National Park Service
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Olmsted Center
for Landscape Preservation

Cultural Landscape Report for Charlestown Navy Yard

Boston National Historical Park
Boston, Massachusetts

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"…all who visit the Yard are familiar with the great elms that make leafy arches over the main entrance way." Boston Globe, 1929

CULTURAL LANDSCAPE REPORT FOR CHARLESTOWN NAVY YARD

BOSTON NATIONAL HISTORICAL PARK
Boston, Massachusetts

INTRODUCTION

SITE HISTORY

EXISTING CONDITIONS

ANALYSIS OF SIGNIFICANCE AND INTEGRITY

TREATMENT

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National Park Service, Boston, Massachusetts, 2005

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Cover Photo: An 1870s view of the waterfront from the Bunker Hill Monument (From the Society for the Preservation of New England Antiquities, SPNEA 12426B).

TABLE OF CONTENTS

LIST OF FIGURES, TABLES, AND PLANS **IV**

ACKNOWLEDGMENTS **X**

INTRODUCTION **1**

SITE HISTORY **11**

1. Settlement of Charlestown and War for Independence, 1630-1800 12
2. Establishment of the Navy Yard, 1800-1828 19
3. Development of the Yard, 1828-1869 35
4. Post Civil War, 1869-1898 55
5. Revival of the Yard and World War I, 1898-1934 71
6. Works Progress Administration and World War II, 1934-1945 105
7. Cold War Era, 1945-1974 123
8. Yard Closure and National Historical Park, 1974-Present 145

EXISTING CONDITIONS **157**

ANALYSIS OF SIGNIFICANCE AND INTEGRITY **199**

TREATMENT **227**

BIBLIOGRAPHY **263**

APPENDICES **269**

LIST OF FIGURES, TABLES, AND PLANS

LIST OF FIGURES

1	Charlestown Navy Yard boundary and major precincts, 2004.	6
1.1	The landforms of Charlestown Neck and Boston in 1630 and 2001.	13
1.2	An early view of Charlestown, Bunker Hill, Breeds Hill, and Moultons Hill.	14
1.3	Map of Bunker Hill, Breeds Hill, Town Hill, and Moultons Hill, 1775.	15
1.4	Maps of the British invasion of Charlestown with landing sites near Moulton's and Bunker Hills, 1775.	17
1.5	Northwest view of part of Charlestown proposed for the United States Dock and Navy Yard, 1800.	17
1.6	Historical base map showing roads, property ownership, structures, fences, and the waterline, c. 1800.	18
2.1	Map of the yard by Peter Tufts, 1801.	21
2.2	Carleton Osgood's drawing of the three tracts of the Charlestown Navy Yard, 1802.	22
2.3	Historical Base Map of the yard, c. 1812.	24
2.4	Map of Charlestown by Peter Tufts, Jr., 1818.	28
2.5	1823 bird's eye view of the yard as interpreted by V.K. Spicer in 1904.	29
2.6	Historical Base Map of the yard, c. 1823.	29
2.7	Painting of the Charlestown Navy Yard, c. 1823.	32
2.8	Engraving derived from a c. 1823 painting of the Charlestown Navy Yard.	32
3.1	Plan of the yard showing existing conditions and proposed additions, 1828.	36
3.2	Plan for the Charlestown Navy Yard, 1840.	36
3.3	1846 map of Boston superimposed with the 1828 master plan of the yard.	38
3.4	Historical Base Map of the yard, c. 1834.	38
3.5	Engraving from of Dry Dock 1, c. 1859.	40
3.6	Engraving of the Commandant's House and gardens, c. 1852.	42
3.7	View of the yard from the exterior looking east along First Avenue and the waterfront, 1850s.	42
3.8	View looking northwest across the elm-lined parade ground, 1856.	43
3.9	The Marine Barracks and Parade Ground, 1856.	43
3.10	Ropewalk, 1852.	44
3.11	Engraving of the launch of the *Merrimack*.	46
3.12	Buildings 22 and 24, Dry Dock 1, the Shears in the distance, and the Shiphouse, 1870.	47
3.13	Muster House, c. 1870.	48
3.14	Cannon and Shot Parks in the shipyard mall (recreation area) of the yard, 1874.	49
3.15	Shot park between First and Second Avenues, c. 1865.	50
3.16	Shot park, c. 1870.	50
3.17	Shell House and guns, c. 1870.	51
3.18	Gun park, c. 1870.	51
3.19	Anchors stored on the west end of the lower yard, c. 1870.	51
3.20	1866 bird's eye view of the Navy Yard as interpreted by V.K. Spicer in 1904.	52
3.21	Plan of yard, 1862.	53
4.1	View of yard and Boston Harbor, 1870s.	59
4.2	View of the head of Dry Dock 1, 1872.	60
4.3	View north of the yard from East Boston, c. 1874.	60
4.4	Commandant's House (Quarters G), 1871.	60

4.5	Officers Quarters (Building 265), 1882.	61
4.6	Eastern end of Gun Park, 1874.	61
4.7	View east of Gate 1, 1874.	62
4.8	Plan of the yard, 1874.	62
4.9	Gun park and base of flagpole, c. 1872.	63
4.10	Gun park and trees along Second Avenue, c. 1874.	63
4.11	Gun park with Main (Second) Avenue elms and Marine Barracks in background, c. 1874.	64
4.12	View southeast recently installed granite block pavers at near the base of Pier 1, 1890s.	64
4.13	The Commandant's Office (Building 29), 1874.	65
4.14	View of "Flirtation Walk," c. 1890.	65
4.15	View of Anchor Park, c. 1890.	65
4.16	Plan for the yard, 1897.	66
5.1	Second Avenue repaving project, 1904.	73
5.2	Paving of First Avenue by the Officer's Quarters (Building 265), 1903.	74
5.3	Construction of the Conduit (Structure 280) and repaving of First Avenue, 1902.	74
5.4	Brick paving of First Avenue, 1903.	75
5.5	First Avenue after paving c. 1903.	75
5.6	A gathering in the former gun park, 1904.	76
5.7	First Avenue at Fourth Street, 1902.	76
5.8	Dry Dock Engine House (Building 22) and granite block paving and rail lines, 1902.	77
5.9	Resurfacing Lincoln Avenue, 1902.	77
5.10	Granite Belgian block paving between the Storehouse and Navy Store (Buildings 4 and 5), 1903.	78
5.11	Railway construction along the south side of the Navy Store (Building 5), 1902.	78
5.12	Surface improvements to the roads on the east and north sides of the Navy Store (Building 5), 1918.	79
5.13	Dry Dock 2 under construction, 1904.	81
5.14	Installation of additional crane and rail tracks by the northeast corner of Dry Dock 2, 1904.	81
5.15	The forty-ton portal crane and its twenty-foot gauge tracks around Dry Dock 2, 1910.	82
5.16	Plan for the yard, 1902-03.	82
5.17	North and east sides of the relocated Pitch House (Building 10), 1901.	83
5.18	Pier 1 under construction, 1902.	83
5.19	The enormous 1904 Coaling Plant (Building 109) on Pier 1, 1911.	84
5.20	The Coaling Plant (Building 109), 1912.	84
5.21	Differing paving materials on either side of the Carpenter's Shop (Building 24), 1900.	85
5.22	The Scale House (Building 19), c. 1919 and 1933.	85
5.23	The Commandant's House (Quarters G), c. 1910.	87
5.24	The south side of the Commandant's House (Quarters G), 1901.	87
5.25	The Bunker Hill Day parade along Chelsea Street, 1914.	88
5.26	Main Gate (Building 97), 1915.	88
5.27	Marine Barracks (Quarters H-I-K), 1902.	89
5.28	The Shell House (Building 32), 1902-1910.	89
5.29	The Muster House (Building 31), 1904.	90
5.30	Plan for the yard, 1914.	91
5.31	Plan for the yard, 1934.	92
5.32	Aerial photograph of the yard, c. 1921.	92
5.33	The east and south facades of the Navy Store (Building 5), 1921.	95
5.34	Dry Dock 2 with rail crane.	95

