletin* 15, referencing 36 CFR Part 60).

A property is not eligible if it cannot be related to a particular time period or cultural group and thereby lacks any historic context within which to evaluate the importance of the cultural resource. The cultural property (e.g., historic structure or landscape) must also retain the historic integrity of those features necessary to convey its significance. Seven aspects or qualities of integrity recognized by the National Register are location, design, setting, materials, workmanship, feeling, and association (NPS 2002).

State/National Register recommendations for properties documented in this report are preliminary and **not** considered final determinations of National Register eligibility. Final State or National Register determinations will be administered respectively by the NGB, NYSHPO or the Advisory Council on Historic Preservation of the U.S. National Park Service.

Background Research. Specific historic and architectural research included a review of historical documents (e.g., historical photographs, installation drawings and plans, installation real property records, environmental studies, and previous reports pertinent to the project area). Repositories visited include the NYSHPO, the New York City Landmarks Preservation Commission, BNYDC Archives, the Brooklyn Historical Society, the Brooklyn Public Library, the New York Historical Society, and the New York Public Library (Map Division, Genealogy and Local History Division, and Science, Business and Industry Library). Other historical documents reviewed included numerous maps of the project area (e.g., insurance maps, atlases, topographic maps, utilities), and local, regional and installation histories. Information from these sources was used to create a context for evaluating the significance of historic resources.

Field Reconnaissance. The field investigation included a walkover reconnaissance to identify and document historic resources in the APE. Digital photographs were taken of all buildings, structures and objects to document their existing conditions. The site visit also included assessment of the overall setting (e.g., landscape features). Historical maps were field checked to identify changes (e.g., demolition) within the project area. Visual inspection of building interiors was limited due to access and or safety concerns.

3.0 Background Research

3.1 SITE FILES AND RECORDS REVIEW

A review of archaeological site files at the New York State Office of Parks, Recreation, and Historic Preservation/NYSHPO¹ and the New York State Museum (NYSM) identified eight archaeological sites within one mile of the Area of Potential Effect (APE): all eight are historic period sites. No prehistoric archaeological sites have been recorded within one mile of the APE.

Early archaeological compendia published by Beauchamp (1900) and Parker (1922) do not record the presence of any prehistoric sites within the project area. Parker (1922:582) cautions, "There is little recorded concerning the [prehistoric] archaeology of Kings county; the early erection of town[s] and villages over its area soon blotting out aboriginal traces. Without doubt, however, it was occupied in nearly every part, and once was an important place of Indian travel and traffic."

Bolton (1934) presented a map (Figure 3.1) showing the reputed locations of Canarsee villages in Kings County, one of which was identified approximately 3,000 feet (915 m) west of the former Navy Yard in proximity to what is now Brooklyn Heights. Later archaeological compendia by Ritchie (1980) and Ritchie and Funk (1973), which discussed the project area, do not report the presence of prehistoric archaeological sites in the project area. The results of the site file review as well as an indication whether the site is National Register Eligible (NRE) are presented in Table 3.1. Two archaeological sites were identified within the former Brooklyn Navy Yard near the former Naval Hospital, more than 2,500 feet (760 m) east of the Admiral's Row project area.

Table 3.1. Previously identified archaeological sites within one mile of the project area

NYSHPO Site #	Additional Site Name	Distance to APE m (ft)	NRE	Time Period	Site Type
04701.014899	Naval Hospital Cemetery	775 (2,543)	Yes-Individually	Historic	No information
04701.014975	Naval Hospital Archaeological Site	1,123 (3,684)	Yes-Individually	Historic	Foundation
04701.000074	Empire Stores (within Fulton Ferry Historic District)	954 (3,130)	Undetermined	Ca. 1810	Structure
04701.000179	Dock Remnant	1,205 (3,953)	Undetermined	Seventeenth century	No information
04701.000102	Corporation House	1,108 (3,635)	Undetermined	1750-1812	Historic tavern foundation
04701.015450	Block 176, Lot 56 Privy & Cistern	807 (2,648)	Yes-Individually	Ca. 1860s	Privy & cistern
04701.000508	Bishop Mugavero Site	1,323 (4,341)	Yes-Individually	1850s-1860s	Buried traces
04701.013923	Atlantic Terminal Historic Site	1,566 (5,138)	Undetermined	1840s-1860s	Buried traces

¹ Both the New York State Office of Parks, Recreation and Historic Preservation and the New York State Historic Preservation Office will be identified as NYSHPO for consistency throughout the report.

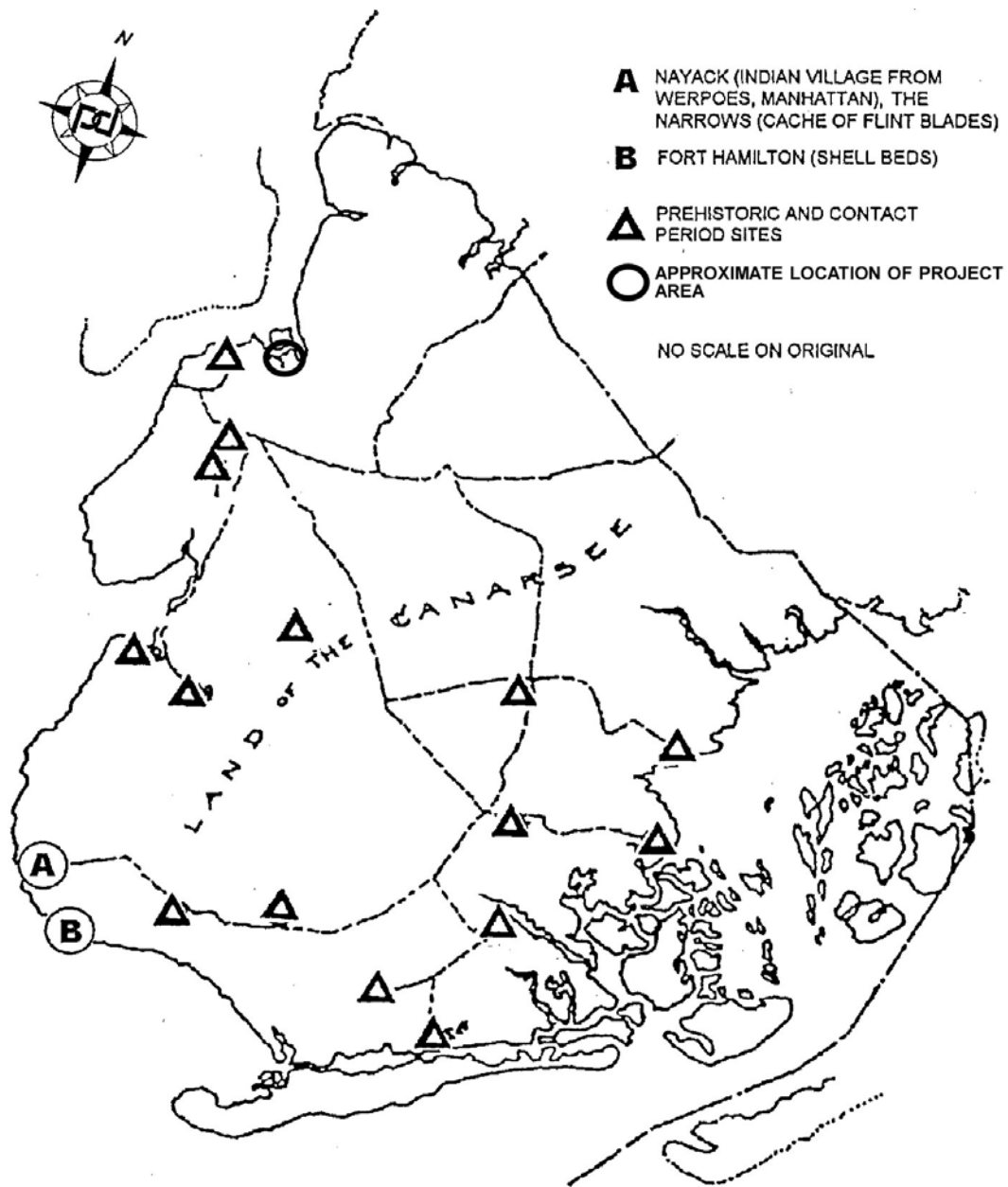


Figure 3.1. Location of prehistoric and contact period Native American sites in Kings County. Brooklyn Navy Yard, Kings County, New York (adapted from Bolton 1934).

In the former Brooklyn Navy Yard, one cultural resource, an historic building, has been listed in the National Register of Historic Places—Quarters A: The Commander's Quarters, Matthew C. Perry House (1806), which is still standing north of the Admiral's Row APE. The Dry Dock #1 (1851), U.S. Marine Hospital (1838) and the associated Surgeon's House (1864) are considered New York City Landmarks. NYSHPO concurred that these structures also were eligible for listing in the State and National Registers of Historic Places (S/NRHP) (Stokes 1989).

In the 1990s, during the closure of Naval Station (NAVSTA) Brooklyn (the eastern portion of the Brooklyn Navy Yard that the Navy retained after the 1966 closure of the western portion of the Navy Yard) and the subsequent disposal of the property, the Navy determined that parts of NAVSTA Brooklyn were eligible for listing on the NRHP as two separate historic districts. The Brooklyn Navy Yard Historic District encompasses most of the buildings in the Northern Triangle, the Western Industrial Sector, and an area fronting the Brooklyn-Queens Expressway (BQE). These were built during the World War II expansion of the Navy Yard. The U.S. Naval Hospital Historic District contains historically significant nineteenth-century and twentieth-century institutional, residential, and industrial buildings as well as the Naval Hospital Cemetery. In 1994, NYSHPO concurred with the Navy's determination that the Naval Station was eligible for listing on the National Register (Federal Register 2001; TAMS and Geismar 1999).

Previously, NYSHPO concurred with the determination by NGB that the ten prominent residential structures within the Admiral's Row APE—Quarters B, C, D, E, F, G, H, I, K and L—were eligible for listing in the S/NRHP under Criteria A and C as a potential historic district (see Section 2.1.3 for criteria definitions). In the same letter, NYSHPO recommended that Building No. 16 (the Timber Shed), Building J (a quarters), and the garages associated with the Admiral's Row structures were not eligible for listing in the S/NRHP because they were “either not old enough to meet the 50 year cut off or they lack architectural or historic significance” (Stokes 1986). The Timber Shed and the garages were mistaken to be modern structures when, in fact, they were already at that time older than 50 years of age.

In light of additional information regarding Admiral's Row, NYSHPO in 2007 affirmed its eligibility concurrence for the ten Admiral's Row quarters, stating that these structures “contribute to a National Register-eligible historic district ... [,] are eligible under Criteria A, B, C, and D and are of national significance” (Cumming 2007). In this letter, NYSHPO also expressed “surprise” about the existing Timber Shed (Building No. 16), which it had incorrectly evaluated as a modern building, and requested additional information about it in order to reassess its previous evaluation (Cumming 2007; Stokes 1986).

Review of Previous Research. Numerous cultural resources surveys have been conducted for the areas within the former Brooklyn Navy Yard and the project area (Church and Rutsch 1982; Ecology & Environment 1990; Geismar and Oberon 1993, 1995, 1996; Baystate Environmental Consultants, Inc. 1994; Roberta Washington Architect, P.C. 1993, 1995; Geismar 1996; TAMS and Geismar 1999; Dietrich 2005; Beardsley/Crawford & Stearns 2008). These reports are on file at the NYSHPO.

No Native American cultural remains have been reported for this area. As a result of “the extensive land movement and construction that occurred throughout the study area ... prehistoric site potential is low” (Geismar 1996:I). Furthermore,

[t]he low-lying, salty and marshy character of the Wallabout Bay shore would not have been very attractive for Native American settlement, though the possibility exists that indigenous groups ventured here to procure plants and animals found in this environmental setting. The potential for the remains of small, briefly-occupied camps and shell heaps can therefore be considered moderate for those portions of the project area that formed the shoreline of Wallabout Bay prior to the establishment of the Navy yard and subsequent filling [Geismar and Oberon 1993:5].

Previous research reveals that the APE is in proximity (less than 800 feet [240 m] to the south, southwest) to the haphazard burials of American prisoners who had died while incarcerated on prison and hospital ships anchored in Wallabout Bay between 1776 and 1783. It was reported that a skeleton was uncovered most recently in 1939 in an area “northeast of Navy Street and northwest of Second Street in the western portion of the Navy Yard,” which was presumed to be the remains of a Revolutionary War prisoner. In areas adjacent to the eighteenth-century salt marshes and shoreline of the bay, if excavations extend beneath the fill layers, then there is potential for encountering human remains from this period (Geismar and Oberon 1993:5, 1996; see Section 4.2 for the geomorphological discussion).

3.2 ENVIRONMENTAL SETTING

Topography. The former Brooklyn Navy Yard is located on the south shore of the East River in Brooklyn/Kings County on Long Island. The 6.07-acre project area, in general, is relatively level and approximately 20 feet (6 meters) above sea level (see Figures 1.1 and 1.2).

Geology. The project area is located within the Atlantic Coastal Plain physiographic province, but the underlying materials consist of Pleistocene morainal deposits of clay and sand and glacial outwash. The surface terrain is low-lying and level. Two terminal moraines from the Wisconsin glaciation are present on Long Island: the Ronkonkoma and the Harbor Hill (Church and Rutsch 1982:5-7; see Section 4.2 for additional discussion of the geology of the APE).

Soils. Borings conducted in 1996 along Perry Avenue, north of the current APE, and east of Fourth Street, just east of the APE, encountered more than eight feet of concrete and fill. Water was encountered between six and seven feet below the surface (Geismar and Oberon 1996).

Drainage. The project area is approximately 1,600 feet (488 m) south of Wallabout Bay and the East River, which is tidal (see Figure 1.1).

Vegetation. The project area was formerly part of tidal lowlands and salt marsh. At present it comprises grassy yards and trees associated with houses along streets in an intensely urban environment.

Manmade Features and Alterations. Beginning prior to 1827, numerous and extensive construction, filling and demolition episodes have impacted the west side of Wallabout Bay and the adjacent shore for the construction and expansion of the heavily industrialized Brooklyn Navy Yard (Hooker 1827). The bay shore evident in the eighteenth century was first altered in 1710 for the operation of a gristmill, and later in the century for the Jackson shipyard. The project area comprised tidal lowland, salt marsh and mill pond areas until the mid-nineteenth century when the area was filled. The timber shed on the west side of the project area was reportedly constructed as early as 1833 and the ten residences along Admiral’s Row erected between ca. 1850s and ca. 1900 (West 1941:25; Ecology & Environment 1990:139-140; Dietrich 2005; Beardsley/Crawford & Stearns 2008).

3.3 CULTURE HISTORY

3.3.1 Prehistoric Period. The prehistory of northeastern North America is marked by three major periods spanning about 13,000 years. The earliest of these periods is the Paleo-

Indian, which lasted from 11,000 BC to 8000 BC. Living in seasonal camps near freshwater sources and lithic workshops, Paleo-Indians subsisted by hunting and gathering. The Paleo-Indian period was followed by the Archaic period which lasted from 8000 to 1000 BC and was characterized by seasonally occupied campsites and later by seasonal villages. The Archaic subsistence system was hunting and gathering with possibly incipient horticulture toward the end of the period. After 1000 BC, Native Americans of the Woodland period lived in seasonally occupied villages and campsites and subsisted by hunting, gathering and horticulture by AD 1000. During this period ceramics were first made in the Northeast.

Paleo-Indian Period. Paleo-Indian cultures were adapted to a late Pleistocene tundra or park tundra environment. Paleo-Indians were highly mobile people who traveled over long distances to obtain food. About 13,000 years ago, the coastal New York environment was a mosaic of tundra and forests that were predominantly arctic willows, pine, spruce and fir that eventually gave way to birch and oak (Funk 1972; Marshall 1982:17). The emergence of oak stands and subsequent increase in resource availability allowed greater human population density toward the end of the period.

Pleistocene megafauna, including mammoth, mastodon, great beaver, fossil bear, and northern species like fox, seal, moose and caribou roamed the Northeast. A variety of other species like fossil peccary, white-tailed deer, elk, bison and horse also were adapted to the region (Funk 1972:11; Ritchie 1980:10-11). Mammoths, who were primarily grazers, preferred grassy tundra environments like those that would have been found in higher elevations during the late Pleistocene. On the other hand, mastodons preferred wooded spruce areas located at lower elevations in the valleys (Marshall 1982:18; Funk 1972:11). Dent suggests that both mammoth and mastodon were extinct 1,000 years before humans arrived in the Upper Delaware Valley and that the tundra environment had succumbed as well (Dent 1991:136). This hypothesis may be true for coastal New York as well. However, according to Marshall, megafauna were still around when the Paleo-Indians arrived in the area. "Contemporaneity of early Paleo-Indian hunters and these animals has been established by radiocarbon dated remains of the megafauna excavated from areas in northern New Jersey, New York, and Pennsylvania" (Marshall 1982:18). Caribou herds probably extended into the Middle Atlantic region beyond the time of the megafauna extinction.

During the late glacial/early postglacial period, caribou likely were hunted by Paleo-Indians as evidenced by caribou bone found at the Dutchess Quarry Cave No. 1 site in association with a fluted point (a primary diagnostic artifact of the period). The bone was radiocarbon dated to $10,580 \pm 370$ BC. Additional fluted points were found at Dutchess Quarry Cave No. 8. Funk and Steadman (1994:53) have recently pointed out that the caribou bone and fluted point found at Cave No. 1 were in the same stratum, but not otherwise in close association. The caribou may have preceded the fluted points at the Dutchess Quarry caves. With deglaciation, the megafauna began to decline and were replaced by more temperate species that migrated into the area. During the span of Paleo-Indian period, human subsistence shifted from large Pleistocene game, like caribou, to more modern, mid-latitude species, such as white-tailed deer (Eisenberg 1978).

In addition to hunting, fish and plant foods were available to Paleo-Indian groups. Pollen analysis of samples from the Shawnee Minisink site near the Delaware Water Gap has revealed the presence of many edible plants. Carbonized seeds were recovered by flotation. Some of the plants identified by these means included goose foot (*Chenopodium* sp.), ground cherry,

blackberry, hawthorn plum, pokeweed, pigweed (*Amaranthus* sp.), smart weed (*Polygonum* sp.), wild lettuce, grape, hackberry, and meadow grass (Kraft 1986:41).

Early Paleo-Indian chipped stone artifacts include fluted points—thin, lanceolate-shaped bifacial implements fluted down the center for hafting—unifacial end and sidescrapers, utilized flakes, and waste flakes (Marshall 1982:13). Cryptocrystalline stones like jasper and chert were the preferred raw materials of Paleo-Indian toolmakers. Cherts, including Normanskill, Deepkill, Fort Ann, Eastern Onondaga, Helderberg, Esopus, Pennsylvania jasper, and those from Delaware and Maryland, are found on archaeological sites in southern New York. Fluted points and other Paleo-Indian artifacts made from Pennsylvania jasper and various cherts were found at the Port Mobil site on Staten Island (Kraft 1977, 1986:34; Ritchie 1980:3). Fluted points gradually decreased in size as larger game animals moved north or became extinct (Kraft 1986:47), and were eventually replaced in the late Paleo-Indian/Early Archaic transition (8000-6000 BC) with unfluted triangular points, stemmed points and Plano points. The last are lanceolate shaped points without flutes. In Monmouth County, New Jersey, late Paleo-Indian artifacts including unfluted triangular points, and Hardaway Dalton points were found at the Turkey Swamp site which dated to between 7041 BC and 5939 BC (Marshall 1982:33). These dates demonstrate an overlap between the Paleo-Indian and Early Archaic periods. According to Kraft (1986), the transition from Paleo-Indian to Early Archaic is not clearly indicated in the Middle Atlantic region. No Paleo-Indian resources have been identified within the Admiral's Row project area or the former Brooklyn Navy Yard.

Archaic Period. The Archaic period began after 8000 BC and developed out of the late Paleo-Indian. Between 8000 and 6000 BC, the hills and mountains were overgrown with pine, hemlock and oak, while forests in the coastal areas were populated with chestnut and oak (Kraft and Mounier 1982:59). The retreating glacier resulted in a continuing rise in sea levels forcing people to move away from the coast.

Aside from occasional technological changes and gradual environmental transformation, life continued much the same as it had in the previous period. People still lived in small territorial bands that hunted, fished, and gathered plant foods. With the exception of the dog, they had no domestic animals. People of the Early Archaic subsisted on anadromous fish, shellfish, berries, roots, tubers, eggs, nuts, and deer (Kraft 1986:51). They probably moved when food supplies dwindled. The small encampments close to rivers, swampy areas or ponds that are typical of Early Archaic sites reflect this mobility (Kraft and Mounier 1982:76; Nicholas 1988).

The Early Archaic tool kit consisted of projectile-point forms related to those of the Carolina Piedmont (Brennan 1979; Ritchie and Funk 1971). These include Hardaway Dalton points, Palmer corner notched, Kirk corner notched, Kirk stemmed, and bifurcate base points like Amos corner notched and LeCroy, both of which frequently had serrated edges in the Southeast. Serrated edges occurred much less frequently in the Northeast. People of the Early Archaic also used end scrapers, sidescrapers, spokeshaves, drills, gravers, choppers, hammers, and anvil stones. During this period, a shift in raw material preference to non-cryptocrystalline stones like argillite occurred.

Several Early Archaic sites have been found on Staten Island and produced projectile points like those mentioned above. The earliest of these sites are Richmond Hill, near the center of Staten Island where a hearth was dated to 7410 BC \pm 120 (I-4929), and Ward's Point, near Tottenville, dating to 6300 BC \pm 140 (I-5331). These are among the earliest Archaic dates in the Northeast (Ritchie and Funk 1971).

The Middle Archaic period extended from 6000 to 4000 BC. People of the Middle Archaic subsisted on chestnuts, acorns and anadromous fish, as well as the abundant forest animals. Oak, chestnut and hemlock dominated the landscape causing animal populations to increase in the forests because of the abundance of mast foods produced by the trees. Heavy woodworking tools, along with netsinkers and fish remains found on archaeological sites, suggest a riverine or estuarine adaptation. Between 6000 and 5000 BC, the seashore was located about 50 miles (81 kilometers) east of Staten Island (Kraft 1986:56). People living in that area during the Middle Archaic would not have been adapted to a coastal lifestyle as later populations were. The climate was warm and moist by 5000 BC, and water levels continued to rise forcing groups to move inland.

People began to develop woodworking tools during the Middle Archaic using coarse-grained stones and river cobbles for their raw materials. These stones were commonly available in large sizes and allowed toolmakers to reserve high quality lithic materials for finely flaked tools. In order to work these coarse-grained rocks, new shaping techniques had to be developed. The primary technique was pecking and grinding, which was used for shaping axes, adzes, gouges, choppers and other woodworking or rough stone tools. These heavy tools may have been used for canoe building. In addition to these implements, the Middle Archaic tool kit included anvil stones, choppers, netsinkers and an array of projectile points. The most commonly used raw materials included chert, jasper, argillite, shale, and rhyolite. Neville points are found on Middle Archaic sites as well as Stanley Stemmed that are similar to Early Archaic bifurcate base points (Kraft 1986:58).

The environment during the Late Archaic (4000-2000 BC) was similar to that of today. Hunting, fishing, and gathering were still the primary daily activities although greater emphasis was placed on small game, shellfish, nuts and wild cereal grains like *Chenopodium*. This shift in subsistence strategies made higher population densities possible. However, the larger population may have made it necessary to exploit these different resources. Whatever the reason, as population increased camps became larger and more numerous. While principal settlements were located near major rivers, people still lived in bands whose territories may have been well defined. Moving seasonally or when resources dwindled, Late Archaic groups probably congregated occasionally for exchange and socialization. Houses of this period may have been circular and oval measuring 36 to 66 feet (11 to 20 meters) in diameter with overlapping entranceways. One such house pattern was found at the Wapanucket No. 6 site in Massachusetts (Robbins 1960). The Lamoka Lake site in western New York contained rectangular house patterns 14 to 16 ft (4.3 to 4.9 m) long and 7 to 13 ft (2.1 to 4 m) wide (Ritchie and Funk 1973). A Late Archaic house pattern was found near Long Island Sound in a "gently-rising, wooded ground on the east side of a northward-flowing stream emptying into an estuary and thence into Long Island Sound" (Gwynne 1984:1). This pattern suggests a round or oval shape but size could not be determined (Gwynne 1984:6).

Heavy grinding implements like mullers, mortars and pestles provided new means of preparing food from seeds, nuts, dried berries and meat. These implements were made of sedimentary and metamorphic rock like sandstone and argillite. Late Archaic people also used bifacial, chipped stone knives, semilunar knives, which were often made of slate, the atlatl or spear thrower, bolas, and plummets. Traces of the Laurentian tradition, a Late Archaic culture, which is characterized by ground slate ulus, plummets, and gouges, are found on some coastal New York sites including the Stony Brook site. Long, narrow stemmed or narrow, weakly notched projectile points like Poplar Island, Bare Island, Lackawaxen stemmed, and Normanskill were characteristic of the Piedmont or Small Stemmed tradition, which originated in the

Southeast (Kraft 1986:73). These projectile points were not often reworked into scrapers, drills and gravers because of their size and shape. Narrow stemmed projectile points were found at the Bowmans Brook site on Staten Island.

A major component of the Late Archaic Piedmont tradition, the Sylvan Lake complex, was found at the Wading River site on Long Island. Sylvan Stemmed points were a part of the Sylvan Lake complex that dates to 2500 BC. Features of this culture include the use of small stemmed points and atlatls for hunting. Flintworking, butchering, and woodworking were other common activities of Sylvan Lake people.

Nut-bearing trees like oak, hickory, chestnut, and beech dominated the eastern forests during the Terminal Archaic (2000-1000 BC). Sea levels continued to rise, causing increased salinity in estuaries, including the lower Hudson River (Kraft 1986; Snow 1980). People of this period subsisted on deer, black bears, small mammals, wild turkeys, pigeons, shellfish, fruits, roots, nuts, and anadromous fish.

Large, broad bladed, skillfully made spearpoints of the Susquehanna broadspear tradition began to appear on archaeological sites from this period and were spread along the Atlantic coast from Georgia to Maine. According to Kraft, this tradition probably originated in the southern Piedmont and was related to the Koens-Crispin culture (Kraft 1986:84). The Koens-Crispin culture is represented by broad stemmed points, scrapers, atlatl weights, celts and adzes. Koens-Crispin points are similar to Savannah River, Lehigh Broad, and Snook Kill points, which indicates widespread travel and trade among Terminal Archaic people. According to Mounier, "The complex is associated with an elaborate pattern of mortuary ceremonialism which emphasized the practice of cremation, the ritual use of red ocher, and the often lavish inclusion of grave goods" (Kraft and Mounier 1982:82). The Koens-Crispin site in Medford, New Jersey, and the Savich Farm site in Marlton, New Jersey, both revealed such practices. The Savich Farm site dates between 1900 BC and 2300 BC (Kraft 1986:80). The Snook Kill phase is an early part of the Susquehanna tradition and is characterized by broad bladed, contracting stemmed Snook Kill points. The Old Place site on Staten Island contained a Snook Kill component consisting of points and scrapers. Another innovation was steatite or soapstone pots which made cooking and food preparation easier.

Woodland Period. The introduction of pottery marks the beginning of the Woodland period. Pottery is significant because it "improved the efficiency of food preparation" (Curtin 1996:6; see Braun 1983). Several different cultures can be recognized in the Early Woodland period, which lasted from 1000 BC to AD 1. Orient Fishtail points replaced the broadspears of the Terminal Archaic during the Orient phase. These points were used as knives and spears, and were reworked into drills, scrapers, strike-a-lights, and gravers (Kraft 1986:91-92). Orient people still used soapstone pots but also used clay pots tempered with crushed steatite. These pots, called Marcey Creek Plain, were similar in shape to steatite pots. Another early type of ceramic was Vinette 1 which was cone shaped with cord-marked impressions on the inside and outside. The Orient culture is named for the Orient sites on northeastern Long Island. These sites were complex burial sites with large communal pits on top of hills and some individual burials. Many of the burials were accompanied by Orient Fishtail points, soapstone fragments or "killed" soapstone pots, and red ochre. "The typical basic grave lot therefore provided for hunting game, kindling fire, and cooking food, with a cosmetic kit thrown in" (Ritchie 1980:177). According to Smith (1950:150), the Orient culture was "the burial complex of the people responsible for the North Beach focus" on Long Island. Orient sites have been found all over Long Island, in upper New York City, on Staten Island, and in the Hudson Valley (Ritchie 1980:165).

Another Early Woodland culture is the Adena-Middlesex (800-300 BC). Adena people subsisted on smartweed, lamb's quarters, marsh elder, pigweed, canary grass, nuts, roots, mammals, fish and fowl (Kraft 1986). Evidence of early, domesticated cucurbits appears at this time in the Midwest, while domesticated tobacco is inferred from the use of pipes. These people had a rich material culture consisting of pipes, gorgets, pendants, boat stones, Cresap points, Adena Beavertail points and copper beads. Unlike their contemporaries, Adena-Middlesex people likely respected and encouraged the accumulation of wealth (Kraft 1986).

The Middle Woodland period (AD 1-900) was characterized by two major periods in Coastal New York. The first is Windsor Northbeach focus (or phase) and the second is Windsor Clearview focus, which overlapped the former. The Clearview focus preceded the Bowmans Brook phase on western Long Island and Manhattan Island (Ritchie 1980:269; Ritchie and Funk 1973).

The Windsor Clearview phase was followed in the Late Woodland by the Windsor Sebonac focus. The Sebonac focus is characterized by relatively large villages of possibly one hundred inhabitants, located in shellfish rich areas (Ritchie 1980:266-268). In addition to shellfish gathering, Sebonac people hunted, fished, and engaged in horticulture as evidenced by carbonized corn found at the Sebonac site on Long Island by Harrington (1924:249-253). Homes of this period were circular and 10 to 20 ft (3 to 6 m) in diameter.

Utilitarian artifacts of the Sebonac phase include broad, thin, triangular Levanna points often made of white quartz. Bone harpoons and fishhooks along with netsinkers were used for fishing. Woodworking tools like grooved and notched axes, celts, and Plano convex adzes were used (Ritchie 1980:267-268). Ritchie described the commonly shell-tempered Sebonac pots as elongated and cone shaped at the base with a straight or inward-slanting collarless rim. The exterior surface was decorated by brushing with scallop shell or fabric but was sometimes cord marked or plain. The interior was smoothed possibly with a scallop shell to create striations. Scallop shells were also used to decorate the area from the shoulder to the lip with linear, criss-crossed or rectangular designs that were combed or stamped. Occasionally, triangular or circular punctations occur with raised interior rim bosses (Ritchie 1980:268).

Non-utilitarian artifacts include stone pendants with holes drilled through the center or side, and sometimes with incised designs. Although bone and shell beads are found only rarely, stone and ceramic pipes are found, and the latter are decorated with stamped or incised designs. Sebonac people buried their dead flexed or folded without grave goods in pits already in use for other purposes, such as cooking. Evidence for the use of charnel houses during this period is also scant.

The Late Woodland is a period of significant cultural change. During this period, the subsistence system shifted its emphasis from gathering wild foods to growing domesticated plants. This change was made possible sometime between AD 500 and 1000 by the development of Northern Flint corn, which is a cold-resistant strain that diffused broadly after its first appearance, probably in the Midwest (Fritz 1990). According to Cassedy et al. (1993), early maize cultivation began about AD 900 in the mid-Hudson drainage. Corn associations with radiocarbon mean dates between AD 850-950 are also reported from coastal Connecticut and the Susquehanna and Hudson drainages (Cassedy et al. 1993). Maize from the Bowmans Brook site on Staten Island was dated to AD 1270-1410 (Ceci 1990). Corn was present in the Long Island Sound region with a large number of radiocarbon dates before European contact (Cassedy et al. 1993).

The introduction of corn horticulture was accompanied by settled village life, population growth, an enriched religious and ceremonial life, and warfare among some cultures, such as the Haudenosaunee or Iroquois Confederacy in upstate New York (Bender and Curtin 1990; Cronon 1984; Handsman 1980; Kraft 1986). Some interesting mortuary practices began to occur during the Late Woodland involving dog ceremonialism (Strong 1985:36) two themes can be seen. One theme, which dates back to the Late Archaic, involves the dog's relationship to "home and hearth" as reflected by dog burials found in villages near hearths. Strong speculates that dogs may have been sacrificed to protect the household. The other theme, which is more prevalent in the Late Woodland, is the burial of dogs in association with humans. It is possible that age, sex, and cause of death of humans were factors in dog sacrifice. Dog burials have been found on sites occupied during the Bowmans Brook phase of the East River tradition in the early Late Woodland.

Bowmans Brook sites are found along "tidal streams or coves" (Ritchie 1980:269) and often contain pits filled with shell. Shellfish gathering was an important activity along with fishing, horticulture and hunting. Utilitarian artifacts include broad triangular Levanna points made of quartz or other stone, antler and bone flaking tools, netsinkers, bone awls, hammerstones, anvils, grooved axes, abrading stones, tools made of beaver incisors, and ceramics.

Ritchie believed the Bowmans Brook culture entered coastal New York from New Jersey. Bowmans Brook incised pottery was found at the Abbott Farm site on the Delaware River in New Jersey. Bowmans Brook Stamped pots are tempered with grit and have an elongated body, cone shaped base, a "straight or flaring rim, and cord-malleated exterior and smooth interior surfaces, and cord-wrapped stick decorations in simple linear, chiefly horizontal, patterns" (Smith 1950:191-192). Bowmans Brook Incised pots are sometimes shell tempered with an in-sloping rim and a mostly smooth exterior surface. The rim is decorated with triangular or rectangular incising. "The herringbone motif is common and a few vessels of this type have stylized human faces formed by three punctates placed on raised nodes about the rim" (Ritchie 1980:270). East River Cord-marked pottery is a third type common to this culture. It is elongated with a cone shaped base like the other two types but the exterior surface is cord marked and sometimes smoothed over.

Non-utilitarian artifacts include "a bone pin with a carved head, a fragmentary rectangular pendant, and a hematite paintstone" (Ritchie 1980:269). Cut and drilled deer bones may have been ornaments worn on clothing, while plain or stamped ceramic pipes have been found on a few sites.

Bowmans Brook people buried their dead flexed or folded without grave goods in pits already in use for other purposes, such as cooking, or in a cemetery near the village. Bundle burials and dog burials have also been found as noted above.

The Bowmans Brook phase was succeeded by the Clasons Point phase of the East River tradition. Dating about AD 1300, Clasons Point sites are usually located on terraces above tidal inlets and often contain numerous pits used for cooking, storage, trash disposal, and graves. Clasons Point people buried their dead flexed in storage pits or in a shallow grave. Shellfish remains are found in very high frequencies on these sites while the remains of other animals are found much less frequently. People of this culture also engaged in gathering and horticulture as evidenced by the presence of corn, hickory nuts, walnuts, and sweet-flag roots (Ritchie 1980:270-272).

Clasons Point people continued to use Levanna points but began using antler and bone projectile points as well. According to Ritchie, "a long-bone dagger with serrated edges occurred on one of the sites" (Ritchie 1980:271). Netsinkers were used in fishing as well as bone hooks. Stone hoes, mortars and pestles, mullers, turtle-shell dishes have been found. Wood-processing tools in the form of three-quarter grooved axes, celts, antler-tine wedges, beaver-incisor scrapers, gravers and chisels, and flake scrapers were used (Ritchie 1980:271). Triangular, stemmed, and lanceolate stone knives were used along with drills, nutting stones, hammerstones, anvilstones, sinewstones, bone awls, perforated mat needles, and antler tool handles (Ritchie 1980:271).

Ceramics of this period were characteristically one-to-two-gallon vessels with the same shape as the types mentioned above, and mostly shell tempered with straight or flaring rims and exterior cord impressed decoration. Vessels from the latter part of the period became more globular with rounded bases and collared rims that have been turned out. The body is smooth or cord marked and the rim and collar are incised. One such type, Van Cortland Stamped is similar to the Owasco Corded Collar type found to the north. Eastern Incised, which has an incised collar, is similar to Chance Incised and Deowongo Incised Iroquoian types (Ritchie 1980:271-272).

Non-utilitarian artifacts include stamped or incised elbow-shaped clay pipes, bone beads, shell beads, and wampum beads, which, according to Ritchie, were "a European-trade-inspired commodity" (1980:271). However, Ceci (1990:23) suggested that wampum or proto-wampum played an important role in the development of sedentary or semi-sedentary villages and in trade between villages and large centers in the Midwest before European contact. "The decline of Midwestern centers led to a breakdown of exchange systems in the Northeast ca. AD 1400" (Ceci 1990:23). According to Ceci, the exchange system was then reactivated around AD 1550-1600 when the first Europeans arrived. Moreover, "native cultural development continued for over a half century after the arrival of Europeans and the same factors that drew the American Indian to the mouth of the Hudson also attracted the Dutch" (Schuyler 1977:1).

3.3.2 Historic Period. Native American groups in southeastern New York were profoundly affected by the introduction of the fur trade, long before the arrival of a permanent European population in the area. Beginning in the first decades of the seventeenth century, the increasingly regular encounters between Europeans and Native Americans incubated a pandemic of European diseases among unprepared native populations, which decimated many native groups. The presence of typhus, smallpox, measles, and others ravaged native communities. "According to a 1640 statement by Hudson River Indians, their numbers had decreased by disease to less than one-tenth of the original population since the arrival of the Dutch" (Brasser 1978a:83; Goddard 1978).

The earliest account of what would become western Long Island comes from Florentine mariner Giovanni da Verrazano. Sponsored by King Francis I of France, Verrazano explored the southern or lower portion of what is now New York Bay in 1524. His narrative depicted the Narrows as "a very agreeable situation located within two small prominent hills, in the midst of which flowed to the sea a very big river [the Hudson River], which was deep within the mouth" (Halsey 1912:93). Further, the warmth of the reception he received from local Native Americans, who offered to barter goods, suggests they may have had previous contacts with European visitors. More than eighty years later, the Dutch would be the first Europeans to actively explore the area now known as the Borough of Brooklyn (Halsey 1912:93-94; Brasser 1978a:79-82; Goddard 1978:220).

In 1609, the English navigator Henry Hudson, in the service of the Dutch East India Company, reconnoitered the coast of what would become New Jersey and what the Dutch would call the North River. While the sources differ over whether Hudson anchored in Sandy Hook Bay, south of Staten Island, or in the future Gravesend Bay, they agree that he allowed Native Americans onto his ship, the *Halve Maen*, to exchange goods, especially tobacco (Brasser 1978a; Bergen 1884; Spooner 1884). Members of Hudson's crew reputedly went ashore near the present Gravesend section of Brooklyn to trade and mingle among the local Native Americans, who provided food and entertainment to the mariners. Seeking a shorter route to the Spice Islands and India, Hudson continued north, sailing up the future Hudson Valley reaching as far north as what is now Albany. Subsequent voyages by Dutch captains, notably Adriaen Block, established outposts along coastal New York and New Jersey to advance the commercial interests of the United Provinces of the Netherlands. As early as 1614, a fortified trading post and several houses had been constructed on Manhattan to attest to the Dutch presence. With the establishment of the Dutch West India Company in 1621 and during the next forty years Dutch ships arrived with increasing regularity to trade with the native groups they encountered (Brasser 1978a:82; Ellis et al. 1967:18-25; Spooner 1884:20-22; Brasser 1978b:200-203).

At its height, the Dutch colony of New Netherland comprised a thin band of sparsely settled territory that stretched along the North River (as the Dutch called the Hudson) and connected New Amsterdam at the lower tip of Manhattan Island with the frontier outpost of Beverwijck/Fort Orange, the present-day City of Albany, and its satellite at nearby Schenectady, New York. From its base in New Netherland, the Dutch prosecuted the prized beaver pelt trade, competing with the English in the Connecticut River valley and the Swedes in the Delaware River valley (Ellis et al. 1967:18-25; Burke 1991:1-18; Gehring and Starna 1988:xiii-xxiv). In the area of western Long Island around what is now Kings County, Dutch traders patronized Native Americans closely related to or allied with Munsee-speaking, Algonquian groups, comprised of the Nayack, Marechkawieck, Canarsee, and Rockaway (although sometimes grouped under the rubric "Canarsee," these names may reflect place names where groups resided rather than separate tribes) (Spooner 1884:20; Goddard 1978:214-215). "Among the woods of this region, and overlooking the broad expanse of 'the Beautiful Bay,' the wigwams of the Nyack tribe stood, undisturbed by the white man for a generation after he had built his first house" in what is now Kings County (Bergen 1884:256; Shorto 2004).

Although the Dutch ostensibly controlled the area along both banks of the river and western Long Island, they continued to have difficulties with the local Native American groups with whom they traded (Goddard 1978:220-221; Kim 1978:4-8; Ellis et al. 1967:18-25; Gehring and Starna 1988:xiii-xxiv; Burke 1991:3-4). After a few decades, as Dutch traders penetrated the forests of the Hudson Valley north of the project area, the supply of local pelts declined precipitously due to intensive harvesting. As a result, the Mohicans became embroiled in a period of ultimately unsuccessful warfare with the Mohawk over control of the fur trade and the increasing amounts of territory needed to acquire beaver pelts. Tensions derived from declining resources were exacerbated by the increasing number of Europeans and slaves entering New Netherland, who were encouraged by Dutch officials to establish farming communities within the colony. Violence erupted between the Native Americans and the Dutch in the 1640s and 1660s over these conflicting land issues. During the governorship of Willem Kieft, director-general of New Netherland (1638-1647), Native Americans from what would become Westchester County invaded western Long Island, destroying houses along a path from near Gowanus to Mespatt (Newtown) to Gravesend. In the aftermath of the attack, more than 100 families fled to New Amsterdam (ostensibly Lower Manhattan) for safety (Spooner 1884:23). In 1643, Algonquian

Delaware living in the vicinity of West Point retaliated against abuses inflicted by Dutch traders and farmers as part of what became two years of bitter conflict. In 1663, a group of Esopus attacked a new farming community of Wiltwijck, in the vicinity of what is now Kingston, igniting year-long hostilities (Brasser 1978b:204; Goddard 1978:220-222; Miller et al. 1979:11-12).

While profits from the fur trade prompted Dutch interactions with these native groups, it also influenced the eventual attempts at colonization, especially north of the project area along the Hudson. However, the Patroon system that developed in the Hudson Valley with its large land grants and associated feudal privileges and obligations (e.g., tenancy) did not occur in western Long Island. The issuance of land patents in what would become Kings County began in 1636 when Native Americans sold a tract of land to Jacob Van Corlaer and a tract to Andries Hudde and Wolfert Gerritson Van Couwenhoven. These tracts together would become known as New Amersfoort (or Flatlands) and Bowanus (now Gowanus) (Brasser 1978b:204; Goddard 1978:220-222; Stiles 1884:43-44; Ross 1902:64). With the choicest areas of settlement being the "flat untimbered lands along the shore of the bay and river" reminiscent of land in Holland, additional purchases in western Long Island followed Kieft's acquisition of title for nearly all of the remaining property in what would become Kings and Queens counties to settle newcomers (Stiles 1884:43-44).

The first European purchase of land in the project area occurred in 1637 when Joris Jansen de Rapalje (several spellings), a French Huguenot and Walloon, purchased 335 acres of land around a bay of what is now called the East River from the local Canarsee. The Indians referred to the land as "Rennegakonk" or "Rennegachonk" (sandy place) in the bend of "Marechkawieck." The bay was more formally called "the boght of Mareckawieck." Rapalje had originally settled at Fort Orange, but in short order had relocated to New Amsterdam. He utilized his Long Island purchase as a farm, but did not move there as his residence until the 1650s. This area was largely on the east side of the bay in proximity to the former U.S. Marine Hospital area. As early as 1656, the area was referred to as Waal-boght or Wahle-Boght (Bay of Foreigners), for the large numbers of Walloons who lived there or "Walloon's Bay," today's Wallabout Bay (Stiles 1867:24, 24n; West 1941:2).

By the mid-1640s, governor Kieft was actively granting land on the west side of Wallabout Bay. Jacob Wolphertsen (von or van Couwenhoven) received a grant on July 3, 1643, portions of which were regranted by the Kieft to Herry (Henry) Breser on September 4, 1645. On the same day, Frederick Lubbertson acquired land to the east of Breser from the director-general. Breser later sold his tract to Cornelis de Potter at the end of August 1651. Prior to the Revolutionary War, these tracts were owned by John Rapalje, a great-great-grandson of the first settler. A one-time Provincial Assemblyman, Rapalje owned the largest estate in Brooklyn, but would run into some trouble during the American Revolution (Stiles 1867:77-79).