5.35	Southwest view of Pier 1, 1921.	96
5.36	The Dry Dock Engine House (Building 22), 1921.	97
5.37	The former Chapel (Building 23), 1921.	97
5.38	The Lighting Plant (Building 28), 1921.	98
5.39	Pier 3, 1930.	98
5.40	USS *Constitution* sits in Dry Dock 1 during its restoration, 1929.	99
5.41	The Commandant's barn or tool storage (Building 20), 1921.	99
5.42	The Stable (Building 21) and Greenhouse, 1921.	100
5.43	The Officers Quarters (Building 265), 1921.	100
5.44	The Commandant's Office (Building 32, the former Shell House), 1920s.	101
5.45	Muster House (Building 31) porch, 1920s.	101
5.46	The Commandant's House (Quarters G), c. 1930.	101
5.47	The south facade of the Commandant's House (Quarters G), 1934.	102
5.48	Removal of the granite boundary wall between the Ropewalk and Chelsea Street, 1929.	102
5.49	Gate 4 and the new concrete posts and wrought iron fence, 1929.	103
6.1	WPA repairs and improvements to the north façade of the Navy Store (Building 5), 1937.	109
6.2	Area paved by WPA and crews Navy Exchange Service Station (Building 194), 1936.	109
6.3	The new Navy Exchange Service Station (Building 194) on Pier 1, 1937.	110
6.4	A portal crane, 1940.	110
6.5	A locomotive crane, 1940.	111
6.6	The Commandant's House, 1936.	111
6.7	WPA crews constructing the kitchen and butler's pantry on the Commandant's House, 1938.	112
6.8	The Commandant's House new kitchen and butler's pantry east wing, 1938.	112
6.9	The Commandant's House west yard and boundary wall, 1942.	113
6.10	The Commandant's House west yard and boundary wall, 1942.	113
6.11	The completed Garage and Chauffeur's Quarters (Building 1), 1936.	114
6.12	The Marine Corps Administration Building (Building 136), 1937.	114
6.13	WPA crews improving the tennis courts, 1937.	115
6.14	Tennis courts improved by WPA, 1937.	115
6.15	Aerial photograph of the yard, 1945.	116
6.16	Looking west down Henley Street, 1937.	117
6.17	Plan for the yard, 1946.	117
6.18	Plan of the multi-site Boston Naval Shipyard during World War II.	118
7.1	Yard-manufactured dielock chain stored in piles, 1943.	129
7.2	The modernization and enlargement of existing structures as recorded in 1957.	129
7.3	The pedestrian Gate 4 looking into the yard from Chelsea Street, 1977.	130
7.4	The Chelsea Street trolley tracks by Gate 4, 1977.	130
7.5	The west and south facades of the Storehouse (Building 4) and the Navy Store (Building 5), 1955.	131
7.6	The west and south facades of the Storehouse (Building 4) and the Navy Store (Building 5), 1974.	131
7.7	Aerial view of a parking lot outside the Yard's western wall, between Gates 1 and 2, 1954.	132
7.8	Gate 1 Gatehouse (Building 267) constructed in 1959.	132
7.9	USS *Constitution* parking area south of Gate 1, 1955 and 1959.	133
7.10	Aerial photographs of the yard, 1966.	134
7.11	The parking area had increased with the demolition of several buildings outside the yard, 1974.	135
7.12	The congested yard, hemmed in by the Mystic and Charles Rivers and Charlestown, 1945.	136
7.13	Commandant's House, c. 1966.	136

7.14	Officers Quarters (Building 265), 1948.	137
7.15	Marine Barracks (Building I), driveway, and Parade Ground, 1974.	137
7.16	Anchor in the Shipyard Mall (recreation area) by First Avenue and Fourth Street, 1967.	138
7.17	Flagpole, Reviewing Stand, and War Memorial (Structures 242, 260, and 279), 1957 and 1974.	138
7.18	Plan for the yard, 1973.	139
8.1	Charlestown Navy Yard plan, 1980.	152
8.2	View looking east on Second Avenue, 1974.	152
8.3	The Muster House (Building 31) at the intersection of Second Avenue and Fifth Street, c. 1977.	153
8.4	The Muster House (Buildings 31) and the Dispensary (Building 120), 1977.	153
8.5	One of First Avenue's few historic trees neat the Dry Dock Engine House (Building 22), 1975.	154
8.6	The pedestrian Gate 4 before Fifth Street was extended to Chelsea Street, 1977.	154
8.7	The pedestrian Gate 4 before Fifth Street was extended, 1977.	155
8.8	The Marine Corps Administration Building (Building 136), 1974.	155
8.9	Temporary Storage Building (Building 198), 1977.	156
8.10	Fourth Street paving with yellow bricks and wood blocks, 2002.	156
9.1	The south elevation of the Commandant's House (Quarters G) and landscape terracing, 2002.	169
9.2	The semicircular boundary wall north of the Commandant's House, 2002 and 2005.	169
9.3	Spatial organization of the park portion of the Charlestown Navy Yard, 2004.	170
9.4	Outside Gate 1 looking into the park, 2003.	171
9.5	Area surrounding Gate 1, 2003.	171
9.6	The broad view south from First Avenue toward Pier 1, 2003.	171
9.7	Pier 1 looking north, 2003.	172
9.8	Dry Dock 1 and the SS Nobska looking south with Pier 1 and the Boston skyline to the right, 2003.	172
9.9	The USS Constitution Museum courtyard and connector, 2002.	173
9.10	The courtyards on the west (left) and east (right) sides of the Marine Barracks (Building I), 2002.	173
9.11	Parking on Pier 1, 2003.	174
9.12	Pier 1 with rails, historic granite paving, supply piles, and bollards, 2003.	174
9.13	Baxter Road parking, 2002.	174
9.14	Buildings, structures, and fencing along Baxter Road, 2002.	175
9.15	Pier 3 in deteriorated condition, 2003.	175
9.16	Fourth Street looking northeast, 2003.	176
9.17	Fifth Street from First Avenue to its intersection with Chelsea Street, 2002.	176
9.18	The pedestrian entrance at Second Avenue looking east toward the BRA portion of the yard, 2002.	177
9.19	The park's vehicular entrance on First Avenue near the intersection with Fifth Street, 2005.	177
9.20	The brick walkway between the Commandant's House (Quarters G) steps and Second Avenue, 2002.	178
9.21	The walks that connect the main walk to areas on either side of the Commandant's House, 2002.	178
9.22	The Commandant's House driveway, 2002.	179
9.23	Concrete walk connecting First and Second Avenues (left) and the Officers Quarters, 2003.	179
9.24	Second Avenue and Officers Quarters' individual yards and Gate 2, 2002.	179
9.25	Explosives Bunker (Building 272) at the end of Pier 1, 2003.	180
9.26	Dry Dock 1 caisson, 2003.	180
9.27	Pier 3 with Building 24, Crane # 30, and Dry Dock 1, 2003.	181
9.28	Pier 3 from Pier 2 with one of the cranes, 2002.	181
9.29	Pier 3's floodlight towers (right) are typical of those installed throughout the yard in the 1960s, 2002.	182
9.30	West elevation of Pier 2 showing the USS Constitution Temporary Storage Shed, 2002.	182
9.31	Dry Dock 2 looking north, 2002.	183

9.32	Shipyard Mall and Marine Barracks from First Avenue, 2003.	183
9.33	Playing Courts (Structure 236), 2002.	184
9.34	Reviewing Stand (Structure 260), 2003.	184
9.35	The yard's granite block boundary wall northwest of the Commandant's House, 2003.	185
9.36	Security and safety features protect USS *Constitution* and guide visitors, 2005.	185
9.37	NPS Kiosk, wooden steps, and trash cans at USS *Cassin Young* on Pier 1, 2003.	186
9.38	Explosives Bunker (Building 272), Saluting Battery (Structure 261), and gangway on Pier 1, 2002.	186
9.39	Synthetic lumber post-and-pale fence surrounding Dry Dock 1, 2002.	187
9.40	View west along First Avenue, 2003.	187
9.41	An installation of masts is displayed south of First Avenue north of Dry Dock 1 and Pier 1, 2003.	188
9.42	Baxter Road, the USS Constitution Museum courtyard, and the Carpenter's Shop, 2003.	188
9.43	First Avenue and the northwest corner of Dry Dock 2, 2003.	189
9.44	The Reviewing Stand and anchor display areas of the Shipyard Mall, 2002.	189
9.45	The top of the Parade Ground in south of the main entrance to the Marine Barracks, 2003.	190
9.46	Southwestern corner of the Shipyard Mall at the intersection of Third Street with First Avenue, 2002.	190
9.47	Commandant's House front lawn, 2002.	191
9.48	The Commandant's House driveway entrance off Second Avenue, 2002.	191
9.49	Trees growing along the Commandant's House driveway, 2003.	192
9.50	The Bunker Hill Monument is visible from many parts or the yard especially the waterfront, 2003.	192
9.51	The Tobin Bridge dominates many yard views including this one from Dry Dock 2, 2002.	193
10.1	Southeast corner of the Commandant's House grounds, 1930s and 2004.	206
10.2	The Marine Barracks terraces, 1923 and 2002.	208
10.3	The Shipyard Mall's open space at the core of the Charlestown Navy Yard.	211
10.4	The Marine Barracks and Parade Ground.	211
10.5	The area west of the Shell House (Building 32), 1920s and 2004.	212
10.6	Second Avenue turf, 1920s and 2004.	218
10.7	Trees of Flirtation Walk.	220
10.8	Young street trees growing along Second Avenue, 1920s.	220

LIST OF TABLES

1	The eight chapters of the Site History section, chapters 1-7.	3
5.1	List of plants added to the Boston Navy Yard in 1929.	94
10.1	Summary of landscape integrity for Charlestown Navy Yard	206
10.2	Summary of landscape characteristics and features for the Charlestown Navy Yard	222

LIST OF PLANS

2.9	Period Plan 1828	33
2.10	Period Plan 1828 Vegetation Plan	34
4.17	Period Plan 1898	68
4.18	Period Plan 1898 Vegetation Plan	69
4.19	Period Plan 1898 Legend	70
6.19	Period Plan 1945	120

6.20	Period Plan 1945 Vegetation Plan	121
6.21	Period Plan 1945 Legend	122
7.19	Period Plan 1974	141
7.20	Period Plan 1974 Vegetation Plan	142
7.21	Period Plan 1974 Enlarged Vegetation Plan	143
7.22	Period Plan 1974 Legend	144
9.52	Existing Conditions 2004	195
9.53	Existing Conditions 2004 Vegetation Plan	196
9.54	Existing Conditions 2004 Enlarged Vegetation Plan	197
9.55	Existing Conditions 2004 Legend	198
11.1	Treatment Plan Zones 2004	259
11.2	Treatment Plan Upper Yard Enlargement 2004	260
11.3	Treatment Plan Waterfront Enlargement 2004	261
11.4	Treatment Plan - USS *Constitution* Location Alternatives	262

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Charlestown Navy Yard, Boston National Historical Park, c. 2000 (NPS).

INTRODUCTION

MANAGEMENT SUMMARY

HISTORICAL OVERVIEW

SCOPE OF WORK METHODOLOGY

DESCRIPTION OF STUDY BOUNDARIES

SUMMARY OF FINDINGS

MANAGEMENT SUMMARY

In the early 1800s the Charlestown Navy Yard, later known as the Boston Navy Yard and Boston Naval Shipyard, was one of the busiest naval yards in the country, employing up to 500 mechanics, laborers, and others in the building, repairing, and equipping of vessels. A half century later, after the Civil War, the yard languished and was almost closed, until the Spanish-American War and World War I once again increased yard activity. In its peak years of production during World War II, the yard employed over 50,000 men and women, who worked at a "frantic pace" to build, repair, and outfit ships for overseas. After the war, the strategic importance of the naval fleet waned, and in the 1970s, officials divided the yard into two parcels transferring one to the National Park Service (NPS) and the other to the Boston Redevelopment Authority (BRA). Today, the yard retains many historic buildings, structures, and landscape elements that reflect its 174-year role in the creation and growth of the U.S. Navy. The yard is designated a National Historical Landmark and listed on the National Register of Historic Places, though documentation has not been formally completed. Serving as home for the Navy's oldest commissioned warship, USS *Constitution*, the yard is a place to celebrate and explore United States maritime history.

The purpose of this cultural landscape report is to thoroughly examine and document the physical development of the thirty-acre portion of the Charlestown Navy Yard that is owned and managed by the National Park Service. The report describes the evolution of the landscape from its establishment as a navy yard in 1800 until its closure in 1974 as well as changes during the period of National Park Service (NPS) management from 1974 to present. This site history is followed by a description of the current condition of the property and an analysis of historical significance and integrity. This includes an evaluation of the yard's historic and contemporary landscape characteristics, such as changes in spatial organization, circulation, and vegetation. With an understanding of the historical fabric, the report then presents treatment issues and recommendations related to security, accessibility, paved surfaces, trees, lawn areas, lighting, and other site features. This study provides the documentation needed to guide management of cultural landscape resources as well as direct long-term planning efforts. In addition, the report will aid in future documentation for review by the Massachusetts State Historic Preservation Officer for compliance with Section 106 of the National Historic Preservation Act, and contribute information needed for an environmental assessment and the public community review process.

This report has been prepared in advance of several NPS construction projects and in response to security issues. Upcoming projects that will necessitate landscape alterations include a new visitor center in the Navy Store (Building 5) and relocation of park headquarters to the Paint Shop (Building 125). Other scheduled projects include repairs to the Commandant's House (Quarters G), Carpenter Shop (Building 24), Dry Dock 1, and the Marine Barracks (Building I). Also scheduled for rehabilitation are the Forge Shop (Building 105) and the Ropewalk (Building 58), which are located in the one hundred-acre parcel of the yard that is now owned by the Boston Redevelopment Authority. Detailed study of the Boston Redevelopment Authority's portion of the yard is not included in this report. The report does however address recent and pressing concerns related to national security. Active-duty and civilian U.S. Navy personnel stationed within the NPS portion of the yard provide public programs and maintain USS *Constitution*. To address issues raised by the construction projects and security concerns, the park sponsored a series of public workshops to identify issues and solutions. A summary of issues related to the cultural landscape is incorporated into the *Treatment* section of this report.

The cultural landscape report was developed in conjunction with several associated projects underway at the Charlestown Navy Yard. A historic resource study (HRS), currently in draft, examines in detail the significance of the yard's historical resources, both in the NPS and Boston Redevelopment Authority portions of the yard. This CLR has expanded on and superseded a former chapter in the draft historic resource study entitled, "Landscape Overview." It provides greater detail on the landscape features within the designated study area and will be

referenced by the HRS. The HRS recommends a future CLR be completed for the remainder of the yard where the NPS has gained oversight responsibilities with land transfers subsequent to the 1974 establishment of the park. Two other recent studies are referenced several times in this report, a pavement study completed in 1995 and a lighting study completed in 1997. Earlier studies that also pertain to the development of the cultural landscape report include: the park's statement for management and general management plan (1980, revised 1987); various historic structure reports for buildings and structures (1980s-1990s); and the historic grounds management report (1985).

HISTORICAL OVERVIEW

The *Site History* section, chapters 1-8, describes the evolution of the Charlestown Navy Yard landscape in eight periods based on major political, technological, and social change as outlined below in Table 1. Chapters 2-7 span the yard's 174-year period of significance, 1800-1974. Chapters 2, 4, and 7 each also represent one of the nine subperiods of significance as proposed within the *Analysis of Significance and Integrity* section, chapter 10. Chapters 3, 5, and 6 each encompass two of the nine proposed subperiods of significance.

Table 1. The eight chapters of the Site History section, chapters 1-8.

Title	Period	Description
1. Settlement of Charlestown and War for Independence	1630 - 1800	From Native American inhabitation of the area, through settlement of the Charlestown peninsula by the Massachusetts Bay Company, and the War for Independence.
2. Establishment of the Navy Yard	1800-1828*	From the establishment of the Navy Yard through the early 1820s.
3. Development of the Yard	1828 - 1869**	From implementation of a master plan, the transition to steam-powered vessels, and the Civil War.
4. Post Civil War	1869 - 1898*	From a period of relatively little activity, through the Navy Appropriations Act of 1890, and the partial modernization of the yard to build, repair, and outfit steel ships leading to the authorization of Dry Dock 2 in 1898.
5. Revival of the Yard and World War I	1898- 1934**	From the outbreak of the Spanish-American War through World War I, a post-war period of modernization, and subsequent inactivity.
6. Works Progress Administration and World War II	1934 - 1945**	From the improvements made by the WPA, through a period of shipbuilding and expansion during World War II.
7. Cold War Era	1945 - 1974*	From the end of World War II, through the Korean and Vietnam Wars and the Cold War until the yard's closure.
8. Yard Closure and National Historical Park	1974 - Present	From the transfer of the yard to the National Park Service and Boston Redevelopment Authority to the present.

*Chapter represents one of the nine subperiods of significance for the Charlestown Navy Yard as proposed in chapter 10.
**Chapter encompasses two of the nine subperiods of significance for the Charlestown Navy Yard as proposed in chapter 10.

The Charlestown Navy Yard is one of the six original yards established by the U.S. Navy in 1800. The yard was a center for building, refitting, and servicing ships, and a manufacturing site for several essential products for the Navy, most notably rope in the nineteenth century and die-lock chain in the twentieth century. During the Colonial period, the site was at the base of a sparsely populated drumlin and field east of the town center, known as Moulton's Hill and Moulton's Point Field, and bounded by a marsh and tidal flats. During the War for

Independence, the shoreline within the future yard site contained two landing points for British troops on 17 June 1775 during the Battle of Bunker Hill. Once the colony achieved independence, the decimated center of Charlestown was rebuilt farther to the west than the original site. In 1800 the U.S. Navy began to acquire pasture and marshland to the east. Construction of the first buildings in the yard was largely dictated by the natural topography of the land and tidal shoreline.