East of Lubbertson, Edward Fiscock received a grant for land at what was the west cape of Marechkawieck on the East River. Jan Haes married Fiscock's widow and received a confirmatory patent for the land on April 2, 1647. This land would later be included as parts of the Navy Yard as well as the estate of Comfort and Joshua Sands. This cape or point at the junction of the Waale-boght with the East River was subsequently called "Martyn's Hook," probably for Jan Martyn, a proprietor in that vicinity about the year 1660. Haes sold a piece of this land in January 4, 1652 to Cornelis de Potter. By the eighteenth century, the land was owned by Aert Aertsen (Middagh) who constructed a mill in 1710 on the "Hook, where a natural pond in the marsh, requiring a short dam, afforded the necessary facilities" (Stiles 1867:80-81). In the 1720s, the area was described in a land transaction as "one-half the meadow, sand,

creek, grist-mill, dam, beach of the old dwelling house, bolting-mill and bolting-house (the new dwelling-house only excepted), situated in Brooklyn, at a place called *Marty's Hook*, as in fence, and bought by the said Hans Jorisse Bergen or Aert Aertsen (Middagh).” Stiles asserts that this mill is the same mill identified by Ratzer in 1767 “as *Remsen's Mill*; and the same property in the Wallabout (now occupied by the United States Navy-yard), together with the land as far as the line of Gold Street, was afterwards known as the Remsen estate” (Stiles 1867:81). Rem A. Remsen was the owner of the property during the Revolution.

Other landowners in the Wallabout included Hans Lodewyck (1645); Michael Picet (whose land contained marsh/salt meadow in the bend of the Marechkawick and was later granted to Willem Cornelissen [1646]); Peter Caesar Italien or Caesar Alberti (1643 for a tobacco plantation); Pieter Monfoort; Jan Monfoort (the area later became the Ryerson farm); Hans Hansen Bergen (1647, a Norwegian son-in-law of Rapalje) (Stiles 1867:83-84, 88). As evidenced in several land disputes presented by Stiles (1867:90-92), residents cut marsh grass, which was plentiful in the wide tidal flats of Wallabout (Church and Rutsch 1982:16-17). Areas along the East River incorporated as the village of Breuckelen, west of the project area, in 1646, while areas to the east and south contained numerous bouweries or farms (Stiles 1867:45). In 1679, a pair of Labadist travelers visited the Wallabout and described the bay “as tolerably wide, where the water rises and falls much [tidal]; and is at low water very shallow, and much of it dry” (Stiles 1867:88n).

Called “t Lange Eylandt” by Adriaen Block as early as 1611, Long Island became dotted with villages during the middle decades of the seventeenth century, and included the settlements of Waal-boght (Wallabout), New Amersfoort (Flatlands), Midwout or vlichte bos (Flatbush), Breuckelen, Boswijck (Bushwick), and Vlissingen (Flushing). The original six towns of Brooklyn were Gravesend (1645), Breuckelen (1646), New Amersfoort (1647), Midwout (1652), New Utrecht (1657), and Boswijck (1661). These towns were incorporated into Kings County by the English when they established the province’s counties on November 1, 1683 (Bergen 1884:256; Shorto 2004).

Documentary research suggests that rural settlements in the area reflected a general pattern of farmsteads owned by locally prominent families, dispersed along or near Indian trails, nascent roads and water-routes with nucleated villages established for economic, social, religious, and administrative needs of the dispersed populations (Miller et al. 1979:9-11). Having obtained a patent for land, the landowner needed to recruit settlers to venture to the frontier, to clear, plant or otherwise work the sometimes difficult landscapes or do the work alone. While the land patents on western Long Island did not duplicate the extensive patroonships characteristic of the mid- and upper-Hudson Valley, Long Island patents were generally settled in large farms that grew wheat and tobacco, and raised livestock with labor supplied by African slaves. In Kings County, these agricultural settlements were often isolated farmsteads or bouweries that provided foodstuffs for the local and New Amsterdam markets. When Dutch proprietorship of New Netherland ended with England's seizure of the colony—renamed New York, for James, Duke of York and Albany—in 1664, land-use and settlement patterns established in the region by the Dutch remained largely the same (Burke 1991; Bergen 1884: 263; Miller et al 1979:9-14).

Foreshadowing this English takeover, New Englanders had successfully infiltrated eastern Long Island and established trading posts and settlements there and in the Connecticut River valley prior to 1650. For all practical purposes, Long Island was divided: the eastern half settled by the English and the western half settled by the Dutch. As a result of the paucity of Dutch

inhabitants (less than 2,000 people lived in New Netherland by the mid-seventeenth century), West India Company directors had allowed some English settlements to exist under their jurisdiction, if those homesteaders took an oath of allegiance to Dutch authority. Although ascribing to Connecticut jurisdiction instead, these English towns included Hempstead, Gravesend, Jamaica (Rusdorp), Newtown (Middlebury), and Oyster Bay (Ross 1902:46; Spooner 1884:23; Stiles 1884:25; Ellis et al. 1967:20-28; Burke 1991:2).

To compensate for a general lack of laborers in the New World, both the Dutch and the English utilized slave labor for agricultural and maritime activities. At the outset of Brooklyn's settlement, documentary evidence suggests that the number of slaves in the town were few. However, as Brooklyn's agricultural economy expanded in the seventeenth century after the British takeover, the number of slaves imported to the colony increased. By 1698, more than 14 percent of the population of the county was held in bondage—296 slaves out of a total population of 2,017. In 1737, the county's population was 2,348 of whom 564 were African slaves (or about 24 percent slave) (Davis 1991:93; Miller et al. 1979:13-14). By the beginning of the American Revolution, nearly one-third of the population of Kings County was in slavery. These numbers suggest that the county "probably had the highest proportion of slaves to total population of any county north of the Mason-Dixon line" in 1775 (Miller et al. 1979:14; Davis 1991:93). After the war, 1,432 slaves were enumerated in the county in 1790. Several Brooklyn churches in the nineteenth century formed nodes of the Abolition movement and served as stops on the Underground Railroad, including the African Wesleyan Methodist Episcopal Church, initially located on High Street, and other locations in the nearby Vinegar Hill neighborhood (Wilson 1995; NYC Landmarks 2007)

Despite the capture of the Dutch colony by the British, the extended Rapalje family continued to farm the Wallabout through the American Revolution, although the farms probably grew smaller as the number of heirs increased. In addition to the farms, "a wandering road had been constructed around the Remsen pond and to the southerly edge of the swamplands which extended across the present Flushing Avenue and into City Park" [by 1767. At some point,] a wooden bridge had been erected across the mill pond by Rem Remsen and a toll was collected for its use. The bridge was about 500 feet long from shore to shore of the pond and cut diagonally across what is now the southwest corner of the Navy Yard" (West 1941:4).

At the outset of the Revolution Abraham Remsen, a member of the extended Rapalje family, had acquired a farm on the west side of the Wallabout. "The Abraham Remsen farm and lands adjoining on the south were owned by the Remsens and related Johnsons well into the mid-nineteenth century" (Church and Rutsch 1982:18; Stiles 1867:94). By the middle of the eighteenth century, the land had been cleared for farming and a gristmill was in operation on the west side of Wallabout Bay south of Martyn's Hook above the low-lying salt marsh (Figure 3.2). Marsh grasses on the tidal flats were also harvested, where possible. Rem A. Remsen, a grandson of the Rapalje patriarch, operated the mill and mill dam during the Revolutionary period. "[T]he mill was designed to draw its power from the flow of the tides and a long dam was built across the western side of Wallabout Bay to create a mill pond" (Stiles 1867:80, 90-92; Church and Rutsch 1982:17; Geismar and Oberon 1993:17). Upon his death his property was inherited by Jeremiah Johnson and conveyed to Cornelius Remsen, who went bankrupt. To the west of the Remsens, John Rapalje, a Loyalist during the Revolution, owned an estate, which was confiscated by the New York legislature in 1779. Although Rapalje returned to it during the British occupation of New York, he left it forever in October 1783 (Stiles 1867:77-79; 81; West 1941:6; Baystate 1994:20).

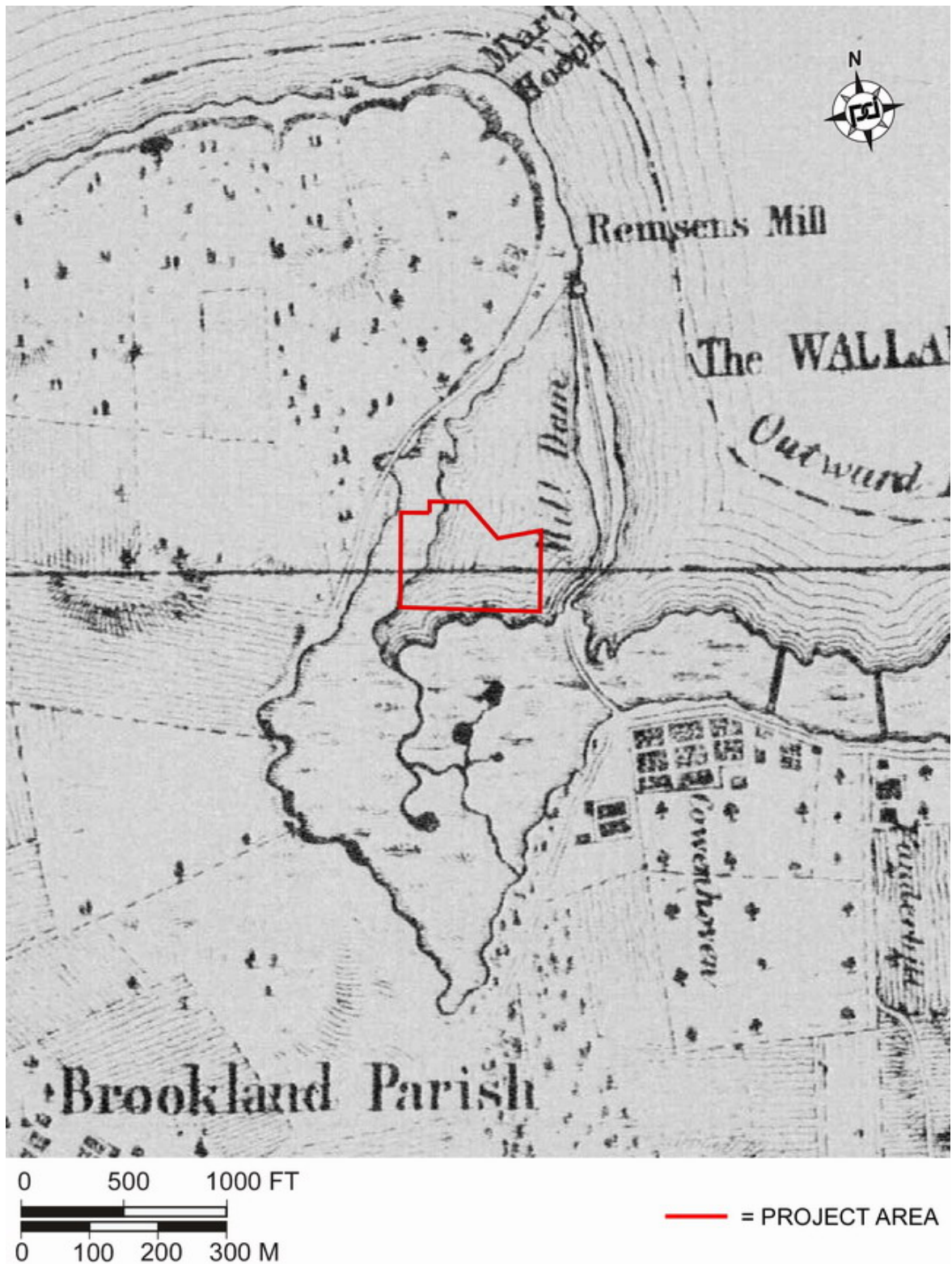


Figure 3.2. Approximate location of the project area (in red) as shown in 1767 (Ratzer). Note: west side of bay was part of Remsen property that included a gristmill and mill pond. Brooklyn Navy Yard, Kings County, New York (Stiles 1867:62-63).

Revolutionary War Period. The attempt to capture New York was part of a larger strategic initiative by the British to divide the New England colonies from the Middle Atlantic and Southern colonies. British planners believed that once the colonies were successfully split, each region could be brought back more easily into the empire. During early July 1776, British forces from Boston under Admiral Richard Howe, brother of General William Howe, landed on Staten Island in preparation for a larger undertaking (Stiles 1884:51; Ross 1902:334; Carrington 1877:199-205). On the morning of August 22, the British, under the command of General Howe, crossed the Narrows and began landing what would become a force of between 15,000 and 16,000 men and 40 pieces of artillery (other estimates of troop strength are higher) on Long Island at what is now Fort Hamilton. At that time, western Long Island was a low, level plain covered with a dense growth of woods and thickets. Stretching north and east from the coast, the plain was divided by a ridge of hills, extending from New York Bay midway through the island (Stiles 1884:52). This staging area would be the launching point for the multi-prong assault on Patriot defenses near Brooklyn, under the command of George Washington (Stiles 1884:13, 51-53; Bergen 1884:262; Carrington 1877:199-215; Harpaz 1996:B-28).

Fought on August 27, 1776, the Battle of Brooklyn (sometimes referred to as the Battle of Long Island) resulted in the decisive defeat of the outnumbered Patriots, who deftly escaped into Manhattan on the night of August 29 under cover of thick fog. The deadliest single encounter of the Revolution for the Americans, the Battle of Brooklyn cost the rebels 3,000 soldiers, who were either killed, captured or missing. After the evacuation of Washington's troops, Kings County was occupied for seven years by the British and their Hessian allies, who foraged and encamped throughout the county, including lands in the Wallabout. During the occupation, according to Bergen (1884:262), "the British, Hessians, Tories and refugees had unlimited range over Long Island, and were quickly joined by 'neutrals' and 'fence gentry.' ... The negroes [sic], also, became their willing aiders and abettors, and frequently guided them in their predatory expeditions" (Harpuz 1996:B-28; Stiles 1884:13, 32-33, 52; Carrington 1877:199-215). The area in the vicinity of the Brooklyn Navy Yard would remain under British-Hessian occupation until November 25, 1783, when the British fired the final cannon shot of the war as a parting salute at crowds on Staten Island who were jeering their departure.

Ancillary to the action related to the Battle of Brooklyn, Wallabout Bay achieved notoriety during the war as the anchorage for at least sixteen British prison and hospital ships during the British occupation of New York City (Figure 3.3). Although the number of American prisoners who died aboard these vessels will never be known, estimates place the number of dead between 11,000 and 12,000 during the period (Lossing 2001 [1850]; Stiles 1867:359). The ships were decaying, out-of-service hulks moored in the bay, some serving as hospital ships. The *Whitby* was reported to be the first of the prison ships moored off Remsen's mill, beginning in October 1776. However, the worst of the lot was reputed to be the *Jersey*, a worn-out, 65-gun sloop (Stiles 1867:333). A former prisoner who survived confinement on the *Jersey*, Christopher Vail wrote:

When a man died he was carried up on the forecastle and laid there until the next morning at 8 o'clock when they were all lowered down the ship sides by a rope round them in the same manner as tho' they were beasts. There was [sic] 8 died of a day while I was there. They were carried on shore in heaps and hove out the boat on the wharf, then taken across a hand barrow, carried to the edge of the bank, where a hole was dug 1 or 2 feet deep and all hove in together [DeWan 2008].

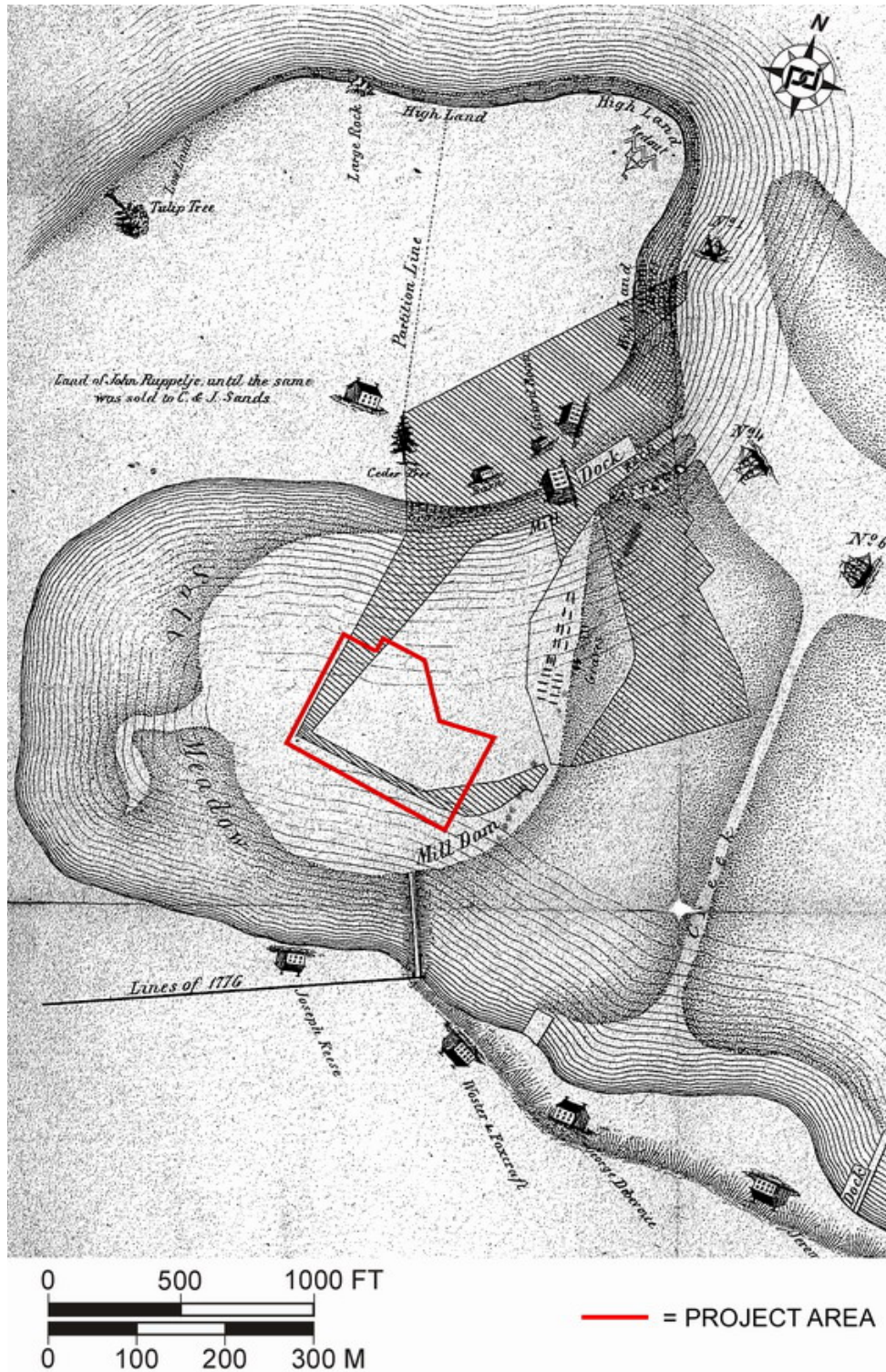


Figure 3.3. Approximate location of project area (outlined in red) superimposed over tidal flats and the initial location of the Navy Yard (black hatching). Note: locations of POW burials northeast of the project area, structures and prison ships. Brooklyn Navy Yard, Kings County, New York (Stiles 1867).

General Jeremiah Johnson, related by marriage to the Rapalje family, reported “I saw the sand-beach, between the ravine in the hill [what was Little Street in 1867] and Mr. Remsen’s dock, become filled with graves in the course of two months; and before the First of May, 1777, the ravine alluded to was itself occupied the same way” (Stiles 1867:334). Almost as soon as the bodies were buried in the sandy flats, bones washed out of the marsh with the tides. Excavations in the area by post-war landowner John Jackson as well as later by Navy Yard personnel disturbed those skeletons that had not eroded out of the sandy hills. These bones were reinterred at a ceremonial site west of the Navy Yard in 1808, and later at Fort Greene Park in 1908. General Johnson briefly described the situation on the Wallabout during the period:

It was no uncommon thing to see five or six dead bodies brought on shore in a single morning, when a small excavation would be dug at the foot of the hill, the bodies be cast in, and a man with a shovel would cover them, by shoveling sand down the hill upon them. Many were buried in a ravine of the hill; some on the farm. The whole shore, from Rennie’s Point to Mr. Remsen’s door-yard, was a place of graves; as were also the slope of the hill near the house (subsequently dug away by Mr. Jackson...); the shore from Mr. Remsen’s barn along the mill-pond, to Rapelje’s farm, and the sandy island between the floodgates and the mill-dam, while a few were buried on the shore on the east side of the Wallabout. Thus did *Death* reign *here*, from 1776 until the peace. The whole Wallabout was a sickly place during the war. The atmosphere seemed to be charged with foul air from the prison-ships, and with the effluvia of the dead bodies washed out of their graves by the tides. We believe that more than half of the dead buried on the outer side of the mill-pond, were washed out by the waves at high tide, during northeasterly winds. The bones of the dead lay exposed along the beach, drying and bleaching in the sun, and whitening the shore, till reached by the power of a succeeding storm; as the agitated waters receded, the bones receded with them into the deep [Stiles 1867:350n].

Remsen’s land was purchased at auction in 1781 by John Jackson and his brothers, Samuel and Treadwell, for \$17,000, who later bought the rights of the remaining acres from the other heirs (Stiles 1867:81; West 1941:6; Baystate 1994:20). Rapalje’s property between what are now Gold and Fulton streets comprising approximately 160 acres was purchased by Comfort and Joshua Sands from the Commissioners of Forfeited Estates on July 13, 1784 for £12,430 in state scrip (Stiles 1867:77-79, 382, 1869:96). The Sands brothers reputedly paid for the purchase with pay certificates issued to Continental soldiers, which they had purchased at a discount in large quantities. The Sands later laid out the area for streets in 1788 and called their village Olympia. Comfort, Joshua, and a third brother, Richardson, were merchants, bankers, New York politicians, and speculators, who provisioned the army in 1777 and 1782 (Stiles 1869:96).

Jackson was an entrepreneur and land developer, who was founder and President of the Wallabout Bridge Company and who built a wind-powered sawmill (which failed) and, later, a powder mill (which also failed). At the time of Jackson’s acquisition of Remsen’s Wallabout property, it was said to comprise “about thirty acres of land and thirty-five acres of pond, together with the old mill and dwelling house,” a pond for seasoning oak timbers, and a pier (Stiles 1867:363n; Ecology & Environment 1990:139). One of Jackson’s first projects on his property was the erection of a dock that reputedly enclosed the hull of one of the prison ships that burned in October 1777 (Stiles 1870:945). As he improved his land during the construction of his shipyard, he cut away the high banks that formed the shore, revealing the bones of dead POWs. The small shipyard constructed the *Canton*, a merchant vessel, and, in 1798, a small frigate, the *John Adams*, for the United States government (West 1941; Church and Rutsch 1982:20; see Section 11 for a discussion of the archaeological sensitivity for potential remains related to Jackson’s shipyard).

Brooklyn Navy Yard. The Navy Department's tenure on the Wallabout began in February 1801. At that time, Jackson sold his shipyard and an adjacent parcel totaling nearly 42 acres to Francis Childs for \$40,000. Childs, an agent for the government, transferred the deed to the United States for the creation of the New York Shipyard (West 1941:7). Lieutenant Jonathan Thorn was the first officer in charge of the naval station, serving for a single year beginning in 1806. During the years preceding the arrival of Thorn nothing was done to improve the shipyard. Captain Isaac Chauncey (1807-1813) was the second commanding officer of the station, during whose command Quarters A was erected (1806). Except for the hill on the west where the commandant's house was built and the terrace where the hospital was later located, the property was originally a wasteland of mud flats, swamps and creeks (Stiles 1884:870; West 1941:19-20; Figure 3.4). Six brick buildings were also constructed during Chauncey's first tour,

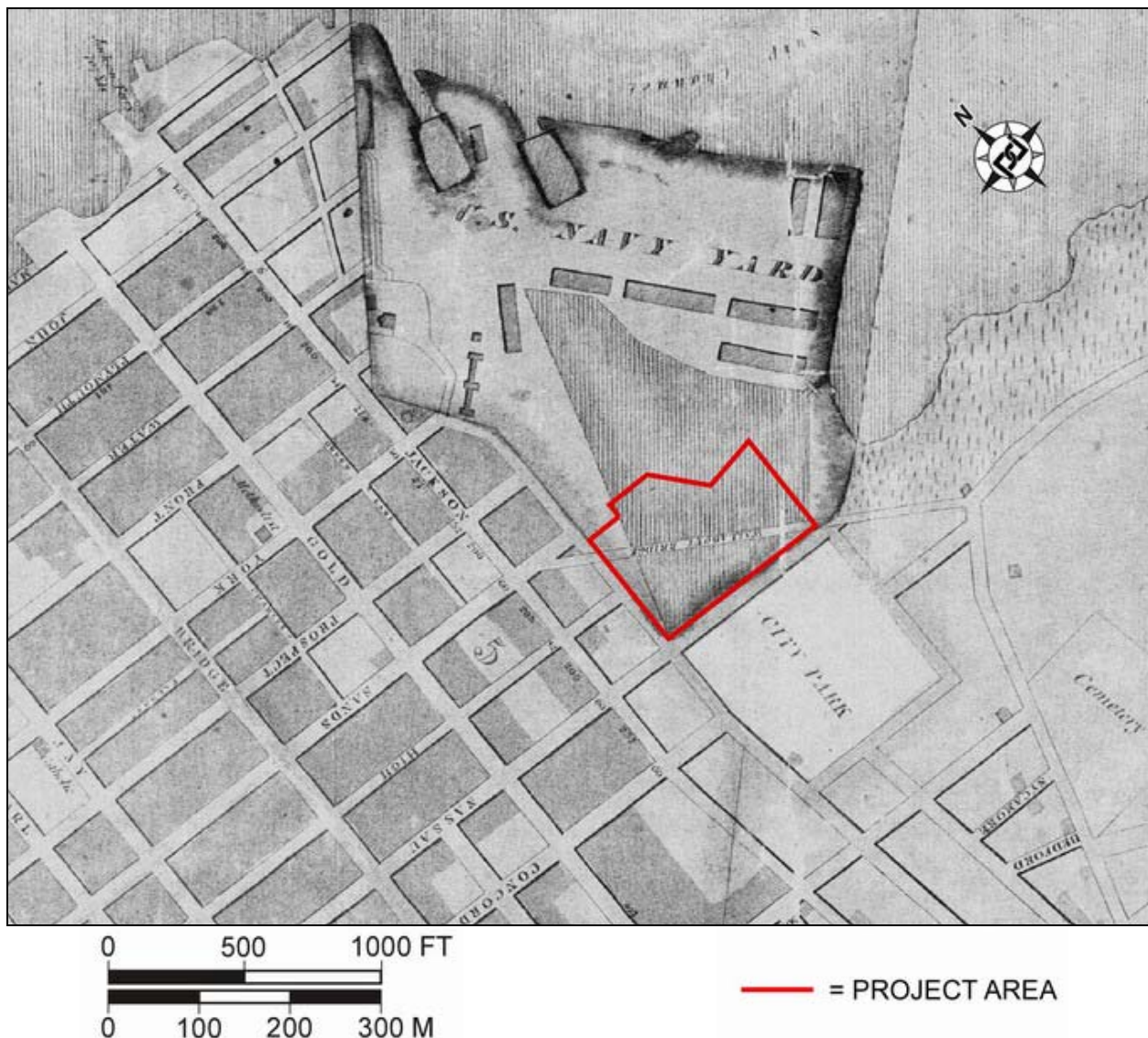


Figure 3.4. Approximate location of the project area (outlined in red) and bridge over mill pond/marsh area in 1835. Brooklyn Navy Yard, Kings County, New York (Herbert and Tolford 1835).

which served as storehouses and offices; these buildings were razed in 1868. Captain Samuel Evans was the third commander (1813-1824), during whose tenure actual ship construction commenced. The station outfitted numerous wooden sail vessels for combat against the British during the War of 1812. The first steam war frigate *Fulton* was outfitted in 1815 (Stiles 1884:871).

During the first decade of the 1800s, John Jackson marketed his remaining properties along the East River west of the naval station as a residential area, which he called Vinegar Hill after a 1798 battle during the Irish rebellion. His focus was clearly Irish refugees and immigrants fleeing the old country. As a result, the area became known as Irish town. During this period, “a portion of the estate of Comfort Sands, contiguous to the lands of Mr. Jackson, was sold, and Jackson Street was opened to Jackson Ferry” (Stiles 1867:385-386). Directly across from lower Manhattan, Brooklyn incorporated as a village up to the Wallabout mill pond in April 1816. By 1820, the population of Brooklyn village was 5,210, while the Town of Brooklyn had 7,175 residents (Stiles 1869:17, 197).

The first Navy ship constructed and launched at the Navy Yard was the 74-gun frigate *Ohio*, the largest ship built in America at that time, which was completed in 1820. However, its facilities remained sparse during the first decades of the Navy Yard’s existence. “The original Jackson shipyard had consisted of a few buildings used to house wooden boats under construction: the former millpond, in which oak beams and planking were seasoned; the abandoned mill building; and the muddy flats, on which a storage pier and winding access road had been built” (Church and Rutsch 1982:21). During these years, the large mill pond, empty at low water, extended from what is now Sands Street along the present western boundary of the Navy Yard to Flushing Avenue, and then as far as Clinton Avenue, extending into the present park (Stiles 1884:870; see Figure 3.4).

The U.S. Congress passed a bill in 1824 that arranged the navy yards into classes, and the navy yard in Brooklyn became a first class yard. Through the nineteenth century, the Brooklyn Navy Yard expanded by acquiring adjoining parcels and constructing additional facilities, although the western side of the installation remained the more intensely developed. Prior to the beginning of the Civil War, yard workers constructed four new steam warships, including the *Fulton II* (1837), the Navy’s first ocean-going steamship, and the *Niagara* (1857), a frigate that participated in laying the transatlantic cable (Church and Rutsch 1982:24; BNYDC 2007). West (1941:25) reported that buildings Nos. 15 and 16 timber sheds were erected in 1833 along what is now Navy Street. “Building No. 15 stood north of where the Sands Street gate now is, and building No. 16 was south of that gate and extended practically to Flushing Avenue” within what was part of the original purchase (West 1941:25), although maps from 1833-1835 that depicted structures within the Navy Yard did not show any structures along Navy Street (Chapin 1833, 1834, 1835; Herbert and Tolford 1835; see Figure 3.4). During this period, the City of Brooklyn was created (1835) through the consolidation of the village and town of Brooklyn (Stiles 1869:245), and was further consolidated in 1854-1855 with the City of Williamsburgh and the Town of Bushwick. The new city’s population was more than 200,000 in 1855 (Stiles 1869:418-419). In 1840, Kings County had a population of 47,613.

At the outset of the Civil War, the New York Navy Yard in Brooklyn comprised more than 80 acres on Wallabout Bay and contained the Naval Lyceum (1833; Commodore Matthew C. Perry, who was commandant of the yard between 1841 and 1843, was one of its founders), the U.S. Marine Hospital (1838) and associated laboratory and cemetery, various mechanical shops for building and repairing ships, a large stone dry dock completed in 1851, “two large buildings to cover ships of war while in process of building, extensive lumber warehouses, several marine

railways, and a large amount of balls, cannon, and other munitions of war” (French 1860:368). A Marine Barrack was located east of the Navy Yard.

As one might expect, during periods of war activities at the Navy Yard employment increased, and during subsequent periods of relative peace, activity and employment declined. “Ships were constructed, outfitted, and repaired throughout this period, and the changes in facilities were numerous and complex” (Church and Rutsch 1982:22). For example, employment at the Navy Yard increased from 1,650 in 1860 to 5,390 in 1865, with fifteen vessels built for the Navy and 416 other vessels converted for military use, including the outfitting and commissioning of the U.S.S. *Monitor* (Dietrich 2005:3; BNYDC 2007).

During the second half of the nineteenth century, new construction impacted the Navy Yard as it modernized to facilitate the construction of larger and heavier ships. The U.S.S. *Maine*, the Navy's first battleship, was built, launched and commissioned between 1888 and 1895. Residential quarters for officers were erected along Flushing Avenue and included Quarters E, F and G (1864), Quarters B (pre-1859), Quarters D (pre-1859), Quarters C (pre-1859) and H (ca. 1880), Quarters I (ca. late 1890s), and Quarters K and L (ca. 1900), although these construction dates may be in question (Ecology & Environment 1990:140; West 1941:25; Dietrich 2005:6; Beardsley/Crawford & Stearns 2008; see Section 7.0 for a detailed discussion of these structures).

The late nineteenth century was also a period of transition for the City of Brooklyn. In 1883, the Brooklyn Bridge between Manhattan and Brooklyn was completed, closely intertwining the commercial, industrial and residential fates of the cities of New York and Brooklyn. By January 1896, the City of Brooklyn and Kings County were coterminous, and Brooklyn became the fourth largest city in the United States. Two years later, on January 1, 1898, Brooklyn became subsumed under Greater New York by an act of the New York State Legislature, thus becoming a borough of the City of New York (Miller et al. 1979).

References to the date for construction/installation of sewer and water utilities in the project area are sparse and vague regarding precise locations. One source generally states that sewers in Brooklyn were designed by Julius W. Adams between 1857 and 1859 (Ontario Concrete Pipe Association 1997 and USACE New Orleans 2002). Another source, however, mentions that privies in Brooklyn needed to be disinfected after the 1866 cholera epidemic which implies the Brooklyn sewer system was incomplete at that time (USACE New Orleans 2002). Reference to plumbing within Brooklyn Navy Yard appears as early as 1863 (Tetra Tech 2008). In summary, it appears wells and privies became obsolete toward the end of the nineteenth century.

In the twentieth century, war and peace continued their interplay with the pace of activity at the Brooklyn Navy Yard. Employment increased from 6,000 in 1914 at the beginning of World War I to 18,000 by its end in 1918. During this period, among the vessels constructed and launched were the U.S.S. *Arizona*, U.S.S. *Connecticut*, U.S.S. *Florida*, and U.S.S. *New York*. The peace and demilitarization of the 1920s and the Great Depression curtailed the activities at the installation. But as the noise of war increased in the late 1930s, so did ship construction at the Navy Yard. “By 1944, nearly 71,000 men and women were employed at the base, constructing battleships, aircraft carriers, and auxiliary vessels, while repairing over 5,000 ships and converting 250 vessels to military use” (Dietrich 2005:4). Aircraft carriers built and launched at the Navy Yard included the U.S.S. *Bennington*, U.S.S. *Bon Homme Richard*, U.S.S. *Franklin D. Roosevelt*, and U.S.S. *Kearsarge*, and battleships built and launched included the U.S.S.

Indiana, U.S.S. *Iowa*, U.S.S. *Missouri*, U.S.S. *North Carolina*, and U.S.S. *South Dakota* (Ecology & Environment 1990; Dietrich 2005:5; BNYDC 2007; Church and Rutsch 1982:31).

During the Cold War period, the Navy Yard constructed and launched aircraft super carriers, U.S.S. *Saratoga*, U.S.S. *Constellation*, and U.S.S. *Independence*, and six amphibious Landing Platform Docks (the L.P.D. *Duluth*, was the largest (BNYDC 2007; Dietrich 2005:5). However, during a period of consolidation, the federal government closed the western portion of the Navy Yard in 1966, and retained the eastern portion as Naval Station (NAVSTA) New York. This area included the Navy Hospital and the nearby annex, called NAVSTA Brooklyn in 1990. The western portion (260 of the Navy Yard's 300 acres) was sold to the City of New York for \$24 million, which reopened it as an industrial park in 1971. Since 1981, the industrial park has been run, under contract with the city, by the Brooklyn Navy Yard Development Corporation (BNYDC). In 2001, the BNYDC acquired the former Navy Hospital area (Ecology & Environment 1990:140-141; Baystate Environmental Consultants 1994; Levere 2007; BNYDC 2007). The 6.07-acre Admiral's Row project area, however, was retained by the Navy and was eventually transferred to the U.S. Army and is now the responsibility of the National Guard Bureau (USACE 2008).

3.4 HISTORICAL MAP ANALYSIS

This section presents a series of historical maps depicting the former Brooklyn Navy Yard and Admiral's Row project area (see Figure 1.1). Nineteenth-century Brooklyn historian Henry Stiles described the original state of the area where the Brooklyn Navy Yard was located as a wasteland of mud flats, swamps and creeks (Stiles 1884:870). As a result of the shifting nature of the tidal flats and salt marshes of Wallabout Bay, the historical maps may be somewhat unreliable in their depiction of natural and manmade features, which hinders the comparison of them with each other and with modern maps. Therefore, the superimposed illustrations of the APE (i.e., project area) cannot be interpreted as definitively reliable in scale, proportion, or position.

Ratzer's 1767 map showed the APE as within the mill pond and on the adjacent flats used to supply power to Remsen's mill (see Figure 3.2). Years later, Jeremiah Johnson's recollection of the Wallabout Bay area during the Revolutionary War, with the then boundaries of the New York Navy Yard superimposed, also presented the APE in this mill pond/tidal flats area. Johnson further sited the graves of American prisoners who died while incarcerated on the notorious British prison ships northeast of the APE on dry land that formed the bank of the mill pond (see Figure 3.3).

Early records reveal that not much in the way of development occurred near the APE after the establishment of the U.S. Navy Yard on Wallabout Bay in 1801. The first building erected by the Navy was the Commander's Quarters and six brick structures for stores and materials in 1806. By 1827 (Figure 3.5), the Navy Yard was a first class yard north of the APE, which was situated on the former mill pond land that was dry at low tide and was bisected by a bridge. West (1941) indicated that two long timber sheds (buildings Nos. 15 and 16) were erected along the western edge of the yard along what would become Navy Street. However, maps from that period (Chapin 1833, 1834 [Figure 3.6] and 1835; Herbert & Tolford 1835 [see Figure 3.4]; Brooklyn Historical Society 1838 [Figure 3.7]) all show the APE as within a watery area crossed by a bridge, which dovetails with the location suggested by Hooker (1827; see Figure 3.5). The Navy may have used this area at high tide, when it would have been inundated, to season the

beams and planks of the wooden sailing ships, and once the conversion to steam power was completed this area was filled in.

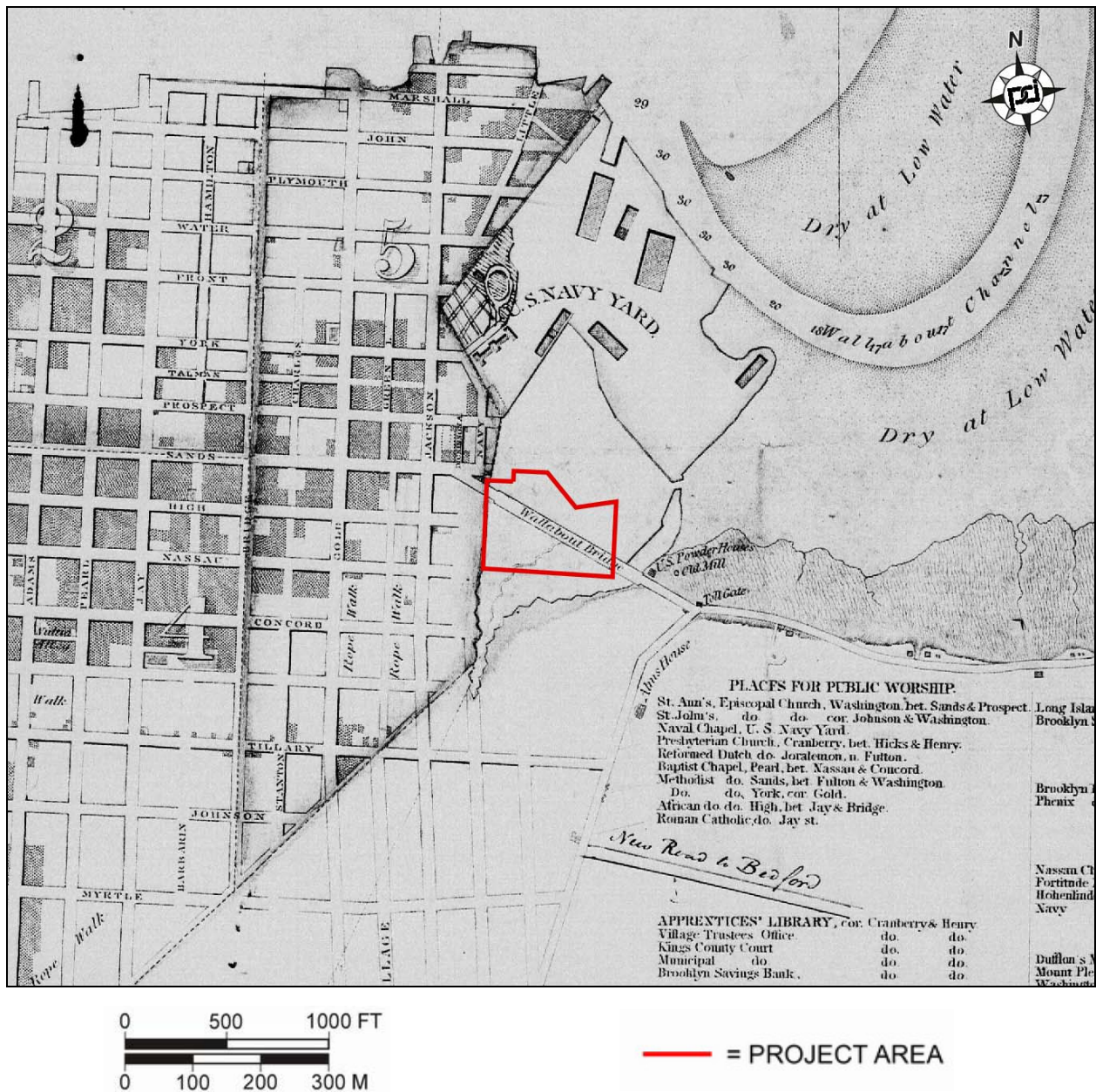


Figure 3.5. The approximate project area as rendered on Hooker's 1827 Plan of the Village of Brooklyn. Brooklyn Navy Yard, Kings County, New York.



Figure 3.6. The approximate project area shown in 1834. Note: the 1833 and 1835 maps by Chapin show the area within the APE exactly the same as depicted on this map. Brooklyn Navy Yard, Kings County, New York (*Chapin 1834*).

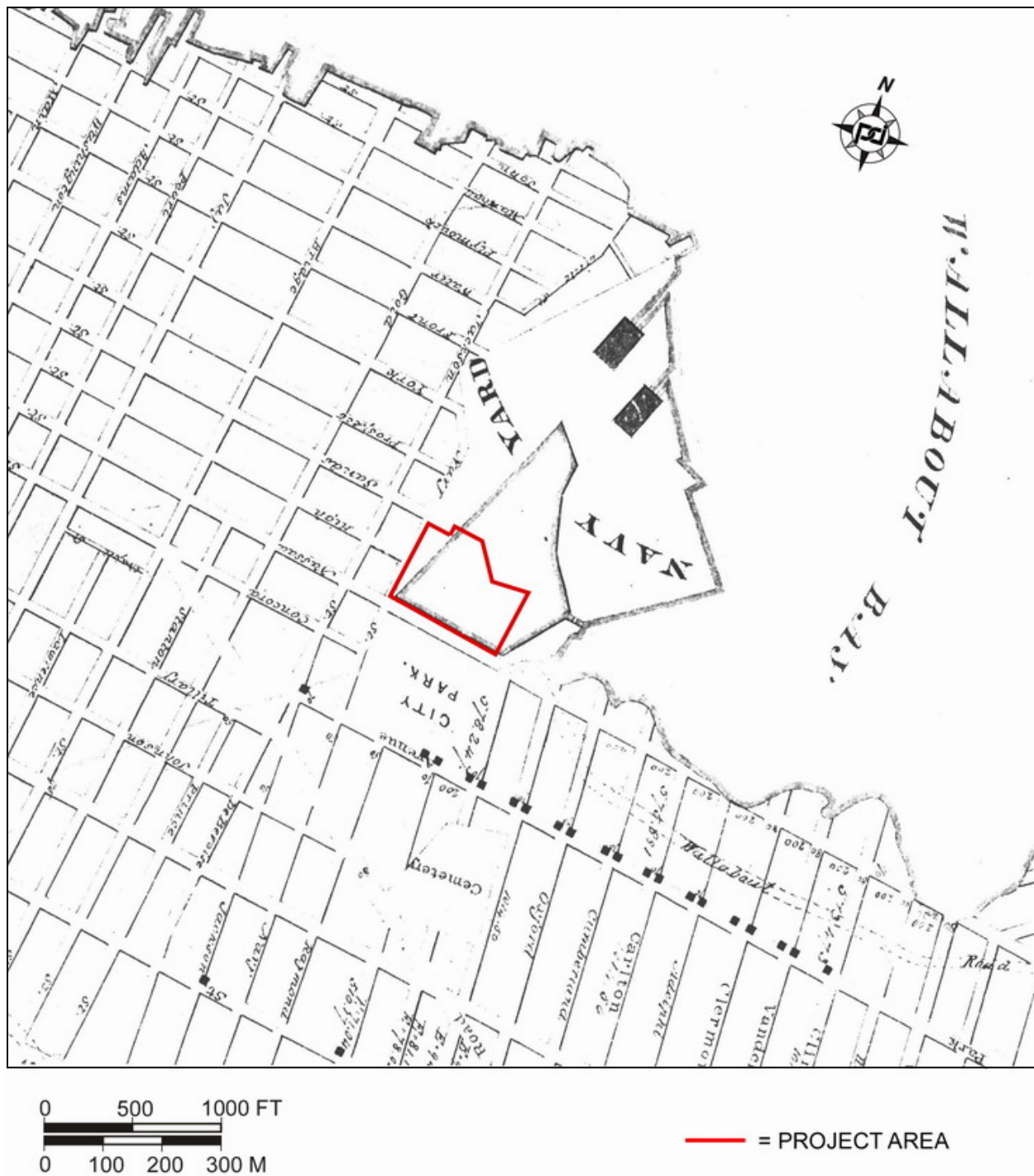


Figure 3.7. The approximate location of the project area in 1838. Brooklyn Navy Yard, Kings County, New York (Brooklyn Historical Society 1838).

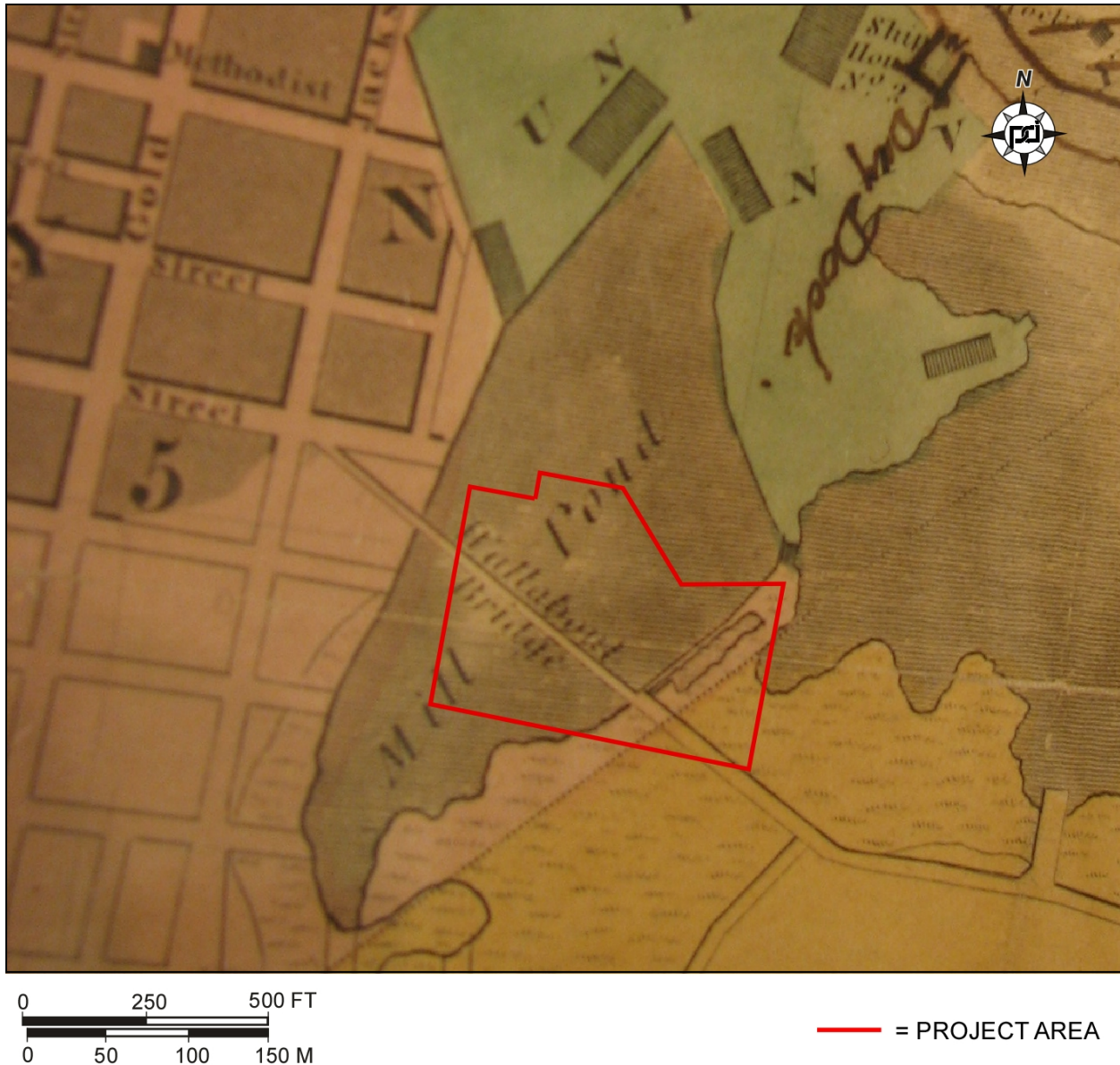


Figure 3.8. The approximate location of the project area in 1845. Brooklyn Navy Yard, Kings County, New York (Burr 1845).

Burr (1845; Figure 3.8) depicted what is now the project area as a mill pond crossed by a bridge, which seems more in keeping with the depictions of the APE in the mid-1830s, since the 1838 map (see Figure 3.7) showed that Navy Street had been laid out and present-day Flushing Avenue had been straightened and intersected what was earlier Nassau Street. The Burr map seems to depict the project area as it was earlier than 1838 and not what was in 1845. The first depiction of timber sheds Nos. 15 and 16 occurred in 1854 (Hayward 1854; Figure 3.9), with No. 16 extending nearly from Nassau Avenue (now Flushing Avenue) to Sands Street. The former mill pond/tidal flat may have been filled and the COB dock had been constructed in Wallabout Bay. The waterline of the bay still reached as far inland as what is now Flushing Avenue (see Figure 3.9).



Figure 3.9. The approximate location of the project area in 1854. Note the presence of the two timber sheds along Navy Street. Brooklyn Navy Yard, Kings County, New York (Hayward 1854).



Figure 3.10. The approximate location of the project area in 1864. Note: the 1869 Dripps map looks exactly the same as this map. Brooklyn Navy Yard, Kings County, New York (Dripps 1864).

By the 1860s, the Navy Yard was chockablock with structures and had expanded eastward into the area between the main construction-repair area on the west side of the Wallabout and the hospital on the east side (Figure 3.10). While marshy areas remained on the east side, structures had been erected along the north side of Flushing Avenue in areas that had either been marshy or tidal in the 1830s. These included the Marine Barracks and three residential structures within the APE, likely Quarters C, B and D erected prior to 1859 as indicated by Beardsley/Crawford & Stearns (2008). Dripps' 1869 map depicted the installation exactly the same as that rendered in Figure 3.10, although Quarters E, F and G (constructed in 1864) should have been represented on the 1869 map.

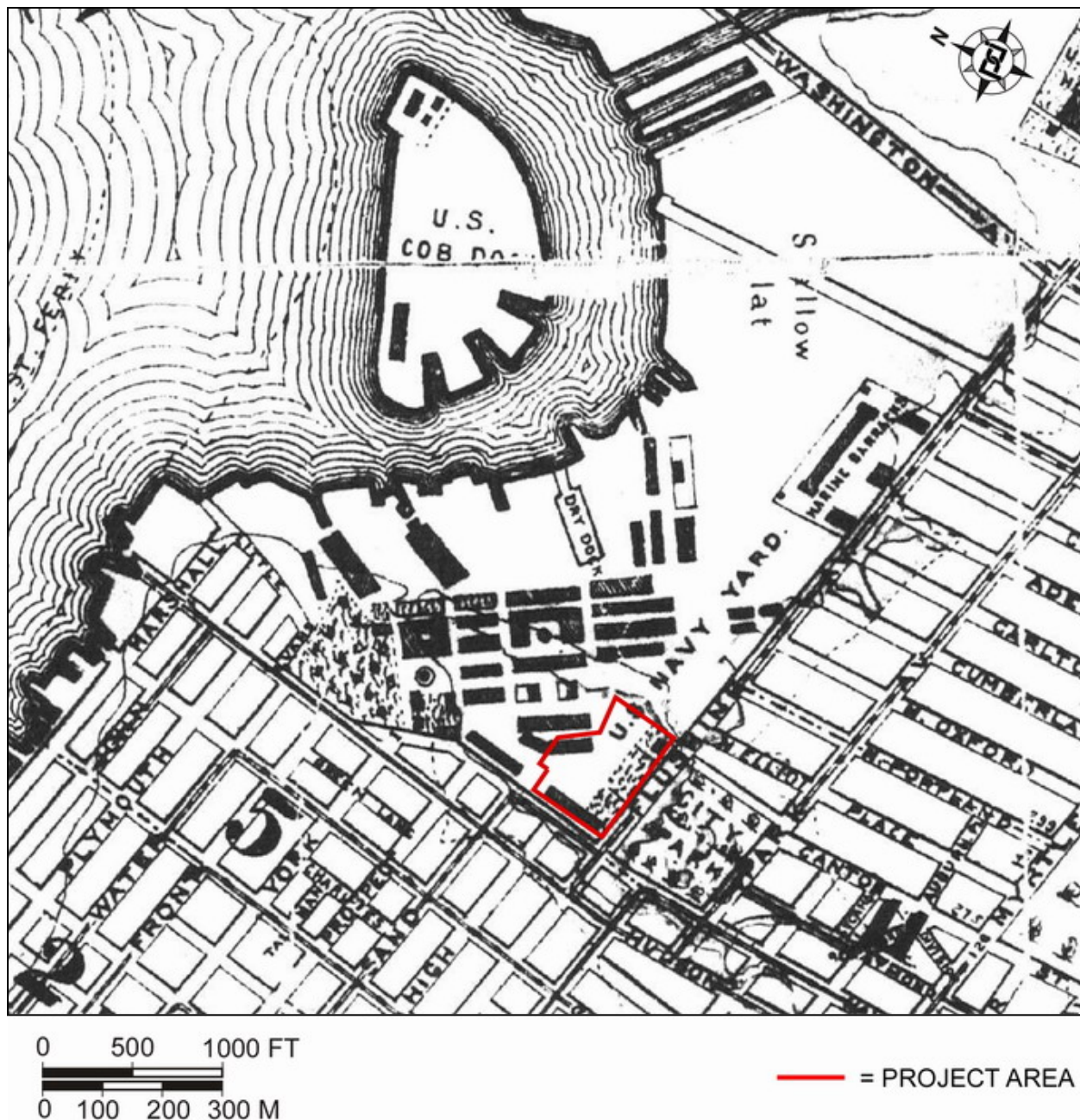


Figure 3.11. The approximate location of the project area in the late 1870s. The 1879 Dripps map (not reproduced here) renders the project area and Navy Yard exactly the same as this map. Brooklyn Navy Yard, Kings County, New York (*Brooklyn Historical Society 1876*).

Additional residential structures were erected in the project area between 1864 and 1900. These included Quarters E, F and G in 1864; Quarters H ca. 1880; Quarters I ca. late 1890s; and Quarters K and L ca. 1900, although there is disagreement regarding these dates (see Section 7.0 this report for a detailed discussion of these structures). Available maps did not clarify this issue. The maps dated to the 1870s (*Brooklyn Historical Society 1876* [Figure 3.11])

and Dripps 1879) illustrated only the timber shed and one structure within the project area as the installation had filled in more tidal areas and expanded into Wallabout Bay. In the 1880s (Sanborn 1886-1888 [Figure 3.12], the Navy Yard had dramatically created additional docking areas off the bay through extensive dredging of the now Wallabout channel.

By the beginning of the twentieth century, the ten present residential structures and the timber shed had been erected within the project area (Belcher Hyde 1904; Figure 3.13). Park Street was shown running behind the residences with a series of small sheds between the houses and the street. A bandstand had been erected in the green space north of Park Street. It is interesting to note that the timber shed as described in West (1941) and shown on the historical maps extended from Flushing Avenue north almost to the Sands Street gate. The structure currently in this location as shown in Figure 1.2 does not extend even half as far as the one depicted on historical maps.

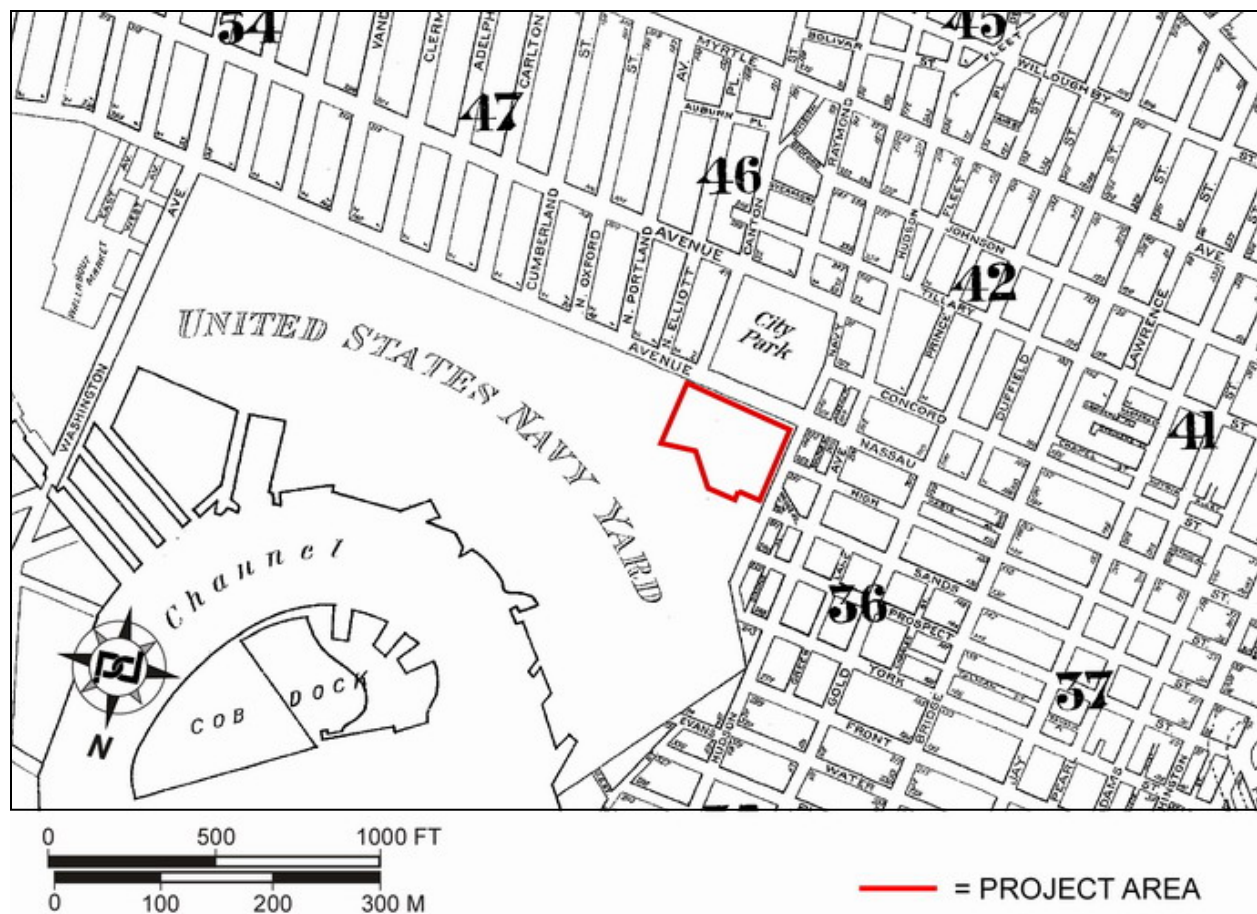


Figure 3.12. The outline of the U.S. Navy Yard and location of the project area on the Sanborn index map. Brooklyn Navy Yard, Kings County, New York (Sanborn 1886-1888).

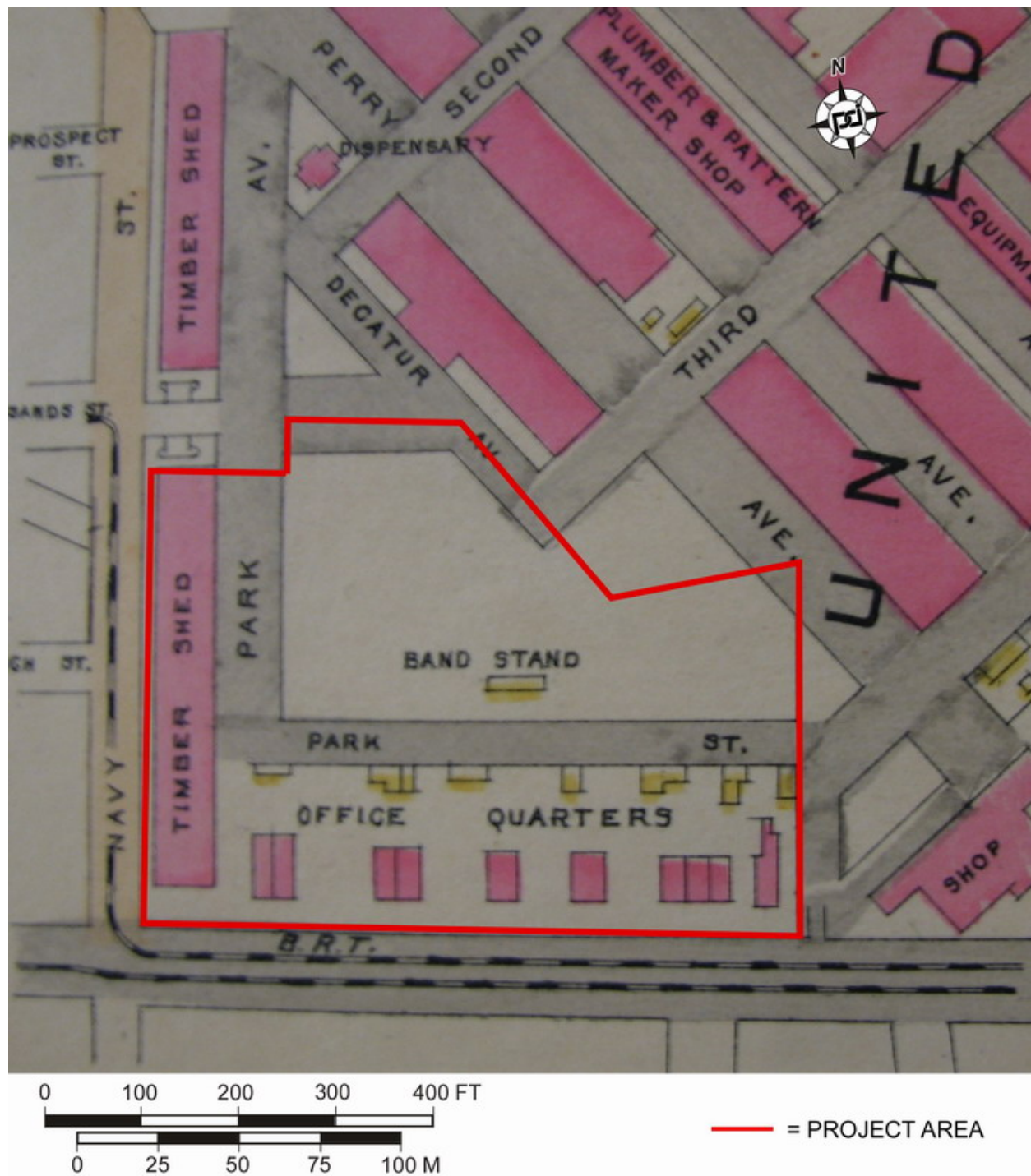


Figure 3.13. The location of the project area and structures and streets within it in 1904. Brooklyn Navy Yard, Kings County, New York (Belcher Hyde 1904).

4.0 Archaeology

4.1 ARCHAEOLOGY FIELD RECONNAISSANCE

The project area was divided analytically into four general study areas for the archaeological investigation (see Figure 4.1):

- the Admiral's Row properties (including extant Buildings B, C, D, E, F, G, H, I, K and L), adjacent yards and outbuildings;
- the Timber Shed (Building 16) including the associated lot to the north;
- the Parade Ground (including the open field, Building J, tennis courts); and
- existing streets (Park Avenue and Park Street).

Admiral's Row Study Area. This study area includes the lots/yards surrounding the extant buildings that comprise Admiral's Row (i.e., the ten former residences and associated outbuildings). This area is bounded on the north by Park Street; on the east by a chain-link fence along the Brooklyn Navy Yard Industrial Park; on the south by a chain-link fence along Flushing Avenue; and on the west by the Timber Shed (Building 16) study area (Figure 4.1). Review of historic maps indicates this area was submerged or tidal marsh until the middle of the nineteenth century when it was filled in just prior to the construction of the extant historic buildings (see Figures 3.1 through 3.8). This area is now fairly level but elevation gradually increases to the south along Flushing Avenue. The yards surrounding the historic structures are now mostly open and covered with vines (English ivy), some grass, deciduous trees (mature and saplings), and thinly scattered brush (Figures 4.2 through 4.7). Modern garbage including some hazardous materials (e.g., hypodermic needle, broken glass) was prevalent between the front of the former residences and Flushing Avenue. The locations of former outbuildings (i.e., outbuildings that are no longer extant) such as wells, privies and cisterns are likely in the adjacent yards of Buildings B, C, D, E, F, G, H, I, K and L. Some locations, however, might possibly be beneath, disturbed or destroyed by extant garage outbuildings built in the early twentieth century along the back of each house lot. No evidence of former outbuildings was observed during the pedestrian (i.e., walkover) survey (see Sections 7.0 and 10.0 for further discussion on the extant historic structures).

Timber Shed (Building 16) Study Area. This study area is bounded on the north by a fence along the Brooklyn Navy Yard Industrial Park (the New York Police Department Brooklyn Tow Pound; on the east by Park Avenue; on the south by a fence along Flushing Avenue; and on the west by the brick wall separating the project area from Navy Street (see Figure 4.1). The area is the historic location of the western shore of the mill pond (see Figures 3.3 through 3.7). This study area presently includes the timber shed and the open rectangular lot to the north. The timber shed previously spanned the length of the open lot but was reduced in size during the 1960s (see Section 6.0). The open lot north of the remaining part of the Timber Shed is approximately 50 cm (1.6 ft) higher ground than Park Avenue along its eastern side (Figure 4.8). Vegetation includes deciduous trees (mostly saplings), ivy, grass, and weeds (Figure 4.9). Modern garbage, debris (e.g., tires, empty 55-gallon drums), and rubble fill are common across the open lot (Figure 4.10). Large push-piles of rubble fill cover a roughly 25 by 75 ft (7.5 by 23 m) area just north of the Timber Shed (Figure 4.11).

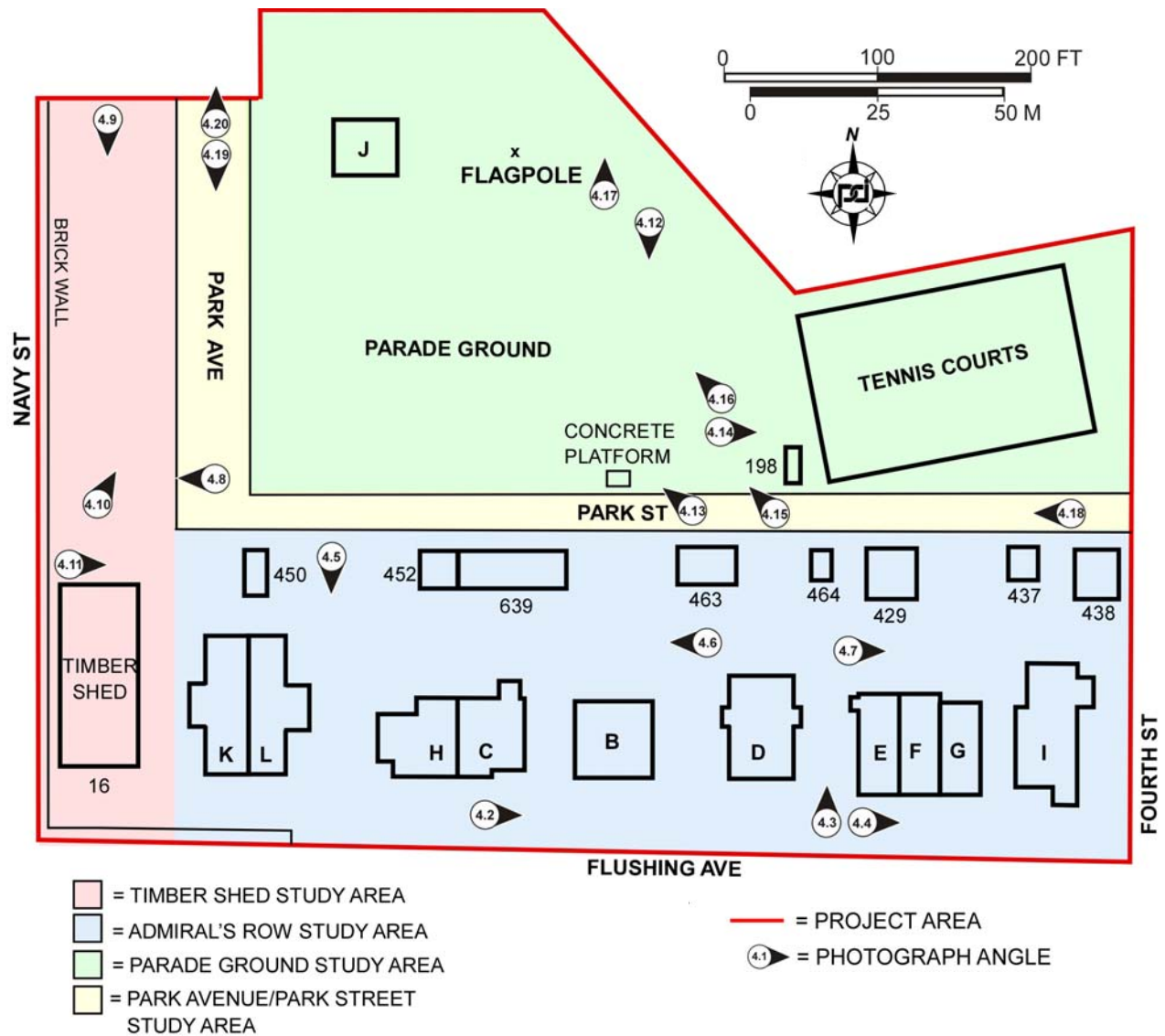


Figure 4.1. Photograph locations relative to buildings, structures and roads. Brooklyn Navy Yard, Kings County, New York.



Figure 4.2. A view of the front yards along the Admiral's Row buildings and Flushing Avenue, facing east. Brooklyn Navy Yard, Kings County, New York (PCI 2008).



Figure 4.3. View of a yard between Buildings D and E, facing north. Brooklyn Navy Yard, Kings County, New York (PCI 2008).



Figure 4.4. A view of the front yards of Buildings E, F and G, facing east. Brooklyn Navy Yard, Kings County, New York (PCI 2008).



Figure 4.5. View of a yard behind and between Buildings L and H, facing south-southeast. Brooklyn Navy Yard, Kings County, New York (PCI 2008).



Figure 4.6. A view of the back yard and covered walkway of Building B, facing west. Brooklyn Navy Yard, Kings County, New York (PCI 2008).



Figure 4.7. View of fallen branches and chain link fences in the yards behind Buildings E, F and G, facing east. Brooklyn Navy Yard, Kings County, New York (PCI 2008).



Figure 4.8. Higher ground across the open lot north of the Timber Shed, facing west. Brooklyn Navy Yard, Kings County, New York (PCI 2008).



Figure 4.9. Sparse vegetation and scattered trash across the open lot north of the Timber Shed, facing south. Brooklyn Navy Yard, Kings County, New York (PCI 2008).



Figure 4.10. Garbage and debris in the open lot north of the Timber Shed, facing northeast. Brooklyn Navy Yard, Kings County, New York (PCI 2008).



Figure 4.11. Rubble push-piles north of the Timber Shed, facing east. Brooklyn Navy Yard, Kings County, New York (PCI 2008).

Parade Ground Study Area. This study area includes the former parade ground of the Navy Yard. It is bounded on the north and east by a fence along the Brooklyn Navy Yard Industrial Park; on the south by Park Street; and on the west by Park Avenue (see Figure 4.1). This entire area was originally a tidal marsh that was converted for use as a mill pond through the first half of the nineteenth century (see Figures 3.1 through 3.7). It was filled and converted into a parade ground in the mid-nineteenth century. The area is currently an open lot with scattered trees and some brush (Figure 4.12). Two structural features that appear to be associated with this area's former use as a parade ground include a platform (building number unknown, Figure 4.13) along Park Street and a flagpole (Building 135). Other structures within this area include Building J, a tennis court (Building 710) and an associated wood frame shower room (Building 198) (see Sections 9.0 and 10.0 for photographs and further discussion on these extant structures). A sign on Building 198 stated hazardous PCBs are within or possibly adjacent to the structure (Figure 4.14). A modern monitoring well was observed west of Building 198 (Figure 4.15). Fill with brick and cement fragments was exposed on the ground surface in the southeast part of this study area (Figure 4.16). Modern garbage and mounds of lawn clippings were also seen throughout (Figure 4.17).

Park Avenue/Park Street Study Area. This study area includes portions of Park Avenue and Park Street that are located within the APE. This study area is asphalt paved but is in poor condition with numerous open gravel patches and a sinkhole (Figures 4.18 and 4.19). Park Street and most or all of Park Avenue were submerged or tidal marsh until the middle of the nineteenth century when it was filled in and the roads were constructed. The northern portion of Park Avenue is on or adjacent to the western shore of the map-documented mill pond. A sinkhole in the pavement was observed at this location. An original brick pavement is visible beneath the modern asphalt pavement (see Figure 4.20). Rubble-fill push piles are present along portions of Park Avenue (see Figure 4.19).



Figure 4.12. Saplings growing across the former Parade Ground, facing south. Brooklyn Navy Yard, Kings County, New York (PCI 2008).



Figure 4.13. A concrete platform along the south side of the former Parade Ground, facing north-northwest. Brooklyn Navy Yard, Kings County, New York (PCI 2008).

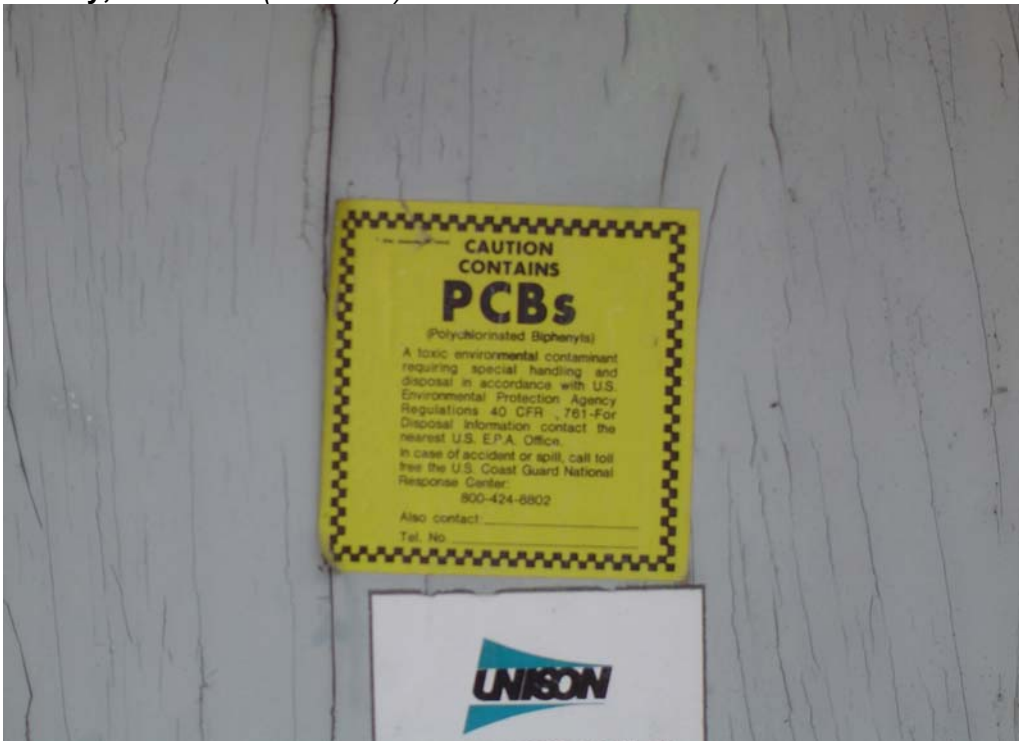


Figure 4.14. Sign warning of the presence of PCBs on the west side of Building 198, facing east. Brooklyn Navy Yard, Kings County, New York (PCI 2008).



Figure 4.15. View of a monitoring well in the former Parade Ground, west of Building 198, facing down. Brooklyn Navy Yard, Kings County, New York (PCI 2008).



Figure 4.16. Exposed fill in the former Parade Ground, facing down. Brooklyn Navy Yard, Kings County, New York (PCI 2008).



Figure 4.17. Modern garbage scattered across the former Parade Ground, facing north. Brooklyn Navy Yard, Kings County, New York (PCI 2008).



Figure 4.18. A view along Park Street, facing west. Brooklyn Navy Yard, Kings County, New York (PCI 2008).



Figure 4.19. A view along Park Avenue showing fill piles along its eastern side, facing south. Brooklyn Navy Yard, Kings County, New York (PCI 2008).



Figure 4.20. A sinkhole at the north end of Park Avenue exposing part of a former brick pavement, facing north. Brooklyn Navy Yard, Kings County, New York (PCI 2008).

4.2 GEOMORPHOLOGY¹

Soils and landforms of the project area at the Brooklyn Navy Yard are a function of Pleistocene glacial activity, sea level, and human alteration beginning at the end of the eighteenth century. The terminal moraine of the Late Wisconsin glacial advance makes up the landform on which the project area is located. After glacial retreat soils developed in glacial sediments and tidal marshes formed on the margins of Wallabout Bay. Development of the Navy Yard resulted in the filling of tidal marshes and the creation and later filling of Wallabout Pond at the site of the current project.

The project area is located in the Embayed section of the Atlantic Coastal Plain province which is characterized by a generally flat and low elevation land surface that slopes to sea (Rogers 2000). Mean annual temperature (La Guardia Airport) is 12.8° Celsius (55.1° F) with 112.7 cm (44.4 in) of precipitation spread evenly throughout the year (NOAA 2002).

The underlying geology of the area consists of poorly consolidated sediments deposited during periods of marine transgression. The Raritan Formation underlies the Mogathy Formation. Both are Late Cretaceous in age and made up of sand, clay, and gravels deposited in coastal and nearshore marine environments. Gardeners Clay was likely deposited during a period of high sea stand during the Pleistocene and unconformably overlies the Mogathy Formation. Gardners Clay is present across Kings County with the exception of an area along the East River from which it may have been eroded prior to deposition of glacial sediments (deLaguna 1948; Suter et al. 1949; USGS 2003).

Surficial geology consists of unconsolidated glacial sediments. Multiple episodes of glacial advance and retreat marked the Pleistocene. These glacial movements scoured the landscape, transporting and redepositing sediments. During the last glacial maximum, approximately 20,000 years before present, the Hudson-Champlain Lobe of the Laurentide Ice Sheet reached its southernmost extent and upon subsequent retreat left the Harbor Hill terminal moraine. The Harbor Hill Moraine forms an east-west ridge with its highest elevation south of the Brooklyn Navy Yard project area (Cadwell 2000; USGS 2003). Well boring logs from Kings County show that glacial sediments, including Late Wisconsin deposits and those from earlier advances, reach as much as 200 feet (61 m) in thickness and consist of unstratified sands, gravels, boulders and fines (deLaguna 1948; Suter et al. 1949).

Mapped soils in the project area reflect the natural and cultural processes that have formed the site. The recently completed New York City Reconnaissance Soil Survey (New York City Soil Survey Staff 2005) identifies soils in the project area as:

- *Pavement & buildings, wet substratum-Laguardia-Ebbets complex, 0 to 8 percent slopes*: Nearly level to gently sloping urbanized areas filled with a mixture of natural soil materials and construction debris over swamp, tidal marsh, or water; a mixture of anthropogenic soils which vary in coarse fragment content, with 50 to 80 percent of the surface covered by impervious pavement and buildings.

¹ This section was researched and written by Dr. John Wah.

Both the Ebbets Series and Laguardia Series are described as greater than 40 inches (101 cm) of fill with construction debris. A typical Ebbets Series soil has from 10 to 34 percent coarse fragments while Laguardia has from 35 to 75 percent coarse fragments. Both series are described as having a cambic (Bw) horizon formed in the fill. Recent test borings performed within the Navy Yard found nineteenth and twentieth century fill to extend to a depth of no less than 7.5 feet (2.3 m) in one area and to greater than 12 feet (3.6 m) in another. Neither buried organic soils nor thick, dark surface horizons typical of tidal marshes and soils formed in saturated, anaerobic settings were described in any of the borings (Geismar and Oberon 1995, 1996).

Historical maps of Brooklyn are abundant and document the alterations to the landscape in the shift from an early undeveloped environment to the modern setting. A 1767 map (see Figure 3.1) shows Wallabout Bay prior to its adoption as the U.S. Navy Yard. The project area is located within tidal marshes with a winding drainageway at the southwestern corner of the bay. Most of the project area, however, is already at least minimally altered by the construction of Ramsen's mill dam and flooding by the mill pond. By 1827 (see Figure 3.4), the west side of Wallabout Bay has become the U.S. Navy Yard with constructed Wallabout Pond covering most of the project area with the exception of the northwestern edge. Wallabout Pond was filled by 1854 and a long building identified as a "wood shed" (i.e., Building 16, the Timber Shed) occupies the western edge of the project area (see Figure 3.8).

5.0 Architectural Investigation

The Phase IA architectural investigation included a field reconnaissance to identify and document historic resources in the project area (see Figure 1.2). Buildings, structures and other landscape features were recorded and photographed. Historic maps were field checked to assess changes in the project area and to identify any resources that are no longer extant.

Information from previous cultural resource and historic building reports is included to present a comprehensive summary of the overall project area. Additional archival research was conducted to locate historic maps and photographs, and other primary and secondary sources with site specific information. Repositories visited for specific historic architectural research included the New York State Historic Preservation Office, the New York City Landmarks Preservation Commission, The National Archives and Records Administration—Northeast Region (New York City), The Brooklyn Navy Yard Development Corporation (BNYDC) Archives, the Brooklyn Historical Society, the Brooklyn Public Library, the New York Historical Society, and the New York Public Library.

One of the primary research questions for the Phase IA architectural investigation involved further assessment and background research of the Timber Shed (Brick Barn or Building 16) at the western end of Admiral's Row as per NYSHPO request (see Appendix A: Cumming 2007). The question of the Timber Shed's historic significance was first raised in the report by Beardsley/Crawford & Stearns (2008). Additional information on the existing Timber Shed/Brick Barn building was obtained as part of this study to determine if the structure is potentially eligible for inclusion on the State/National Register of Historic Places (see Section 6.0).

One of the required tasks listed in the project scope of work (USACE 2008:5) entailed an investigation to determine if the nineteenth century architect, Thomas U. Walter (1804-1887), was involved with the design/construction of any of the structures within the project area. Subsequent correspondence¹ with national repositories with holdings associated with Walter (i.e., The Athenæum of Philadelphia and The Architect of the Capitol, Washington D.C.) found no evidence linking Walter with the Officers' Quarters in Admiral's Row (see Appendix A: Lavery 2008; Wolanin 2008). Available documentation shows that Walter was involved in the Marine's Barracks, but no further documentation linking Walter to any buildings at BNY was located.

The Walter collection at the Athenaeum of Philadelphia houses 46 boxes containing diaries, ledgers, letter books, and account books from 1833 to about 1900. These documents meticulously record Walter's career as a self-employed businessman and architect. The Athenaeum is considered the primary repository of Thomas U. Walter archival material with its collection of over 500 of his architectural drawings and 150 photographs. Bruce Lavery, Gladys Brooks Curator of Architecture at the Athenaeum, has conducted extensive research of Walter's early career. To date, he is not aware of any building at the BNY designed by Walter prior to 1851. According to Lavery, there is no evidence in the Athenaeum collection of buildings at the BNY designed by Walter after 1851 with the sole exception of the Marine Commandant's House, Barracks and Officers Quarters designed in 1857-1858 (see Appendix A: Lavery 2008). The Athenaeum has a large drawing of these buildings as well as manuscript documentation of

¹ This correspondence post-dated the completion of the Beardsley/Crawford & Stearns report (January 2008).

the same. Further, Lavery reviewed photographs from the early 1900s of the Officers' Quarters on Admiral's Row and believes that none of the buildings were designs from any period of Walter's career.

The records of the Architect of the Capitol, include almost 1,500 drawings created between 1850 and 1865 under Walter, who was appointed the fourth Architect of the Capitol (see Appendix A: Wolanin 2008). His most famous construction is the dome of the U.S. Capitol. When Walter resigned in 1865 (over a contract dispute), he took leading drawings with the expectation of his return. The Architect purchased almost 600 of these drawings in 1908 and 1910 from Walter's daughters. A small number of other documents were transferred later by the Library of Congress. The bulk of Walter's drawings, reported at about 900 in number, apparently remained in the Capitol with the rest of the Capital Extension and New Dome textual records.

Among the Walter drawings in the Capitol collection are the 1858 "Plans of Marine Barracks at Brooklyn NY" that detail the grounds and building plans for the Marine Commandant's house, Officers Quarters, Barracks and Entrance Gate. According to Barbara Wolanin, Curator, The Architect of the Capitol, there are no known drawings in the records of the Architect of the Capitol of any other buildings in Brooklyn designed by Thomas U. Walter (see Appendix A: Wolanin 2008).

Beardsley Design Associates and Crawford & Stearns completed an Assessment of Admiral's Row in 2007 (Beardsley/Crawford & Stearns 2008 [Final]). The New York State Historic Preservation Office (NYSHPO) commented on the draft report dated November 12, 2007 (included in Appendix A: Cumming 2007). NYSHPO acknowledged Beardsley/Crawford & Stearns' comprehensive analysis of the historic structures and their condition and concurred with the recommendation that the buildings at Admiral's Row (B, C, D, E, F, G, H, I, K and L) remain eligible for listing in the State and National Registers of Historic Places.² NYSHPO further concurred that these buildings contribute to a National Register-eligible district. NYSHPO also concurred that the buildings are eligible under Criteria A, B, C and D and are of national significance, singling out Buildings B and D as being of exceptional significance due to their reported attribution to architect Thomas U. Walter. As noted above, further inquiry after the submission of the NYSHPO review of the report confirmed Walter's association with the BNY only to the Marines Barracks. Even though it does not appear that Walter designed any structure within the APE, the Admiral's Row still remains eligible for listing in the NRHP under all four criteria.

NYSHPO also concurred with the findings of the Beardsley/Crawford & Stearns report regarding the superstructures of the masonry buildings which "appear to be sound, level and plumb, showing areas of framing failures and masonry distress."³ NYSHPO acknowledged the buildings appeared to be in better condition than previously ascertained. However, Buildings C and F exhibit more severe structural concerns and the late twentieth century additions and the later twentieth century additions on all of the buildings "are not likely salvageable due to major structural distress and failures" (Cumming 2007).

The Historic American Buildings Survey (HABS) of Admiral's Row (CRCG 2005) and the Beardsley/Crawford & Stearns report (2008) provided ample documentation of the Officers'

² See Item No. 2 of NYSHPO letter dated December 17, 2007, Appendix A.

³ See Item No. 3 of NYSHPO letter dated December 17, 2007, Appendix A.

Quarters on Admiral's Row. As such, the present Phase IA report is limited to a brief description and summary of each Officer's Quarters along with current photographs and historic photographs dating from the first half of the twentieth century. In some instances, plans and elevations supplement the section. This report also documents the associated garages at Admiral's Row, which were previously determined not NR-eligible (see Section 7.0). These resources should be reevaluated for their potential as contributing elements to the historic district. Further, there are other elements (i.e., landscape features and other miscellaneous facilities (see Sections 8.0, 9.0 and 10.0) in the project area associated with the residential and recreational history of Admiral's Row.

Previous historic building investigations of Admiral's Row. Several studies of Admiral's Row have been conducted, which have reported conflicting construction dates for Quarters B, D, C, H (Table 5.1). Construction dates for the officers' houses originally reported by West in 1941 have served as the generally accepted dates (Roberta Washington Architects, PC 1995) until 2005 when additional archival research and field inspection of the buildings was conducted as part of HABS Level II documentation (CRCG 2005). The HABS included a history and description of the officers' houses as well as 35 large format images of the ten buildings' principal exteriors, interiors and details. Additional documentation included five black and white drawings of the subject property. The Timber Shed was not documented in the HABS. Note the Timber Shed is not historically associated with the row of officers quarters referred to as Admiral's Row.

Table 5.1. Reported dates of construction of buildings in Admiral's Row.