Early development of the yard was concentrated on the western portion of the parcel, at the foot of Breed's Hill and edge of the marsh, which served as a timber basin. The Commandant's House (Quarters G), Marine Barracks (Building I), and Navy Store (Building 5) were among the earliest structures. Haphazard development occurred in the central and eastern portions of the yard where areas were designated for use by the U.S. Army and U.S. Treasury Department. Beginning in 1816, the commandant of the yard and site engineers began to address landscape improvements and overall site organization. Street trees, fruit trees, a gun and cannon park, and parade ground created a campus-like setting in the western portion of the upper yard in front of the Commandant's House (Quarters G).

A legislative requirement for a master plan in 1828 resulted in a classical grid pattern imposed on the yard's irregular developments. By mid-century, new structures, improved roads, and the associated filling, dredging, and regrading, adhered to the grid, creating a more unified appearance to the yard, which was even more pronounced with the construction of a granite block boundary wall in 1824. At the close of the Civil War, the yard had tripled in size but lacked a logical organization. Sail making lofts operated next to steam-power plants, wood storage sheds stood next to iron plating factories. Cannon, shot, and anchor parks contained obsolete materials that had been destined for ships. In the 1880s, the yard operations shifted from the construction and repair of ships to the manufacturing of supplies, including rope, sail, chain, and anchors. During this period, many buildings associated with ship construction fell into disrepair or were dismantled, including partially-built vessels.

Following nearly thirty years of minimal activity, yard operations gained momentum during and after the Spanish-American War in 1898 and further intensified when American troops entered World War I in 1917. Shipways for steel vessels replaced wooden shiphouses; gas and oil tanks replaced coal storage facilities; and electric lights replaced gas. Construction of a second, larger dry dock, a marine railway, and extension of the bulkhead line into the harbor allowed the yard to repair and outfit both large and small ships. Seventeen trade shops supplied some 450 vessels between 1917 and 1918, with an average of fifty ships a day arriving and departing from the yard.

Once again, yard activities diminished after World War I, but certain changes were vital to keep abreast of major innovations. Adapting from wind to steam to oil-powered vessels and from wood to iron to steel construction required constant changes to the yard's industrial landscape. During the Great Depression, federal relief programs established by President Franklin D. Roosevelt transformed the yard into a modern shipbuilding facility. After sixty years of supply manufacturing, Charlestown built its first modern warship, a destroyer, in 1931, with thirteen additional destroyers built over the next six years. While some portions of the yard changed dramatically, the upper, western end of the yard retained a residential character with brick buildings, tree-lined streets, ornamental shrubs, and a central flagpole and bandstand area. During the late 1930s, some 1,400 workers employed through the Works Progress Administration completed many projects in the yard, including the replacement of the porches and addition of a kitchen wing on the Commandant's House (Quarters G), new porches and stair towers on the Marine Barracks (Building I), improvements to tennis courts, paving of streets, pier improvements, and interior reconstruction of the Navy Store (Building 5).

Construction more than doubled in the 1940s with the outbreak of World War II. Known as the "destroyer yard," the yard also produced escort vessels (commonly known as destroyer escorts), landing ships, barracks ships, submarines, and many smaller vessels. An estimated 6,000 vessels were built, repaired, overhauled, converted, or

outfitted between 1939 and 1945. A work force of 50,000, including some 7,700 women and 2,300 African Americans, worked around the clock in three eight-hour shifts. Before and during World War II, new buildings filled a large portion of the remaining open ceremonial and recreational space in the yard, both in the residential area and the former timber basin area east of Dry Dock 2. Most notable was the dominating World War II Temporary Storage Building (Building 198), erected between the Marine Barracks (Building I) and the Dry Dock Engine House (Building 22).

After the war, production slowed and the yard shifted its facilities to sonar and radar technology. In the 1960s, the yard also outfitted vessels with missiles, antisubmarine warfare devices, and conducted fleet rehabilitation and modernization overhauls to extend the usefulness of the Navy's aging and dwindling fleet. By the early 1970s, work was greatly diminished and closure was imminent. The Marine Railway and Ropewalk (Building 58) were closed in 1971 and the entire yard was officially closed on 1 July 1974. When closed, the yard was divided into two parcels, with approximately 100 acres transferred to the Boston Redevelopment Authority and the rest to the National Park Service. Additional parcels not owned by the Navy, including the Hoosac Stores, were subsequently transferred to or acquired by the NPS, increasing the NPS portion of the yard to some thirty acres.[1]

Under National Park Service management, numerous features were altered, removed, or added to improve circulation and facilitate park operations. The Marine Corps Administration Building (Building 136), World War II Temporary Storage Building (Building 198), Transportation Garage (Building 204), and the Marine Railway were removed. In the early 1980s, Gate 4 and Fifth Street were expanded to accommodate vehicle traffic. The associated construction of the Chelsea-Water Street Connector required the relocation of the boundary wall, which resulted in a loss of open space along the front and side lawns of the Commandant's House (Quarters G). Numerous buildings were rehabilitated for new uses, including the Dry Dock Engine House (Building 22) as the USS Constitution Museum and the Pitch House (Building 10) as a restaurant. Despite the many changes, clusters of notable nineteenth and twentieth-century buildings remain, as well as industrial structures including piers, dry docks, light towers, grit hoppers, and portal cranes. The site is also home to USS *Constitution* and USS *Cassin Young*. The park's General Management Plan for the Charlestown Navy Yard (revised 1987) states that all surface areas and structures within the National Historical Park will be included in a "historic zone."

SCOPE OF WORK AND METHODOLOGY

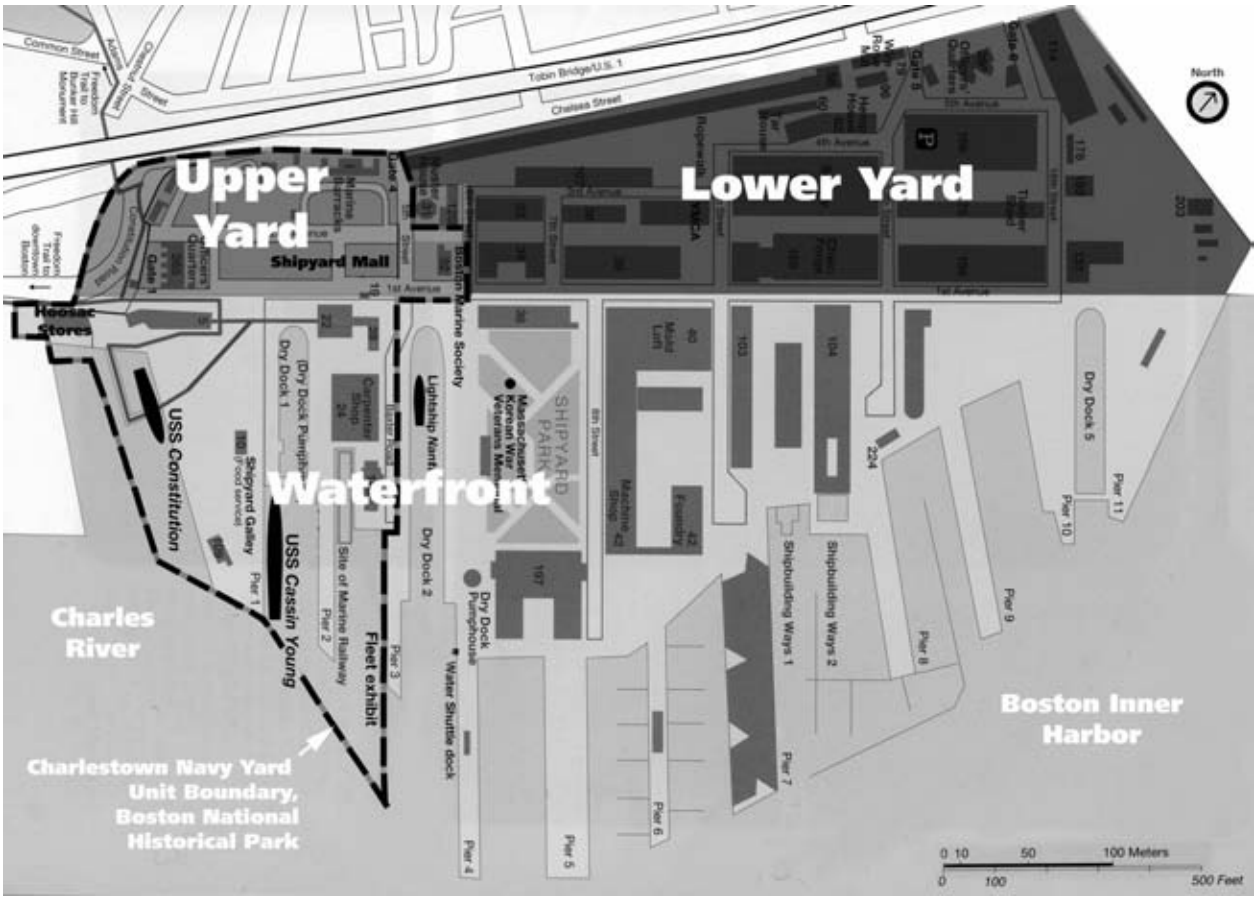
This report was completed in 2005. Research was conducted at a cursory level, relying on many of the existing studies completed at the yard. The CLR consists of four major sections: *Site History*; *Existing Conditions*; *Analysis of Significance and Integrity* with a summary of landscape characteristics and features; and *Treatment* with guidelines and recommendations. The *Site History* section is divided into chapters based on national trends or major changes in the yard, either due to changes in technology, funding initiatives, or wartime needs. The *Existing Conditions* section provides a description of extant landscape characteristics and features. The *Analysis of Significance and Integrity* section reviews the current site documentation with respect to the National Register of Historic Places, examines the integrity of landscape characteristics, and lists contributing characteristics and features, including natural features, spatial organization, circulation, structures, vegetation, and small-scale features. The *Treatment* section describes four treatment alternatives, preservation, rehabilitation, restoration, and reconstruction, and the justification for the selected treatment, rehabilitation. Guiding principles and specific recommendations are paired