Report	E, F / G	B	D	C / H	I	K / L	Timber Shed
West [1941]	1864	1872	1873	1881	1899	1901	1833
BNY appraisal by Sanders A. Kahn Assoc. [1966]	1864	1872	1873	1881	1889	1901	1833
Roberta Washington Architects [1995]	1864	1872	1873	1881	1899	1901	Not in study
CRCG [2005]	1864	ca. 1870	pre-1872	ca. 1870	ca. 1899	ca. 1900	Not in study
Beardsley/Crawford & Stearns [2008]	1864	ca. pre-1859	ca. pre-1859; possibly as early as 1840s	C pre-1859; H ca. 1880	ca. late 1890s	ca. 1900	1838

The CRCG report (2005:5) referenced building specifications from June 1863 by the Construction Engineer. The specifications noted proposed houses (Quarters E, F, and G) were to be located east "of the present officers' houses on Flushing Avenue" (U.S. Navy Yard 1863:3). The construction date of 1864 for Quarters E, F and G is supported by the referenced specifications. The Beardsley/Crawford & Stearns report (2008) is the first to suggest a pre-1859 construction date for Quarters B, D and C based on traditional military enumeration of officer quarters in sequential chronological order with the lowest number or letter representing the oldest structure; as evidenced at BNY with Quarters "A" (not located in APE), the oldest of the BNY officer quarters (Beardsley/Crawford & Stearns 2008:3). Beardsley/Crawford & Stearns further supported their estimated construction dates for Admiral's Row with building observations and review of historic maps. Based on additional field investigation, historical map review, and archival research conducted for the Phase IA investigations, the Beardsley/Crawford

& Stearns circa construction dates for the officers' quarters in Admiral's Row (Table 5.1) appear to be the most accurate to date.⁴

The following facilities/structures were previously evaluated by NYSHPO in 1982 for their significance in accordance with the criteria of the State Register of Historic Places (SR)⁵. NYSHPO determined the following buildings as not eligible for listing on the SR: Buildings J, 135, 148 (sic [198])⁶, 429, 432⁷, 433, 434, 435, 436, 438, 450, 452, 453, 463, and 464 (NYSHPO 1986). At that time, these buildings were considered "either not old enough to meet the 50 year cut off or they lacked architectural or historic significance" (NYSHPO 1986). Most of the buildings listed below were constructed in 1919 as detached garages with access from Park Street (Roberta Washington Architects, PC 1995:Schedule A-Supplement to Report of Excess Real Property). Most of the nine garages are attached and share one common party wall. The garages are constructed of concrete block with frame roof structures that are pitched or sloped. In 1995, the garage roofs were observed as leaking due to neglect and lack of maintenance and repair (Roberta Washington Architects, PC 1995:148).

The Phase IA investigation reviewed the existing information presented in the Beardsley/Crawford & Stearns report (2008) for the Timber Shed and conducted a more extensive review of historic maps of BNY and plans on file at the BNYDC Archives. Based on review of these materials, it appears the construction of the Timber Sheds post-date the accepted 1833 date originally supplied by West (1941). Results of the research and analysis conducted as part of this Phase IA architectural investigation suggests a circa 1853 as an estimated date of construction for the extant Timber Shed (see following section for discussion of the Timber Sheds).

⁴ A preliminary inquiry of the Congressional Reports in the United States Congressional Serial Set, 1817-1980 electronic database accessed at the Science Industry and Business Library, New York Public Library did not locate specific information on the officer's quarters in Admiral's Row or about the Timber Shed. (The online version of the Congressional Serial Set is not as yet complete.) Additional research of the records of the U.S. Naval Museum, Washington, D.C. and the National Archives and Records Administration might possibly substantiate or disprove the pre-1859 dates. Relevant records include Annual Reports of Secretary of the Navy, Report of the Commission on Navy Yards, as well as vertical files at the Navy Museum.

⁵ The 1982 Excess Real Property forms are included in the Appendix of the Supplementary Report prepared by Roberta Washington Architects, PC (2005).

⁶ The building identified as No. 148 appears to have been a typographical error, as there is no such building number identified on the Naval Facilities Engineering Command Excess Real Property List dated 28 April 1982 or plans of the project area. The correct building number appears to be Building No. 198, the Shower Room.

⁷ Buildings 432 and 433 were not identified during the Phase IA field investigation, on the Excess Real Property List or plans of the project area.

6.0 Timber Shed

The Timber Shed (Building 16)¹ occupies the southwest corner of the former Brooklyn Navy Yard (BNY) and abuts the western edge of the area of the Yard known as Admiral's Row, a row of masonry senior naval officers' quarters (Figures 6.1 and 6.2). The building was one of several timber sheds constructed in the nineteenth century at BNY for timber storage in order to support the installation's primary mission of shipbuilding (Figure 6.3). The long rectangular brick and heavy timber frame building fronts Flushing Avenue and parallels Navy Street northward to just south of Park Street. A tall brick wall with decorative iron fencing encloses the timber shed along the street frontages. The brick wall extends east along Flushing Avenue to the east side of Quarters K-L, the westernmost officers' quarters on Admiral's Row.

In October 1986, NYSHPO determined Building 16 (the Timber Shed) and 14 other buildings² in the Admiral's Row section of the BNY not eligible for listing in the State Register (NYSHPO 1986). In 2007, Beardsley/ Crawford & Stearns field inspected and photographed the existing condition of the timber shed was (Beardsley/Crawford & Stearns 2008:183-191). Though not initially within the purview of their study area, Beardsley/Crawford & Stearns recognized the historical significance of the Timber Shed and included it in their report because of its "proximity to and as part of Admiral's Row and its historical relationship to Admiral's Row" (Beardsley/Crawford & Stearns 2008:183 [1]).³ Beardsley/Crawford & Stearns concluded, "The primary design features (site, site features, and siting; building style, plan, detailing, features, and construction) of the 1838 [sic] 'Timber Shed' as part of Admiral's Row remain in place with some twentieth century alterations to the building. Deterioration has occurred in the side brick walls and where the roof has failed" (Beardsley/Crawford & Stearns 2008:184).⁴

6.1 PHASE IA ARCHITECTURAL INVESTIGATION

The Phase IA architectural field investigation and review of historical maps and historic photographs of BNY confirmed the Timber Shed in its current condition survives as only a small section, the southernmost portion, of a much larger building. Physical evidence of the demolished section in the north elevation of the timber shed is not readily apparent from the exterior of the building due to the asbestos shingle sheathing, dense vegetation, and scattered debris. Close visual inspection of the interior of the north wall revealed the existing north wall was added in the mid-twentieth century. The original timber shed had an approximate length of 400 feet or approximately two city blocks.

¹ This discussion refers to the building known as the "Timber Shed", "Stable," "Barn", or "Building 16" as "Timber Shed," as per its original use.

² These buildings included J, 135, 198, 429, 432, 433, 434, 435, 438, 450, 452, 453, 463 and 466.

³ The original dimensions of the timber shed were not identified, although the report referenced two "long" Timber Sheds in their historical map review of the BNY. The caption accompanying the 1859 bird's-eye view said of the existing Timber Shed: "the lower one remains in place at the end of Admiral's Row" (Beardsley/Crawford & Stearns 2008:11). In their discussion of the historic integrity of the Timber Shed, the authors described the Timber Shed as a "long brick building" (Beardsley/Crawford & Stearns 2008:183).

⁴ This historic integrity assessment of the Timber Shed did not take into account that the present Timber Shed represents roughly only a third of its original length. Examination of the 1900 plan of BNY, current aerial photographs and a sketch map of Admiral's Row provided in their report clearly indicates only the southern portion of the original Timber Shed is extant (Beardsley/Crawford & Stearns 2008:12-13).



Figure 6.1. East elevation of Building 16 (Timber Shed) from Park Street, ca. 1925. Note the extant southern portion of the building is not captured in this photograph. Original caption: “Repairs to Roof of Bldg. 16 view looking west,” January 10, 1925. (New York Navy Yard: 1900-1945; Record Group 181-B; NARA—Northeast Region (NYC). Figure F16 C1. Reproduced courtesy of BNYDC Archives.)



Figure 6.2. East elevation of Building 16 (Timber Shed) facing southwest from north end of building. “Outside of Building 16,” January 8, 1920. (*New York Navy Yard: 1900-1945; Record Group 181-B; NARA—Northeast Region (NYC). Figure F16 N10.*)



Figure 6.3. Building 15, the northern timber shed, facing northwest. Note: 1) shadow of Sands Street Gate tower on side of building at left and 2) brick-lined Park Avenue, which reveal the sloping terrain toward Wallabout Bay. “New Roof Cover,” November 2, 1914. (New York Navy Yard: 1900-1945; Record Group 181-B; NARA—Northeast Region (NYC). Figure F15 N1.)

BNY historian James H. West attributed a construction date of 1833⁵ for the Timber Shed, which he reported as constructed as one of a pair with the second shed located to the north of the existing building (West 1941:25). West noted that “[w]ith the exception of the Commandant’s quarters the two oldest buildings now standing in the Navy Yard are buildings Nos. 15 and 16, which are the timber sheds” (West 1941:25). The northern shed (Building 15) was demolished (date unknown). West (1941:25) reported Building Nos. 15 and 16 (timber sheds) were erected in 1833 along what is now Sands Street: Building No. 15⁶ stood north of where the Sands Street gate now is and building No. 16 was south of that gate and “extended practically to Flushing Avenue” within what was part of the original purchase of 41.93 acres (West 1941:25). Historic maps dating from 1833-1835 documented structures within BNY show there are no structures depicted in the locations of the timber sheds (Chapin 1833, 1834, 1835 [see Figure 3.3]). An 1851 “*Bird’s eye view of New-York & Brooklyn*”⁷ shows long rectangular buildings at BNY. (Note: author acknowledges inherent artistic license and lack of scale of nineteenth century bird’s eye views.) These buildings do not appear to be in the same location as Buildings 15 and 16 nor do they share the same general north-south orientation. Two timber sheds along Navy Street, in the footprints of Buildings 15 and 16, were first documented on Hayward’s 1854 *Map of the Consolidated City of Brooklyn* (see Figure 3.8).

One of the earliest plans of the Timber Shed (with no title block) on file at the BNYDC archives has a notation stating “Plan of the Timber Sheds at the U.S. Navy Yard New York to be erected under the appropriations of 1830–1831” (Figure 6.5). This early date cannot be substantiated by the historic map sequence of the period (see Section 3.4), which documents a mill pond and the Wallabout Bay shoreline in the area surrounding the location of the timber sheds along Navy Street prior to the filling in of the southwest corner of BNY known as Admiral’s Row. (For further discussion on the historic shoreline of Wallabout Bay see Section 3.0 and Figure 11.1 for historic shoreline locations.) An incomplete notation⁸ on the same plan (see Figure 6.5) reveals a date of 1853. Another plan, “*Plan & Elevations of Timber Shed, 1854*” (Plan No. F16 S1 [Figure 6.4]) offers more detail for a timber shed building with architectural and stylistic elements that are reflected in the extant Timber Shed. Both of the nineteenth century plans lack any construction detail so it is unknown if these are “as built” drawings, which suggests they were more than likely drafted as standard plans; a common practice at military installations.

A circa date of 1853 for the existing Timber Shed is suggested based on 1) the existence of a mill pond in 1833 in the general area of the timber shed; 2) the history of the filling in of Wallabout Bay, which post-dated 1833; 3) the 1854 timber shed plan and elevations; and 4) first documentation of the Timber Shed on Hayward’s 1854 *Map of the Consolidated City of Brooklyn*. The date of demolition for the northern section of the timber shed is between 1963 and 1966. A 1963 map, *N.Y. Naval Shipyard Showing Conditions on January 1, 1963* (Drawing No. F569-S264), shows the Timber Shed at its full length. An aerial photograph of BNY dating from the mid-1960s provided in the installation’s 1966 appraisal shows only the extant southern section of the building (Sanders 1966).

⁵ West’s construction date of 1833 has been the generally accepted date for the Timber Shed.

⁶ In 1937 and 1938, two new lumber storage buildings (Building Nos. 238 and 239) were erected to replace the spaces in Building No. 15 which had been removed in order to permit an extension of both Building No. 200 and Building No. 4 (West 1941:37). Building 200 connected to the Romanesque-inspired Sands Street Gate House (built 1895; extant).

⁷ New York : Published by A. Guerber & Co., c 1851 (Printed by J. Bachman[n])

⁸ Original copy of plan is damaged so full notation is partially missing.

6.2 DESCRIPTION

The “Timber Shed” is a long brick, common bond masonry building with heavy timber frame post and beam construction and features a gable roof with clerestory, which was originally designed to extend the full length of the building. The building was constructed for timber storage related to ship construction in the mid-nineteenth century. Presently only 103 ft (31.4 m) long, the 60-ft- (18.2-m) wide and 33-ft- (10-m) tall building originally extended to a length of 400 ft (122 m). The building has a piled stone foundation. The roof was originally sheathed with slate roofing tiles. Clerestory windows are paired six-over-six double hung wood sash. Current photographs of the Timber shed are provided at the end of this section (for exterior see Figures 6.22 through 6.42; for interior see Figures 6.43 through 6.53).

The following plans and elevations for a timber shed date from the nineteenth century (Figures 6.4 to 6.7). These plans more than likely represent a standard form for timber sheds as there are no notes on the plans that indicate if these were as-built drawings. The main floor of the south elevation (or façade) has two round arch entry bays in the side bays and two window openings with granite lintels and sills in the central bays. The attic level has two round arch window openings. Original heavy plank double-leaf doors remains in place in the west entry bay of the south elevation while the eastern entry bay has been modified to include a single door in the center of the opening. Similar plank doors or shutters are found on the attic level openings.

The east elevation of the Timber Shed fronts Park Avenue. A combination of arcuated and trabeated openings (a total of 23) originally punctuated the east wall. Fenestration included a series of 12 alternating round arch entry bays and 11 six-over-six double hung wood sash windows with granite sills and lintels. The entry bays were accented by granite tabs and capped by arched drip stones. Presently, only four round arch bays and four window openings remain on the east elevation. Three of the round arch bays and three of the window openings have been filled in with brick. No original hardware remains on any of the openings on the east wall.

The west elevation of the Timber shed is not visible from the street due to its proximity along the perimeter brick wall on Navy Street, an area less than 10 feet (3 m) wide. Unlike the east elevation, the west wall features a series of window openings with a heavy iron hardware set, pivoted wooden shutter and relieving arch that extend the length of the building. The west elevation also has a raised granite foundation with water table. The lack of entry bays along the west wall suggests the design for the building was restricted by its confined location along the brick wall and the western edge of BNY.

The interior is open space with two rows of large timber posts supporting a series of huge timber girts with diagonal bracing. The chamfered timber posts are 12"x12". Narrow brick buttresses line the interior walls (Figures 6.8 to 6.11). Note the interior of the attic level was not accessed during the Phase IA field investigation due to safety concerns regarding the existing condition of the building's roof. Historic photographs from the early twentieth century captured workers or “the timber gang” and the method of lumber storage within the shed as well as outdoor stockpiling (Figures 6.12 to 6.15). A plank runway along the eastern bay provided access to the storage bays of the building.

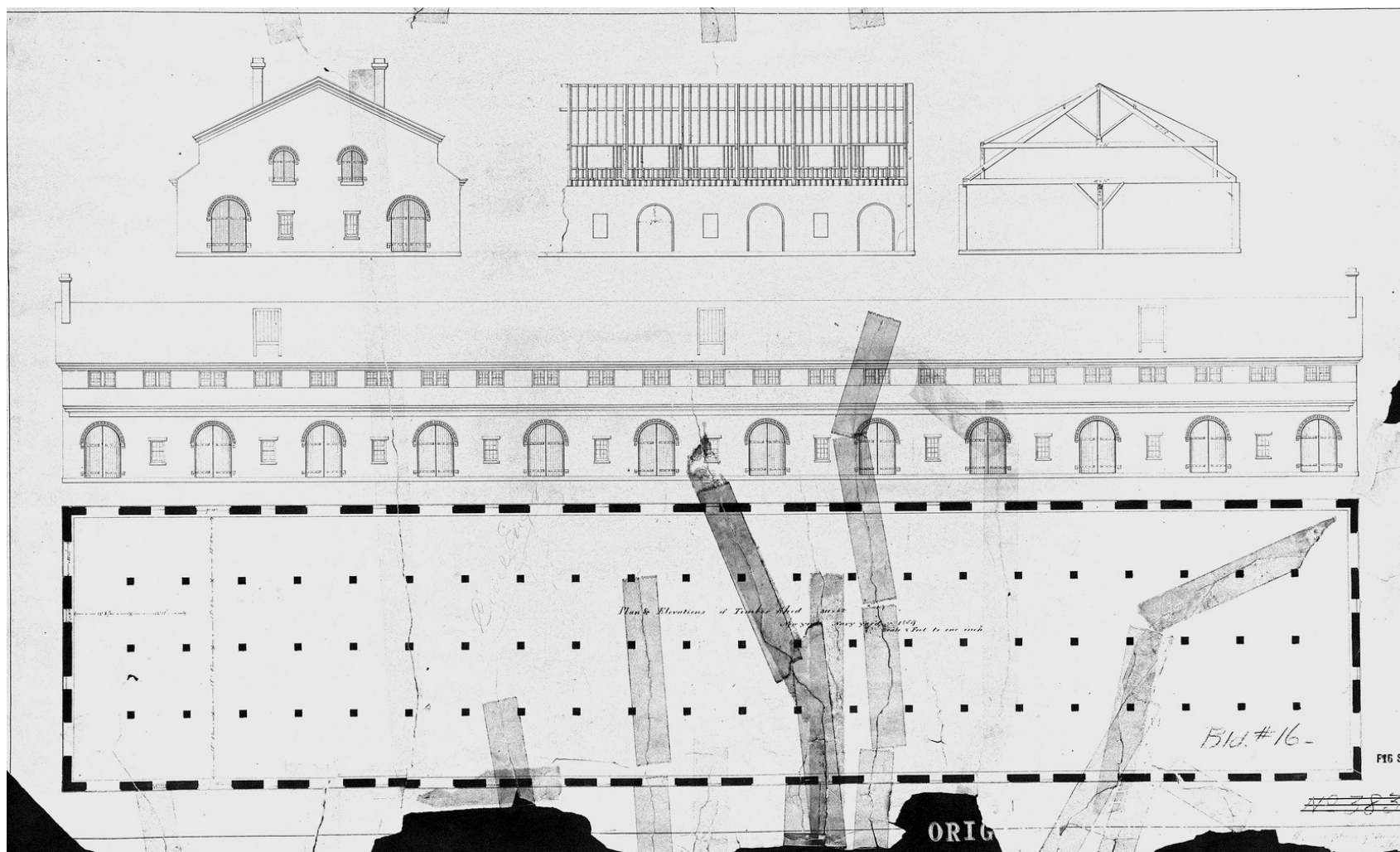


Figure 6.4. “Plan & Elevations of Timber Shed, 1854,” Plan No. F16 S1. Brooklyn Navy Yard, Kings County, New York
(Reproduced courtesy of BNYDC Archives).

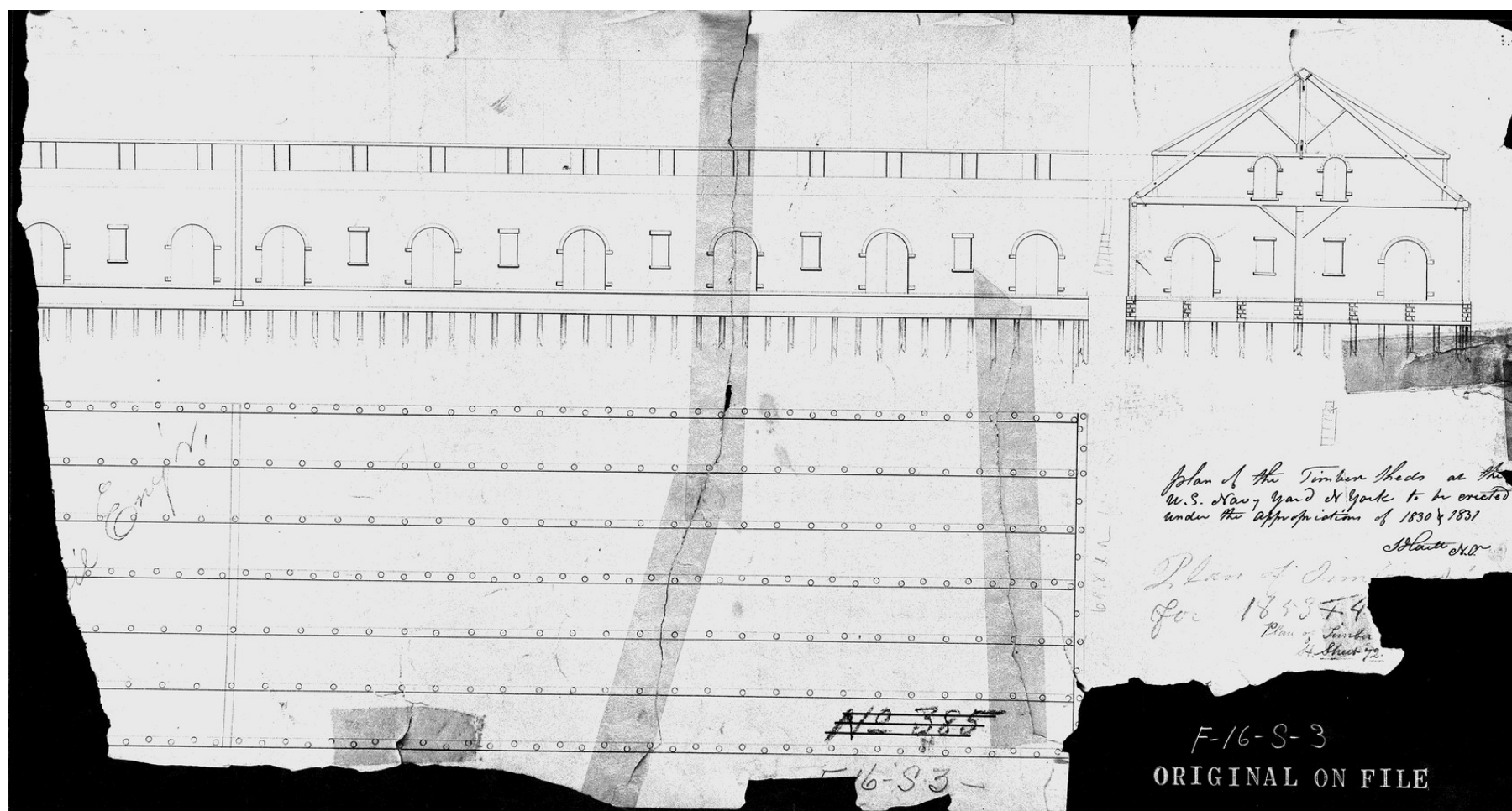


Figure 6.5. Plan No. F16-S-3. Upper note on Plan: "Plan of the Timber Sheds at the U.S. Navy Yard N York to be erected under the appropriations of 1830–1831." Lower note on plan is not complete, but it reveals a date of 1853. Brooklyn Navy Yard, Kings County, New York (Reproduced courtesy of BNYDC Archives).

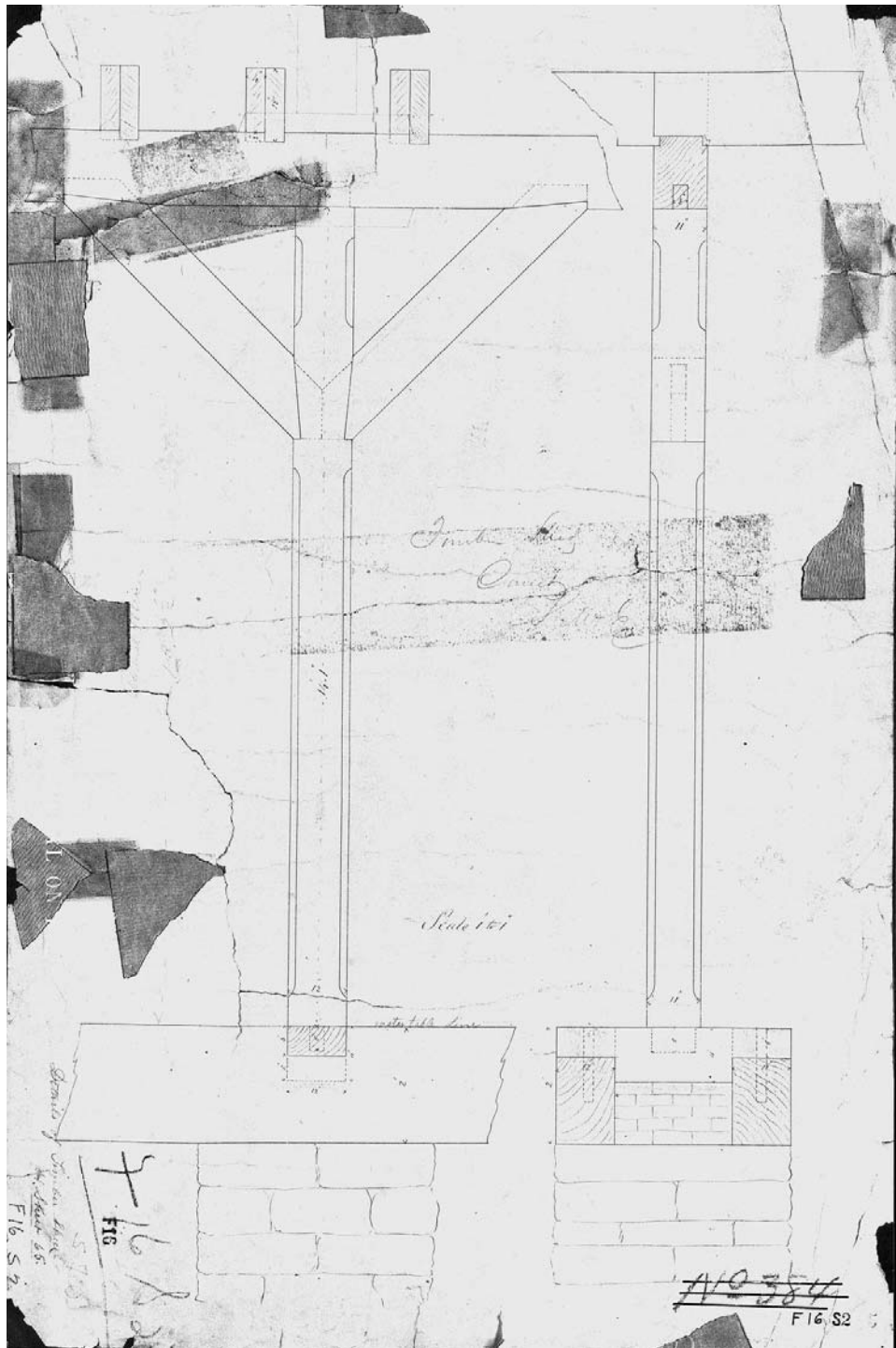


Figure 6.6. Drawing No. F16 S2; “Details of Timber Shed, no date [possibly ca. 1854]. Brooklyn Navy Yard, Kings County, New York (Reproduced courtesy of BNYDC Archives).

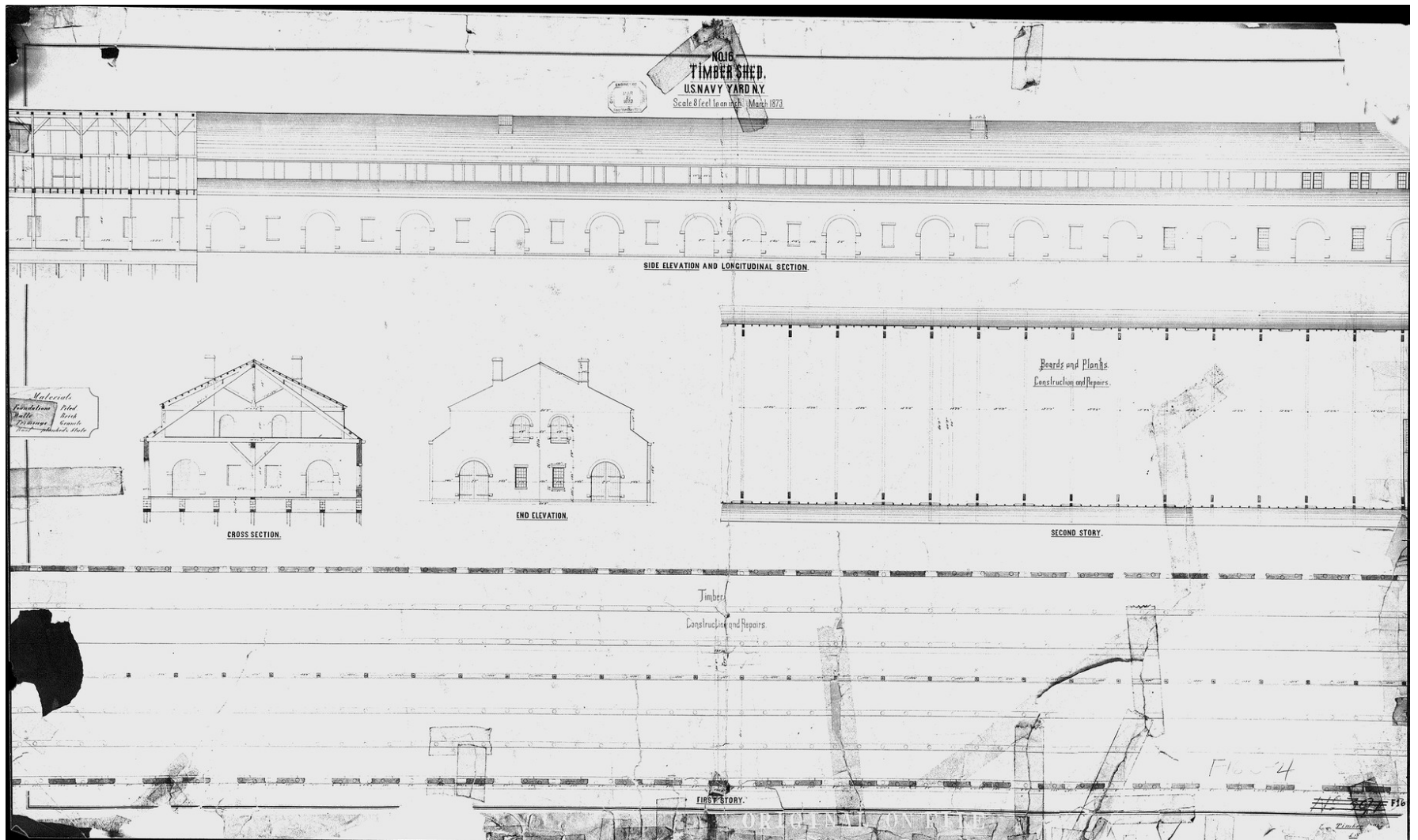


Figure 6.7. Plan & Elevations of Building No. 16 Timber Shed, U.S. Navy Yard N.Y., March 1873. Brooklyn Navy Yard, Kings County, New York (Reproduced courtesy of BNYDC Archives).



Figure 6.8. “Timber Shed, Bldg 16, Looking S. from 4th door from North End,” November 16, 1914; Brooklyn Navy Yard, Kings County, New York. (New York Navy Yard: 1900-1945; Record Group 181-B; NARA—Northeast Region (NYC). Figure F16 N4.)



Figure 6.9. “Timber Shed, Bldg 16, Looking N. from South End,” November 16, 1914. Brooklyn Navy Yard, Kings County, New York. (New York Navy Yard: 1900-1945; Record Group 181-B; NARA—Northeast Region (NYC). Figure F16 N3.)



Figure 6.10. “Timber Shed, Bldg 16, Looking W. Across Shed Near Center,” November 16, 1914. Brooklyn Navy Yard, Kings County, New York. (New York Navy Yard: 1900-1945; Record Group 181-B; NARA—Northeast Region (NYC). Figure F16 N5.)



Figure 6.11. “Timber Shed, Bldg 16, Looking S.W. Near S. End,” October 26, 1916. Brooklyn Navy Yard, Kings County, New York. (New York Navy Yard: 1900-1945; Record Group 181-B; NARA—Northeast Region (NYC). Figure F16 N9.)



Figure 6.12. "Timber Shed, Bldg 16, Timber Gang at N. of Bldg. Looking W.," November 6, 1914. Brooklyn Navy Yard, Kings County, New York. (New York Navy Yard: 1900-1945; Record Group 181-B; NARA—Northeast Region (NYC). Figure F16 N7.)



Figure 6.13. "Front End View Piles on Park Ave.," January 8, 1920. Quarters K & L are in right background. (New York Navy Yard: 1900-1945; Record Group 181-B; NARA—Northeast Region (NYC). Figure F16 N15.)



Figure 6.14. “Piles Fronting on Park Street,” January 8, 1920. This photograph shows the Parade Ground was also used for open storage of lumber. Building 16 in background. (New York Navy Yard: 1900-1945; Record Group 181-B; NARA—Northeast Region (NYC). Figure F16 N11.)



Figure 6.15. “Piles Fronting on Park Street,” January 8, 1920. (New York Navy Yard: 1900-1945; Record Group 181-B; NARA—Northeast Region (NYC). Figure F16 N10.)

As previously noted, the Timber Shed represents an early example of a Navy industrial building with gabled roof and clerestory. This type of roof system provided both light and ventilation. The various types of roof forms employed for industrial buildings during the nineteenth century were selected for functional purposes and in the case of the BNY Timber Shed the gable roof with monitor provided light to the attic space. An industrial building's roof system, "more than any other aspect," was engineered "to serve industry, to provide ventilation and light, resist fire, span large areas, and support equipment" (Bradley 1999:177). American engineers had "adapted European roof forms and methods of roof lighting for the harsher climate of North America and developed new ones as well" (Bradley 1999:177). During the mid-nineteenth century industrial buildings began to require larger spaces and "methods of spanning somewhat wider industrial buildings with gable roofs became standard practice" (Bradley 1999:178). Traditional rafters and purlins were used to support the roof of a wide building if two rows of columns were used to divide the interior into thirds. In the case of the BNY Timber Shed three rows of columns divided the interior. American builders typically covered an industrial building with a single roof gable and placed its ridge parallel to the length of the rectangular structure (Bradley 1999:178).

6.3 TWENTIETH CENTURY MODIFICATIONS

In 1942, the Navy planned to fireproof the Timber Shed with the addition of fire walls. At that time, the building was still used for lumber storage as noted on the plan (Figure 6.16). A 1958 note in the title block of the drawing states that the plans were "corrected to date." At the same time, an addition was planned for the Sands Street Gate, which connected to the northern end of Building 16 (Figure 6.17). The addition was designed to house turnstiles in anticipation of increased workers at BNY during World War II. Figures 6.18 to 6.20 show the Sands Street Gate. The shadow of the demolished northern end of the timber shed is visible on the mid-twentieth century addition on the south elevation of the Sands Street Gate.

The Timber Shed once had an associated ice skating rink (1982 Excess Real Property). The rink was reported to have been inside the building, however a plan on file at BNYDC (date unknown: Figure 6.21) for a protective canopy over the ice rink shows the rink was built on the south side of the building. According to the plan, the rink extended 30 feet (9.1 m) south from the southern brick wall and 56 feet (17 m) from the west. Evidence of metal hardware from the canvas canopy is visible on the south elevation of the Timber Shed. A metal cleat remains in place on the west side of the west entry bay. Further inspection might reveal additional hardware from the canopy.

The shadow of the demolished northern end of the timber shed is visible on the mid-twentieth century addition on the south elevation of the Sands Street Gate.

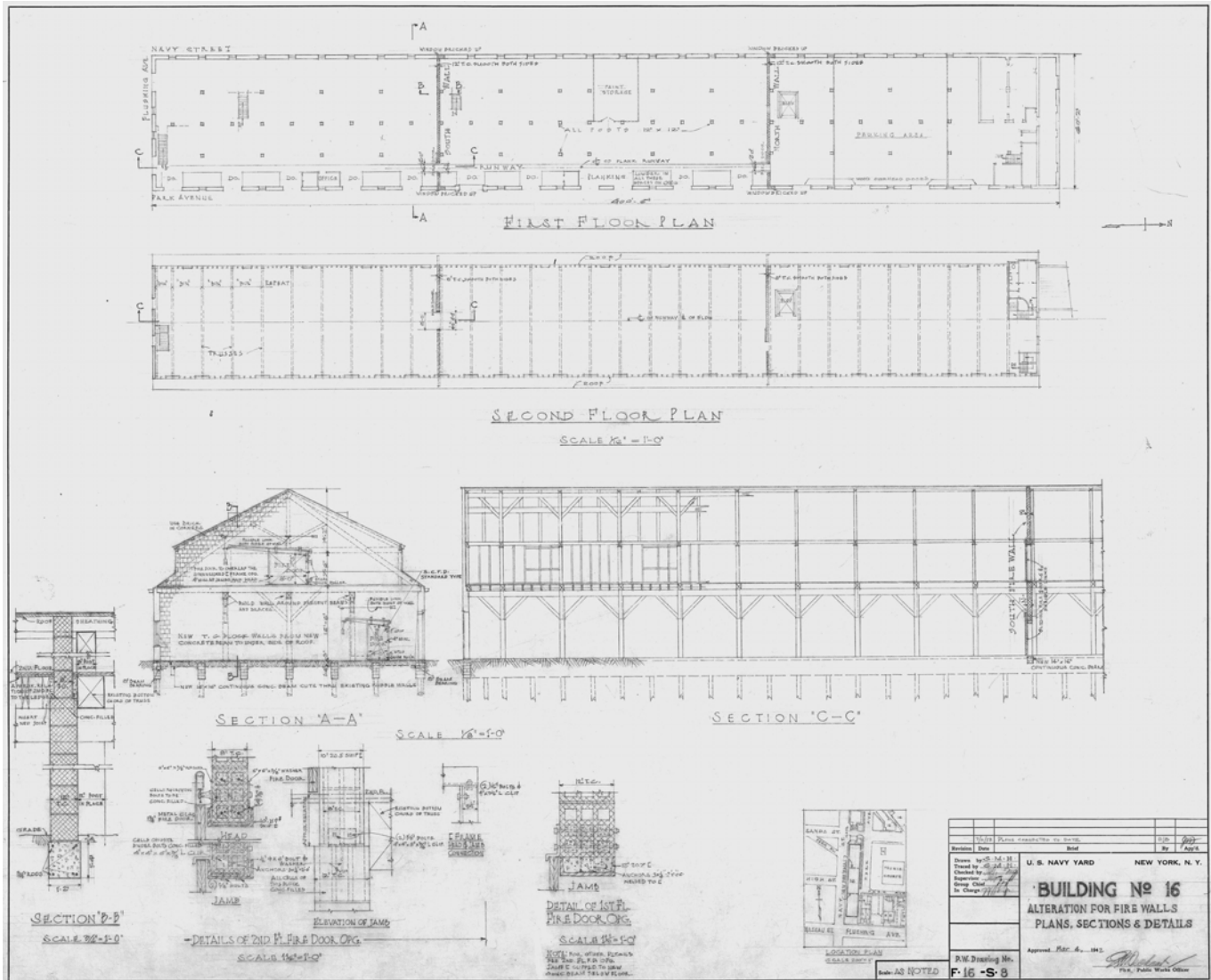


Figure 6.16. "Building No. 16 Alteration for Fire Walls Plans, Sections & Details," Plan No. F16-S-8; Plans approved March 4, 1942; Plans corrected to date 7/11/1958. Brooklyn Navy Yard, Kings County, New York (Reproduced courtesy of BNYDC Archives).

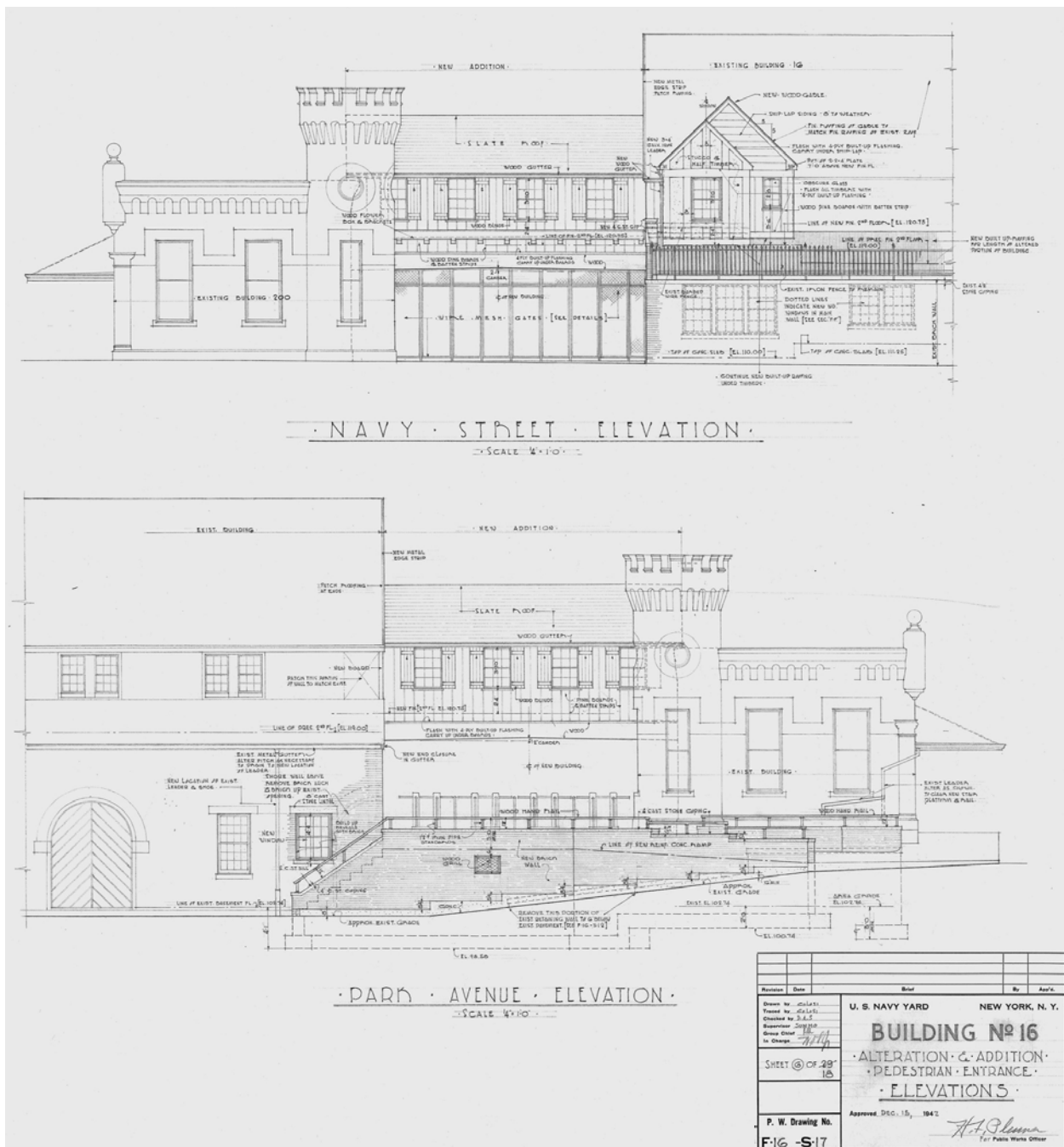


Figure 6.17. A planned addition for the Sands Street Gate, which connected to the northern end of Building 16. Brooklyn Navy Yard, Kings County, New York. (Drawing F16-S17 "Building No 16 Alteration & Addition Pedestrian Entrance Elevations," December 15, 1942.)



Figure 6.18. The east elevation of the Sands Street entrance (Building 200), facing west from Gate Avenue, circa 1966. Note south wing at left; at that time, the northern portion of Building 16 (Timber Shed) was not attached. (Reproduced from Sanders and Kahn Associates, Inc. (1966).



Figure 6.19. Navy Street elevation of Sands Street entrance with south wing at right, facing northeast. Note the Sands Street entrance is not located in the project area. Brooklyn Navy Yard, Kings County, New York (PCI 2008).



Figure 6.20. Southern elevation of Sands Street entrance which is where Building No. 16 connected with the south wing of the gate, facing north. Brooklyn Navy Yard, Kings County, New York (PCI 2008).