[1] The 1973 yard plan (399-155) indicates the following: hard land – 83.9 acres, water – 46.07 acres, total 129.97 acres, plus Marine Corps land – 1.34 acres, for a total of 131.31 acres. Steve Carlson, correspondence, 18 July 2002.

with current issues facing the yard, with some design concepts and details as parameters for design and construction.

ORIENTATION

Throughout the report, geographic references follow the Navy's practice in considering that First Avenue ran true east to west and not northeast to southwest. This usage, which Boston NHP has continued in developing construction drawings for work within the yard, simplifies the geographical orientation and allows for consistency between contemporary and historic plans. To further aid in the description of structures and landscape features, the yard is divided into three general areas: the waterfront south of First Avenue, including the piers; the upper yard, including the western residential area; and the lower yard, including the central marsh, manufacturing area, and the eastern residential area (Figure 1). Aspects that encompass the entire yard, including circulation and the boundary wall, are addressed under separate headings. This report concentrates on the western end of the waterfront and upper yard, which represents the NPS portion of the property, but often describes major changes in other parts of the yard. Many features outside of the study area, particularly along the waterfront were linked by function and require some explanation beyond the study area. In an effort to provide consistency throughout the report, information is presented chronologically in the site history section and by landscape characteristics and area in the existing conditions and analysis of significance and integrity sections.


Upper Yard
Shipyard Mall
Lower Yard
Waterfront
Charles River
Boston Inner Harbor
Tobin Bridge/U.S. 1
Chelsea Street
Common Street
Freedom Trail to Bunker Hill Monument
Freedom Trail to downtown Boston
Gate 1
Gate 4
Gate 5
Gate 6
Officers' Quarters
Enlisted Quarters
Marine Barracks
Commandant's House
Hospital
Rogers Hall
Hall
Hall

YARD AND STREET NAMES

Known variously as the Boston Navy Yard or Charlestown Navy Yard throughout its history, the yard officially became the Boston Naval Shipyard in 1945, shortly after the end of World War II. When starting in World War I, the yard acquired additional storage, docking, and repair facilities in South Boston, East Boston, and Chelsea, the Charlestown yard was referred to as the "main yard." When the property became a national park site, Congress designated it as Charlestown Navy Yard.[2] The naval operations that continue within the Charlestown Navy Yard are known as the Naval Historical Center Detachment Boston's Maintenance & Repair Facility. In this report the site is referred to as the Charlestown Navy Yard, or simply the "yard."

Some of the surrounding streets names have changed since their seventeenth and eighteenth century origins. Chelsea Street was previously known as the Salem Turnpike, and the first road to the site was referred to as the "Lane to the Brickyards." Early roads that led to Gates 1 and 2 of the yard—Water, Wapping, and Henley Streets—were subsequently eliminated and replaced by Constitution Road, which approaches Gate 1 along the former alignment of Water Street. Within the yard, the first road extended east from Henley Street and was known as New Road until it became Main Avenue in 1857. In the 1860s when railroad tracks were introduced to the yard, the waterfront road became the principal street called First Avenue, and Main Avenue became Second Avenue. In the 1870s, the Navy assigned letters to the avenue names with First Avenue being Avenue E and Second Avenue being Avenue D. In 1902, to aid in yard organization, the Navy officially named roads running east-west as "Avenues" in numerical order from south to north, and roads running north-south as "Streets" in numerical order from west to east.[3]

BUILDING, STRUCTURE, AND PIER NAMES

Beginning in the late 1860s, the Navy assigned a number or letter to each building, structure, and pier. Unfortunately, during major periods of development of the yard, such as in 1900 and the 1940s, some renumbering occurred. Similarly, building functions changed resulting in new descriptive names, such as the Dry Dock Engine House that now serves as the USS Constitution Museum (Building 22). In this report the descriptive name of the building or structure is paired with its numerical name in parenthesis to minimize confusion, e.g., the Paint Shop (Building 125). Appendix 1 lists the proper names, numbers, and locations of buildings and structures referenced in this report. Military documents typically capitalize the names of buildings, such as Dry Dock 1 and the Commandant's House (Quarters G). In keeping with this tradition, most building and major structure names are capitalized in this report.

The earliest piers were termed "wharves" and the two located at the western end of the yard were known as White's Wharf and Shear Wharf. In the early 1900s, when the Navy extended the bulkhead line further into the harbor, many of the wharves were extended and thereafter referred to as piers. The piers are numbered from one to eleven, with Pier 1 on the western end of the yard. When closed in 1974, there were three dry docks in the yard, known as Dry Docks 1, 2, and 5. Dry Docks 3 and 4 were located in the South Boston Annex, which was active during World War II.

[2] For more information on names, refer to Carlson, HRS, 2, f3.
[3] For more information on building numbers and street names, refer to Carlson, HRS, 11, f17.

DESCRIPTION OF STUDY BOUNDARIES

This study focuses on the land owned by the National Park Service that was part of the Charlestown Navy Yard. The study does not include the Hoosac Stores area because it is a separate National Register district of local and regional significance and was never part of the Charlestown Navy Yard (see Figure 1). The study area includes the waterfront Piers 1, 2, and 3, though only a portion of Pier 3 is in the park. The history of both Dry Docks 1 and 2 is examined, though Dry Dock 2 is outside of the park. In the upper yard, the study includes the area surrounded by the boundary wall from Gate 1 to Gate 4, and Fifth Street, as well as the block between Fifth and Sixth Street that contains the former Shell House now used by the Boston Marine Society (Building 32).

SUMMARY OF FINDINGS

In November 1966, the US Secretary of the Interior designated the Boston Naval Shipyard as a National Historic Landmark under the National Historic Preservation Act (NHPA). This designation also automatically placed the yard on the National Register, which had been created a month earlier by the NHPA. The nomination noted that "…the Boston Naval Shipyard…has been found to possess exceptional value in commemorating or illustrating the history of the United States…"[4] In 1978, the National Park Service prepared a National Register Nomination Form to document the landmark. The form was submitted to the National Register Office but never formally accepted. This draft document found the Charlestown Navy Yard to be eligible under National Register Criteria A, C and D. A Historic Resource Study was completed by Edwin C. Bearss and Frederick R. Black in 1984 and 1988 occupying three parts and five volumes. These volumes focus on the history of the site and focus on naval operations and ships built in the yard. They do not address surviving resources, significance, or treatment. A revised Historic Resource Study (HRS) is currently in draft, which seeks to document and assess the cultural resources and determine primary and secondary periods of significance for the yard. The draft recommends that revised National Register forms be prepared and that all four criteria (A,B,C,D) are applicable to the yard. The revised HRS also addresses the period of 1974 to 2000, when many changes were made in the yard.

The period of significance of the Charlestown Navy Yard extends from the yard's establishment in 1800 to its deactivation in 1974 when the yard became part of Boston National Historical Park.[5] The 1978 draft National Register Nomination Form applies four primary themes to evaluate all extant buildings and features of the yard: History of the American Navy (Military); History of Technology (Engineering); History of Social and Worker Movements (Politics/Government); and History of American Architectural Design and Planning (Architecture). Both the draft National Register Nomination Form and draft Historic Resource Study ascribes national significance to the property, one of the six original United States Navy Yards, under Criterion A for its association with 174 years of the U.S. Navy's war and peacetime efforts.6 Additionally, the property is significant under Criterion B for its association to significant figures including naval officers and other individuals involved with the yard's architecture, engineering, and technology. The property is also significant under Criterion C for its distinctive historic residences, manufacturing facilities, piers, and dry docks as well as associated open space critical to the yard's

[4] National Survey of Historic Sites and Buildings, "Boston Naval Shipyard, Massachusetts," October 10, 1966, enclosed in Howard R. Stagner to Paul H. Nitze, Secretary of the Navy, Nov. 15, 1966, Boston Naval Shipyard NHL Reference File, Division of Cultural Resources, Boston NHP.