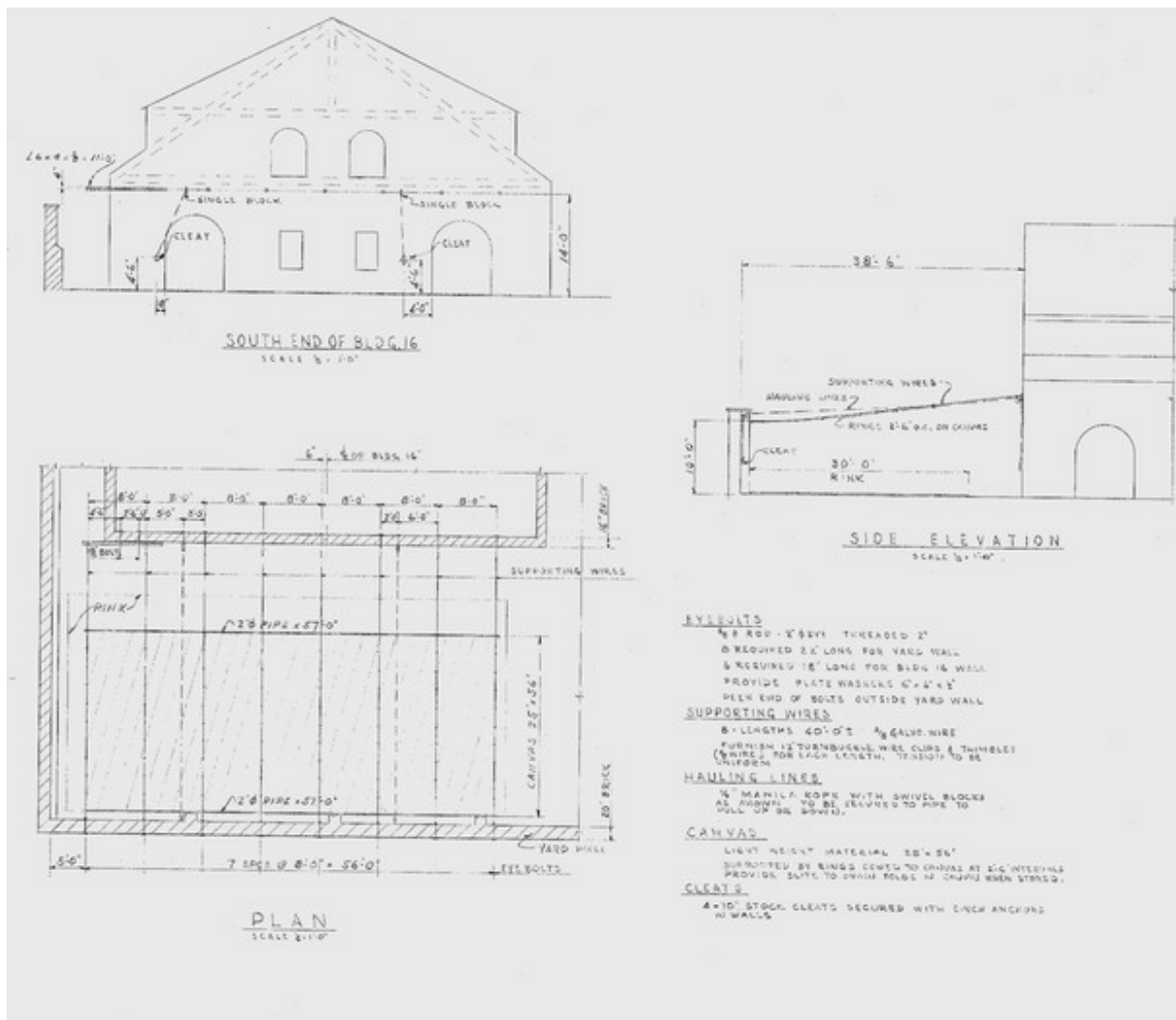


Figure 6.21. "Building No. 16 Protective Canopy," Drawing No 7536; no date. Plan for a protective canopy over skating rink at south end of Building 16 (Timber Shed). The steel cleat on west side of west entry bay (upper left) is still attached. Brooklyn Navy Yard, Kings County, New York. (Reproduced courtesy of BNYDC Archives.)

6.4 EXISTING CONDITION

Deterioration of portions of the Timber Shed and site has occurred since the U.S. Navy closed BNY in 1966. The adjacent Admiral's Row quarters were vacated by the early 1970s. Since that time the area around the Timber Shed has become overgrown and English Ivy vines have overtaken the building façade. In 1982, the building was identified on the Excess Real Property form as an Ice Skating Rink and Garage with 12,360 sq feet (1,148.3 sq m) and a real property cost of \$21,321.

Over the years, the building has been used for miscellaneous storage with large amounts of debris remaining in the southern portion of the building. The northern end of the building served as the garage and is presently empty. Weathered metal lockers are currently spread in the yard area in front of the south elevation. Piles of gravel and dirt and other industrial debris are located in front of the garage bays on the north elevation. Figures 6.22 to 6.53 are current representative photographs of the Timber Shed.

Beardsley/Crawford & Stearns identified the major source of deterioration of the Timber Shed from “water penetration into the building, mostly all from deteriorated roof conditions and open roof conditions. Most of the severe deterioration from roof failure is found in east sections of the roof and to the west brick wall. Portions of the west wall are out of plumb from water penetration above” (Beardsley/Crawford & Stearns 2008:184). The Timber Shed, however, “with due consideration of existing deterioration, retains an exceptionally high level of historic integrity to its 1838 [sic] construction date⁹ and historic significance of Admiral's Row” (Beardsley/Crawford & Stearns 2008:186).

6.5 SIGNIFICANCE

BNY is historically significant for its association with the establishment, organization, development and support of our nation's Navy Department.¹⁰ In 1799, a portion of an appropriation to create a permanent navy was applied “to the purchase and improvement of selected grounds for six navy-yards, located as follows: One at New York, one at Philadelphia, one at Boston, one at Portsmouth, one at Norfolk, and one at Washington” (Hibben 1890:21). Timber sheds of both frame construction and brick masonry construction were integral and yet commonplace at the original navy yards as these installations supported the U.S. Navy's mission of shipbuilding. Navy yards typically had several timber sheds. The long histories

⁹ Research and analysis conducted during this Phase IA report identified a later construction date than previously reported. Additional research of the records of the U.S. Naval Museum, Washington D.C. and the National Archives and Records Administration might confirm an actual date of construction. Relevant records include Annual Reports of Secretary of Navy, Report of the Commission on Navy Yards, as well as vertical files at the Navy Museum.

¹⁰ The Beardsley/Crawford & Stearns report concluded the Timber Shed “appears to be Nationally [sic] significant under all four NRHP criteria (A-D)” as part of the “primary compound of senior officer residential quarters within the historic Brooklyn Navy Yard. The ‘Timber Shed’ is significant as part of the group of buildings and the oldest one making up the historic Brooklyn Navy Yard Admiral's Row area” (2008:183). The authors further individually recommended the Timber Shed as historically significant (NRHP Criterion A) for its association with the nineteenth century development of the BNY, as an early part of the Admiral's Row compound and development of BNY, and is architecturally significant (NRHP Criterion C) “as an intact example of a rare surviving nineteenth century building type (navy yard timber shed), style, design and construction (interior and exterior built at the BNY). The ‘Timber Shed’ is archaeologically significant (NRHP Criterion D) because the site has the potential to yield sub-surface information important from the earliest development and history of the site” (2008:183).

shared by the six original navy yards reveal these installations were ever changing to accommodate the shipbuilding needs and demands of the Navy, especially during times of war. Timber sheds were essential at navy yards and older sheds were often replaced by new facilities or augmented by the construction of new timber sheds. For example, West stated in his history of BNY that buildings were torn down in 1868 and they were replaced “by more modern structures to meet the more modern requirements of the growing Navy” (West 1941:24). According to an 1883 map of the New York Navy Yard, there were six timber sheds on the installation. On a 1917 map of New York Navy Yard, the Timber Shed (Building 16) is referred to as “Lumber Storage.” By World War I, the timber required was for small boats, yard craft, barges, and smaller vessels not the large nineteenth century sailing vessels. Changing technology and construction of new types of vessels led to the demise of the traditional nineteenth century timber shed form. Timber sheds were subsequently demolished or reused for other purposes.

The surviving Timber Shed at BNY stands out as a surviving early example of a brick masonry and heavy timber naval industrial building with a ca. 1853 example of a gable roof with clerestory. Though only a third of its original size, the Timber Shed retains sufficient integrity to convey its location, design, setting, materials, workmanship, feeling, and association. Navy and naval historians were contacted for both the Beardsley/Crawford & Stearns report and this Phase IA report and overall, no other surviving examples of the BNY timber shed type are known to exist at the original navy yards.¹¹ Further, the BNY has been recognized as having executed their buildings on a grander scale with ornate articulation of detail when compared to other navy yards. The detailed elevation drawings of the BNY timber shed clearly demonstrate the attention to size and detail shown by the Civil Engineers of the BNY for a utilitarian industrial building (see Figures 6.4 to 6.7). The BNY timber shed is distinguished as a rare example of a pre-Civil War navy yard building type and merits recognition as an individually NR-eligible resource.

Originally constructed as part of the extensive operations at BNY, the Timber Shed is not historically associated with the residential quarters of Admiral’s Row. The Timber Shed, however, has served visually as the western anchor of Admiral’s Row along with the tall brick wall that encompasses it. The Timber Shed also dates from the earliest period of development of the southwestern corner of BNY, part of the Yard’s original purchase, and is almost contemporaneous with the earliest quarters constructed on Admiral’s Row. The Timber Shed and the tall brick wall which surrounds it are recommended as contributing elements of the Admiral’s Row Historic District as part of the surviving block of buildings constructed in the second half of the nineteenth century. Following is a summary application of the seven aspects of historic integrity to the Timber Shed:

- **Location:** The extant portion of the circa 1853 Timber Shed at BNY retains sufficient historic integrity of Location as the original southern section of the building remains in place and the footprint of the demolished section has not been redeveloped. The brick walls surrounding the building’s footprint, Park Avenue, and the Sands Street Gate further convey the location of the timber shed. The shadow of the demolished northern end of the timber shed is visible on the mid-twentieth century addition on the south

¹¹ Note: buildings in the Norfolk Navy Yard burned during the Civil War and the Philadelphia Navy Yard was relocated in the 1870s. A frame example of a timber shed (date of construction unknown; demolished) was identified in a historic photograph of the Washington Navy Yard. There are no such surviving examples of a similar type as the BNY Timber Shed at Portsmouth or Boston.

elevation of the Sands Street Gate. Also, a section of rail spur along the eastern edge of the demolished section of the building is still evident. The extant section of the Timber Shed has been integrated into the larger residential Admiral's Row section of BNY due to its location at the western end of the row of buildings.

- **Design:** The extant portion of the circa 1853 Timber Shed at BNY retains an extremely high level of historic integrity of Design when compared with the historic plans for timber sheds at BNY from the nineteenth century (specifically the 1854 plan). Presently, the Timber Shed represents only a quarter of its original length (103-ft [31.4 m] of 400 ft [122 m]). Despite the demolition of most of the original building, the extant Timber Shed retains architectural details, massing and form, and design elements to sufficiently convey its historic significance and character. The original large-scale of the building's design and its original spatial relationship with the surrounding section of BNY (e.g., Admiral's Row, Sands Street Gate, Park Avenue and the former parade ground) is visually discernable. Deterioration and collapsing of the building's roof framing and features of the brick walls are extant; however, with the amount of intact features and high level of their circa 1853 design, the Timber Shed retains an exceptionally high level of historic integrity of Design.

The Timber Shed was not originally conceived as part of the residential officer's housing as it appears the Timber Shed pre-dated the residential park-like setting attributed to the design of Admiral's Row. Construction of the brick walls around the street elevations of the Timber Shed further isolated the activities of the navy yard from the surrounding area to the south (the City Park) and west. Located on the west side of Park Avenue, the Timber Shed was an active industrial building through World War I and not visually or physically separated from the landscaped enclave of officer's quarters. Timber piles were stored and moved along both Park Avenue and Park Street.

The Timber Shed became more integrated with residential (i.e., recreational) activity after it outlived its original industrial function in the mid-twentieth century. It was used for various purposes, but specifically for storage. A skating rink was constructed on the south end of the building. After the northern section of the building was demolished in the 1960s, the truncated extant portion of the Timber Shed shared a similar scale as Admiral's Row, as all of the parcels containing the officers' quarters extended from Flushing Avenue to Park Street; the approximate length of the extant Timber Shed. After Admiral's Row was vacated by the early 1970s, the site became overgrown and the Timber Shed has since become associated with the design of the entire Admiral's Row area because of its location at the western end of the officers' quarters.

- **Setting:** The extant portion of the circa 1853 Timber Shed at BNY retains historic integrity of Setting as the basic physical environment of the former navy industrial property (although overgrown) remains in place despite demolition of most of the building. Further the building and its setting reflects how the site was built, as well as the original industrial function it was intended to serve as part of BNY.
- **Materials:** The extant portion of the circa 1853 Timber Shed at BNY retains sufficient historic integrity of Materials to convey the physical elements (original building materials) that were used in the construction of the Timber Shed.

- **Workmanship:** The extant portion of the circa 1853 Timber Shed at BNY retains an exceptional level of historic integrity of Workmanship as the physical evidence of mid-nineteenth century industrial navy construction and building technology is still conveyed by the remaining section of the building. The Timber Shed illustrates the aesthetic principles of BNY's mid-nineteenth century industrial development and reveals specific BNY applications of traditional U.S. Navy Timber Shed plans.
- **Feeling:** The extant portion of the circa 1853 Timber Shed at BNY retains sufficient historic integrity of Feeling as the large-sized scale of the building and its former industrial use is discernable from the interior of the building. The building's aesthetic or historic sense (feeling) of the BNY period of time remains in place.
- **Association:** The extant portion of the circa 1853 Timber Shed at BNY retains historic integrity of Association for its direct link with the historical shipbuilding mission of the six original U.S. Navy Yards. Originally constructed as part of the extensive navy yard operations at BNY, the timber shed is not historically associated with the residential quarters of Admiral's Row. The Timber Shed, however, has served visually as the western anchor of Admiral's Row along with the tall brick wall that encompasses it. The Timber Shed also dates from the earliest period of development of the southwestern corner of BNY, part of the Navy Yard's original purchase, and is almost contemporaneous with the earliest quarters constructed on Admiral's Row. The Timber Shed and the tall brick wall which surrounds it are recommended as contributing elements of the Admiral's Row Historic District as part of the surviving block of buildings constructed in the second half of the nineteenth century.

Summary Statement: The extant portion of the circa 1853 Timber Shed at BNY appears to demonstrate all seven aspects of historic integrity, thus retaining the identity for which it is significant. The historic character of the building has been retained since the early 1970s because of its vacant status. As such, it has remained in place and free of additional late twentieth century alterations, changes, and compromise. The circa 1853 Timber Shed is currently a significant component, as well as the oldest building, of the Admiral's Row district. It contributes to the high level of historic integrity of the Admiral's Row area.



Figure 6.22. Navy Street and Timber Shed, facing north from Flushing Avenue. Brooklyn Navy Yard, Kings County, New York (PCI 2008).



Figure 6.23. West elevation of Timber Shed, facing northeast. Brooklyn Navy Yard, Kings County, New York (PCI 2008).



Figure 6.24. Detail of north elevation of Timber Shed at left. Note iron fence and tree growing through the top of the brick wall (at right of center foreground). Brooklyn Navy Yard, Kings County, New York (PCI 2008).



Figure 6.25. West elevation of Timber Shed from Navy Street, facing east. Brooklyn Navy Yard, Kings County, New York (PCI 2008).



Figure 6.26. North elevation of Timber Shed, facing south, from the Timber Shed's demolished northern section. Brooklyn Navy Yard, Kings County, New York (PCI 2008).



Figure 6.27. North elevation of Timber Shed, facing southwest, from near foot of Park Street. Note mounded dirt fill and debris in front of the building. Brooklyn Navy Yard, Kings County, New York (PCI 2008).



Figure 6.28. Detail of northeast corner of Timber Shed, at left, facing south-southeast. Note juncture of original brick masonry wall and later asbestos-covered frame wall.



Figure 6.29. Detail of interior of northeast corner of Timber Shed, at right facing north. Note bricked window opening at right. Brooklyn Navy Yard, Kings County, New York (PCI 2008).



Figure 6.30. Quarters K at left and the east elevation of Timber Shed at right, facing south. Brooklyn Navy Yard, Kings County, New York (PCI 2008).



Figure 6.31. East elevation of Timber Shed from south end of building, facing north-northwest. The round arch bay at left is the only open bay remaining on the east side of the building. Brooklyn Navy Yard, Kings County, New York (PCI 2008).



Figures 6.32. Northernmost bay on east elevation, facing southwest. Brooklyn Navy Yard, Kings County, New York (PCI 2008).



Figures 6.33. Detail of window opening on east elevation, facing west. Brooklyn Navy Yard, Kings County, New York (PCI 2008).



Figure 6.34. Detail of roof—wall juncture on east elevation, facing southeast. Brooklyn Navy Yard, Kings County, New York (PCI 2008).



Figure 6.35. Detail of paired windows on attic story of east elevation, facing west. Brooklyn Navy Yard, Kings County, New York (PCI 2008).



Figure 6.36. South elevation of Timber Shed, facing northwest. Brooklyn Navy Yard, Kings County, New York (PCI 2008).



Figure 6.37. Detail of east entry bay on south elevation of Timber Shed, facing north. Brooklyn Navy Yard, Kings County, New York (PCI 2008).



Figure 6.38. Window openings on ground floor of south elevation of Timber Shed, facing north. Brooklyn Navy Yard, Kings County, New York (PCI 2008).



Figure 6.39. Detail of round-arch window opening, with intact wooden shutters and hardware, south elevation of Timber Shed, facing north. Brooklyn Navy Yard, Kings County, New York (PCI 2008).



Figure 6.40. West entry bay with double-leaf doors, south elevation of Timber Shed, facing north. Note original hardware. Brooklyn Navy Yard, Kings County, New York (PCI 2008).



Figure 6.41. West elevation of Timber Shed at right and interior of brick fence at left, facing north. Note raised stone foundation and stone beltcourse. Brooklyn Navy Yard, Kings County, New York (PCI 2008).



Figure 6.42. Detail of window opening at south end of west elevation of Timber Shed, facing southeast. Brooklyn Navy Yard, Kings County, New York (PCI 2008).



Figure 6.43. Interior of north end of the Timber Shed, east wall, facing southeast. Brooklyn Navy Yard, Kings County, New York (PCI 2008).



Figure 6.44. Interior of north end of the Timber Shed, west wall, facing southwest. Brooklyn Navy Yard, Kings County, New York (PCI 2008).



Figure 6.45. Interior of north end of the Timber Shed, facing south from east bay. Brooklyn Navy Yard, Kings County, New York (PCI 2008).



Figure 6.46. Interior of north end of the Timber Shed, facing southeast. Brooklyn Navy Yard, Kings County, New York (PCI 2008).



Figure 6.47. Interior of south end of the Timber Shed, facing west. Brooklyn Navy Yard, Kings County, New York (PCI 2008).



Figure 6.48. Interior of south end of the Timber Shed, facing west-northwest. Brooklyn Navy Yard, Kings County, New York (PCI 2008).



Figure 6.49. Interior of south end of the Timber Shed, facing north toward east entry bay on south elevation. Brooklyn Navy Yard, Kings County, New York (PCI 2008).



Figure 6.50. Interior of south end of the Timber Shed, facing north-northwest. Brooklyn Navy Yard, Kings County, New York (PCI 2008).



Figure 6.51. Detail of ceiling, interior of south end of the Timber shed. Brooklyn Navy Yard, Kings County, New York (PCI 2008).



Figure 6.52. Interior of south end of the Timber Shed, facing north from west bay on south elevation. Brooklyn Navy Yard, Kings County, New York (PCI 2008).



Figure 6.53. Interior of south end of the Timber Shed, facing northeast from west bay on south elevation. Brooklyn Navy Yard, Kings County, New York (PCI 2008).

7.0 Officers' Quarters, Admiral's Row

Ten buildings at Admiral's Row (Quarters B, C, D, E, F, G, H, I, K and L) were recommended as eligible for listing in the State and National Registers of Historic Places (see Appendix A; see also Section 2.0).

This section of the Phase IA report provides a brief summary of each of the Quarters, as well as current photographs of the Quarters and their associated garages (see Figure 1.2). Previous reports have not included photographs of or detailed information about the garages. Existing conditions of each building were culled from the recent Assessment of Admiral's Row by Beardsley/Crawford & Stearns (2008). Archival research for the Phase IA report uncovered historic photographs and plans of several of the Quarters which have been integrated into the discussion of each of the Quarters. The Quarters are presented from west to east following the same order as the 1995 HABS (CRCG 1995).

7.1 QUARTERS K AND L

Quarters K-L were constructed as attached dwellings at the western end of Admiral's Row (see Figure 1.2). The quarters stand behind a tall brick fence, east of the Timber Shed (Building 16). Executed in the French Second Empire style and most likely built ca. 1900 (CRCG 2005:7; Beardsley/Crawford & Stearns 2008:155), the quarters feature a three-bay brick façade, a Mansard roof with dormers, a raised rusticated stone foundation, stone entranceway, stone front stoop with steps, and stone trim. Historically, the Senior Member, Board of Inspection resided in Quarters K and the Yard Paymaster lived in Quarters L (Figures 7.1 to 7.7).

Twentieth century alterations to Quarters K-L included a basement and first-story addition on the rear elevation, a basement and first-story porch on the east elevation, and a basement and first-story living space addition to the west elevation. The interior plan and features of Quarters K-L remained largely as built (Beardsley/Crawford & Stearns 2008:155). The later rear addition contained stairways, access, kitchen circulation and service areas. A historic photograph dated from 1934 illustrates the extension of the rear addition (Figure 7.8).

Water damage was determined to have caused significant structural collapse to portions of the rear two-story sections of Quarters K-L and front Mansard Roof areas; "in recent years the roofs on the 1941 sections have failed causing extensive interior framing collapse within those sections" (Beardsley/Crawford & Stearns 2008:155). Overall, the structural integrity for the original nineteenth century portions of Quarters K-L's superstructure appears to be "sound, level and plumb, showing localized areas of framing failures and masonry distress" (Beardsley/Crawford & Stearns:2).

Quarters L has an associated garage, **Building 450**, which was constructed in 1919 as a semi-permanent building (Property Record Card No 2-00437) (Figure 7.9). It is located on the south side of Park Street, north of Quarters L. Building 450 is a one-story, concrete block building consisting of 529 square feet (23'x23'x11'). The structure's real property cost value was listed at \$900 in 1985 when it was transferred from the U.S. Navy to the U.S. Army National Guard Bureau. Upon cursory visual inspection, Building 450 appears to be in fair condition. Its frame roof system has been compromised due to exposure which has caused both collapsed framing and missing sections of roof.



Figure 7.1. Quarters K-L street elevation, facing north. Brooklyn Navy Yard, Kings County, New York (PCI 2008).



Figure 7.2. South elevation and east elevation of Quarters L, facing west-northwest. Brooklyn Navy Yard, Kings County, New York (PCI 2008).



Figure 7.3. Quarters K-L, entrance detail, facing north. Note collapsed cornice. Brooklyn Navy Yard, Kings County, New York (PCI 2008).



Figure 7.4. Quarters K-L, rear elevation and backyard. Brooklyn Navy Yard, Kings County, New York (PCI 2008).



Figure 7.5. Quarters K, rear elevation, facing east-southeast. Brooklyn Navy Yard, Kings County, New York (PCI 2008).



Figure 7.6. Quarters K, west elevation, facing north-northeast. Brooklyn Navy Yard, Kings County, New York (PCI 2008).



Figure 7.7. Quarters L, east elevation, facing southwest. Brooklyn Navy Yard, Kings County, New York (PCI 2008).



Figure 7.8. “Alterations and Repairs to Quarters K and L,” July 5, 1934. Note Timber shed at right background. Brooklyn Navy Yard, Kings County, New York (New York Navy Yard: 1900-1945; Record Group 181-B; NARA—Northeast Region (NYC). Photograph FCK4.)



Figure 7.9. Building 450, concrete block garage associated with Quarters L, facing south. Brooklyn Navy Yard, Kings County, New York (PCI 2008).

7.2 QUARTERS H AND C

Quarters H-C were constructed as attached dwellings at the western end of Admiral's Row, with Quarters K-L to the west and Quarters B to the east (see Figure 1.2 and Figures 7.10 to 7.16). Designed in the French Second Empire style, the estimated dates of construction for Quarters H and C are generally accepted not to be the same. Quarters C is mentioned as early as 1870 in navy yard correspondence, while Quarters H was evidently constructed later (CRCG 2005:7). Historically, Quarters H was the residence of the General Storekeeper and the Equipment Officer lived in Quarters C.

A review of historic photographs dated from 1912 confirmed when stucco was applied to the brick masonry exterior of Quarters C-H (Figures 7.17 and 7.18). These photographs also documented Quarters "C" prior to construction of a two-story wing on its east elevation. Beardsley/Crawford & Stearns reported

A fire in the 1990s damaged the third story (Mansard level) of Quarters C leaving the roof and upper story open to the elements. Quarters H was unaffected by the fire. Subsequent water damage caused significant structural collapse to portions of Quarters C and in recent years the roofs on the 1941 sections have failed, causing extensive interior framing collapse within those sections (Figure 7.19).

Quarters H has an associated garage, **Building 452**, which was constructed in 1919 as a semi-permanent building (Property Record Card No 2-00438) (Figure 7.20). It is located on the south side of Park Street, north of Quarters H. Building 452 is a one-story, concrete block building consisting of 529 square feet (23'x23'x11'). The structure's real property cost value was listed at \$500 in 1985 when it was transferred from the U.S. Navy to the U.S. Army National Guard Bureau.

Quarters C has an associated garage, **Building 639**, which was constructed in 1943 as a permanent building (Property Record Card No 2-00441) (Figure 7.21). It is located on the south side of Park Street, north of Quarters C. Building 639 is a one-story, concrete block building consisting of 576 square feet (24'x24'x12'). The structure's real property cost value was listed at \$5,800 in 1985 when it was transferred from the U.S. Navy to the U.S. Army National Guard Bureau.

Upon cursory visual inspection, **Buildings 452 and 639** appear to be in fair condition. The buildings have been left open and exposed to natural elements since the 1970s when Admiral's Row was vacated. The frame roof systems of each garage have been compromised due to exposure which has caused both collapsed framing and missing sections of roof and the attached walkway extending from Garage 639 south to Quarters C has collapsed.



Figure 7.10. Quarters H, west elevation, facing northeast. Brooklyn Navy Yard, Kings County, New York (PCI 2008).



Figure 7.11. Quarters H & C, street elevation, facing north. Brooklyn Navy Yard, Kings County, New York (PCI 2008).



Figure 7.12. Quarters H & C, street elevation, facing northwest. Brooklyn Navy Yard, Kings County, New York (PCI 2008).



Figure 7.13. Quarters H, west elevation, facing southeast. Brooklyn Navy Yard, Kings County, New York (PCI 2008).



Figure 7.14. Quarters H, rear elevation and backyard, facing south. Brooklyn Navy Yard, Kings County, New York (PCI 2008).



Figure 7.15. Quarters C, detail of façade, facing north. Brooklyn Navy Yard, Kings County, New York (PCI 2008).



Figure 7.16. Quarters C, east wing, facing north-northwest. Brooklyn Navy Yard, Kings County, New York (PCI 2008).



Figure 7.17. “Repairs to Quarters – House C,” November 4, 1912. Note brownstone stylistic accents prior to application of stucco. Brooklyn Navy Yard, Kings County, New York (*New York Navy Yard: 1900-1945; Record Group 181-B; NARA—Northeast Region (NYC). Photograph FC N1.*)



Figure 7.18. “Houses C & H [51], Repairs Looking N.W.” December 14, 1912. Brooklyn Navy Yard, Kings County, New York (*New York Navy Yard: 1900-1945; Record Group 181-B; NARA—Northeast Region (NYC). Photograph FC N2.*)



Figure 7.19. Interior of Quarters C from entrance, facing north. Brooklyn Navy Yard, Kings County, New York (PCI 2008).



Figure 7.20. Building 452, Garage on Park Street associated with Quarters H, facing south. Brooklyn Navy Yard, Kings County, New York (PCI 2008).



Figure 7.21. Building 639, Garage on Park Street associated with Quarters C, facing south. Brooklyn Navy Yard, Kings County, New York (PCI 2008).

7.3 QUARTERS B

Quarters B is a detached dwelling located in the western half of Admiral's Row with Quarters H-C to the west and Quarters D to the east (Figures 7.22 to 7.32). The building is considered to be one of the oldest quarters in Admiral's Row. Reported dates of construction vary from prior to 1859 (Beardsley/Crawford & Stearns 2008:99) to ca. 1870 (CRCG 1995:7). Historically, the Captain of the Yard resided in the building. Stylistically, the building represents elements associated in the transitional period of the Greek Revival and Italianate style. The four-bay-wide brick building is the largest single residence in Admiral's Row and stands out for its high level of stylistic detailing. It has a raised rusticated basement course, two full primary stories, and an attic story under the shallow pitched flat roof with deep cornice and wooden drop brackets. Other elements include a row of smaller attic windows, wide exterior window trim with molded hoods, and over scaled doorway.

The interior of Quarters B has high ceilings and large spaces with well articulated detailing and is set up for formal entertaining and living (Figure 7.33). The first story has a broad hallway with winding stairway to the third story and large formal rooms with highly detailed large ceiling plaster work. Doorways are over scaled and the front entrance and foyer are highly detailed in walnut hardwood. The upper stories are well detailed but more restrained.

Historic photographs show that stucco was applied to the brick masonry exterior of Quarters B in 1912 (see Figures 7.25 to 7.27). Twentieth century additions consist of an extensive enclosed frame two-story rear addition with porches and covered walkway to Park Street. The northern section of the covered walkway from Park Street has collapsed (see Figure 7.32).

Portions of Quarters B have deteriorated. Beardsley/Crawford & Stearns identify the source of the damage as

water penetration into the building, mostly all from deteriorated roof conditions, open roof hatches, and basement dampness . . . most of the severe deterioration from roof failure is found in rear sections, porches, and in and below the east roof cornice area. In Quarters 'B' the severe deterioration (collapse) of the rear appendages, side porch, and roofs of the garage is confined to areas that were significantly altered or built well into the twentieth century with modern amenities and features including utilitarian areas such as the kitchens, storage, and service areas. These areas are not part of the historic core sections of the building and while their deterioration is unfortunate, it does not play a major contributing factor to the historic integrity of the historic building sections. Within the rear bay of the pre-1859 quarters roof leaks have caused some framing and detail deterioration to the roof where the gallery was located, and to the north and east walls (Beardsley/Crawford & Stearns 2008:101).

Historic plans of the Navy Yard and historic photographs documented a guard house in front of Quarters B (see Figures 7.24 and 7.27; Figure 7.34), which is no longer extant. The guard house was a small rectangular frame building with Stick Style detailing.

Quarters B has an associated garage, **Building 463**, which was constructed in 1919 as a semi-permanent building (Property Record Card No 2-00439) (see Figure 7.31). It is located on the south side of Park Street, north of Quarters B. Building 463 is a one-story, concrete block building consisting of 552 square feet (24'x23'x8'). The structure's real property value was listed at \$500 in 1985 when it was transferred from the U.S. Navy to U.S. Army National Guard

Bureau. Upon cursory visual inspection, the present condition of Building 463 is fair. The building has been left open and exposed to natural elements since Admiral's Row was vacated. Its frame roof system has been compromised due to exposure which has caused both framing collapse and missing sections of roof.

In 1958, a design for an entrance improvement included a circular driveway along Park Street and associated landscaping (Figure 7.34). A covered walkway extended over the driveway. The covered walkway has since collapsed and the area is overgrown with brush and other vegetation (see Figures 7.28 and 7.29).



Figure 7.22. Quarters B, facing northeast. Brooklyn Navy Yard, Kings County, New York (PCI 2008).



Figure 7.23. Quarters B, facing northwest. Brooklyn Navy Yard, Kings County, New York (PCI 2008).



Figure 7.24. Detail from: “Quarters B, D, H C, K, L, looking Northwest,” March 8, 1904. Note guard house (New York Navy Yard: 1900-1945; Record Group 181-B; NARA—Northeast Region (NYC). Photograph No. FC NI.



Figure 7.25. “Repairs to Quarters-House B,” November 4, 1912. (New York Navy Yard: 1900-1945; Record Group 181-B; NARA—Northeast Region (NYC). Photograph No. FB N2. Reproduced courtesy of BNYDC Archives).



Figure 7.26. “House B (52), Looking W. Repairs,”
January 6, 1913 (*New York Navy Yard: 1900-1945; Record Group 181-B; NARA—Northeast Region (NYC). Photograph No. FB N4).*



Figure 7.27. A later Guard House in front of Quarters B. “House B (52), Looking N.W. Repairs,” January 6, 1913 (*New York Navy Yard: 1900-1945; Record Group 181-B; NARA—Northeast Region (NYC). Photograph No. FB N5*).



Figure 7.28. Quarters B, detail of rear elevation, facing southwest. Brooklyn Navy Yard, Kings County, New York (PCI 2008).



Figure 7.29. Quarters B, covered walkway facing south. Brooklyn Navy Yard, Kings County, New York (PCI 2008).



Figure 7.30. Building 463, garage associated with Quarters B, located on northeast corner of lot, facing north. Brooklyn Navy Yard, Kings County, New York (PCI 2008).



Figure 7.31. Building 463, garage associated with Quarters B, located on northeast corner of lot, facing southeast. Brooklyn Navy Yard, Kings County, New York (PCI 2008).



Figure 7.32. Quarters B from Park Street, facing south. Brooklyn Navy Yard, Kings County, New York (PCI 2008).

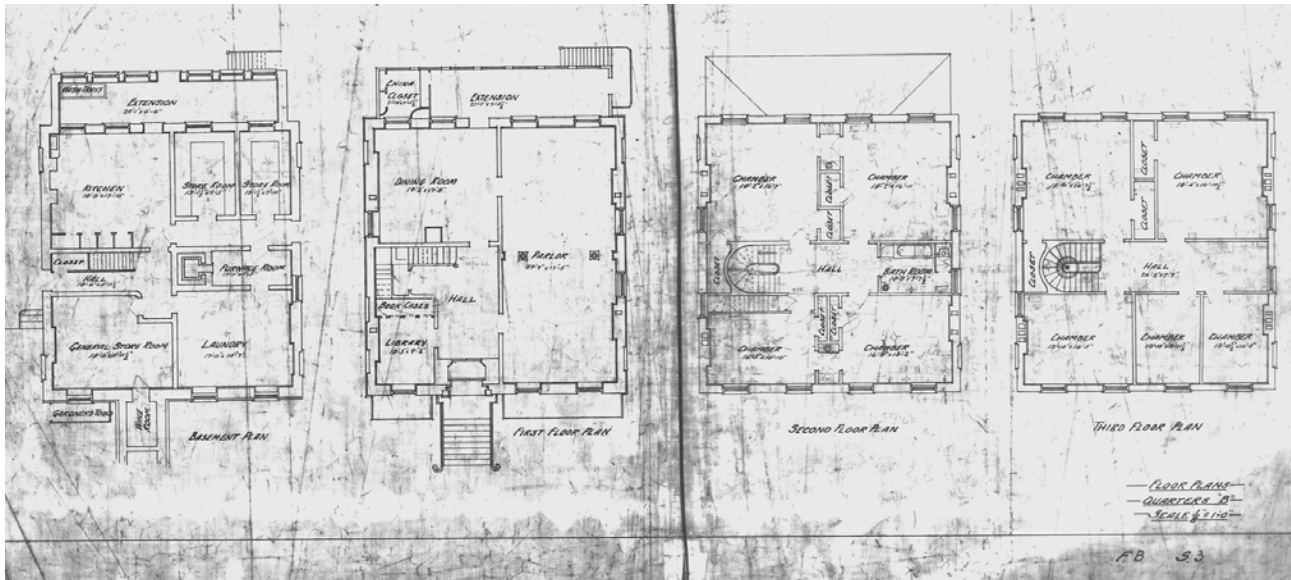


Figure 7.33. Drawing FB S3. "Floor Plans Quarters 'B'," no date. Brooklyn Navy Yard, Kings County, New York (Reproduced courtesy of BNYDC Archives).

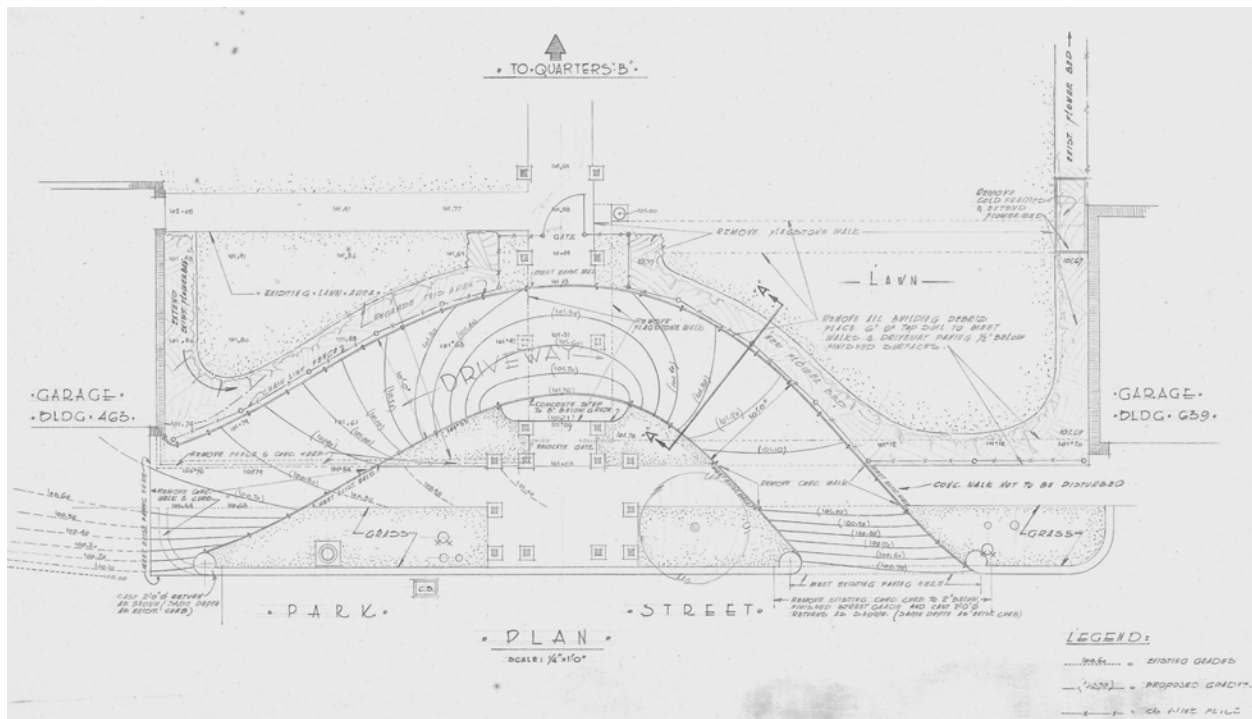


Figure 7.34. Drawing F571-S446. "Quarters B Entrance Improvement Driveway," Plan revised August 19, 1958. Brooklyn Navy Yard, Kings County, New York (Reproduced courtesy of BNYDC Archives).

7.4 QUARTERS D

Quarters D is a detached dwelling located in the central eastern half of Admiral's Row with Quarters B to the west and Quarters E, F & G to the east (Figures 7.35 to 7.40). The building is considered to be one of the oldest quarters in Admiral's Row. Reported dates of construction vary from prior to 1859 (Beardsley/Crawford & Stearns 2008:79) to ca. 1870 (CRCG 1995:7). Stylistically, the building represents elements associated with mid-nineteenth century transitional Greek Revival and Italianate. According to Beardsley/Crawford & Stearns (2008:79), "Quarters 'D' was built as and survives as a textbook example of a mid nineteenth century full blown late Greek Revival style military officer's quarters including exterior, building plan, and interior details." Historically, the Ordnance Officer resided in Quarters D.

A review of historic photographs from 1912 confirmed when stucco was applied to the brick masonry exterior of Quarters D (Figures 7.41 and 7.42). Additional historic photographs from 1930 documented the extension of the rear addition (Figures 7.43 and 7.44).

Portions of Quarters D are severely deteriorated (Figures 7.45 to 7.47),

with the source of the deterioration attributed to water penetration into the building, mostly all from deteriorated roof conditions, open roof hatches, basement dampness, and open third story burned out roof section. Most of the severe deterioration from roof failure is found in rear sections, porch, and in the burned attic roof areas. In Quarters "D" the severe deterioration (collapse) of the rear appendages, side porch, and roofs of the garage is to areas that were significantly altered well into the twentieth century with modern amenities and features including utilitarian areas such as the kitchens, storage, and service areas. These areas are not part of the historic core sections of the buildings and while their deterioration is unfortunate, it does not play a major contributing factor to the historic integrity of the historic building sections. Damage in the pre-1859 building is limited to the burned interior (not destroyed) of the third story, burned holes in the roof, and water penetration into the rear brick wall causing partial wall failure at the second and first story levels. Ironically the old metal roof is still shedding water in many areas of the main roof even with the fire damage (Beardsley/Crawford & Stearns 2008:81).

Quarters D has an associated garage, **Building 464**, which was constructed in 1919 as a semi-permanent building (Property Record Card No 2-00440). It is located on the south side of Park Street, north of Quarters D. Building 464 is a one-story, concrete block building consisting of 529 square feet (23'x23'x11'). The structure's real property cost value was listed at \$500 in 1985 when it was transferred from the U.S. Navy to the U.S. Army National Guard Bureau.

Upon cursory visual inspection, Building 464 appears to be in fair condition. The building has been left open and exposed to natural elements since Admiral's Row was vacated. Its frame roof system has been compromised due to exposure which has caused both collapsed framing and missing sections of roof (Figures 7.48 and 7.49).



Figure 7.35. Quarters D, facing northeast. Brooklyn Navy Yard, Kings County, New York (PCI 2008).



Figure 7.36. Quarters D, facing northwest. Brooklyn Navy Yard, Kings County, New York (PCI 2008).

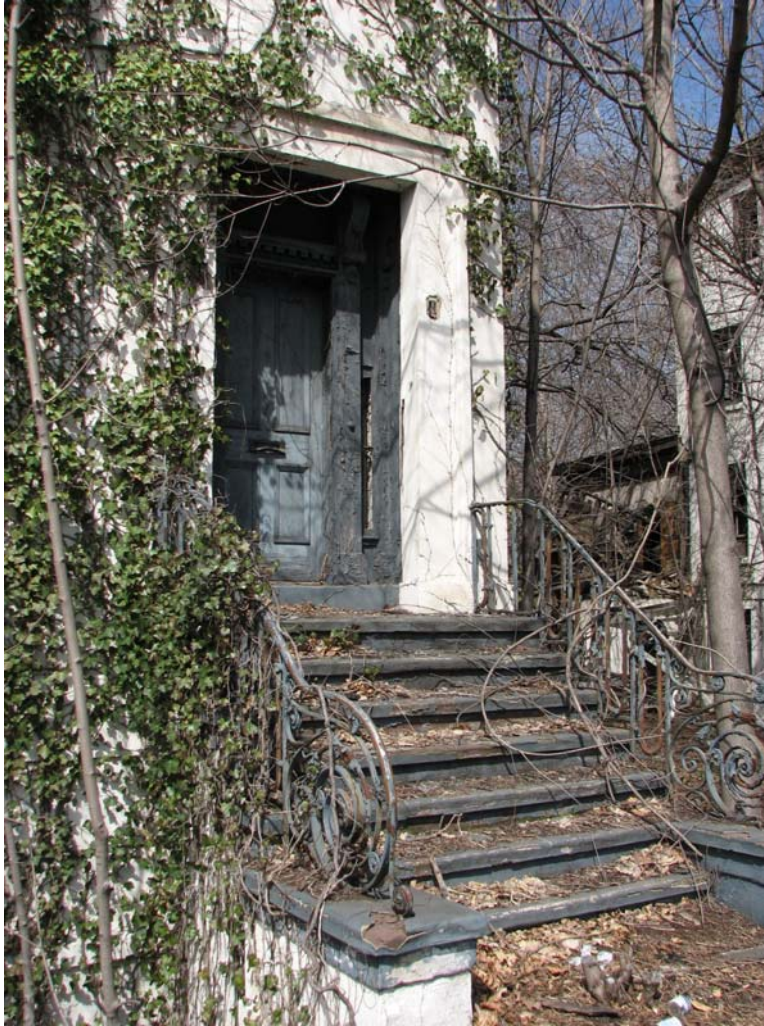


Figure 7.37. Quarters D, entranceway, facing northeast. Brooklyn Navy Yard, Kings County, New York (PCI 2008).



Figure 7.38. Quarters D, west elevation, facing southeast. Brooklyn Navy Yard, Kings County, New York (PCI 2008).



Figure 7.39. Quarters D, east elevation, facing northwest. Brooklyn Navy Yard, Kings County, New York (PCI 2008).



Figure 7.40. Quarters D, rear elevation, facing south. Brooklyn Navy Yard, Kings County, New York (PCI 2008).



Figure 7.41. “Repairs to Quarters House D,” November 4, 1912. Shows Quarters D prior to application of stucco. (New York Navy Yard: 1900-1945; Record Group 181-B; NARA—Northeast Region (NYC). Photograph No. FD N1. Reproduced courtesy of BNYDC Archives.)



Figure 7.42. “House D (53). Repairs, looking northwest,” December 12, 1912. (New York Navy Yard: 1900-1945; Record Group 181-B; NARA—Northeast Region (NYC). Photograph No. FD N2. Reproduced courtesy of BNYDC Archives.)

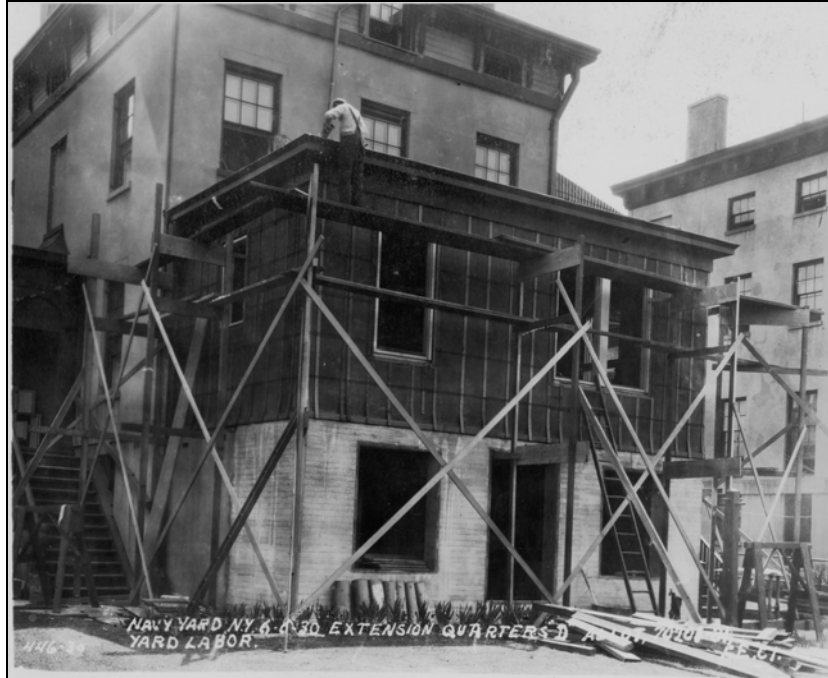


Figure 7.43. “Extension Quarters D,” June 6, 1930. (New York Navy Yard: 1900-1945; Record Group 181-B; NARA—Northeast Region (NYC). Photograph No. FD C1. Reproduced courtesy of BNYDC Archives.)



Figure 7.44. “Extension Quarters D,” July 10, 1930. (New York Navy Yard: 1900-1945; Record Group 181-B; NARA—Northeast Region (NYC). Photograph No. FD C2. Reproduced courtesy of BNYDC Archives.)



Figure 7.45. Interior stairway of Quarters D. Brooklyn Navy Yard, Kings County, New York (PCI 2008).



Figure 7.46. Interior of Quarters D. Brooklyn Navy Yard, Kings County, New York (PCI 2008).



Figure 7.47. Interior of Quarters D. Brooklyn Navy Yard, Kings County, New York (PCI 2008).



Figure 7.48. Building 464, garage associated with Quarters D, facing north. Located on northeast corner of property. Brooklyn Navy Yard, Kings County, New York (PCI 2008).



Figure 7.49. Building 464, garage associated with Quarters D, facing southeast. Brooklyn Navy Yard, Kings County, New York (PCI 2008).

7.5 QUARTERS E, F AND G

Quarters “E-F-G” comprise three attached dwellings located in the eastern half of Admiral’s Row with Quarters D to the west and Quarters “I” to the east (Figures 7.50 to 7.52). Constructed in 1864, Quarters E-F-G share a unified façade designed in the Second Empire Style. Each building consists of a three-story nineteenth century structure with raised finished basements and large single-story twentieth century additions with raised finished basements. The structural system for the original nineteenth century portion of Quarters E-F-G consists of multi-wythe exterior brick bearing walls with rough sawn wood floor and roof framing spanning from the exterior bearing walls to interior multi-wythe brick or rough sawn wood bearing walls. Twentieth century additions consist of rough sawn wood bearing walls, floor and roof framing (Beardsley/Crawford & Stearns 2008:209). Historically, Quarters E housed the Naval Constructor, the Chief Engineer lived in Quarters F, and the Surgeon in Quarters G.

A review of historic photographs from 1912 confirmed when stucco was applied to the brick masonry exterior of Quarters E-F-G (Figure 7.53). In 1930, cornice repairs were made to Quarters E-F-G and photographs from that year provide unobstructed views (i.e., no vegetation) of the Flushing Avenue elevation (Figures 7.54 and 7.55). Additional historic photographs from 1934 documented repairs and alterations to the east side of Quarters G (Figures 7.56 and 7.57).

In their 2008 report, Beardsley/Crawford & Stearns noted

significant failures are evident to the structural systems of the twentieth century additions, Quarters F, and to the South portions of Quarters E and Quarters G. The structural failures observed in these areas aid in the perception that the structural integrity of the entire superstructure is in question. While this remains true for the structural integrity of the twentieth century additions, the overall structural integrity for the original nineteenth century portions of the structural systems for Quarters E and Quarters G appear intact, with localized deteriorations and minimal structural system failures [Figures 7.58 to 7.60]. The severe superstructure failure in Quarters F is progressively deteriorating, and is causing a negative impact on the structural systems of Quarters E and Quarters G. Inevitably, the superstructure failure occurring in Quarters F will ultimately result in the failure of Quarters E and Quarters G (2008:210).



Figure 7.50. Quarters E, F and G, facing northeast. Brooklyn Navy Yard, Kings County, New York (PCI 2008).



Figure 7.51. Quarters E, F and G, facing north. Brooklyn Navy Yard, Kings County, New York (PCI 2008).



Figure 7.52. Quarters E, F and G, facing northwest. Brooklyn Navy Yard, Kings County, New York (PCI 2008).



Figure 7.53. “Houses E, F, & G (54), Repairs, Looking northwest,” December 14, 1912. (New York Navy Yard: 1900-1945; Record Group 181-B; NARA—Northeast Region (NYC). Photograph No. FE N1. Reproduced courtesy of BNYDC Archives.)



Figure 7.54. “Repairs to Cornice on Quarters E-F & G.” June 6, 1930. (New York Navy Yard: 1900-1945; Record Group 181-B; NARA—Northeast Region (NYC). Photograph No. FE C9. Reproduced courtesy of BNYDC Archives.)



Figure 7.55. “Repairs to Cornice Quarters E-F-G,” July 7, 1930.” (New York Navy Yard: 1900-1945; Record Group 181-B; NARA—Northeast Region (NYC). Photograph No. FE C2. Reproduced courtesy of BNYDC Archives.)



Figure 7.56. “Alterations and Repairs to Quarters G [east side],” July 2, 1934. (New York Navy Yard: 1900-1945; Record Group 181-B; NARA—Northeast Region (NYC). Photograph No. FG C9. Reproduced courtesy of BNYDC Archives.)



Figure 7.57. “Alterations and Repairs to Quarters G,” July 2, 1934. (New York Navy Yard: 1900-1945; Record Group 181-B; NARA—Northeast Region (NYC). Photograph No. FG C11. Reproduced courtesy of BNYDC Archives.)



Figure 7.58. West elevation of Quarters E, facing east-northeast. Brooklyn Navy Yard, Kings County, New York (PCI 2008).



Figure 7.59. Quarters E, F and G, facing southeast. Brooklyn Navy Yard, Kings County, New York (PCI 2008).



Figure 7.60. Quarters E, F and G, facing south. Brooklyn Navy Yard, Kings County, New York (PCI 2008).

7.6 QUARTERS I

Quarters I is a detached dwelling located at the eastern end of Admiral's Row with Quarters E, F & G to the west and Fourth Street to the east. Building 275 stands on the opposite side of Fourth Street. This French Second Empire style building is reported to have been constructed in ca. 1899 (CRCG 1995:8). Historically, the Civil Engineer resided in Quarters I (Figures 7.61 to 7.66).

A review of historic photographs from 1912 confirmed when stucco was applied to the brick masonry exterior of Quarters I (Figures 7.67 and 7.68). These photographs also documented Quarters "I" prior to construction of the frame additions on the east and rear elevations.

In their 2008 report, Beardsley/Crawford & Stearns noted

In the case of Quarters "I" the source of the deterioration has been water penetration into the building, mostly all from deteriorated roof conditions, open roof hatches, and basement dampness. While visually alarming, most of the severe deterioration from roof failure is found in rear sections, porch, and in and below Mansard roof areas. In Quarters "I" the severe deterioration (collapse) of the rear appendages, side porch, and roofs of the garage is confined to areas that were altered or built well into the twentieth century with modern amenities and features including utilitarian areas such as the kitchens, storage, and service areas. These areas are not part of the historic core sections of the buildings and while their deterioration is unfortunate, it does not play a major contributing factor to the historic integrity of the historic building sections. Within the rear bay of the circa 1900 building roof leaks have caused severe framing and detail deterioration to the roof, floor framing, and service stairway [Figures 7.69 to 7.71]. Portions of these isolated frame interior features have collapsed within the sound exterior brick masonry walls (Beardsley/Crawford & Stearns 2008:19).

Quarters I has two associated garages. **Building 437** was constructed in 1919 as a semi-permanent structure (Property Record Card No 2-00435). The excess real property supplement identified the building as a Garage (Figure 7.72). It is located on the south side of Park Street, north of Quarters I. Building 437 is a one-story, concrete block building consisting of 483 square feet (23'x21'x10'). The structure's real property cost value was listed at \$860 in 1985 when it was transferred from the U.S. Navy to the U.S. Army National Guard Bureau.

Building 438 was constructed in 1919 as a semi-permanent structure (Property Record Card No 2-00436) (Figure 7.73). It is located on the south side of Park Street, north of Quarters I along the eastern boundary of the parcel. Building 438 is a one-story, concrete block building consisting of 408 square feet (24'x17'x10'). The structure's real property cost value was listed at \$1,200 in 1985 when it was transferred from the U.S. Navy to the U.S. Army National Guard Bureau. Figure 7.74 is a drawing from 1955 [Drawing No F-438-SX] of "Building No. 438 Quarters I Garage Repairs Plans, Elevations & Details," June 6, 1955. It shows the shed roof and other details of the garage.

Upon cursory visual inspection, Building 437 and Building 438 appear to be in fair condition. The buildings have been left open and exposed to natural elements since Admiral's Row was vacated. Its frame roof system has been compromised due to exposure which has caused both collapsed framing and missing sections of roof.



Figure 7.61. Quarters I, facing northeast. Brooklyn Navy Yard, Kings County, New York (PCI 2008).



Figure 7.62. Quarters I, facing north. Brooklyn Navy Yard, Kings County, New York (PCI 2008).



Figure 7.63. Quarters I, facing east. Brooklyn Navy Yard, Kings County, New York (PCI 2008).



Figure 7.64. Quarters I, rear elevation, facing south. Brooklyn Navy Yard, Kings County, New York (PCI 2008).



Figure 7.65. Quarters I, east elevation, facing south. Brooklyn Navy Yard, Kings County, New York (PCI 2008).



Figure 7.66. Quarters I, facing northwest. The chain-linked fence at right delineates the western boundary of Admiral's Row. Brooklyn Navy Yard, Kings County, New York (PCI 2008).



Figure 7.67. “House I (55) Repairs Looking N.W.,”
December 14, 1912. (*New York Navy Yard: 1900-1945;*
Record Group 181-B; NARA—Northeast Region (NYC).
Photograph No. FIN24. Reproduced courtesy of BNYDC
Archives).



Figure 7.68. "House I (55) Looking N.W. Repairs,"
January 6, 1913. (New York Navy Yard: 1900-1945; Record
Group 181-B; NARA—Northeast Region (NYC). Photograph
No. FIN24. Reproduced courtesy of BNYDC Archives.)



Figure 7.69. Quarters I, interior, facing south. Brooklyn Navy Yard, Kings County, New York (PCI 2008).



Figure 7.70. Quarters I, interior, facing southeast. Brooklyn Navy Yard, Kings County, New York (PCI 2008).



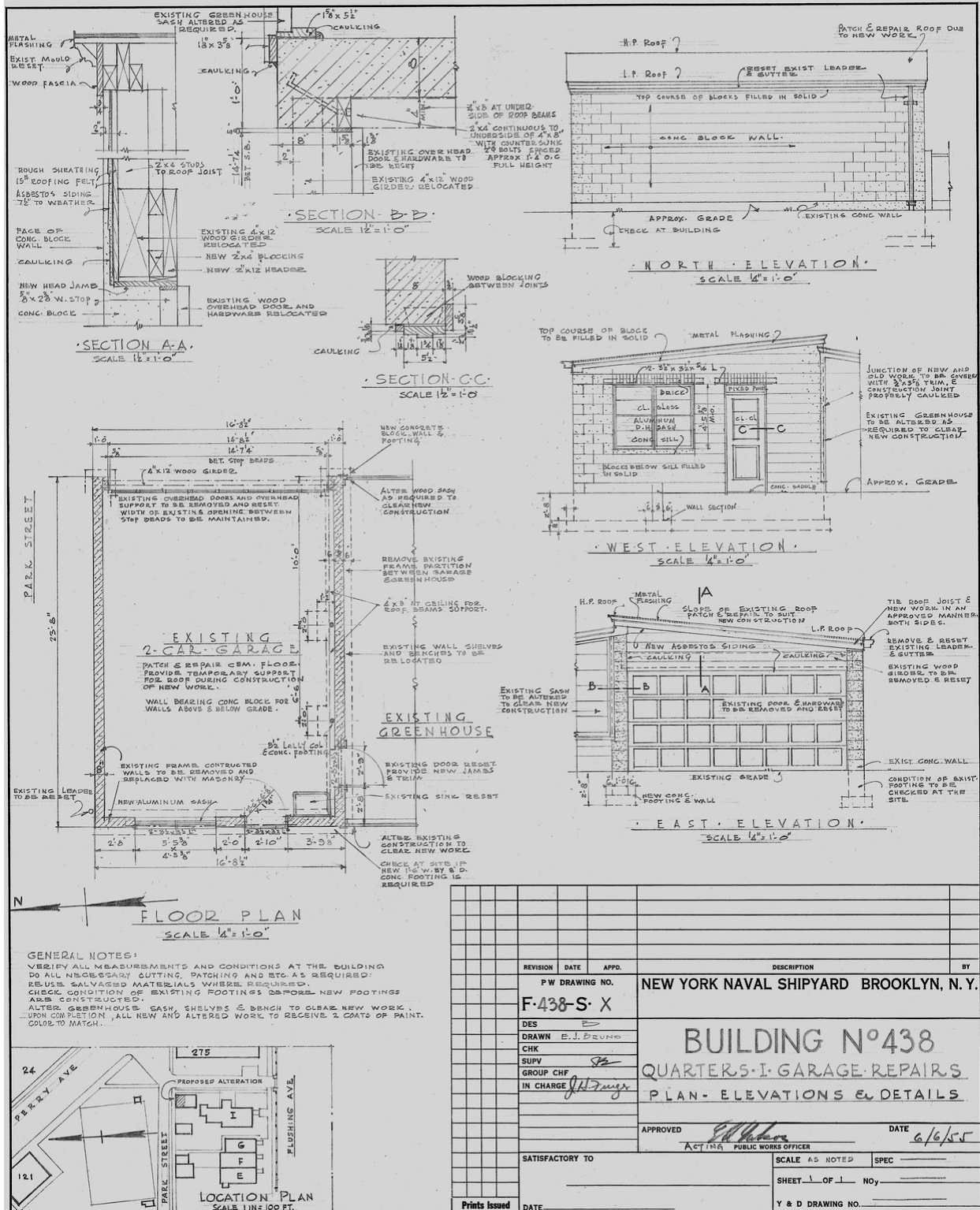
Figure 7.71. Quarters I, interior, facing south. Brooklyn Navy Yard, Kings County, New York (PCI 2008).



Figure 7.72. Building 437, associated with Quarters I, located on northwest corner of the lot, facing southwest. Brooklyn Navy Yard, Kings County, New York (PCI 2008).



Figure 7.73 Building 438, associated with Quarters I, located on northeast corner of the lot, facing southeast. Brooklyn Navy Yard, Kings County, New York (PCI 2008).



8.0 Park Street and Park Avenue

Park Street is the main east-west road in the project area that survives as the only former residential roadway in the BNY (Figures 8.1 to 8.5). The rear yards and garages associated with the Officers' Quarters line the south side of Park Street. The eastern portion of the north side of the street contains a former tennis court and an associated shower building. West of the former tennis court facilities is an undeveloped area known historically as the Parade Ground. The south side of the street is lined with poured concrete sidewalks and curbs, which were probably constructed at the same time or shortly after the construction of the garages (ca. 1919). Mature hardwood trees still line the north side of Park Street. A raised poured concrete platform is located on the south side of the former Parade Ground, on the north side of Park Street (Figure 8.6). The platform might have been associated with a bandstand that was documented on earlier maps of the project area (see Figure 3.12).

Park Avenue is a north-south road that terminates at Park Street (Figures 8.7 to 8.11). A street sign at the northern end of the project area, near Quarters J, identifies the roadway as First Avenue. The northern half of the Timber Shed (Building 16) once lined the west side of the street (see Figure 3.12). The former parade ground stood along the eastern side of Park Avenue (see Figures 8.8 and 8.9). A sinkhole at the northern end of the section of the street within the project area revealed Park Avenue was once brick-lined.



Figure 8.1. Park Street, facing west. The Tennis Court is at right. Brooklyn Navy Yard, Kings County, New York (PCI 2008).



Figure 8.2. Park Street facing east from Building 198. Brooklyn Navy Yard, Kings County, New York (PCI 2008).



Figure 8.3. Park Street facing west from Building 198. Brooklyn Navy Yard, Kings County, New York (PCI 2008).



Figure 8.4. Detail of poured concrete sidewalk and curb located between Buildings 438 (at right) and 437, facing east. Brooklyn Navy Yard, Kings County, New York (PCI 2008).



Figure 8.5. Park Street from Park Avenue, facing east. Brooklyn Navy Yard, Kings County, New York (PCI 2008).



Figure 8.6. Raised poured concrete platform located on south side of the former Parade Ground, on the north side of Park Street, facing northwest. Brooklyn Navy Yard, Kings County, New York (PCI 2008).



Figure 8.7. Facing west from terminus of Park Street at Park Avenue. Note brick fence in background. Brooklyn Navy Yard, Kings County, New York (PCI 2008).



Figure 8.8. Former Parade Ground from intersection of Park Street and Park Avenue, facing northeast. Brooklyn Navy Yard, Kings County, New York (PCI 2008).



Figure 8.9. Former Parade Ground from intersection of Park Street and Park Avenue, facing northwest. Brooklyn Navy Yard, Kings County, New York (PCI 2008).



Figure 8.10. Park Avenue from Park Street, facing north. Brooklyn Navy Yard, Kings County, New York (PCI 2008).



Figure 8.11. Park Avenue from north end of the project area, facing north. Brooklyn Navy Yard, Kings County, New York (PCI 2008).

9.0 Quarters J

Quarters J was constructed in 1955 as a detached dwelling located on the northeast side of Park Avenue at the northern boundary of the project area (Figures 9.1 to 9.8). The one-story frame building is set on a concrete foundation and is sheathed with asbestos shingles. It has a side-gabled roof and a side entrance porch on the east elevation. A one-story frame addition with exterior brick chimney is attached to the rear elevation. Quarters J is presently dilapidated with a collapsed south façade. Stylistic remnants include a Colonial Revival style door enframement. The building was formerly designated Quarters “M” and once housed the Public Works Officer.

The building is presently in poor condition (e.g., near ruinous) and appears from exterior visual inspection to be structurally unsound. Its southern façade has collapsed and the side elevations appear to be undermined and collapsing.

Evidence of a raised lawn or garden area with poured concrete retaining walls is apparent on the east and south sides of the building. Despite overgrown vegetation surrounding the building, there is evidence of landscaping such as ornamental trees and bushes.

Based on a review of plans on file at BNYDC Archives, it appears a development for Officers’ Quarters was planned in the mid-1950s for the area bound by Park Street and Park Avenue (Figure 9.9). Quarters J was the only quarters constructed in this area. NYSHPO previously determined Quarters J as not NR-eligible in 1986 (see Appendix A: SHPO 1986).



Figure 9.1. Quarters J, south elevation (façade), facing northeast from Park Avenue. Brooklyn Navy Yard, Kings County, New York (PCI 2008).



Figure 9.2. Quarters J, south elevation (façade), facing northwest. Brooklyn Navy Yard, Kings County, New York (PCI 2008).



Figure 9.3. Quarters J, west elevation, facing east. Brooklyn Navy Yard, Kings County, New York (PCI 2008).



Figure 9.4. Quarters J, east elevation, facing west. Brooklyn Navy Yard, Kings County, New York (PCI 2008).



Figure 9.5. Quarters J, rear elevation with shed roof addition and exterior chimney, facing west. Brooklyn Navy Yard, Kings County, New York (PCI 2008).



Figure 9.6. Quarters J, detail of entrance on south elevation facing north. Note Colonial Revival style door enframement. Brooklyn Navy Yard, Kings County, New York (PCI 2008).



Figure 9.7. Quarters J, interior from side entrance, facing southwest. Brooklyn Navy Yard, Kings County, New York (PCI 2008).



Figure 9.8. Quarters J, interior from side entrance, facing west. Brooklyn Navy Yard, Kings County, New York (PCI 2008).

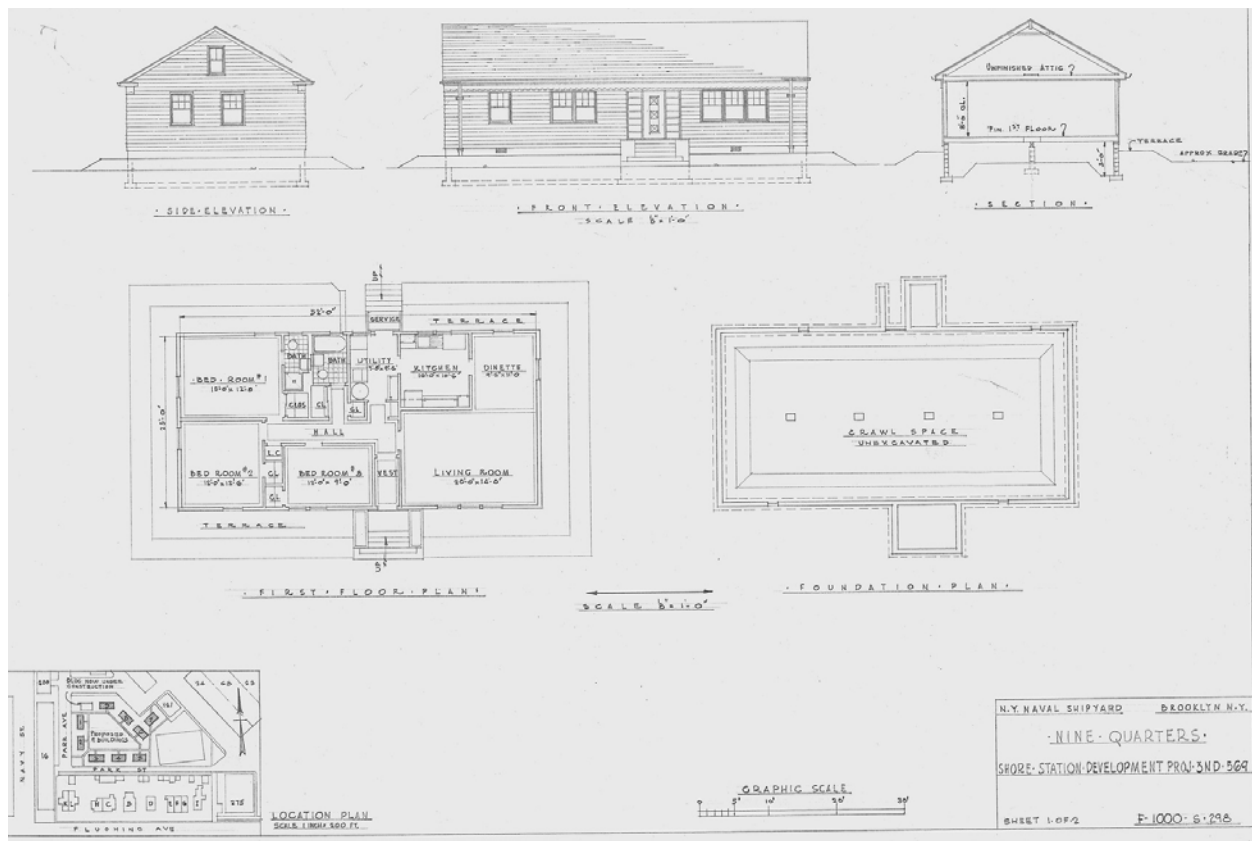


Figure 9.9. Drawing No. F1000-S298. "Nine Quarters Shore Station Proj. 3ND-569," no date [likely ca. mid-1950s]. At the time this plan was designed, Quarters J was under construction (lower left corner). A development of nine quarters planned for the area bound by Park Street and Park Avenue was never constructed. (Reproduced courtesy of BNYDC Archives.)

10.0 Miscellaneous Facilities

The following facilities/structures were previously evaluated by NYSHPO in 1982 for their significance in accordance with the criteria of the State Register of Historic Places (SR)¹. NYSHPO determined the following buildings as not eligible for listing on the SR: Buildings J, 135, 148 (sic [198])², 429, 432³, 433, 434, 435, 436, 438, 450, 452, 453, 463, and 464 (NYSHPO 1986). At that time, these buildings were considered “either not old enough to meet the 50 year cut off or they lacked architectural or historic significance” (NYSHPO 1986).

Most of the outbuildings were constructed in 1919 as detached garages with access from Park Street (Roberta Washington Architects, PC 1995: Schedule A-Supplement to Report of Excess Real Property). Most of the nine garages are attached and share one common party wall. The garages are constructed of concrete block with frame roof structures that are pitched or sloped. In 1985, the garage roofs were observed as leaking due to neglect and lack of maintenance and repair (Roberta Washington Architects, PC 1995:148). Note that the garages are presented earlier in this report with their associated Quarters (see Section 7.0).

Below is a discussion of miscellaneous facilities in the project area that are not associated with Quarters. These facilities are presented first with a discussion of the project area’s brick walls (no number designation) and then followed by other miscellaneous facilities in sequential building number order. The property also includes 2,089 square yards of concrete sidewalks and 3,593 square yards of asphalt covered roads. Other facilities listed in the transfer of real property dated January 28, 1985 included steam piping (3200 LF), electrical distribution system (7000 LF), gas distribution system (1000 LF), water distribution system 2700 LF, and Sewer and Storm Drains (2500 LF).

Brick Walls. Three sections of brick walls located along the southern and western perimeters of the parcel were listed separately in the excess real property supplement (Figures 10.1 to 10.4; see also Figures 6.22 to 6.25, Timber Shed, and Figure 7.1, Quarters K-L). The Navy Yard’s brick walls along Navy Street and Flushing Avenue have been a prominent feature of the urban landscape since the nineteenth century. Square brick piers support the walls. Stone coping and decorative iron fencing cap the top of the wall. The interior of the brick wall along Navy Street was covered with stucco, probably circa 1912 at the same time as the Quarters. Large areas of stucco along the interior of the brick wall have detached from the brick surface. Trees have grown along the interior base of the wall, which more than likely have compromised structural soundness in sections of the wall. Each section is listed below:

1. Brick Wall section measuring 11’6” high and 160 linear feet [LF]
2. Brick Wall section measuring 14’ high and 70 LF
3. Brick Wall section measuring 17’ high and 415 LF

¹ The 1982 Excess Real Property forms are included in the Appendix of the Supplementary Report prepared by Roberta Washington Architects, PC (2005).

² The building identified as Number 148 appears to have been a typographical error, as there is no such building number identified on the Naval Facilities Engineering Command Excess Real Property List dated 28 April 1982 or plans of the project area. The correct building number appears to be Building No. 198, the Shower Room.

³ Buildings 432 and 433 were not identified during the Phase IA field investigation, on the Excess Real Property List or plans of the project area.



Figure 10.1. East elevation of the brick wall along Navy Street from near the northwest corner of the project area, facing south. Note trees along base of wall. Brooklyn Navy Yard, Kings County, New York (PCI 2008).



Figure 10.2. Detail of brick masonry of wall showing common bond construction. Note stucco above. Brooklyn Navy Yard, Kings County, New York (PCI 2008).



Figure 10.3. Juncture of Flushing Avenue (at left) and (at right) Navy Street wall sections in front of the Timber Shed. Brooklyn Navy Yard, Kings County, New York (PCI 2008).

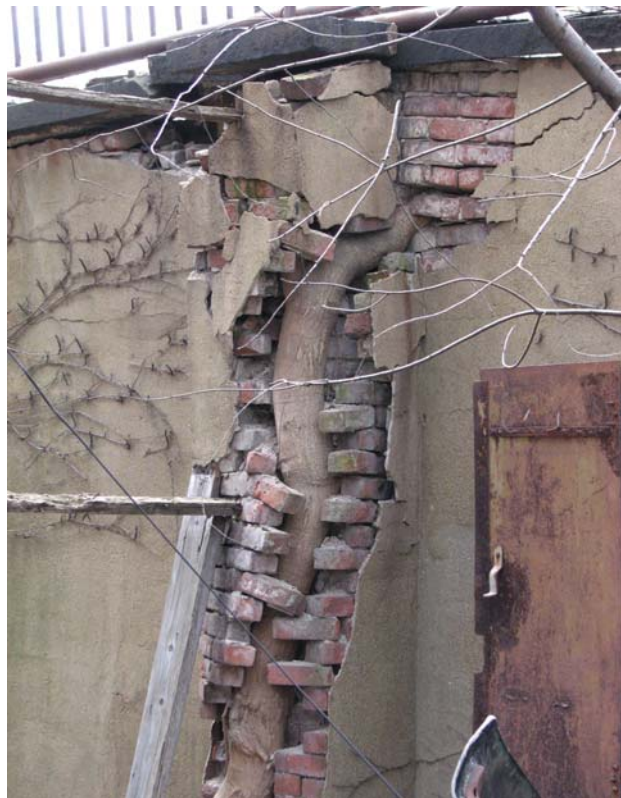


Figure 10.4. Detail of tree growing through brick pier next to north end of Timber Shed, facing southwest. Brooklyn Navy Yard, Kings County, New York (PCI 2008).

Other perimeter fencing includes a 13-ft high iron perimeter wall/fence (465 LF) and 8' chain link fence (465 LF) that were listed separately in the excess real property supplement.

Building 135: Flag Pole. Building 135, a flag pole, was constructed in 1943 as a permanent structure (Property Record Card No 2-004432). It is located in the northern portion of the project area, east of Quarters J. The structure's real property cost value was listed at \$1,000 in 1985 when it was transferred from the U.S. Navy to the U.S. Army National Guard Bureau.⁴

The flag pole still stands, but it is no longer in use. Formerly a prominent feature of the parade ground, the flag pole is not visible from most points in the project area due to surrounding dense vegetation and trees (Figure 10.5).



Figure 10.5. Building 135, a flag pole located in the northern portion of the project area (in center), facing north-northwest. Brooklyn Navy Yard, Kings County, New York (PCI 2008).

⁴ Real property cost value information obtained from Transfer and Acceptance of Military Real Property, January 23, 1985. Prepared for Commander, New York District Corps of Engineers.

Building 198: Shower Room (Tennis Court). Building 198 was constructed in 1952 as a semi-permanent building (Property Record Card No 2-00433)⁵. The excess real property supplement identified the building as “Shower Room Tennis Court.” It is located on the north side of Park Street next to the southwest corner of the Tennis Court. The structure’s real property cost value was listed at \$500 in 1985 when it was transferred from the U.S. Navy to the U.S. Army National Guard Bureau. The building appears to be in fair condition with much of its original historic exterior building fabric intact (Figures 10.6 to 10.11).



Figure 10.6. Building 198 (Shower Room), located next to southwest corner of Tennis Court, facing northwest. Brooklyn Navy Yard, Kings County, New York (PCI 2008).

⁵ The Brooklyn Navy Development Corporation Archives do not retain real property cards. The real property record card numbers in this report were obtained from *Report of Real Property* dated April 28, 1982; Holding Agency No. 8-80, GSA Control No. N-NY-627C as reproduced in the Roberta Washington Architects, PC report (1995:Appendix).



Figure 10.7. Building 198 (Shower Room), east elevation, facing north. Brooklyn Navy Yard, Kings County, New York (PCI 2008).



Figure 10.8. Building 198 (Shower Room), facing northeast. Brooklyn Navy Yard, Kings County, New York (PCI 2008).



Figure 10.9. Building 198 (Shower Room), rear and west elevations, facing southeast. Brooklyn Navy Yard, Kings County, New York (PCI 2008).



Figure 10.10. Remnant of flagstone walkway (in foreground) on west side of Building 198, facing north. Brooklyn Navy Yard, Kings County, New York (PCI 2008).



Figure 10.11. Unidentified metal structure located behind Building 198, facing east. Brooklyn Navy Yard, Kings County, New York (PCI 2008).

Building 429: Public Works Maintenance Building. Building 429 was constructed in 1919 as a semi-permanent building (Property Record Card No 2-00434). The excess real property supplement identified the building as a Public Works Maintenance Building. It is located on the south side of Park Street, north of Quarters E, F and G. The south elevation has an attached green house. The structure's real property cost value was listed at \$750 in 1985 when it was transferred from the U.S. Navy to the U.S. Army National Guard Bureau. The present condition of the garage is fair. The building has been left open and exposed to natural elements since Admiral's Row was vacated. Its frame roof system has been compromised due to exposure which has caused both collapsed framing and missing sections of roof (Figures 10.12 and 10.13).



Figure 10.12. Building 429, Public Works Maintenance Building, located behind Quarters E, F and G, facing southeast. Brooklyn Navy Yard, Kings County, New York (PCI 2008).



Figure 10.13. Building 429, Public Works Maintenance Building, located behind Quarters E, F and G, facing west. Brooklyn Navy Yard, Kings County, New York (PCI 2008).

Building 710: Tennis Court. Building 710 was constructed in 1918 as a permanent facility (Property Record Card No 2-00442). The excess real property supplement identified the facility as “Tennis Court.” It is located on the north side of Park Street, in the northeast corner of the project area. The 165-x-116-ft tennis court is contained within a chain linked fence (Figures 10.14 to 10.16). The structure’s real property cost value was listed at \$20,000 in 1985 when it was transferred from the U.S. Navy to the U.S. Army National Guard Bureau.



Figure 10.14. Tennis Court (Building 710), from Park Street, facing northeast. Brooklyn Navy Yard, Kings County, New York (PCI 2008).



Figure 10.15. Tennis Court (Building 710), from northwest corner of court, facing southeast. Brooklyn Navy Yard, Kings County, New York (PCI 2008).



Figure 10.16. Wooden benches next to the northwest corner of the tennis court, facing south. Benches face west. Brooklyn Navy Yard, Kings County, New York (PCI 2008).

11.0 Conclusions and Recommendations

11.1 ARCHAEOLOGICAL INVESTIGATION

11.1.1 Prehistoric and Early Historic Sensitivity. No prehistoric sites have been listed within one mile of the project area in the archaeological site files at the NYSHPO and the New York State Museum (see Section 3.1). This region and the Wallabout Bay waterfront were inhabited by Native Americans including the Canarsee in the early historic period (see Figure 3.1; Bolton 1934). Land-use or settlement by prehistoric Native Americans spans thousands of years (as presented in Section 3.3.1). The likelihood for the presence of buried prehistoric cultural resources within the APE is generally low due to the former presence of tidal salt marshes and open water of Wallabout Bay that originally covered the entire project area (see Figure 3.2). Although not likely, potential prehistoric sites would include shell middens, small camps, or early Holocene remains deposited prior to a post-glacial rise in sea level.

There is also a low likelihood for the presence of early historic cultural resources due to the APE's former state as a tidal marsh/salt meadow. The earliest European settlement in the area was by Joris Jansen de Rapalje and others starting in the mid-seventeenth century during the Dutch occupation of New York and continuing through the English occupation and American Revolution. Some of the family's property was reportedly outside the APE on the east side of the bay. With the exception of a wooden bridge erected across the millpond in the late eighteenth century, no historic map-documented structures (MDS) are present in the APE from this era. If the fringes (i.e., shore) of the tidal marsh lie within the APE, possible historic remains could include those associated with Dutch and English settlement as well as African slaves. Evidence (e.g., lost planks, dock remains [if ever constructed]) also could remain from historic use of the former millpond for seasoning oak planks (see Church and Rutsch 1982:21).

11.1.2 Revolutionary War Period Sensitivity. The sensitivity for remains associated with the Revolutionary War in the project area is considered moderate. The British and their allies reportedly foraged and encamped throughout the area including lands in the Wallabout for seven years. Although most or all of the project area was a tidal marsh during this period, multiple accounts report that shallow burials of deceased American prisoners were hastily dug along the shoreline of Wallabout Bay during the British occupation of New York City (see Section 3.3.2). British prison ships were anchored nearby during the war. The shoreline depicted on early nineteenth-century maps is adjacent to, or crosses the northwest portion of the project area. As previously discussed in Sections 2.2.3 and 3.4, the precise location of the shoreline for any given period is not reliably established due to the shifting nature of the tidal flats and salt marshes of Wallabout Bay and the potential inaccuracies of historic maps including problems with scale, proportion and/or position.

11.1.3 Nineteenth-Century and Twentieth-Century Archaeological Sensitivity. Occupation of the project area by the United States Navy spanned the years 1801 to 1966 and residences along Admiral's Row were used into the 1970s. The setting of the project area appears to have changed little during the first half of the nineteenth century. The northwest corner appears to be the only dry land during this time with the remainder of the project area covered by the south end of the millpond. The location of the millpond shoreline is in question as it is depicted in multiple locations on the historic maps between 1838 and 1854 (see Figures 3.6 through 3.9). This could be due to cartographic error and or consequent problems matching modern and historic maps. Timber Shed (Building 16) was constructed across the western

portion of this area in the middle of the nineteenth century (ca. 1853). Approximately 75 percent of the building was demolished in the 1960s leaving the area west of Park Avenue an open lot. This area is sensitive for remains associated with former activities at the Timber Shed. Portions of its floor might have remained dirt with no formal flooring or pavement. This location is also sensitive for archaeological remains from activities along the former shoreline because disturbances from the Timber Shed construction might be limited to its structural footings and fill. As a result, earlier deposits may be preserved.

The sensitivity assessment for the presence of nineteenth-century and twentieth-century cultural resources is low to moderate in the area of the parade ground. Historic use of this open space would not have likely resulted in significant artifact deposition with identifiable patterns or stratification. No indication of former outbuildings associated with the residences of Admiral's Row was found during background research. Foundation remains of the former bandstand could be present but its historic use would not likely result in significant artifact deposition. The presence of subsurface features (e.g., midden) is unlikely. Similarly, ground adjacent to the tennis court (Building 710 [built in 1918]) and flagpole (Building 135 [built in 1943]) have a low sensitivity for associated cultural resources even though both structures are greater than 50 years old. The areas surrounding Building J and the Tennis Court Shower Room (Building 198) have low sensitivity for significant cultural resources because the structures were built in the second half of the twentieth century.

The likelihood of historic archaeological resources associated with the Admiral's Row residences is high. The yards surrounding the buildings are generally undisturbed. Artifact deposits and other cultural features could be present and have the potential to provide insight regarding the everyday lives of Naval officers and their families (e.g., economy, material culture, etc.) from the middle nineteenth to the late twentieth century. As Simeon Bankoff (Executive Director, Historic Districts Council) expressed in a communication to Kristin Leahy (National Guard Bureau Cultural Resources Manager): "This is during the time when America grew into a defining world power. During this time, the U.S. military and military life grew and changed, and the stories of the people in these houses might open an interesting and important window to that evolution" (April 18, 2008). The yards behind each residence are particularly sensitive for the presence of middens and filled or covered privies, wells and cisterns. If present, filled wells or privy features could be sensitive for cultural materials deposited toward the end of the nineteenth century as they became obsolete (see Section 3: page 3-22).

11.1.4 Recommendations. The entire project area has potential to yield cultural remains from the prehistoric (although low due to its formerly submerged setting [see Section 11.1.1]) through historic periods. Therefore, a Phase IB archaeological investigation is recommended. Table 11.1 presents a summary of Phase IB recommendations. Subsurface testing is recommended to determine the presence or absence of potentially buried prehistoric and historic cultural resources. Standard shovel testing should be employed as well as geomorphological sampling. The geomorphological investigation should be conducted initially to determine the practicality of shovel testing in areas sensitive for deep deposits and to assess ground disturbances. Figure 11.1 shows a few suggested locations for Phase IB geomorphological investigations. Logistical impediments (e.g., utilities, trees, structures) and initial results will likely affect the ultimate distribution and number of survey locations. If archaeologically sensitive strata are found below the effective limit of shovel test sampling (approximately one meter), additional backhoe trenching or overburden stripping might be necessary. Geomorphological field investigation efforts should also focus on the west side of the project area to determine the location of the original shoreline and if any of the original

landscape is intact. If logistically feasible, auguring or trenching between the extant structures and Flushing Avenue should be attempted to identify the former millpond shoreline(s). The lengths of exploratory trenches should vary depending on the results of borings, initial trench results, and logistical limitations. Evidence of the former shoreline might appear as natural soils below dateable fill (i.e., fill with diagnostic materials) or remains of former walls/bulkheads (e.g, timber, stone, brick). In addition, any trenching should be conducted with prudence, as it is a destructive exploratory method. A manual bucket auger would cause the least disturbance to

Table 11.1. Summary of Phase IB Investigation Recommendations

Investigation Component	Recommended Objective	Recommended Methodology
Archaeology and Architecture	Develop a Health and Safety Plan for field investigations	Determine potential hazards and incorporate procedures to identify, avoid, or respond.
Geomorphology	Identify the original shoreline (if present)	Auger probing, backhoe trenching
	Determine the depth of fill and practicality of archaeological shovel testing	
	Possibly identify hazardous materials (if apparent)	
Archaeology	Identify buried cultural resources in the Admirals Row Study Area	Close interval shovel testing (e.g., 7.5 m [25 ft])
	Identify buried cultural resources in the Timber Shed and Parade Ground Study Areas	Standard interval shovel testing (e.g., 15 m [50 ft])
	Identify deeply (i.e., >1 meter) buried cultural resources throughout the project area	backhoe trenching, auger probing as part of the geomorphological investigation and possibly overburden stripping
Architecture	NYSHPO evaluation of outbuildings and other former recreational facilities associated with Admiral's Row.	
	NYSHPO evaluation of Timber Shed	
	Further research into whether or not Thomas U. Walter designed any of the structures within APE.	Additional research of the records of the Library of Congress, U.S. Naval Museum, Washington D.C. and the National Archives and Records Administration might confirm an actual date of construction. Relevant records include Annual Reports of Secretary of Navy, Report of the Commission on Navy Yards, as well as vertical files at the Navy Museum.
	Possible further research of Timber Shed.	Additional research of the records of the U.S. Naval Museum, Washington D.C. and the National Archives and Records Administration might confirm an actual date of construction. Relevant records include Annual Reports of Secretary of Navy, Report of the Commission on Navy Yards, as well as vertical files at the Navy Museum.



Figure 11.1. Suggested Phase IB geomorphological survey locations relative to historic map-documented shoreline locations (Note: all shorelines are approximate due to the unreliable depiction of scale, location and proportions on some historic maps).

any potentially sensitive soils, however, the thickness (potentially 12+ feet) and nature (10 to 75 percent coarse fragments) of the historic fill will likely require the use of either a hydraulically powered auger (e.g., Giddings Probe) or backhoe. This will be determined by the depths of disturbance required by the proposed project.

The yards surrounding the Admiral's Row residences south of Park Street are highly sensitive for remains that might provide insight regarding the everyday lives of Naval officers and their families as part of the Brooklyn Navy Yard and the neighboring community. In this area, close-interval shovel testing (e.g., 7.5-m [25-ft]) is recommended. Closer interval radial

shovel testing (i.e., one- or three-meter intervals in cardinal directions) should be conducted where initial testing results indicate greater research potential and to delineate artifact concentrations or other cultural features. Geomorphological investigation results should be used to determine the intensity of shovel testing west of Park Avenue where the mill pond shoreline or Timber Shed remains could be found as well as across the parade ground. A standard interval (e.g., 15 m [50 ft]) between shovel tests is recommended if shallow and undisturbed sensitive strata are present. Closer intervals (e.g., 7.5 m (25 ft)) should be used if locations are found with higher research potential. Mechanical trenching may be necessary if deep archaeologically sensitive strata are found. The need for backhoe trenching within Park Street or Park Avenue should be determined using the results of investigation adjacent to each paved area.

The development of a Health and Safety Plan is recommended prior to a Phase IB field investigation. Potential hazards within the project area include but are not limited to: collapsing structures, buried utilities, PCBs (as identified at Building 198, see Figure 4.14), poison ivy, discarded hypodermic needles (left from transient trespassers), and other unknown materials in rubble-filled areas. Potential hazards also include those associated with recommended investigation techniques such as mechanical testing (e.g., heavy machinery) and hand excavation.