[5] The Charlestown Navy Yard also includes the site of the British landing during their 17 June 1775 attack on the colonial fortifications built on Breeds Hill, later known as the Battle of Bunker Hill. This event falls outside of the yard's 1800-1974 period of significance and is more associated with the program of the Bunker Hill Monument unit of Boston National Historical Park.

[6] National Register of Historic Places Nomination Form, The Historic Resources of the Boston Naval Shipyard, Charlestown Navy Yard. Partial Inventory: Historic and Architectural Resources by Edwin C. Bearrs, Historian, Peter J. Snell, Historical Architect, NPS, Denver Service Center, May 1978, page one, Significance Section.

operation. Much of the yard's grid, open space, and buildings can be attributed to the planning and design of Laommi Baldwin, Alexander Parris, and Joseph Billings among others while engineers such as Baldwin created structural feats such as Dry Dock 1. Additional significance is ascribed under Criterion D for the potential of the property's buildings and structures to yield important historical information. The archeological resources associated with the yard are significant, but beyond the scope of this study.

Boston National Historical Park's Charlestown Navy Yard includes the administrative and ceremonial center of the yard with many nineteenth-century buildings. Today's Navy Yard represents an amalgam of technology and building and landscape styles and ideals. In order to evaluate integrity, the 174-year long period of significance has been divided into nine subperiods, slight variations of those identified by the draft HRS. Expectedly the landscape of the most recent subperiod, 1945-1974 Cold War Era, possesses the highest integrity.

Although the site retains many nineteenth-century landscape characteristics and features, the landscape does not retain overall integrity for the nineteenth-century subperiods. Yet the intent of the yard's overall plan and building scale, largely influenced by Loammi Baldwin, Alexander Parris, and other early yard architects and engineers is still strongly expressed. World Wars I &II necessitated intense additions that compromised the yard's park-like character. By the latter war, few street trees remained much like today. After World War II, the Navy removed many of the stockpiles needed for the war effort. The park and BRA later removed much of the World War II era buildings and structures and reconfigured some streets. These actions removed some evidence of this subperiod's design, materials, and feeling. The setting surrounding the park changed during the twentieth century and continued to change once the Navy left and the park formed. The setting today reflects these changes made during the last half of the twentieth century.

The park's General Management Plan (GMP) (revised 1987) states that "…the Navy Yard's appearance will be managed to reflect the final period of Navy occupancy dating to 1974."[7] The plan defines a "Preservation Subzone" for the majority of the NPS property, which calls for the "preservation and maintenance of the twentieth-century industrial character of the yard as it existed in 1973 prior to transfer to the National Park Service." While this approach has been accepted for over a decade, it has become increasingly untenable for several reasons. First, there is the need to look at the integrity and significance of the yard within its broader historical and material culture contexts. The draft HRS provides a broader perspective on the significance of the yard. With this study, the park will be able highlight a broader range of significant aspects of the Yard's history. Second, as new issues arise and changes are necessary, the preservation to 1973-74 becomes less feasible. The yard has already been substantially altered since the park was established. These major physical alterations, paired with a philosophical reexamination of the yard's significance, require a new treatment approach for the yard. A third reason to reconsider the treatment approach for the yard is the redefinition of appropriate treatments. The Secretary of the Interior's Standards for the Treatment of Historic Properties (rev 1992) provide clearer distinctions between a preservation and rehabilitation treatment. Likewise, the GMP guidelines were prepared at a time when the concept of the cultural landscape was barely considered. The present conditions, with a loss of historic small-scale features, historic vegetation, and lack of visitor amenities are partially due to the lack of a guiding document for the landscape and associated treatment recommendations.

This CLR presents rehabilitation as the treatment approach, which is a departure from the preservation recommendations of the outdated GMP above. Rehabilitation as opposed to preservation has become the park's preferred alternative in recent years as it allows for the preservation of historic characteristics and features while accommodating necessary change in the yard. Preservation focuses on the maintenance and repair of existing historic materials and retention of a property's form as it has evolved over time. This approach would prescribe the

[7] Final Revised General Management Plan, Volume II, Boston national Historical Park, Charlestown Navy Yard, Boston, MA, February 1987.

maintenance and repair of the site as it currently exists, and would allow existing features to be replaced in kind, yet would not permit the addition of new features. A preservation strategy would no longer reflect the historic landscape since there have been many changes since the park was established. The park's GMP specifies preservation to the 1973-74 appearance. However, as pointed out in the park's draft HRS, the park is "no longer preserving the industrial character present in 1973, but a cleaned up version of what the yard once was." Entire buildings and structures have been removed and roadways altered. Due to the urban nature of the site, multiple users, security needs, and other issues, a preservation approach is too restrictive and does not allow for the alterations and additions necessary for compatible uses. In addition, it is impossible to restore the yard's landscape to a specific subperiod without destroying earlier or subsequent layers. Rehabilitation acknowledges the need to meet continuing or changing uses through alterations or new additions while retaining the property's historic character. It allows for repairs or alterations of the cultural landscape, and for improving the utility and/or function of landscape features. It is used to make an efficient, compatible use while preserving those portions or features of the site that contribute to defining its historical significance. These changes would best serve management goals for continued visitor use. Therefore, the most sound treatment approach for the Charlestown Navy Yard site is rehabilitation.

This CLR provides treatment guidelines and recommendations described that seek to embrace the yard's 174-year period of significance as well as multiple historical themes and to best serve management goals for continued visitor use. Currently, several issues challenge the park's management and interpretation of the cultural landscape. The Charlestown Navy Yard must solve complex problems with respect to security, visitor experience, facilities maintenance, and accessibility. Design treatments and cultural landscape management should focus on the preservation, integration, and interpretation of features remaining from all significant historic periods as a way to enhance visitor understanding of the complexity and continuity of the yard.

When rehabilitation treatment actions are completed, treatment actions should be documented as an update to the Park's Landscape Preservation Maintenance Plan. Thereafter, maintenance activities affecting landscape treatment should continue to be documented as work is performed to maintain an ongoing record of physical changes made to the site. Completion of a CLR for Charlestown Navy Yard's lower yard (PMIS 16796) would contribute to the preservation of this area and to holistic treatment for the entire yard. This area largely held by the BRA also includes buildings within the park's legislative boundary (Buildings 58, 60, and 105 and 107).



1850s View of the Charlestown Navy Yard from the exterior looking east along First Avenue, Boston National Historical Park (*Gleason's Pictorial Drawing Room Companion,* November 29, 1857, BOSTS 8635).

SITE HISTORY

1. SETTLEMENT OF CHARLESTOWN AND WAR FOR INDEPENDENCE, 1630-1800
2. ESTABLISHMENT OF THE NAVY YARD, 1800-1828
3. DEVELOPMENT OF THE YARD, 1828-1869
    - EARLY NINETEENTH-CENTURY GROWTH, 1828-1853
    - DEVELOPMENT IN THE AGE OF STEAM, 1853-1869
4. POST CIVIL WAR, 1869-1898
5. REVIVAL OF THE YARD AND WORLD WAR I, 1898-1934
    - YARD RESURRECTED, 1898-1920
    - THE STAGNANT 1920S, 1920-1934
6. WORKS PROGRESS ADMINISTRATION AND WORLD WAR II, 1934-1945
7. COLD WAR ERA, 1945-1974
8. YARD CLOSURE AND NATIONAL HISTORICAL PARK, 1974-PRESENT

1. SETTLEMENT OF CHARLESTOWN AND WAR FOR INDEPENDENCE, PRE 1630 – 1800

PREHISTORY

When glacial ice covered New England nearly 12,000 years ago, the Boston Basin, a geological depression bounded by an escarpment to the north and west, was a hilly plain cut by rivers and streams and colonized by various plant and animal species. Within the basin, advancing glaciers formed drumlins—elongated masses of till shaped into smooth-sloped hills—that characterize the landscape of the Charlestown area (Figure 1.1). Five to eight thousand years later, Paleo-Indian populations and their descendants occupied the region, settling primarily along major river basins. In the late sixteenth century, members of the Algonquin linguistic group occupied the area that later became Charlestown. The Algonquin called it *Mishaumut* or *Mishawum,* translated as "Great Spring," bounded by the Mystic and Charles Rivers, then the *Mistick* and *Mishaum*.[1] These individuals were possibly part of the Massachuset or Pawtucket Tribes, some of the first Native Americans to come in contact with European explorers in the early 1600s.[2] Coastal tribes were also the first to be heavily exposed to European diseases, particularly small pox, that afflicted entire villages in 1616 and 1619. Many New England colonial settlements were built on the sites of decimated Native American villages, requiring little effort to claim and clear the land.[3] While it is likely that Native Americans hunted and occupied the land within the present Charlestown Navy Yard, prehistoric archeological sites have only been located west of the property. Subsequent development of the yard property may have destroyed many sites.[4]

[1] Wood, 123-4 and Henry Herbert Edes, "Charlestown in the Colonial Period," in Justin Winsor, *The Memorial History of Boston, Including Suffolk County, Massachusetts, 1630-1880* (Boston: James Osgood and Company, 1881), 383, 387 (f3).
[2] According to seventeenth century town records, Aberginian Indians inhabited the area north of the Charles River Edes in Winsor. During his second visit to Boston Harbor in 1608, Samuel Champlain anchored between Charlestown and Noddle's Island (later East Boston) and described the indigenous peoples and the cultivation that they practiced. "Along the shore there is a great deal of land cleared up and planted with Indian corn. The country is very pleasant and agreeable, and there is no lack of fine trees….As we continue our course, large numbers came to us in canoes from the island and mainland" M. F. Sweetser, *King's Handbook of Boston Harbor* (Cambridge, MA: Moses King, 1888) Sweetser, 260.
[3] Cronon, *Changes in the Land* (NY: Hill and Wang, 1983) 90.
[4] Carlson, 9.