As discussed, the project area is sensitive for the presence of human remains. In the event that human remains are encountered during construction or archaeological investigations, NYSHPO requires implementation of the following protocol:

- At all times, human remains must be treated with the utmost dignity and respect. Should human remains be encountered work in the general area of the discovery will stop immediately and the location will be immediately secured and protected from damage and disturbance.
- Human remains or associated artifacts will be left in place and not disturbed. No skeletal remains or materials associated with the remains will be collected or removed until appropriate consultation has taken place and a plan of action has been developed.
- The county coroner and local law enforcement as well as NYSHPO and the involved agency will be notified immediately. The coroner and local law enforcement will make the official ruling on the nature of the remains, being either forensic or archeological. If the remains are archeological in nature, a bioarchaeologist will confirm the identification as human.
- If human remains are determined to be Native American, the remains will be left in place and protected from further disturbance until a plan for their avoidance or removal can be generated. The involved agency will consult NYSHPO and appropriate Native American groups to develop a plan of action that is consistent with the Native American Graves Protection and Repatriation Act (NAGPRA) guidance.
- If human remains are determined to be Euro-American, the remains will be left in place and protected from further disturbance until a plan for their avoidance or removal can be generated. Consultation with the NYSHPO and other appropriate parties will be required to determine a plan of action.

11.2 ARCHITECTURAL INVESTIGATION

The Phase IA investigation concurs with the recommendations from the Beardsley/Crawford & Stearns report which concluded the circa 1853 Timber Shed “appears to be Nationally [sic] significant under all four NRHP criteria (A-D)” as part of the “primary compound of senior officer residential quarters within the historic Brooklyn Navy Yard. The ‘Timber Shed’ is significant as part of the group of buildings and the oldest one making up the historic Brooklyn Navy Yard Admiral’s Row area” (2008:183). The Phase IA investigation further concurs that the Timber Shed is individually NR-eligible. It is “historically significant (NRHP Criterion A) for its association with the nineteenth century development of the BNY [and] as an early part of the Admiral’s Row compound and development of BNY, is architecturally significant (NRHP Criterion C) as an intact example of a rare surviving nineteenth century building type, (navy yard timber shed) style, design, and construction (interior and exterior) built at the BNY. The Timber Shed is archaeologically significant (NRHP Criterion D) because the site has the potential to yield subsurface information important from the earliest development and history of the site” (2008:183). The Timber Shed at BNY stands out as a surviving early example of a brick masonry and heavy timber naval industrial building with a ca. 1853 example of a gable roof with clerestory. Though only a fourth of its original size, the Timber Shed retains sufficient integrity to convey its location, design, setting, materials, workmanship, feeling, and association. Navy and naval historians were contacted for both the Beardsley/Crawford & Stearns report and this Phase IA report and overall, no other surviving examples of the BNY Timber Shed type are known to exist at the original navy yards. Further, the BNY has been recognized as having executed their buildings on a grander scale with ornate articulation of detail when compared to other navy yards. The BNY Timber Shed is distinguished as a rare example of a pre-Civil War navy yard building type and merits recognition as an individually NR-eligible resource.

Originally constructed as part of the extensive navy yard operations at BNY, the timber shed is not historically associated with the residential quarters of Admiral’s Row. The Timber Shed, however, has served visually as the western anchor of Admiral’s Row along with the tall brick wall that encompasses it. The Timber Shed also dates from the earliest period of development of the southwestern corner of BNY, part of the Navy Yard’s original purchase, and is almost contemporaneous with the earliest quarters constructed on Admiral’s Row. The Timber Shed and the tall brick wall which surrounds it are recommended as contributing elements of the Admiral’s Row Historic District as part of the surviving block of buildings constructed in the second half of the nineteenth century.

NYSHPO acknowledged Beardsley/Crawford & Stearn’s comprehensive analysis of the historic structures and their condition and concurred with the recommendation that the buildings at Admiral’s Row (B, C, D, E, F, G, H, I, K and L) remain eligible for listing in the State and National Registers of Historic Places. NYSHPO further concurred that these buildings contribute to a National Register-eligible district. The following facilities/structures were previously evaluated by NYSHPO in 1982 for their significance in accordance with the criteria of the State Register of Historic Places (SR). NYSHPO determined the following buildings as not eligible for listing in the SR: Buildings J, 135, 198, 429, 432, 433, 434, 435, 436, 438, 450, 452, 453, 463, and 464 (NYSHPO 1986). At that time, these buildings were considered “either not old enough to meet the 50 year cut off or they lacked architectural or historic significance” (NYSHPO 1986).

Research conducted for the Phase IA study revealed that the outbuildings associated with Admiral’s Row were constructed in 1919 as detached garages with access from Park Street (Roberta Washington Architects, PC 1995: Schedule A - Supplement to Report of Excess Real

Property). The outbuildings should be re-evaluated as contributing elements to the Admiral's Row Historic District. Further, the garages represent the continued occupation and improvements of the residential area Admiral's Row in the early twentieth century. The tennis court (built 1918) and shower room building (built 1952) located opposite the eastern part of Admiral's Row should also be re-evaluated for their association with the residential and recreational history of Admiral's Row.

12.0 References Cited

Bankoff, Simeon

2008 Correspondence from Simeon Bankoff, Executive Director, Historic Districts Council to Kristin E. Leahy, National Guard Bureau, April 18, 2008.

Baystate Environmental Consultants

1994 *Cultural Resources Survey for Base Closure and Realignment Redevelopment and Reuse of Excess Property at Naval Station New York, Brooklyn, New York*. Baystate Environmental Consultants, Inc., East Longmeadow, MA. Prepared for Northern Division Facilities Engineering Command, Lester, PA.

Beardsley/Crawford & Stearns

2008 *Assessment of Admirals Row Buildings K-L, H-C, B, D, E-F-G, and I, Brooklyn Navy Yard, Brooklyn, New York City, New York*. Final Report. Beardsley Design Associates Architecture, Engineering & Landscape Architecture, P.C., Auburn, NY, and Crawford & Stearns Architects and Preservation Planners, Syracuse, NY. Prepared for U.S. Army Corps of Engineers, New York District, New York.

Beauchamp, William M.

1900 *Aboriginal Occupation of New York*. New York State Museum Bulletin Vol. 7, No. 32. Albany.

Belcher Hyde, E.

1904 *Plan of the United States Navy Yard and Wallabout Basin. Part of Wards 11 & 20, Section 7, Atlas of the Borough of Brooklyn, City of New York*. By and under the direction of Hugo Ullitz, C.E. Published by E. Belcher Hyde, Brooklyn, NY.

Bender, Susan J., and Edward V. Curtin

1990 *A Prehistoric Context for the Upper Hudson Valley: Report of the Survey and Planning Project*. Department of Sociology, Anthropology, and Social Work, Skidmore College, Saratoga Springs, NY. Prepared for the New York State Office of Parks, Recreation, and Historic Preservation, Peebles Island, Waterford, and the National Park Service, U.S. Department of the Interior, Philadelphia.

Bergen, Teunis G.

1884 History of the Town of New Utrecht. In *History of Kings County, New York, 1663 to 1884*, edited by Henry R. Stiles, pp. 255-267. W.W. Munsell and Company, New York.

BNYDC [Brooklyn Navy Yard Development Corporation]

2007 The History of BNY. Brooklyn Navy Yard Industrial Park webpage, Brooklyn Navy Yard Development Corporation, Brooklyn, NY [online www]. Available URL: "<http://www.brooklynnavyyard.org/history.html>," [accessed March 17, 2008]

Bolton, Reginald Pelham

1934 *Indian Life of Long Ago in the City of New York*. New York Historical Society, New York.

Bradley, Betsey Hunter

1999 *The Works The Industrial Architecture of the United States*. Oxford University Press New York.

Brasser, T.J.

1978a Early Indian-European Contacts. In *Northeast*, edited by Bruce G. Trigger, pp. 78-88. Handbook of North American Indians, vol 15, William C. Sturtevant, general editor. Smithsonian Institution, Washington, D.C.

1978b Mahican. In *Northeast*, edited by Bruce G. Trigger, pp. 198-212. Handbook of North American Indians, vol. 15, William C. Sturtevant, general editor. Smithsonian Institution, Washington, D.C.

Braun, David P.

1983 Pots as Tools. In *Archaeological Hammers and Theories*, edited by James A. Moore and Arthur S. Keene, pp. 107-134. Academic Press, New York.

Brennan, Louis A.

1979 Propositions Concerning the Early Archaic in New York. *The Bulletin*, New York State Archeological Association 75:1-14.

Brooklyn Historical Society

1838 *Map of the City of Brooklyn*. On file, Brooklyn Historical Society.

1876 *Map Showing the Original High and Low Grounds, Salt Marsh and Shore Lines in the City of Brooklyn, 1776-1777*. On file, Brooklyn Historical Society.

Burke, Thomas E., Jr.

1991 *Mohawk Frontier: The Dutch Community of Schenectady, New York, 1661-1710*. Cornell University Press, Ithaca, NY.

Burr, David H.

1845 *City of New York*. Edward Walker, New York

Cadwell, D.H.

2000 The Big Chill: The Pleistocene Epoch. In *Geology of New York: A Simplified Account*, edited by Y.W. Isachsen, E. Landing, J.M. Lauber, L.V. Rickard, and W.B. Rogers, pp. 161-184. New York State Museum Educational Leaflet 28. The New York State Museum/Geological Survey, Albany.

Carrington, Henry R.

1877 *Battles of the American Revolution, 1775-1781*. A.S. Barnes & Company, Chicago.

Cassedy, Daniel, Paul Webb, Tracy Millis, and Heather Millis

1993 New Data on Maize Horticulture and Subsistence in Southwestern Connecticut. Paper presented at the Annual Meeting of the Northeastern Anthropological Association, Danbury, CT.

Ceci, Lynn

1990 Radiocarbon Dating "Village" Sites in Coastal New York: Settlement Pattern Change in the Middle to Late Woodland. *Man in the Northeast* 39:1-28.

Chapin, William

1833 *City of New York*. Published by W. Chapin & W.V. Le Count, New York. On file, New York Historical Society.

1834 *City of New York*. Published by B.S. Squire & W.V. Le Count, New York. On file, New York Historical Society.

1835 *City of New York*. Published by B.S. Squire & W.V. Le Count, New York. On file, New York Historical Society.

Church, David E., and Edward S. Rutsch

1982 *Stage I Cultural Resources Survey for the Proposed Resource Recovery Facility Site Brooklyn Navy Yard, New York City*. Historic Conservation & Interpretation, Inc., Newton, NJ. Prepared for Camp, Dresser & McKee, Boston, MA.

CRCG [Cultural Resource Consulting Group]

2005 *History and Description, Officers' Houses – Brooklyn Navy Yard – Borough of Brooklyn, New York City – Kings County, New York*. Report on file New York State Office of Parks, Recreation and Historic Preservation, Albany, NY. [This report also includes Level II HABS Documentation for Admiral's Row / Brooklyn Navy Yard, Brooklyn, Kings County, 03PR05477. Copies on file at New York State Archives, BNYDC Archives, and the Brooklyn Historical Society.]

Cronon, William

1984 *Changes in the Land. Indians, Colonists, and the Ecology of New England*. Hill and Wang, New York.

Cumming, Beth A.

2007 Letter to Kristin Leahy, Cultural Resources Program Manager, National Guard Bureau, re: ARNG Brooklyn Navy Yard Officers' Housing (Admirals Row), dated December 17, 2007. New York State Office of Parks, Recreation and Historic Preservation, Historic Preservation Field Services, Peebles Island, Waterford.

Curtin, Edward V.

1996 *Prehistory of Eastern New York*. Manuscript in author's possession, Castleton, NY.

Davis, Thomas J.

1991 New York's Long Black Line: A Note on the Growing Slave Population, 1626-1790. In *Coming and Becoming; Pluralism in New York State History*, compiled by Wendell Tripp, pp. 79-98. New York State Historical Association, Cooperstown, NY.

deLaguna, W.

1948 Geologic Correlation of Logs of Wells in Kings County, New York. Bulletin GW-17. USGS and Department of Conservation Water Power and Control Commission, Albany.

Dent, Richard J.

1991 Archaeology in the Upper Delaware Valley: The Earliest Populations. In *The People of Minisink*, edited by D. G. Orr and D. V. Campana, pp. 117-144. National Park Service, Philadelphia.

DeWan, George

2008 The Wretched Prison Ships. Colonial History section, Newday.com Website NY [online www]. Available URL: "<http://www.newsday.com/community/guide/lihistory/ny-history-hs425a,0,6698945.story>" [accessed April 17, 2008]

Dietrich, Gregory G.

2005 *History and Description, Officers' Houses, Brooklyn Navy Yard, Borough of Brooklyn, New York City, Kings County, New York*. Cultural Resource Consulting Group, New York, NY. Report on file New York State Office of Parks, Recreation and Historic Preservation, Albany, NY.

Dripps, Matthew

1864 *Map of Brooklyn and Vicinity*. M. Dripps, New York.

1869 *Map of Brooklyn and Vicinity*. M. Dripps, New York.

1879 *Map of the City of Brooklyn New York*. M. Dripps, New York.

Ecology & Environment

1990 *Environmental Assessment for Base Closure and Realignment of Naval Station New York at Brooklyn*. Ecology and Environment, Inc., np. Prepared for Northern Division Facilities Engineering Command, Lester, PA.

Eisenberg, Leonard

1978 Paleo-Indian Settlement Pattern in the Hudson and Delaware River Drainages. *Occasional Publications in Northeastern Anthropology*, No. 4, Franklin Pierce College, Rindge, NH.

Ellis, David M., James A. Frost, Harold C. Syrett, and Harry J. Carmen

1967 *A History of New York State*. Cornell University Press, Ithaca, NY.

Federal Register

2001 Record of Decision for the Disposal and Reuse of Naval Station Brooklyn, New York. *Federal Register*: January 30, 2001, 66 (20):8205-8209.

French, J.H.

1860 *Gazetteer of the State of New York*. Sixth Edition. R. Pearsall Smith, Syracuse.

Fritz, Gayle

1990 Multiple Pathways to Farming in Precontact Eastern North America. *Journal of World Prehistory* 4:387-435.

Funk, Robert E.

1972 Early Man in the Northeast and the Late Glacial Environment. *Man in the Northeast* 4:7-42.

Funk, Robert E., and David W. Steadman

1994 *Archaeological and Paleoenvironmental Investigations in the Dutchess Quarry Caves, Orange County, New York*. Persimmon Press, Buffalo.

Gehring, Charles T., and William A. Starna, trans. and ed.

1988 *A Journey into Mohawk and Oneida Country, 1634-1635. The Journal of Harmen Meyndertz van den Bogaert*. Syracuse University Press, Syracuse.

Geismar, Joan H.

1996 *Draft Archaeological Evaluation (Stage IA Documentary Study) Former Naval Station (NAVSTA) New York Navy Yard Annex Site, Brooklyn, New York*. TAMS Consultants, Inc., np. Prepared for Northern Division, Naval Facilities Engineering Command, Lester, PA.

Geismar, Joan H., and Stephen J. Oberon

1993 *Stage I-A Cultural Resources Survey Documentation Study and Assessment of Potential Impact, Proposed Navy Yard Cogeneration Facility, Borough of Brooklyn, Kings County, New York*. TAMS Consultants, Inc., np. Prepared for Blasland & Bouck Engineers, P.C., Middletown, NY.

1995 *Stage 1-B Field Monitoring, Monitoring Well and Test Boring Locations, Brooklyn Navy Yard Cogeneration Project, Borough of Brooklyn, Kings County, New York*. TAMS Consultants, Inc., np. Prepared for Blasland & Bouck Engineers, P.C., Middletown, NY.

1996 *Stage I-B Field Monitoring Test Boring, Electric Line and Overhead Support Locations, Brooklyn Navy Yard Cogeneration Project, Borough of Brooklyn, Kings County, New York*. Prepared for Roux Associates, Inc., Islandia, NY.

Goddard, Ives

1978 Delaware. In *Northeast*, edited by Bruce G. Trigger, pp. 213-239. *Handbook of North American Indians*, vol 15, William C. Sturtevant, general editor. Smithsonian Institution, Washington, D.C.

Gwynne, Gretchen Anderson

1984 A Late Archaic House Pattern on Long Island. *The Bulletin*, New York State Archeological Association 88:1-8.

Halsey, Francis W., editor

1912 The Discovery of New York Harbor by Verazzano (1524); Verazzano's Own Account. In *Great Epochs in American History: Described by Famous Writers from Columbus to Roosevelt*, pp. 92-103. Vol. I: Voyages of Discovery and Early Explorations, 1000 AD—1682. Funk & Wagnalls Company, New York and London.

Handsman, Russell

1990 The Weantinock Indian Homeland was not a "Desert." *Artifacts* 18(2):3-7.

Harrington, Mark R.

1924 An Ancient Village Site of the Shinnecock Indians. *Anthropological Papers of the American Museum of Natural History*, Vol. XXII, Pt. V. New York.

Hayward, George

1854 *Map of the Consolidated City of Brooklyn, comprising the City of Brooklyn, City of Williamsburgh, and Town of Bushwick, Kings County, Long Island*. G. Hayward, New York

Herbert, S.C., & R. Tolford

1835 Map of the City of Brooklyn. S.C. Herbert & R. Tolford, np. On file, Brooklyn Historical Society.

Hibben, Henry, A.M. Chaplain, US Navy

1890 *Navy-Yard, Washington History from Organization, 1799 to Present Date (51st Congress 1st session, US Senate Ex. Doc. No 22)*. Government Printing Office, Washington, D.C.

Hooker, William

1827 *Hooker's New Pocket Plan of the Village of Brooklyn*. Compiled and surveyed by E.C. Ward. William Hooker, New York

Kim, Sung Bok

1978 *Landlord and Tenant in Colonial New York: Manorial Society, 1664-1775*. The University of North Carolina Press, Chapel Hill.

Kraft, Herbert C.

1977 The Paleo-Indian Sites of Port Mobil, Staten Island. In *Current Perspectives in Northeastern Archeology: Essays in Honor of William A. Ritchie*, edited by Robert E. Funk and Charles F. Hayes III, pp. 1-19. Researches and Transactions of the New York State Archeological Association, Volume XVII, Number 1.

1986 *The Lenape: Archaeology, History, and Ethnology*. The New Jersey Historical Society, Newark.

Kraft, Herbert C., and R. Alan Mounier

1982 The Archaic Period in Northern New Jersey: ca. 8000 B.C.-1000 B.C. In *New Jersey's Archaeological Resources from the Paleo-Indian Period to the Present: A Review of Research Problems and Survey Priorities*, edited by Olga Chesler, pp. 52-102. Office of New Jersey Heritage, New Jersey Department of Environmental Protection, Trenton.

Levere, Jane L.

2007 Brooklyn Navy Yard, a Roomy Haven for Industry, Once Again is Booming. *The New York Times*, August 29 [online www]. Available URL:

<http://www.nytimes.com/2007/08/29/business/29navy.html?ref=nyregion&pagewanted=print>
[accessed March 17, 2008]

Lossing, Benson John

2001 [1850] *Pictorial Field Book of the Revolution* Vol. II. Supplement IV: British Prisons and Prison Ships. Harper & Brothers, New York. [online www]. Hosted by Rootsweb. Available URL:

"<http://freepages.history.rootsweb.ancestry.com/~wcarr1/Lossing1/Chap59.html>
[accessed April 2, 2008]

Marshall, Sydne B.

1982 Aboriginal Settlement in New Jersey During the Paleo-Indian Cultural Period, ca. 10,000 BC-6000 BC. In *New Jersey's Archaeological Resources from Paleo-Indian Period to the Present: A Review of Research Problems and Survey Priorities*, edited by Olga Chesler, pp. 10-51. Office of New Jersey Heritage, New Jersey Department of Environmental Protection, Trenton.

Miller, Rita Seiden (editor)

1979 *Brooklyn, USA: The Fourth Largest City in America*. Brooklyn College Press, New York.

Miller, Ron, Rita Seiden Miller, and Stephen J. Karp

1979 *The Fourth Largest City in America: A Sociological History of Brooklyn*. In *Brooklyn, USA: The Fourth Largest City in America*, edited by R. S. Miller, pp. 3-44. Brooklyn College Press, New York.

National Archives and Records Administration (NARA)

2007 *Citing Records in the National Archives of the United States*. General Information Leaflet 17. NARA, Washington D.C.

Naval Facilities Engineering Command (Northern Division, Philadelphia)

1982 *Officers Family Housing Quarters Naval Support Activity Brooklyn, NY—Report of Excess Real Property*. Holding Agency No. 8-80, Date of Report 28 April. GSA Control No N-NY-627C. Prepared for General Services Administration, Region Two, New York, NY. In Roberta Washington Architect, PC 1995:Appendix.

1985 *Transfer and Acceptance of Military Real Property, January 22*. Prepared for Commander, New York District Corps of Engineers. In Roberta Washington Architect, PC 1995:Appendix.

New York City Soil Survey Staff

2005 *New York City Reconnaissance Soil Survey*. U.S. Department of Agricultural Natural Resources Conservation Service, Staten Island, NY.

New York State Historic Preservation Office (NYSHPO)

1986 Letter to John T. Law, State of New York, Division of Military Naval Affairs, 21 October. On File at the Brooklyn Navy Yard Development Corporation Archives, Brooklyn, NY.

Nicholas, George P. (Editor)

1988 *Ecological Leveling: The Archaeology and Environmental Dynamics of Early Postglacial Land Use*. In *Holocene Human Ecology in Northeastern North America*, pp. 257-296. Plenum Press, New York.

NOAA [National Oceanic and Atmospheric Administration]

2002 *Climatology of the United States No. 81: Monthly Normals of Temperature, Precipitation, and Heating and Cooling Degree Days 1971-2000*. National Climatic Data Center/NESDIS/NOAA, Asheville, NC.

NYC Landmarks

2007 *DUMBO Historic District Designation Report*. New York City Landmarks Preservation Commission, New York [online www]. Available URL: "http://www.nyc.gov/html/lpc/downloads/pdf/reports/DUMBO_Designation_Report.pdf," [accessed April 21, 2008]

Ontario Concrete Pipe Association (OCPA)

1997 Section 1 – History in *Concrete Pipe Design Manual*. 3rd edition. Ontario Concrete Pipe Association, Toronto, Ontario, Canada [online www]. Available URL: "<http://www.ocpa.com/manual/histroy.htm>" [accessed July 11, 2008]

- Parker, Arthur C.
1922 *The Archeological History of New York*. New York State Museum Bulletin 235-238, Albany.
- Ratzer, B.
1767 *Plan of the Town of Brooklyn and Part of Long Island*. B. Ratzer, np
- Ritchie, William A.
1980 *The Archaeology of New York State*. Revised Edition. Harbor Hill Books, Harrison, NY.
- Ritchie, William A., and Robert E. Funk
1971 Evidence for Early Archaic Occupations on Staten Island. *Pennsylvania Archaeologist* 41(3):45-59.
- 1973 *Aboriginal Settlement Patterns in the Northeast*. New York State Museum and Science Service Memoir 20, Albany.
- Robbins, Maurice
1960 *Wapanucket No. 6, An Archaic Village in Middleboro Massachusetts*. Cohannet Chapter, Massachusetts Archaeological Society, Inc., Attleboro.
- Roberta Washington Architect, PC
1993 *Officer's Housing Site, Brooklyn Navy Yard, Brooklyn, New York: Existing Conditions Report*. Roberta Washington Architect, P.C., New York. Prepared for NYC Economic Development Corporation, New York.
- 1995 *Officers' Houses Brooklyn Navy Yard Site, Brooklyn, New York: Preliminary Case Report, Supplementary Report*. Roberta Washington Architect, P.C., New York. Prepared for NYC Economic Development Corporation, New York.
- Rogers, W.B.
2000 At the Beach: Atlantic Coastal Plain and the Continental Shelf. p. 149-153. In *Geology of New York: A Simplified Account*, edited by Y.W. Isachsen, E. Landing, J.M. Lauber, L.V. Rickard, and W.B. Rogers. New York State Museum Educational Leaflet 28. The New York State Museum/Geological Survey, Albany.
- Ross, Peter
1902 *A History of Long Island from Its Earliest Settlement to the Present Time*. Vol. 1. The Lewis Publishing Company, New York.
- Sanborn Map Company
1886-1888 Fire Insurance Maps for the Borough of Brooklyn, Index Key. Sanborn Map Company, New York.
- Sanders A. Kahn Associates, Inc.
1966 *Appraisal of New York Naval Shipyard, Brooklyn, N.Y.* Sanders and Kahn Associates, Inc., New York. On file at NARA Northeast Region, New York City.

- Schuyler, Robert L.
1977 Archaeology of the New York Metropolis. *The Bulletin*, New York State Archeological Association 69:1-19.
- Shorto, Russell
2004 *The Island at the Center of the World*. Doubleday, New York.
- Smith, Carlisle S.
1950 The Archaeology of Coastal New York. *Anthropological Papers of the American Museum of Natural History*, Vol. 43, Pt. 2. New York
- Snow, Dean R.
1980 *The Archaeology of New England*. Academic Press, New York.
- Spooner, Alden J.
1884 The Indians of Long Island. In *History of Kings County, New York, including the City of Brooklyn, 1663 to 1884*, edited by Henry R. Stiles, pp. 20-25. W.W. Munsell & Company, New York.
- Stiles, Henry R.
1867 *A History of the City of Brooklyn, including the Old Town and Village of Brooklyn, the Town of Bushwick, and the Village and City of Williamsburgh*. Vol. I. Published by Subscription, Brooklyn, NY.

1869 *A History of the City of Brooklyn, including the Old Town and Village of Brooklyn, the Town of Bushwick, and the Village and City of Williamsburgh*. Vol. II. Published by Subscription, Brooklyn, NY.

1870 *A History of the City of Brooklyn, including the Old Town and Village of Brooklyn, the Town of Bushwick, and the Village and City of Williamsburgh*. Vol. III. Published by Subscription, Brooklyn, NY.

1884 *The Civil, Political, Professional and Ecclesiastical History and Commercial and Industrial Record of the County of Kings and the City of Brooklyn, N.Y., from 1683 to 1884*. W.W. Munsell & Company, New York.
- Stokes, Julia S.
1986 Letter to John T. Law, Colonel, NYARNG, re: DMNA, Brooklyn Navy Yard—demolition of 8 buildings, dated October 21, 1986. New York State Office of Parks, Recreation and Historic Preservation, Albany.

1989 Letter to Robert Swieconck, Army Corps of Engineers, Headquarters, Washington, D.C., re: Army proposed conveyance of National Guard Facility (formerly Brooklyn Navy Yard), dated June 22, 1989. New York State Office of Parks, Recreation and Historic Preservation, Albany.
- Strong, John A.
1985 Late Woodland Dog Ceremonialism on Long Island in Comparative and Temporal Perspective. *The Bulletin*, New York State Archeological Association 91:32-38.

Suter, R., W. deLaguna, and N.M Perlmutter

1949. Mapping of geologic formations and aquifers of Long Island, New York. *Bulletin GW-18*. Department of Conservation Water Power and Control Commission and USGS, Albany.

TAMS and Joan H. Geismar

1999 *State of the Research: Naval Hospital Cemetery Historical Documentation, Naval Station Brooklyn, New York*. TAMS Consultants, Inc., np. Prepared for the U.S. Department of the Navy, Northern Division Naval Facilities Engineering Command, Lester, PA.

Tetra-Tech

2008 *Alternative Analysis of Admiral's Row Section, Former Brooklyn Navy Yard, Brooklyn, New York*. Draft Report. U.S. Army Corps of Engineers, New York District. New York.

USACE

2008 *Scope of Work—Environmental Assessment, Phase IA Documentary Cultural Resource Report, an Alternative Analysis Study Report and Contractual Work to Comply with NHPA Section 106—for the Admiral's Row Section of the Former Brooklyn Navy Yard, Brooklyn (Kings County), New York January 22, 2008*. U.S. Army Corps of Engineers, New York District, New York.

USACE, New Orleans

2002 Chapter 2. Overview of the Development of Drainage in European and American Cities through the nineteenth century. *National Register Eligibility Evaluation of the New Orleans Drainage System*. U.S. Army Corps of Engineers, New Orleans District, LA [online www]. Available URL: "http://www.mvn.usace.army.mil/pao/history/NO_Drainage/NO_Drain_chap2.pdf" [accessed July 11, 2008]

U.S. Geological Survey

2003 *Geology of the New York City Region: A Preliminary Regional Field-Trip Guidebook* [online]. Available URL: <http://3dparks.wr.usgs.gov/nyc/index.html> [accessed April 19, 2008].

1980 Brooklyn Quadrangle Map. 7.5 minute series U.S. Geological Survey, Reston, VA.

U.S. Navy Yard New York

1863 "*Specifications for Officers' Houses at U.S. Navy Yard New York*. [microform] Brooklyn:s.n. Available at New York Public Library, 1982.

West, James H.

1941 *A Short History of the New York Naval Yard*. Ms. On file at Brooklyn Historical Society, Brooklyn, NY.

Wilson, Sherrill D.

1995 Blacks In *The Encyclopedia of New York City*, edited by Kenneth T. Jackson. Yale University Press, New Haven [online www]. Available URL: "http://www.virtualny.cuny.edu/EncyNYC/Blacks_for_draft_riots.html," [accessed April 29, 2008]

Appendix A: Supporting Documentation



Washington, DC 20515

January 22, 2008

Ms. Daniella Romano
Chief Archivist
Brooklyn Navy Yard Development Corporation
63 Flushing Ave., Unit 300
Brooklyn, NY 11205

Dear Ms. Romano:

The Architect of the Capitol is charged with the operation and maintenance of the buildings committed to his care by Congress. By law, the Office of the Architect of the Capitol maintains its own records and does not deposit them with the National Archives and Records Administration.

The records of the Architect of the Capitol include over 150,000 architectural and engineering drawings. Among these are almost 1,500 drawings created between 1850 and 1865 under Thomas Ustick Walter, who was appointed Architect of the Capitol Extension in 1851 and is considered the fourth Architect of the Capitol. When Walter resigned in 1865, he took leading drawings with him, expecting to be called back. The Architect of the Capitol purchased almost 600 of them from Walter's daughters in 1908 and 1910. The remaining drawings in the daughter's possession were purchased by the Athenaeum in Philadelphia. A small number of others were transferred later by the Library of Congress. The majority of the Walter drawings, about 900 in number, apparently remained in the Capitol with the rest of the Capitol Extension and New Dome textual records.

Among the Walter drawings are the 1858 "Plans of Marine Barracks at Brooklyn, NY" that detail the grounds and building plans for the Marine Commandant's House, Officers Quarters, Barracks, and Entrance Gate. However, there are no known drawings in the records of the Architect of the Capitol of any other buildings in Brooklyn designed by Thomas U. Walter.

Sincerely,

A handwritten signature in black ink, which appears to read "Barbara Wolanin". The signature is fluid and cursive.

Barbara Wolanin, Ph. D.
Curator

THE ATHENÆUM OF PHILADELPHIA

East Washington Square
Philadelphia, PA 19106-3794

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January 15, 2008

Daniella Romano
Chief Archivist
Brooklyn Navy Yard Development Corporation
63 Flushing Ave., Unit 300
Brooklyn, NY 11205

Dear Ms. Romano,

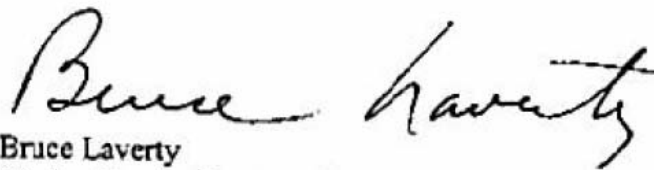
One of the Membership Libraries Group, the Athenæum of Philadelphia "is a member supported, not-for-profit, special collections library founded in 1814 to collect materials 'connected with the history and antiquities of America, and the useful arts, and generally to disseminate useful knowledge' for public benefit." We currently house a collection of 220,000 American architectural drawings and 300,000 photographs. I have served as Curator of Architecture at the Athenæum since 1985, and have been responsible for the care of the Thomas Ustick Walter collection since 1983.

The Thomas Ustick Walter papers at the Athenæum of Philadelphia, are arranged chronologically and comprise 46 boxes of material, spanning the years from 1833 to about 1900. Containing diaries, ledgers, letter books, and account books, the papers meticulously record Walter's career as a self-employed businessman/architect, documenting the rise and fall of his fortunes and his constant struggle to maintain his family's standard of living in the face of mounting indebtedness. With over 500 of his architectural drawings, and 150 photographs, the Athenæum is the primary repository of Thomas Ustick Walter archival material.

According to my own extensive research of Walter's early career, there is no evidence in the Walter papers of any building at the Brooklyn Navy Yard designed by Walter prior to 1851. Nor is there any evidence in the Athenæum collection of buildings at the Brooklyn Navy Yard designed by him after 1851, with the sole exception of the Marine Commandants House, Barracks and Officers Quarters designed in 1857-58. The Athenæum has a large drawing of these as well as manuscript documentation of same.

Upon review of the early 1900s photographs you sent me of the Brooklyn Navy Yard Admirals Row, none look like they could be designs from any period of Walter's career. Recognizing the difficulty of proving a negative, I can say with confidence that there is no documentary evidence in the principal Walter archive of his design of anything but the Marine Commandants House, Barracks and Officers Quarters of 1857. If such documentary evidence exists in another collection, I would be most interested in learning of it.

Sincerely,

A handwritten signature in cursive script that reads "Bruce Lavery". The signature is fluid and elegant, with a long, sweeping underline for the name "Lavery".

Bruce Lavery
Gladys Brooks Curator of Architecture



New York State Office of Parks, Recreation and Historic Preservation
The Governor Nelson A. Rockefeller Empire State Plaza
Agency Building 1, Albany, New York 12230

October 21, 1986

John T. Law
Colonel, General Staff, NYAFNG
Deputy Chief of Staff for Logistical Services
State of New York, Division of Military &
Naval Affairs
330 Old Niskayuna Road
Latham, New York 12110-2224

Dear Mr. Law:

Re: DMNA
Brooklyn Navy Yard - demolition of
Buildings
Brooklyn, Kings County

The New York Office of Parks, Recreation and Historic Preservation (OPRHP) has reviewed the above referenced project in accordance with the New York State Parks, Recreation and Historic Preservation Law, Section 14.09.

The structures have been evaluated for their significance in accordance with the criteria of the State Register of Historic Places (SR). Based upon this evaluation, it has been determined that Buildings B, C, D, E, F, G, H, I, K, and L meet the SR criteria. (See attached sheet for comments on eligibility.) Therefore, demolition of these structures poses an adverse impact. Please prepare documentation that all feasible and prudent alternatives to the demolition have been explored. In addition, it is the opinion of OPRHP that Buildings J, 16, 135, 148, 429, 432, 433, 434, 435, 436, 438, 450, 452, 453, 463, and 464 are not eligible for the SR. They are either not old enough to meet the 50-year cut off or they lack architectural or historic significance.

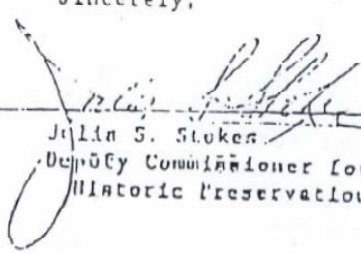
With regard to archeology, we note that at the present time there are no previously reported archeological resources in your project area or immediately adjacent to it. This finding is based upon our archeological sensitivity model. Archeologically sensitive areas are determined by proximity to known archeological sites, as well as the area's likelihood of producing other archeological materials.

Page Two

October 21, 1986

Should you have any questions, please contact the project review staff
at (510) 474-3176.

Sincerely,


J. S. Stokes
Deputy Commissioner for
Historic Preservation

JSS:AMH:vr
cc: Maurice Savage



New York State Office of Parks, Recreation and Historic Preservation

Historic Preservation Field Services • Peebles Island, PO Box 189, Waterford, New York 12188-0189

518-237-8643

www.nysparks.com

Elliot Spitzer
Governor

Carol Ash
Commissioner

December 17, 2007

Kristin Leahy
Cultural Resources Program Manager
National Guard Bureau
Attn: ARE-C
111 So. George Mason Drive
Arlington, VA 22204

Re: ARNG
Brooklyn Navy Yard Officers' Housing (Admirals Row)
Kings County
03PR05477

Dear Ms. Leahy:

Thank you for requesting the comments of the New York State Historic Preservation Office (NYSHPO) for the proposed work at Admirals Row at the Brooklyn Navy Yard. We have reviewed the submitted report in accordance with Section 106 of the National Historic Preservation Act of 1966 and the relevant implementing regulations.

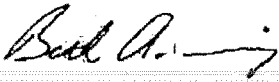
Based upon our review of the Beardsley and Design Associates and Crawford and Stearns, "Draft Assessment of Admiral's Row Buildings, Brooklyn Navy Yard" dated November 12, 2007 (Beardsley/Crawford Report) and our meeting on November 27, 2007 we offer the following comments:

1. We are very pleased with the level of detail and historic preservation expertise presented in the Beardsley/Crawford Report. It appears to present a comprehensive analysis of the historic structures and their existing condition.
2. Based upon our review of the Beardsley/Crawford Report our office concurs that the buildings at Admiral's Row, buildings B, C, D, E, F, G, H, I, K and L remain eligible for listing on the State and National Registers of Historic Places. These buildings contribute to a National Register-eligible historic district. We further concur that the buildings are eligible under Criteria A, B, C and D and are of national significance. We were surprised to learn of the existing brick timber shed located next to building K and its relative significance. Since the Beardsley/Crawford report did not address this building in detail, we request additional information regarding this resource to determine its eligibility for the State and National Registers of Historic Places.
3. In addition, our office concurs with the findings of the Beardsley/Crawford report that superstructures of the masonry buildings appear to be sound, level and plumb, showing areas of framing failures and masonry distress. In general, the buildings appear to be in much better condition than we previously believed. However, buildings C and F exhibit more severe structural concerns and the later 20th Century additions on all of the buildings are likely not salvageable due to major structural distress and failures. We further note that buildings B&D are of exceptional significance and attributed to architect Thomas U. Walter.
4. Comments regarding archeology are attached for your review.

At this point, it is our opinion that the 1996 MOA does not address the new findings provided in the Beardsley/Crawford Report particularly regarding the existing condition of the buildings superstructure. As you know, demolition of buildings eligible for the National Register is, by definition, an Adverse Effect. This finding triggers an exploration of prudent and feasible alternatives that might avoid or reduce project effects. As a matter of policy and practice, this exploration must occur before mitigation measures can be developed and before demolition can occur. We hope that appropriate alternatives will be considered including adaptive reuse and rehabilitation of the historic building and the site (including walls, fences, and landscape features). We are not opposed to the redevelopment of the site by the Brooklyn Navy Yard Redevelopment Corporation but it is critical that the alternatives analysis seriously consider how these nationally significant buildings can be creatively incorporated into the overall plan.

If you have any questions or if I can be of any assistance call me at (518) 237-8643, ext. 3282. Please refer to the SHPO Project Review (PR) number in any future correspondences regarding this project.

Sincerely,



Beth A. Cumming *BAC*
Historic Preservation Specialist – Technical Unit
e-mail: Beth.cumming@oprhp.state.ny.us

cc: Archeology comments

Admiral's Row Archaeology Concerns

After reviewing a series of Historic Maps and previously completed reports it is apparent that the vicinity of the Project Area has several potential archaeological issues which should be addressed. The maps clearly indicate that through the late 18th century the project area consists primarily of a bay making it highly unlikely that prehistoric cultural deposits are present. However, these same maps indicate that the shoreline of the Bay crossed through the southern edge of the project area, leaving a small area that may have been fast land within the project. The documentary evidence indicates that the Bay was used as a POW camp during the American Revolution. British ships anchored in the bay were used to house American Prisoners. There are extensive accounts that as prisoners died their bodies were taken ashore and buried along the shoreline and adjacent hills. Accounts exist of these bodies washing out throughout the late 18th to early 19th century until the shoreline was extended by filling. Even work done on the Yard during the 20th century has revealed a number of sets of remains in areas that were once used to bury the American dead. The potential that any remains are still in place within areas that may be impacted by the proposed project should be examined.

As the area developed, much of the Bay was filled in and turned into fast land; however a small section in the vicinity of the project area was retained as a pond. Documentary evidence suggests that this pond was actually employed in the ship building process, providing an area where large planks could soak to soften before being shaped to the ship. It is unclear from the maps if this pond had any structural additions to facilitate the process or if it was simply a natural bank enclosure. If evidence of the structural components of the pond or associated machinery remain they could provide important information on shipbuilding techniques of the period. Effort should be taken to identify if any such remnants remain intact.

The third area of archaeological concern is related to the earliest structures along Admiral's Row. At least these earliest structures seem to predate running water and sewage improvements to the area. Historic maps suggest that privies may have been located at the rear of these lots. Cisterns and other shaft features are also associated with sites of this period. Efforts should be made to identify which parcels are likely to contain such features (identify the dates that running water and sewer facilities were brought to the area and compare to construction dates) and then to test the appropriate parcels to determine if any deposits remain intact.

Several techniques should be helpful in gathering the data needed to assess issues. Soil core/bore information should be able to help identify the location of the original beach line and determine where within the project it may lie and what areas should be considered sensitive for potential human remains. The same technique may also be able to provide important data regarding the location of the pond and possibly (if a bore is placed in the correct location) if wooden structural features are associated with the pond.

Once the data from borings have been processed and evaluated to determine areas where these types of deposits might be located, mechanical excavation with a backhoe should be helpful in opening larger areas to identify if deposits are actually present.

Backhoe excavation, complemented by documentary analysis, should also be helpful in identifying if any shaft features associated with the early residences are present. SHPO will be happy to work with the project archaeologist to develop appropriate testing methods to address these concerns.

Appendix B: Vitae



Panamerican Consultants, Inc.

Robert J. Hanley, M.A., RPA

Senior Archaeologist-Prehistoric and Historic Archaeology

M.A., Archaeology, SUNY at Albany (1994)

B.A., Anthropology, SUNY, College at Buffalo (1989)

Mr. Hanley exceeds the requirements in 36 CFR 61 for Archaeology (prehistoric and historic). He has an M.A. in Archaeology and a B.A. in Anthropology, more than 19 years of field and analytical experience in North American archaeology, and has coauthored more than 200 cultural resources management reports for various clients including the U.S. Army Corps of Engineers, New York State Department of Transportation, municipalities and private-sector organizations. In addition, he has more than seven years experience supervising the study of archeological resources of both the prehistoric and historic period, and has conducted various field investigations throughout the eastern United States. Further, he has extensive experience in lithic analysis and graduate training in human bone analysis.

Relevant Panamerican Experience:

- Mr. Hanley is currently serving as Principal Investigator and Field Director for the Empire Connector Pipeline Project Phase I cultural resources investigation under contract to Haley and Aldrich of New York and the Empire State Pipeline Company. The archeological survey, conducted in accordance with the FERC's 2002 *Guidelines for Reporting on Cultural Resources Investigations for Pipeline Projects*, covers an approximately 78-mile project corridor, which passes through Ontario, Yates, Schuyler, Chemung and Steuben counties in New York's Finger Lakes Region, and a proposed compressor station site in the Town of Oakfield, Genesee County. The field investigation included a walkover reconnaissance, photographic documentation, shovel testing, and documentation of fieldwork.
- Mr. Hanley has directed and implemented a comprehensive array of field methodologies pertinent to cultural resources investigations, including developing and implementing research designs, directing field components for Phase I and Phase II cultural resource investigations, and preparing detailed discussions of conducted fieldwork. He serves as a principal investigator and field director, and has coordinated and supervised Phase I and Phase II field investigations, artifact preparation and analysis, and report writing.
- He was principal investigator for a Phase I investigation of seven sites as part of the Hudson River PCB Superfund Site project along the Upper Hudson River (NY). Conducted for the U.S. Environmental Protection Agency and USACE, Kansas City District, under contract to Ecology & Environment, Inc., the investigation comprised three components: archaeological, geomorphological, and historic architectural. The archaeological investigation focused on identifying archaeological resources within the identified properties, the geomorphological focused on examining alluvial areas within the project areas, and the historic architectural investigation evaluated structures within or adjacent to the project areas, as well as assessing any potential impact to surrounding viewsheds.
- Mr. Hanley served as Principal Investigator for the terrestrial archaeology component of cultural resources investigations conducted for the Athens Navigation Project, Athens, Greene County, NY. The project was conducted for the USACE, New York District under contract to Barry Vittor & Associates, Inc. The archaeological investigation included terrestrial and maritime components. The terrestrial component required an investigation of the dredged material disposal area and the maritime component required a remote sensing survey of the new navigation channel.
- He was Principal Investigator for the Phase I cultural resources investigation of the area around Building 631 at the U.S. Military Academy at West Point, NY. Prepared for NEA, Inc. under contract to the New York District, USACE, the study was conducted to identify any potential cultural resources that may be impacted by the proposed renovation of the building and assess NRHP eligibility. The investigation included archival and documentary research and an intensive field investigation of the project area. Field investigations included an intensive walkover reconnaissance of the area of potential effect, photodocumentation, and shovel testing.
- Mr. Hanley was Principal Investigator and Field Director for the Phase I archeological survey associated with the proposed replacement of a 9,300-ft. section of perimeter fence at Picatinny Arsenal, Morris County, NJ. Under contract to the arsenal through the U.S. Army Medical Research Acquisition Activity (USAMRAA), he coordinated PCI project activities including a literature review and background research, pedestrian reconnaissance, photographic documentation, shovel testing along the entire linear APE, and GPS recordation of all shovel test locations.