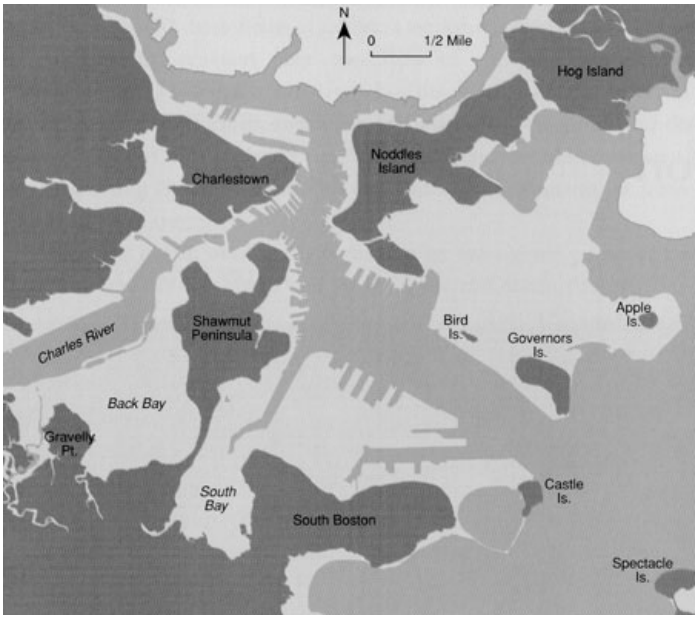


Figure 1.1: The dark shaded areas represent the landforms of Charlestown Neck and Boston in 1630, while the white areas represent the current land after centuries of fill (*Mapping Boston* 2001; 16).

EUROPEAN SETTLEMENT OF CHARLESTOWN

Members of the Massachusetts Bay Company arrived at Charlestown or "Cherton" in 1629, when about one hundred persons relocated from Salem under the leadership of Frances Higginson.[5] Seventeenth-century town records relate that a small company "traveled the woods…and lighted of a place situate and lying on the north side of Charles River, full of Indians called Aberginians…by whose free consent they settled about the hill of the same place, by the said natives called *Mishawum*." The Company's engineer, Thomas Graves, proceeded to "model and layout the form of the town, with streets about the hill." Each inhabitant was allocated a two-acre lot to plant upon, and "all were to fence in common."[6] The southern-most hill, the smallest of four drumlins on the peninsula, was selected as the center of the settlement and named "Town Hill," rising at the confluence of the Charles and Mystic Rivers, where there was deep anchorage. To the west, a narrow isthmus, known as the "Neck," connected the peninsula to abundant inland forests and farmland. The three other hills were subsequently named Bunkers, Breeds, and Moultons Hills. Moultons (or, Mortons) Hill, a drumlin originally thirty-five to forty feet in elevation, rose from the easterly portion of a field, known as Moultons Point Field, that would later become part of the Charlestown Navy Yard (Figure 1.2). The settlers measured out properties, built stone fences to establish the boundary markers, enclosed a common, and erected a "Great House" on Town Hill. On July 4, 1629, King Charles of England chartered the settlement as an independent town, and "Charlestown" became his namesake.[7]

Upon his arrival to Charlestown in 1630, John Winthrop, the designated Governor of the Massachusetts Bay Colony, noted "some wigwams and one house." He selected Charlestown as the seat of government and occupied the "Great House" with several of the patentees, while "the multitude set up cottages, booths, and tents about the Town Hill."[8] After two months of persistent sickness, scarce food, and inadequate fresh water, Winthrop and many

[5] Thomas Walford established the first English settlement in Charlestown in about 1625. Walford relocated from Wessagusset (now part of North Weymouth), which had been settled by the Robert Georges Company and subsequently abandoned. Walford's episcopal tenets would eventually lead to his departure from Charlestown upon the arrival of Puritans of the Massachusetts Bay Company.
[6] Edes in Winsor, 385.
[7] Charlestown originally included what is now Malden, Woburn, Stoneham, Burlington, and Somerville and parts of what is now Medford, Cambridge and Reading. From Heli Meltsner, Bonnie Marxer, and Sarah Zimmerman. "National Register of Historic Places Inventory-Nomination Form, Monument Square Historic District." (October 1985) 8:1.
[8] Edes in Winsor, 386.

colonists moved to the Shawmut peninsula, that was renamed Boston. The following year the General Court inaugurated a ferry between Boston and Charlestown. Those who remained in Charlestown began to realize Graves' town plan around Town Hill, that became "a large market-place near the water side built round with houses, comely and fair, forth of which there issues two streets orderly built with some very fair houses, beautified with pleasant orchards and gardens."[9] One of the earliest orders of Charlestown provided for a great "Cornfield" on the east side of Town Hill, embracing all of the land between Main Street and the Mystic River and the three hills—Bunkers, Breeds, and Moultons. This cornfield may have included land that became the Charlestown Navy Yard. The earliest roads were "the Country Road" (later Main Street) towards Charlestown Neck and the "Crooked-lane" (later Bow Street) that encircled Town Hill.[10] A small cart path likely led to Moultons Point.

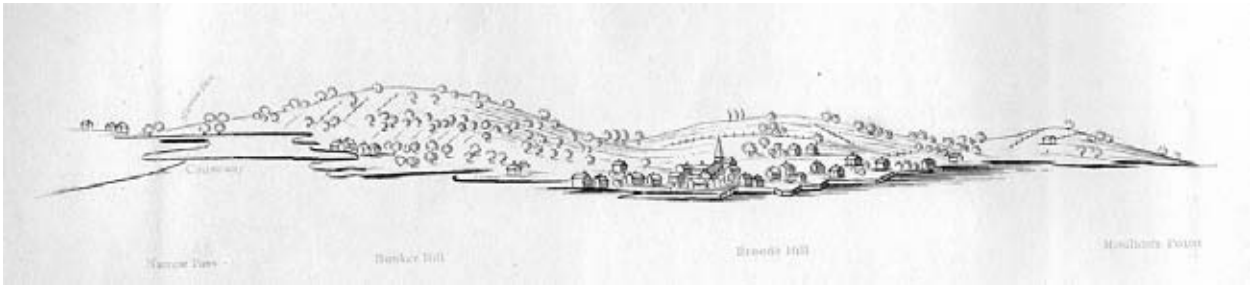


Figure 1.2: A view from Boston of the Town Hill settlement in Charlestown (foreground); the neck that connected to the mainland (far left); the three drumlins (left to right)--Bunker Hill, Breeds Hill, and Moultons Hill; and Moultons Point (far right), that later became the Charlestown Navy Yard (Frothingham 1859; 12).

SEAPORT DEVELOPMENT

The sheltered location of Boston's inner harbor provided good anchorage and deep channels to support the Massachusetts Colony's early maritime economy. By the eighteenth century, the Charlestown settlement emerged as a thriving community founded upon several shipyards and merchants, who engaged primarily in commerce and trade with the West Indies and Europe. Charlestown listed 412 voters who agreed to pave portions of public streets and to construct an almshouse. Along the main streets and waterfront, occupants constructed about 400 buildings, including houses, shops, a marketplace, and shipyards precipitating the town's transformation into a bustling seaport.[11] An inland road, ranging from sixteen to thirty feet wide, extended from the Charlestown Neck across the upland hayfields and pastures from Bunker Hill to Moultons Point. Farmhouses lay along the roads backed by fields and pastures, clearly demarcated with post-and-rail fences. With the exception of trees along the main roads, most of the peninsula's timber had long since been harvested, leaving open views to Boston, Noddles Island (later East Boston), and Chelsea (Figure 1.3). The Moultons Point section of Charlestown was largely open pasture and marsh fronting on tidal flats at the confluence of the Charles and Mystic Rivers at the inner limit of Boston Harbor. Only a couple of buildings stood on the extreme west corner of what became the Charlestown Navy Yard.[12] Eighteenth-century town records indicate that James Russell built a dry dock near Harris' Wharf, not far from the present location of the Charlestown Navy Yard and Samuel Henley purchased a portion of the town's common.[13] The War for Independence, however, resulted in a dramatic alteration of the Charlestown landscape.