Panamerican Consultants, Inc.

Christine M. Longiaru, M.A.

Architectural Historian

M.A., Art History, State University of New York at Buffalo (1999)
B.A., Anthropology and Art History, State University of New York
College at Buffalo (1991)

Ms. Longiaru exceeds the requirements in 36 CFR 61 for Architectural History. She has more than 16 years of experience in Cultural Resource Management with 12 years of experience conducting historical and architectural research, architectural inventories and National Register eligibility assessments for cultural reconnaissance surveys. She has extensive experience researching and discussing the architecture and historical archaeology of Western New York, including preparing more than 65 cultural resources reports for the New York State Museum (NYSM)/State Education Departments (SED) Cultural Resource Survey Program (CRSP) and the New York State Department Transportation (NYSDOT). She also has significant experience in researching and evaluating Heritage Landscapes. As the principal investigator of several historic resources surveys in Western New York, she advanced a revised report format in New York State for Historic Resources Surveys. Currently Staff Architectural Historian with Panamerican Consultants, Inc. (July 2000-October 2002 and January 2005-present), Ms. Longiaru's duties include executing technical, theoretical, and regulatory aspects of historic resources survey, evaluation and documentation. She has a diverse project history that includes both architectural and archaeological field investigations for large-scale projects such as military installations, transportation and landscape projects, as well as for smaller projects such as individual buildings and site examinations.

Relevant Panamerican Experience

- For Panamerican in 2005, Ms. Longiaru was the historian for the Allen Family Research for the Freeport-McMORAN Main Pass Energy Hub (MPEH), Mobile County, Alabama. She has been involved with two large projects at Fort Benning, U.S. Army Infantry Training Center, Georgia. She served as an architectural historian for *Historic Properties Survey Update: Intensive Survey of Historic Properties, 1939-1963 (PHASE I.B), Fort Benning, Georgia* and assisted with the *Historic Building Treatment Plan for Fort Benning, Georgia*. Ms. Longiaru is currently writing a comprehensive historic context for the Henderson Sawmill site, Sanford, Covington County, Alabama for the Alabama Department of Transportation. The study focuses on steam-powered sawmills from the late nineteenth century to early twentieth century and the longleaf pine timber industry of Alabama.

Historic Resources Survey Experience

- Principal Investigator and Architectural Historian for the *Historic Resources Intensive Level Survey Broadway – Fillmore Neighborhood City of Buffalo, Erie County, New York (In Draft stage)*. Prepared for the City of Buffalo Urban Renewal Agency and the New York State Office of Parks, Recreation and Historic Preservation (NYSOPRHP).
- Principal Investigator and Architectural Historian for the *Historic Resources Intensive Level Survey Downtown Neighborhood, City of Niagara Falls, Niagara County, New York (Draft submitted)*. Prepared for the Niagara Falls Historic Preservation Commission and the NYSOPRHP. Authored the historic context for the entire City of Niagara Falls.
- Principal Investigator and Architectural Historian for *Historic Resources Reconnaissance Survey New York Windfarm – Chautauqua County Windpower Project Towns of Ripley, Westfield and Chautauqua, Chautauqua County, New York*. Prepared for Ecology & Environment.

Heritage Landscape Survey Experience

- Ms. Longiaru served as the Architectural Historian and Project Supervisor for the Massachusetts Heritage Landscape Survey (Intensive Level). She was a contributor to an award-winning publication based on that pilot-study, *Massachusetts Heritage Landscapes, Reading the Land: A Guide to Identification and Protection*, prepared for the Massachusetts Department of Environmental Management (DEM). She also continued her work with large grant-funded surveys, in the State of Massachusetts, particularly various transportation authorities, and the documentation of historic bridges in the State of Rhode Island. Ms. Longiaru also prepared two National Register of Historic Places nominations in Rhode Island.

Buffalo Branch, 2390 Clinton Street, Buffalo, NY 14227 • 716.821.1650 • 716.812.1650 (fax)



Panamerican Consultants, Inc.

Michael A. Cinquino, Ph.D., RPA

Vice President, Director Buffalo Branch Office
Senior Archaeologist-Prehistoric and Historic Archaeology

Ph.D., Anthropology, SUNY at Stony Brook (1986)

M.A., Anthropology, SUNY at Stony Brook (1977)

B.A., Sociology, St. John Fisher College (1971)

With more than 25 years of experience as in archaeology in the Eastern United States and the Caribbean, Dr. Cinquino exceeds the requirements in 36 CFR 61 for Archaeology (prehistoric and historic). He has authored more than 400 cultural resources management reports for various clients including the U.S. Army Corps of Engineers, U.S. Environmental Protection Agency, New York State Department of Transportation, municipalities and private sector organizations. In addition, he has more than 15 years experience supervising the study of archeological resources of both the prehistoric and historic period.

Relevant Panamerican Experience:

- Dr. Cinquino has served as project manager/principal investigator on over 400 cultural resources projects throughout New York, Pennsylvania, New Jersey, Puerto Rico, the U.S. Virgin Islands, and the eastern United States. These projects include wind farm/wind power developments, waterfront developments, natural gas pipelines, historic canals, transportation projects, flood control projects for the U.S. Army Corps of Engineers (USACE), interceptor sewers, construction monitoring, light rail rapid transit systems, fiber optic line installations, cellular communications towers, industrial parks, wastewater treatment plants, fuel storage projects, demolition projects, and at U.S. military installations. In addition, he prepared numerous cultural resource sections for environmental assessments, impact statements, environmental resource documents, and cultural resource management plans, environmental audits, and predictive site modeling strategies.
- He also has extensive regulatory experience on the federal and state levels as an archaeological consultant for the New York State Department of Environmental Conservation directing the cultural resource review for the NYSDEC permit program and State Environmental Quality Review Act compliance, and as State Archaeologist and Review and Compliance Archaeologist for the Puerto Rico State Historic Preservation Office. As an employee of Ebasco, he assisted in report reviews for the Federal Energy Regulatory Commission.
- Dr. Cinquino has served as project director since 1995 for all terrestrial archaeological projects sponsored by the USACE, New York District under six contracts, totaling more than 75 investigations, including a cultural resources baseline survey for the Jamaica Bay Ecosystem Restoration project, Kings, Queens and Nassau counties, NY; a cultural resources investigation of the Selody Property, Manville, Somerset County, NJ; a field inspection of 55 areas sensitive for cultural resources and Phase IB archaeological surveys of eight sensitive areas at Picatinny Arsenal, NJ; and for more than 20 investigations at the USMA, West Point, NY.
- He was Panamerican's Project Director and Senior Technical Advisor for a Phase I cultural resources investigation of seven sites proposed for a sediment dewatering facility as part of the Hudson River PCB Superfund Site project along the Upper Hudson River (NY). The investigation was conducted for USEPA and the USACE, Kansas City District, under contract to Ecology & Environment, Inc. and included three components: archaeological, geomorphological, and historic architectural, as well as assessing any potential impact to surrounding viewsheds.
- He served as Panamerican's Project Director for the archaeological monitoring of overburden removal for the former Commercial Slip of the Erie Canal in the City of Buffalo as part of the Buffalo Inner Harbor Project, NY, for the Phase II/III cultural resources investigation and data recovery for the Erie Canal Harbor Project, City of Buffalo for Parsons Brinckerhoff and Empire State Development Corp, and for the Phases IA and IB investigations for the Buffalo Inner Harbor Support Structure along the waterfront for Foit-Albert, Inc.
- Dr. Cinquino serves as Panamerican's Project Manager for pipeline projects conducted for Williams-Transco Gas Pipeline (Houston, TX) in New Jersey; Empire State Pipeline Company in Central New York and National Fuel in Pennsylvania and New York. Panamerican's recent pipeline projects included a *Cultural Resources Survey for the Proposed Empire Connector Project, Ontario, Yates, Schuyler, Chemung, and Steuben Counties, New York* for Empire State Pipeline under contract to Haley & Aldrich of New York, and a *Phase I/II Cultural Resources Survey Addendum for the Leidy to Long Island Expansion Project, Branchburg and Hillsborough Townships, Somerset County; and Sayreville Borough and Old Bridge Township, Middlesex County, New Jersey* for Williams Gas Pipeline.

Appendix C: Scope of Work



DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, NEW YORK DISTRICT
JACOB K. JAVITS FEDERAL BUILDING
26 FEDERAL PLAZA
NEW YORK, NY 10278-0090

REPLY TO
ATTENTION OF

January 22, 2008

Environmental Analysis Branch

David J. Santillo
Northern Ecological Associates, Inc.
451 Presumpscot Lane
Portland, Maine 04103

Dear Mr. Santillo:

Reference is made to Contract No. W912DS-07-D-0005 (base year).

The U.S. Army Corps of Engineers, New York District (District) is currently assisting the National Guard Bureau (NGB) as it complies with all Federal regulations as they pertain to the undertaking of transferring the existing Admiral's Row section of the former Brooklyn Navy Yard located in the Greenpoint section of Brooklyn (Kings County), New York, from the Federal Government's ownership and disposing of the property as per Public Law 100-202.


As part of that project, the District is transmitting a Scope of Work for:

1. A Environmental Assessment (EA) Report
2. A Phase IA Cultural Resource Documentary Report
3. A Structural Alternative Analysis Report

A cost proposal using the agreed contract prices should be faxed and/or emailed to the District no later than February 1, 2008. The District requests that PCI Panamerican Consultants be considered as the sub contractor for the Phase IA Cultural Resource Documentary Report as PCI has shown great expertise within this project area. The cost proposal should display the personnel, equipment and the level of effort needed for each of the tasks described in the Scope of Work.

The District, if required, will conduct negotiations, via telephone after the receipt of the cost proposal. Your proposal may be faxed to (212) 264-0961. If you have any questions, please contact Dr. Christopher Ricciardi, Environmental Coordinator and Project Archaeologist, at (917) 790-88630.

Sincerely,


Leonard Houston
Chief, Environmental Analysis Branch

Enclosure

Scope of Work –
Environmental Assessment,
Phase IA Documentary Cultural Resource Report, an
Alternative Analysis Study Report
And Contractual Work to Comply with NHPA Section 106 -
for the Admiral's Row section of the former Brooklyn Navy Yard
Brooklyn (Kings County), New York
January 22, 2008

I. Introduction

The U.S. Army Corps of Engineers, New York District (District) is currently assisting the National Guard Bureau (NGB) as it complies with all Federal regulations as they pertain to the undertaking of transferring the existing Admiral's Row section of the former Brooklyn Navy Yard located in the Greenpoint section of Brooklyn (Kings County), New York, from the Federal Government's ownership and disposing of the property as per Public Law 100-202.

As directed by the National Environmental Policy Act (NEPA) of 1969 (as amended), the Federal government must take into consideration what potential effects may occur if a given action is undertaken. An Environmental Assessment (EA) will be prepared that provides this information following the implementing regulations of the Council on Environmental Quality (CEQ) and the NGB NEPA Handbook. These guidance documents work in accordance and conjunction with the guidelines set forth in NEPA.

As an agency of the Federal government, the Army has certain responsibilities regarding the identification and protection of the cultural resources that may be eligible for inclusion on the National Register of Historic Places (NRHP). As part of project planning, Federal statutes and regulations require the identification of significant cultural resources that are eligible for the NRHP and mitigation of adverse impacts to such resources, if identified. The Federal statutes and regulations authorizing the Army to undertake these responsibilities include Section 106 of the National Historic Preservation Act (NHPA) as amended through 2004, the Abandoned Shipwreck Act of 1987, and the Advisory Council on Historic Preservation Guidelines for the Protection of Cultural and Historic Properties (36 CFR Part 800).

This scope of work requires the preparation of 1) an Environmental Assessment, 2) a Phase IA Documentary Cultural Resource Report, 3) an Alternatives Analysis Study Report of the proposed plans by the City of New York (City) and the Brooklyn Navy Yard Development Corporation (BNYDC) for the Admirals Row property, and 4) assistance in complying with NHPA Section 106 process.

This Purchase, Request and Commitment is to be contracted through Northern Ecological and Associates using the services of their subcontractor, Panamerican Consultants. Their combined expertise and previous outstanding work on other District projects in the area makes them the prime main and subcontractor candidates for this phase of the overall Cultural Resources project.

II. Project Description

A. Project Area (see Attachment A)

Admiral's Row is located in the southwestern corner of the former Brooklyn Navy Yard (Flushing Avenue and Navy Street) in the Greenpoint section of Brooklyn (Kings County), New York. In the mid 1980s the majority of the Brooklyn Navy Yard was sold to the City of New York by the Federal Government. This particular parcel (approximately 6 acres) remained with Department of Navy and was eventually transferred to Department of Army with the United States Property and Fiscal for New York accepting accountability. It was anticipated at the time that the property would be licensed to the New York Army National Guard for construction of an armory. The ten standing domestic houses and one barn/shed on the property were not utilized and all of the structures fell into a state of disrepair.

Congress authorized the Army (P.L. 100-202) to dispose of the property by sale at fair market value. The City has been given the right of first refusal for the property.

B. Project Plans

It is the goal of the NGB to comply with all Federal regulations as they pertain to disposing of the property, as per Congress' direction. The City, through an agreement with the BNYDC, a not-for-profit organization that has a long term lease with the City as the management and development administrators for the rest of the former Navy Yard, has expressed interest in obtaining the property. Their current proposal is to redevelop the property for use as a supermarket, with a parking lot, and to construct a new light industrial building for manufacturing purposes.

III. Contractor Services and Required Investigations

The general services to be provided under this work order are those required to produce an Environmental Assessment (EA), a Phase IA Cultural Resource Documentary Report, an Alternative Analysis Report on the proposed action by BNYDC, and contractual assistance under NHPA Section 106. The format and outline as issued in the NGB NEPA Handbook must be used for the drafting of the EA (NGB NEPA Handbook June 2006). A digital copy of this guidebook will be forwarded along with this Scope of Work to the contractor.

The Contractor shall be responsible for conducting, in the manner prescribed and on schedule, the work detailed below. The Contractor must furnish professional quality draft and final reports. Failure to fully meet the requirements of this scope of work may be cause for termination of work for default of the work order, or for an evaluation of unsatisfactory upon completion of the project.

The Contractor will submit to the District and NGB bimonthly progress reports that discuss the work completed, work currently underway, research that has been accomplished, and an evaluation of general progress on all work as specified within this work order.

This scope of work requires the completion of the following tasks:

Task 1: Environmental Assessment

The Contractor shall, in accordance with NEPA, Section 6 of the NGB NEPA Handbook, U.S. Fish and Wildlife Coordination Act, Endangered Species Act, the National Historic Preservation Act (NHPA), State Water Quality, Coastal Zone Management, Environmental Justice regulation [Executive Order 12898 (February 11, 1994) and other pertinent regulations, prepare an EA and circulate the draft and final reports for public review.

The Contractor shall document all coordination with Federal, State or other agencies, either through correspondence or records of conversation. Coordination with these agencies or individuals shall be documented in the Appendices of the EA.

Information gathered in the Phase IA Cultural Resource Documentary Report and the Alternative Analysis Report must be incorporated into the EA, and the reports themselves, will be incorporated as Appendices. Additionally, if further archaeological work is required, this information will also be incorporated into the EA. However Phase IA and Alternative Analysis reports will also be submitted as individual reports during the draft phase for review in order to meet specific requirements under NHPA. A detailed timeline of anticipated project suspenses is found in the Project Schedule Section of this work order.

As part of the EA process, the contractor will be responsible for:

- a. Attending the kick-off meeting, and other meetings, as necessary.
- b. Producing a draft EA that meets the requirements as stipulated within the NGB NEPA Handbook.
- c. Creating a project mailing list and sending copies of the draft and final reports to the mailing list members (most mailing list member will receive digital copies).
- d. Posting the required public notices in the local newspapers, as mandated within the NGB NEPA Handbook. Newspapers which will run the public notice will be the *Brooklyn Daily Eagle*, the *New York Daily News*, and the *Brooklyn Paper* (Fort Greene Section).
- d. Respond to comments/incorporate comments, where applicable, based on review of the draft report.
- e. Incorporating information obtained from the NHPA Section 106 process into the EA

Task 1a: Environmental Assessment Draft Report Preparation

The Contractor will prepare a detailed draft report to the standards specified in the NGB NEPA Handbook.

As per regulations, the draft EA will be distributed to the project mailing list for review. The majority of the mailing list will receive digital copies of the draft report. Ten (10) hard copies will be required for the various agency and governmental review.

Upon review, and potential incorporation of comments, a final EA will be distributed to the project mailing list. The majority of the mailing list will receive digital copies of the draft report. Ten (10) hard copies will be required for the various agency and governmental review.

The draft and final reports will clearly state whether additional studies are warranted. The reports will develop specific recommendations for conducting those studies.

Task 1b: Response to Comments to Draft EA

The Contractor will compile all comments received and respond to them. Some comments may require additional work and/or text changes within the report. The comments will be summarized into a table format and presented in the text of the EA. All comments will be incorporated into an Appendix to the EA.

Task 1c: Final EA Preparation

The Contractor will prepare a detailed final report to the standards specified in the NGB NEPA Handbook.

Upon completing the draft and comment process, and incorporating the response to comments into the text and as an appendix section to the report, the report should be finalized and distributed to the mailing list via digital format on CD as well as ten (10) hard copies sent to the District.

Task 2: Phase IA Cultural Resource Documentary Report

This report will be submitted as a stand alone report, and will be included as an Appendix to the EA. All and appropriate information will be incorporated into the EA. A detailed timeline of anticipated project suspenses is found in the Project Schedule Section of this work order.

Documentary research should include, but not be limited to, an examination of site maps and records pertinent to the history of this particular parcel of property at the Brooklyn Navy Yard. Copies of historic maps of the project area must be obtained. Secondary materials such as local histories should be reviewed, and used for background and reference materials. When possible, local informants should be consulted.

Research will occur at the following repositories:

The NY State Historic Preservation Office (NYSHPO), Albany, NY
The New York City Landmarks Preservation Commission (NYC LPC), New York City
The Brooklyn Navy Yard Development Corporation Archives, New York City
The Brooklyn Historical Society, New York City
The Brooklyn Public Library, New York City
The New York Historical Society, New York City
The New York Public Library, New York City
Athenaeum, Philadelphia, PA
The Pennsylvania Historical Society, Philadelphia PA (if necessary)
The American Institute of Architects (AIA) Library and Archive, Washington, DC
The Navy Historical Center, Washington, DC
The National Archives, Washington DC and College Park, MD

The recent Beardsley/Crawford and Stearns Report raised several questions that should be specifically addressed in the Phase IA. They include:

a. detailed information on the existing Timber Shed/Brick Barn building – to provide information that may help to determine if the structure is potentially eligible for inclusion on the National Register of Historic Places. The historic use of the building, information about the frequency of such building types within the Navy, construction methods, etc. should be evaluated as possible. The contractor will provide their recommendations for the National Register eligibility of this building, taking into consideration the four National Register criteria and its current level of historic integrity.

b. attempt to determine if the nineteenth century architect, Thomas U. Walter, was involved with the design/construction of any of the structures within the project area. To accomplish this work, research facilities in Philadelphia, Pennsylvania and Washington, DC will require consultation and/or visitation. It is anticipated that work will be required at The Athenæum and the Pennsylvania Historical Society, in Philadelphia, PA, the National Archives, the Navy Historical Center and the American Institute of Architects (AIA) Library and Archive in Washington, DC. Additional information about Thomas U. Walter is also available at the BNYDC Archives.

c. determine if original shoreline of Wallabout Bay extended to this property; identify the Navy Yard use of this area, prior to the construction of the residences. Provide reconstructed location of shoreline and recommendations for testing to confirm shoreline location and determine if remains of Navy Yard activities in this area exist.

Much information has already been gathered in previous reports. Information should be culled from these reports so that an in-depth level of effort, for this specific information, is not duplicated and all potential new information is provided. The majority of these previously written reports are located at the City of New York – Landmarks Preservation Commission (NYC LPC). These included, but are not limited:

Baystate Environmental Consultants, Inc.

- 1994 Cultural Resources Survey for Base Closure and Realignment Redevelopment and Reuse of Excess Property at Naval Station New York, Brooklyn, N.Y. Prepared for: Northern Division Naval Facilities Engineering Command [Brooklyn Navy Yard]. Report on file – City of New York – Landmarks Preservation Commission. New York, New York.

Ecology and Environment, Inc.

- 1990 Environmental Assessment For Base Closure and Realignment of Naval Station New York at Brooklyn. For: Northern Division, Naval Facilities Engineering Command. [Brooklyn Navy Yard]. Report on file – City of New York – Landmarks Preservation Commission. New York, New York.

Geismar, Joan H.

- 1996 Draft Archaeological Evaluation (Stage 1A Documentary Study), Former Naval Station (NAVSTA) New York, Navy Yard Annex Site, Brooklyn, New York. TAMS Consultants, Inc. For: Northern Division, Naval Facilities Engineering Command. 12-23-96; updated 1-21-9. Report on file – City of New York – Landmarks Preservation Commission. New York, New York.
- 1997 Ground-Penetrating Radar (GPR) Evaluation, For: Navy-Retained Section (former) Brooklyn Navy Yard, Brooklyn, New York. TAMS Consultants, Inc. Northern Division Naval Facilities Engineering Command, Department of the Navy. Report on file – City of New York – Landmarks Preservation Commission. New York, New York.
- 1999 State of the Research, Naval Hospital Cemetery Historical Documentation. Naval Station Brooklyn, New York. TAMS Consultants, Inc. Northern Division Naval Facilities Engineering Command, Department of the Navy. Report on file – City of New York – Landmarks Preservation Commission. New York, New York.

Geismar, Joan H. and Stephen J. Oberon.

- 1993 Stage I-A Cultural Resources Survey Documentary Study and Assessment of Potential Impact, Proposed Navy Yard Cogeneration Facility, Borough of Brooklyn, Kings County, New York. For: Blasland and Bouck Engineers, P.C. Report on file – City of New York – Landmarks Preservation Commission. New York, New York.
- 1995 Stage 1-B Field Monitoring. Monitoring Well and Test Boring Locations. Brooklyn Navy Yard Cogeneration Project Borough of Brooklyn, Kings County, New York. For: Brooklyn Navy Yard Cogeneration Partners, L.P. Report on file – City of New York – Landmarks Preservation Commission. New York, New York.

- 1996 Stage I-B Field Monitoring Test Boring, Electric Line and Overhead Support Locations Brooklyn Navy Yard Cogeneration Project Borough of Brooklyn, Kings County, New York. For: Roux Associates, Inc. (June 1996). Report on file – City of New York – Landmarks Preservation Commission. New York, New York.

Historic Conservation and Interpretation, Inc. [Ed Rutsch, Multiple authors].

- 1982 Stage I Cultural Resources Survey For The Proposed Resource Recovery Facility Site, Brooklyn Navy Yard, New York City. For: Camp, Dresser & McKee. Report on file – City of New York – Landmarks Preservation Commission. New York, New York.

Solecki, Ralph S.

- 1980 Preliminary Report on Two Cannons Dating from About the Civil War in the Brooklyn Navy Yard, New York, Contract W.P. 152, Red Hook Foundation W.P.C.P. Report on file – City of New York – Landmarks Preservation Commission. New York, New York.

Several architectural and historic survey reports have been completed as well. These include, but are not limited to the following reports. All are available through New York State Office of Parks, Recreation and Historic Preservation (NY SHPO) and the District Offices:

Beardsley Design Associates and Crawford and Stearns.

- 2007 Assessment of Admirals Row – Buildings K-L, H-C, B, D, E-F-G, and I – Brooklyn Navy Yard – Brooklyn, New York City, New York. Report on file – New York State Office of Parks, Recreation and Historic Preservation. Albany, New York.

Cultural Resource Consulting Group.

- 2004 History and Description, Officers' Houses – Brooklyn Navy Yard – Borough of Brooklyn, New York City – Kings County, New York. Report on file – New York State Office of Parks, Recreation and Historic Preservation. Albany, New York.

Washington, Roberta.

- 1995 Officer's Houses – Brooklyn Navy Yard Site – Brooklyn, New York – Preliminary Case Report – Supplementary Report. Report on file – New York State Office of Parks, Recreation and Historic Preservation. Albany, New York.

As part of the Scope of Work, these, and other, reports must be viewed and incorporated into the final product, as appropriate.

Consulting parties, identified by the NGB, will receive digital copies of the draft report after the NGB first reviews the draft and makes comments. Ten (10) hard copies will be required for the various agency and governmental review. The contractor will compile comments from all identified parties and address them in the revision of the final document.

Upon completing the draft and comment process, and incorporating the response to comments into spreadsheet format, the report will be finalized and distributed to the mailing list via digital format on CD as well as ten (10) hard copies sent to the District.

Task 3: Alternative Analysis Study

This report will be submitted as a stand alone report, and will also be included as an Appendix to the EA, and appropriate information incorporated into the EA. A detailed timeline of anticipated project suspenses is found in the Project Schedule Section of this work order.

NY SHPO has requested that an Alternative Analysis Study be undertaken as part of the Section 106 process to determine if there are implementable alternatives to the existing full demolition proposal by the City and the BNYDC. Working from the conceptual plan that will be obtained/provided by the BNYDC, this task requires that alternatives that incorporate the overall project goals of the BNYDC for the property be developed. Most likely, several meetings with the BNYDC will be required to obtain the baseline information that will be required for this section of the overall report. These conceptual alternatives will help to determine if other implementable possibilities exist. Additional concepts within the alternatives analysis should consider, but not be limited to, the demolition of all of the structures (the BNYDC recommended plan), the incorporation of existing structure or structures into the BNYDC's proposed redevelopment of the site; and the restoration of one, some or all of the structures in conjunction with the BNYDC's proposed redevelopment; etc. Additionally, the Alternatives Analysis should provide detailed information as to the costs associated with potential mothballing of the buildings. Particular mothballing issues such as cost per building should be provided within this report.

The Alternatives Analysis will need to carefully evaluate City of New York regulations and requirements for new construction and ensure that all alternatives presented within the document are viable and feasible.

Consulting parties, identified by the NGB, will receive digital copies of the draft report after the NGB first reviews the draft and makes comments. Ten (10) hard copies will be required for the various agency and governmental review. The contractor will compile comments from all identified parties and address them in the revision of the final document.

Upon completing the draft and comment process, and incorporating the response to comments into spreadsheet format, the report will be finalized and distributed to the mailing list via digital format on CD as well as ten (10) hard copies sent to the District.

Task 4: Site Visit(s)

As part of Tasks 1, 2 and 3, site visits to the project area, Admiral's Row, various archives and repositories, including those in the City of New York and elsewhere are required. Any current photographs of the buildings or archival materials should be incorporated into the reports and submitted to NGB upon completion of the reports.

Task 5: Assistance with meetings and the Section 106 Process

The contractor will assist the NGB and the District in all meetings relating to the Section 106 process. As part of the services, the contractor will provide an assistant who will organize, record and produce meeting minutes, and act as an assistant to the NGB.

The contractor will provide an independent facilitator to run the various Section 106 meetings and any potential public meeting and/or information session(s). It is planned that six (6) meetings, in total, will be held in New York City.

The contractor will assist NGB in the development and drafting of the Memorandum of Agreement (MOA) as specified in the Section 106 process.

The contractor will create a website for this project which will be functional during the Section 106 process. This website will allow the District and NGB to upload documents for public review, will allow the interested public to comment on both specific reports and the project in general, and will allow District and NGB to easily disseminate pertinent information to the interested public in regard to the Section 106 process. The web site will be hosted on the District's server. The contractor will provide the initial web site files to the District for uploading.

The contractor will assist in the preparation of two (2) public meetings, one to be held in Manhattan and another to be held in Brooklyn. This will include the contractor posting the required advertisements in the local newspapers for the meetings. Newspapers that will run the advertisement will be the *Brooklyn Daily Eagle*, the *New York Daily News* (for the Manhattan public meeting only), and the *Brooklyn Paper* (Fort Greene Section).

Task 6: Project Management

The Contractor will be responsible for ensuring that all deliverables are provided on schedule and that all terms of this scope of work are satisfied. The Project Manager and the Principal Investigator shall consult with the District's Point of Contact throughout all project phases, as necessary.

V. Field Requirements

All measurements, if any, will be in metric.

Photographs will be done digitally. Photographs must be in 300dpi and saved in a TIFF format. All digital photographs will be included on a disk(s) submitted with the draft and final reports, as well as being inserted as necessary into the written report.

All applicable OSHA safety standards will be observed. All work will be performed in accordance with the Health and Safety Plan and the Corps' *Safety and Health Requirements Manual*.

VI. Report Format and Content – for the Environmental Assessment

The EA should be formatted and follow the guidelines as set forth in Section 6 of the NGB NEPA Handbook.

VII. Report Format and Content – for the Phase IA Cultural Resource Report and the Alternative Analysis Report

There will be a separate draft and final report produced for both documents. All hardcopies of both draft and final reports will be printed on 30% post consumer recycled content paper. The NGB will receive electronic versions of all draft and final reports both as PDF and MSWord Formats. All electronic draft and final reports submitted to all other agencies for review will be available in PDF format only.

The draft and final reports shall reflect and report on the fieldwork required by this Scope of Work. They shall be suitable for publication and be prepared in a format reflecting contemporary organizational and illustrative standards of professional archaeological journals. They must meet both the requirements for cultural resource protection and scientific standards of current research as defined in 36 CFR Part 800, NY SHPO Guidelines and the New York Archaeological Council's Handbook.

The reports will contain the following elements:

A. The **TITLE PAGE** will bear an appropriate inscription indicating the name and location of the project (city/village/town/county/state), authorship, including contributors, organizational affiliation and address, as well as the name and address of the prime/subcontractors, if applicable, the source of funds used to conduct the reported work, the agency and address to which the report was submitted and the date (month and year) the report was submitted.

B. If someone, other than Contract Principal Investigator, writes the report, the cover and title page of the publishable report must bear the inscription “Prepared Under the Supervision of (Name), Principal Investigator.” The Principal Investigator is required to sign the original copy of the report. In addition, the Principal Investigator must at least prepare a foreword describing the overall research context of the report, the significance of the work, and any other background circumstances relating to the manner in which the work was undertaken.

C. The **TABLE OF CONTENTS** will provide a list of all chapters, figures, tables, appendices, etc. presented in the report.

D. A **BRIEF SYNOPSIS/ABSTRACT** of the project’s findings and the documentation conducted shall appear in the front of the report and will be suitable for publication as an abstract. The following items are requested by the SHPO:

- a. The abstract should be limited to one or more pages and can be presented in outline or bullet form.

- b. Project name/project title

- c. Location, size, and boundaries of project area. Project area should include USGS citations, transportation boundaries, municipality and county names, survey boundaries, and approximate square miles.

- d. The date of SHPO correspondence, if any.

- e. Review authority.

- f. Field and Recordation Methods.

- g. Summary. Results should include the major facts of the report. For example, the number of targets investigated and documented.

- h. Evaluations and impacts. This section includes a cursory assessment of the overall effects of the proposed project on the eligible sites.

- i. Location where copies of this report on the survey area and sites within the survey area are on file.

E. An **INTRODUCTION** stating the purpose and goals of the report and summarizing all pertinent sections of the report. It should include the names of the project sponsor and contact person, the legislation relevant to the work being conducted, the geographic limits of the project area, approximate number of field hours, the dates of the study, the composition of the personnel, a project summary of findings, and a summary description of the documentation.

F. A **RESEARCH DESIGN** containing the following:

a. Objectives

b. Properties investigated and recorded

c. Methodology: Description of field and documentation methods used; discussion of how properties were selected; discussion of rationale for level of investigation and documentation; discussion of any deviation from original methodology and any problems or biases encountered during project.

G. A **DESCRIPTION OF THE PHYSICAL SETTING**, summarizing the natural and physical factors relating specifically to the location of cultural resources. Minimally, this should include, with maps if appropriate, information on the project area's, natural and cultural environmental elements, listed or eligible New York or National Register buildings, sites, structures, objects, and/or districts in the area. This discussion should also address the urban/rural character of the environment, and recent human/natural disturbance. The discussion should also include a brief architectural analysis of the area, its general integrity, and overall physical conditions and layout.

H. A **LIMITED REVIEW OF PREVIOUS INVESTIGATIONS AND BACKGROUND RESEARCH** conducted in the study area and nearby, and should incorporate and reference information obtained from individuals and organizations knowledgeable about cultural resources in the project area.

I. An **OVERVIEW OF THE HISTORIC/TECHNOLOGICAL CONTEXT OF THE PROPERTIES** summarizing material presented in earlier reports and drawing upon new information gathered during the present investigations.

J. A **DESCRIPTION OF FIELD METHODS AND THEIR RATIONALE**, making explicit the manner in which the data were collected and analyzed.

K. A **DESCRIPTION OF THE RESULTS OF THE INVESTIGATIONS, AND DOCUMENTATION ACTIVITIES** synthesizing the previous research, field data, and laboratory analysis, if applicable. This should include specific statements about the significance of these canal-related resources and their preservation potential. Discuss the investigation work in detail, including the documentation efforts. Historic and current photographs, maps, plans, and other illustrations should be integrated into the text. In preparing the text, the authors should follow the requirements described in the Secretary of the Interior's *Standards and Guidelines for Archaeology and Historic Preservation* (48FR 44734-37), and the Advisory Council's handbook *Treatment of Archaeological Properties*.

L. **CONCLUSIONS/RECOMMENDATIONS** as to the potential NRHP listings.

M. A **REFERENCES CITED** section listing all references cited within the text and within any appendices, including all primary and secondary sources, the sources' location or repository, personal communications, interviews, and pertinent project correspondence. This list must be in the format used by professional archaeological journals, such as *Historical Archaeology*, *Journal for the Society for Historical Archaeology* or *IA*, *Journal for the Society for Industrial Archaeology*.

N. **APPENDICES** to the draft and final reports will include:

a. **LOG OF PERSONS/INSTITUTIONS**, etc contacted as part of this project, indicating their affiliation(s), address and areas of expertise. The log should include the date and means of the contact (telephone conversation, interview, or written communication).

b. **SUPPORTING DOCUMENTATION**

c. The **RESUME/CURRICULUM VITAE** of the key personnel

d. **SCOPE OF WORK**

O. **PAGE SIZE AND FORMAT.** Each report shall be produced on 8 1/2" x 11" paper, single-spaced, with double spacing between paragraphs. The printing of the text should be of good quality and should approximate letter quality. Maps, if necessary, may be produced on 8 1/2" by 17" paper. All text pages, including figures, tables, plates, and appendices, must be consecutively numbered.

P. **GRAPHIC PRESENTATION OF THE RESULTS.**

a. All pages, including graphic presentations will be numbered sequentially.

b. All tables shall have a number, title, appropriate explanatory notes and a source note.

c. All figures shall have a title block containing the name of the project, county, and state, and will provide the reference, if applicable, as well as the name of the firm conducting the work.

d. All maps shall display a north arrow, graphical scale, and key, where applicable. They will also include a reference, if applicable, and the name of the firm conducting the work.

e. All graphic presentations, including maps, charts and diagrams, shall be referred to as "Figures." All figures must be sequentially numbered and cited by number within the body of the text.

- f. All graphic presentation should follow the page on which they were cited.
- g. Graphic presentation should include, but not be limited to, the following:
 - i. a project area base map, outlining clearly and accurately, the project boundaries on appropriate portion of the relevant U.S.G.S. quad sheet(s), with the name of the quad sheet(s) clearly indicated in the map title and year of issue.
 - ii. a map showing recommended areas for testing, if warranted.

Q. PHOTOGRAPHS

a. Digital photographs should be integrated into the report text and not appended. All photographs should be correctly keyed to the text and a principal map. Photographs should be counted as “Figures” in a single running series of illustrations. The captions underneath the photograph should also include the direction in which the camera is facing.

b. Digital photographs must be a minimum of 300dpi and in a TIFF format.

c. Aside from being included within the text, a separate disk(s) of the photographs should also be submitted. The disk(s) should be attached to the back of the submitted text within a closed/sealed CD envelope.

R. MAPS

a. A map of the project area should be included noting the location of the elements/structures which are being investigated.

b. The report should include the project area accurately delineated on a section of the USGS map and the appropriate quad labeled.

c. Maps should be integrated into the report and not appended. All maps should be correctly keyed to the text with photographed sites noted.

d. All maps, including reproductions of historic maps, should include a north arrow, delineation of the project area, legend, map title, bar scale, and year of publication.

S. OTHER ILLUSTRATIONS (IF NECESSARY)

- a. Illustrations should be integrated and not appended. All illustrations should be correctly keyed to the text and the principal map.
- b. Diagrams of engineering structures should include clearly labeled components.
- c. Cross-sections, elevations, site plans, and profile drawings should include scale, elevation, orientation, location, title (historic name), construction date, and illustrator.

VIII. Field Documentation

All original notes, forms, and maps will be retained and curated as provided by 36 CFR Part 79.

IX. Project Schedule

A. The Contractor will initiate the contract upon receipt of the award of the work order/notice to proceed. The Contractor will coordinate with the New York District at the initiation of the project and arrange the dates of the field survey.

B. Phase IA Cultural Resource Documentary Report - The draft Phase IA Cultural Resource Documentary Report should be submitted to the NGB and the District no later than eight (8) weeks from the Notice to Proceed (NTP). The NGB and the District will first review and comment on the draft report before it is sent to others for review. Once the District and NGB comments are incorporated, the NY SHPO and the NYC LPC will review the draft report. It is at the discretion of the District and NGB to have additional identified parties review the draft document if they so choose. The contractor should receive comments from the NY SHPO and the LPC approximately 30 days after submission. Depending on the number and magnitude of the comments, the contractor should provide the final report within two (2) weeks of receiving the all draft comments.

Phase IA Cultural Resource Documentary Report

Project Threshold	Deadline
Draft Report Submitted to the District NGB for Internal Review	Eight weeks (56 Days) from NTP
The District and NGB Comments Submitted to Contractor	Ten weeks (70 Days) from NTP
Contractor Revises Draft Report with the District and NGB Comments	12 Weeks (84 Days) from NTP
Comment Period	16 Weeks (112 Days) from NTP
Contractor completes Final Report and submits hardcopies to District and mails electronic copies to identified parties (TBD)	18 Weeks (126 Days) from NTP

C. Alternative Analysis Assessment Report - The draft Alternative Analysis Assessment Report should be submitted to the District no later than sixteen (16) weeks from the Notice to Proceed. The District, the NGB, the NY SHPO and the NYC LPC will review the draft report. The contractor should receive initial comments from the draft report approximately six (6) to eight (8) weeks after submission. Upon initial review of the draft report by the District, the NGB, the NY SHPO, and the NYC LPC, the contractor may be asked to participate in a consultation meeting(s) with identified consulting parties as part of the Section 106 process to discuss their findings, the draft alternatives they have identified, and to elicit further consulting party comments for incorporation into the final draft. Depending on the number and magnitude of the comments, the contractor should provide the final report within two (2) weeks of receiving the all draft comments.

Alternative Analysis Assessment Report

Project Threshold	Deadline
Contractor Presents Information on Alternatives Analysis to NHPA Consulting Parties in official Section 106 Meetings/Gets Important Information for Drafting Alternatives Analysis	TBD (first meeting is anticipated in late February/early March 2008)
Draft Report Submitted to the District and NGB for Internal Review	16 Weeks (112 Days) from NTP
The District and NGB Comments submitted to Contractor	18 Weeks (126 Days) from NTP
Comment Period (including meeting(s) with NHPA Consulting Parties) to elicit further comments on report, discuss viability of alternatives	24 Weeks (168 Days) from NTP
Contractor completes Final Report and submits hardcopies to District and mails electronic copies to identified parties (TBD)	26 Weeks (182 Days) from NTP

D. Environmental Assessment - An initial draft Environmental Assessment Report, for internal District and NGB review, which should include both the Phase IA Cultural Resource Documentary Report and the Alternative Analysis Assessment Report in the appendices, should be received no later than six (6) weeks after comments are received by the contractor for the Alternative Analysis Report. This period should provide the contractor with enough time and level of effort to finish incorporating the information from the previous two reports and, coupled with the twenty-four (24) weeks leading up to the this stage, provides a total of thirty (30) weeks to prepare the draft EA. Before a Draft EA is submitted for public review and agency review, the District and NGB will review the document internally. All changes/questions from this internal review will need to be incorporated before the document is made public.

The EA will be submitted to federal, state, local agency and governmental organizations, as well as general public members of the project's mailing list for review. The majority of the mailing list should receive this information digitally on CD. Some hard copies, for agency review, will be required.

After the required thirty (30) day review period, the contractor will incorporate comments, where necessary, document the comments received and prepare and release a final EA no later than thirty (30) days after the closing of the thirty (30) day review period. The final EA will be submitted to federal, state, local agency and governmental organizations, as well as general public members of the project's mailing list for review. The majority of the mailing list should receive this information digitally on CD. Some hard copies, for agency review, will be required.

The timeline, as described below, may be adjusted as needed based on NHPA compliance which will be required for the completion of the Final EA.

Environmental Assessment

Project Threshold	Deadline
Preliminary Draft EA Submitted to the District and NGB for Internal Review	30 Weeks (210 Days) from NTP
NGB Comments submitted to Contractor	32 Weeks (224 Days) from NTP
Contractor Revises PDEA with the District and NGB Comments and Submits Official Draft EA NGB	34 Weeks (238 Days) from NTP
The District and NGB performs Full Staff Review and Submits Comments to Contractor	37 Weeks (259 Days) from NTP
Contractor Revises EA, the District and NGB comments and Submits Revised EA to the District and NGB for QA/QC Review	39 Weeks (273 Days) from NTP
The District and NGB Performs QA/QC of DEA	40 Weeks (280 Days) from NTP
Public Review Period of revised DEA	44 Weeks (308 Days) from NTP
Contractor Revises EA with public comments – Final EA and DFNSI submitted to the District and NGB for Review	46 Weeks (322 Days) from NTP
The District and NGB conducts 2 nd Official Review of EA. Sends FEA and DFNSI back to Contractor for corrections as needed.	49 Weeks (343 Days) from NTP
Contractor revises EA and makes any necessary corrections to the FNSI	50 Weeks (350 Days) from NTP
Public Review Period of Final EA and DFNSI	54 Weeks (378 Days) from NTP
Submit Final EA and FFNSI for Signature	55 Weeks (385 Days) From NTP

E. The number of copies for the draft and final reports will be submitted, according to the above schedule, as follows:

a. For the Phase IA Report, aside from the digital copies on CD sent to the mailing list, ten (10) hard copies of the draft and final reports will be required.

b. For the Draft Alternative Analysis Report and the Draft EA Report, aside from the digital copies on CD sent to the mailing list, ten (10) hard copies of the draft and final reports will be required.

c. The digital copies of both the draft and final report must be submitted on a CD. The format should be a text format (e.g. MS Word 95 or greater), an Adobe Acrobat “.pdf” file format (to best convert charts, graphs, photographs, text, etc.) and all databases.

F. Scheduled completion date for the work specified in this scope is no later than fifty-two (52) weeks (twelve (12) months) from the Notice to Proceed.

X. Additional Contract Requirements

A. Agencies, institutions, corporations, associations or individuals will be considered qualified when they meet the minimum criteria. As part of the supplemental documentation, a contract proposal must include vitae for the Principal Investigator and main supervisory personnel in support of their academic and experiential qualifications for the research.

B. Principal Investigators shall be responsible for the validity of material presented in their reports. In the event of a controversy or court challenge, the Principal Investigator shall be required to testify on behalf of the government in support of findings presented in their reports.

C. Neither the Contractor nor his/her representatives shall release and/or use any sketch, photograph, report or other data, or material of any nature obtained or prepared under this contract without specific written approval of the NGB or the District prior to the time of final acceptance of the government.

D. The Contractor shall furnish all labor, transportation, instruments, survey equipment, boats and other associated materials to perform the work required by this Scope of Work.

XI. Fiscal Arrangements

A. Partial payments of the total amount allocated will be dispersed upon the receipt and acceptance of invoices. Invoices should be submitted based upon completion of specific tasks. The total amount of these invoices shall not total more than 90% of the agreed work order amount. The remaining 10% of the agreed work order amount shall be paid upon the receipt and approval of the final report, photographs, if applicable, original figures, etc. and the receipt of the final invoice.

B. Payments will be made in accordance with the “Prompt Payment” section in the base contract.

C. Scheduled completion date for the work specified in this Scope of Work is **385 days** from the Notice to Proceed.

D. The District’s Point of Contact for this project is:

Dr. Christopher Ricciardi, Project Archaeologist
U.S. Army Corps of Engineers –
Planning Division – Environmental Branch
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26 Federal Plaza – Room 2151
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