[9] Edes in Winsor, 383-400.
[10] Richard Frothingham, *History of the Siege of Boston* (NY: Da Capo Press) 93.
[11] Frothingham, 48.
[12] Bearss, Charlestown Navy Yard, 1800-1842, 2: 1075, 1077, 1081. Throughout this section, geographic references follow the Navy's practice in considering that First Avenue ran true east to west and not northeast to southwest. This usage, which Boston NHP has continued in developing construction drawings for work within the yard, simplifies the geographical orientation and allows for consistency between contemporary and historic plans.
[13] Frothingham, 181, 210, 264, 325-26 and "Boston, and its Environs in 1775."

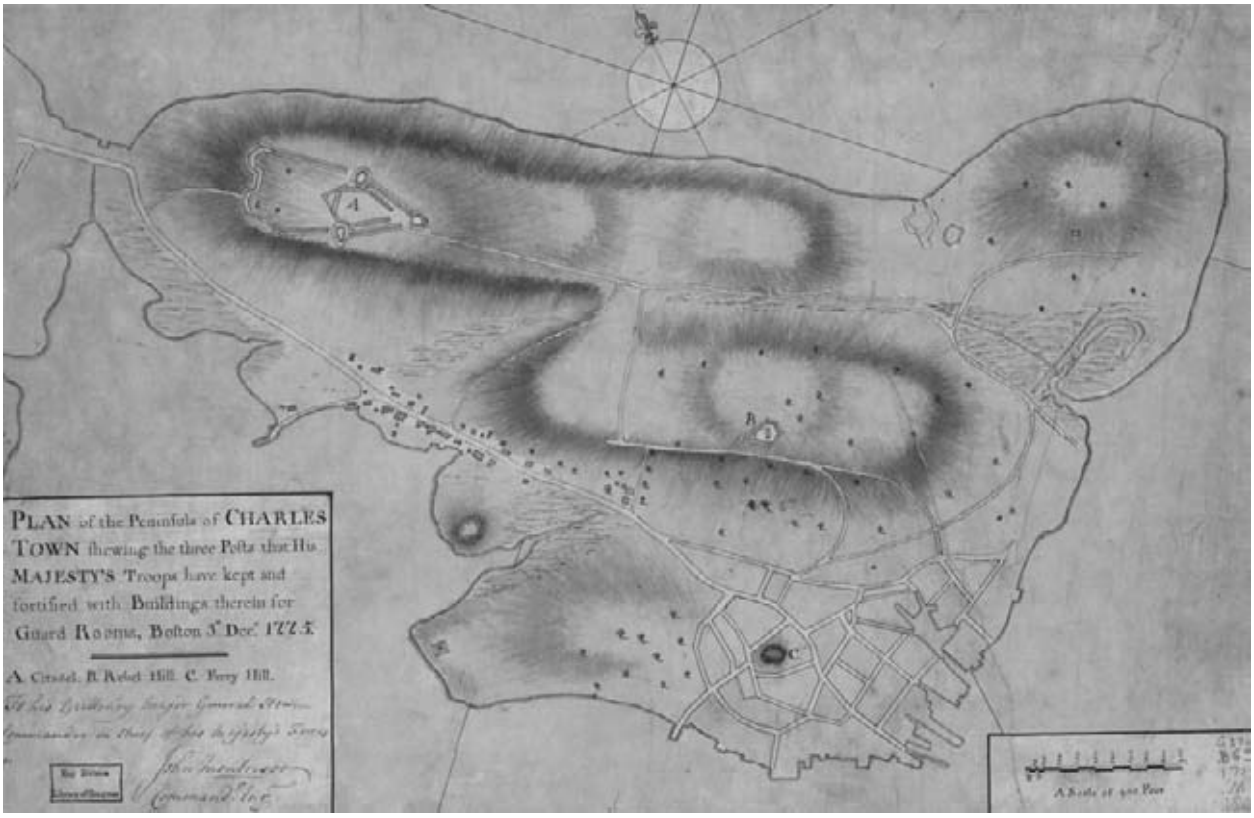


Figure 1.3: 1775 map showing Bunker Hill (A), Breeds Hill (B), Town Hill (C), and Moultons Hill (top right). The "Country Road," later Main Street, extends from the Neck, southeast to Town Hill. The "Crooked Lane," later Bow Street, encircles Town Hill. Three lanes extended east from Town Hill to Moultons Point, that later became the "Lane to Brickyards" (later Chelsea Street), Wapping Street, and Battery (Water) Street. Meeting (Henley) Street is not shown. The government later established the yard along the shoreline below Moulton's Hill, east of Breeds Hill, encompassing what was once a pasture and marsh (American Memory, The Library of Congress National Digital Library, http://lcweb.loc.gov/rr/geogmap/gmpage.html**).**

WAR FOR INDEPENDENCE

By the Revolutionary era, Charlestown's prosperous seaport was hampered only by British rule and taxation. In June of 1774, the British-imposed Boston Port Bill effectively shut down Charlestown, suspending maritime trade, precipitating economic decline, and spurring Charlestown delegates to bear an active part in patriotic councils. On 18 April 1775, Paul Revere landed along the Charlestown shore, at a point now at the western end of the yard, and began his ride to Lexington to bring news of British General Gage's dispatch of troops to destroy the rebel stores in Concord. The next day, Charlestown was the scene of intense excitement and confusion as the British Regulars retreated to the peninsula and occupied Bunker Hill. Many of the town's 3,000 inhabitants fled after Gage notified the Charlestown selectmen that he would order his ships in Boston Harbor to fire on the town if American troops entered the peninsula. The population further dwindled to less than 200 after a general order on 6 May 1775 prohibited all traffic through Boston. American troops began to fortify Breed's Hill on the eve of 17 June 1775. At dawn, Gage kept his word, ordering British artillery on Copp's Hill in Boston to open fire on Charlestown. By mid-afternoon, nearly 3,000 British troops marched from two landing sites at Moultons Point toward the American redoubt, and the Battle of Bunker Hill ensued. Charlestown burned in a great fire, ignited in part by the shells thrown from Boston (Figure 1.4). The British *Annual Register* later reported the town's fate:

> Charlestown was large, handsome, and well built, both in respect to its public and private edifices; it contained about four hundred houses, and had the greatest trade of any port in the province, except Boston…It is now in ruins.[14]

[14] Frothingham, 334, 344, 368.

No known physical elements remain from Revere's landing, the British landing sites, or the battle within the yard. Revere's approximate landing site is marked with a plaque west of Pier 1 along the waterfront and the British landing sites are marked with plaques on Buildings 5 and 105.[15] After the war, Charlestown residents returned "to repair their waste places" and rebuilt the town center largely to the west of the former center, in a location considered easier to defend. Legislative acts in 1781 and 1790 provided for "widening and amending the Streets, Lanes, and Squares, in that part of the Town which was lately laid waste by Fire" and clearing the ruins, particularly around the market place. New structures were built along Water (Battery) and Henley (Meeting) Streets, that branched off from the crooked lanes leading eastward from Town Hill towards Moultons Point. Later Wapping Street cut between the two streets. In 1785, there were 151 buildings and nearly 1,000 residents on the Charlestown peninsula.

SUMMARY

By 1800, the town contained 349 buildings and 2,750 residents, of whom some of the most prominent occupied "well-cared-for estates, surrounded by green fields stretching away as far as the eye can see," on the slopes of Breed's Hill.[16] Merchants, shipbuilders, manufacturing industries, and farmers resumed their businesses in the Moultons Point vicinity. On the lower part of the ridge, along the "lane to the brick yards" were several houses, a brewery, Samuel Ferrin's brickyard, and the ropewalk established by Joseph Burton and Benjamin Gray in 1794. A second ropewalk extended from another portion of the "lane" (on what was to become Chelsea Street), north of Henley Street, to the rear of the Tufts and Breed estates.[17] A watercolor painted in 1800 depicts the land that became the yard (Figure 1.5). A great lawn stretched from a large, Federal style mansion towards the "lane." The lawn contained trees that may have represented an orchard. Only three small buildings, situated on the portion of John Harris' tract between Henley and Water Streets, occupied the flats below the "lane." A dam, together with a "sluice or drain" roughly in line with western portion of the "lane," drained marshland to create Ebenezer Breed's "Dam Pasture." Post-and-rail fences, running to low-tide mark along the Charles River, delineated the boundaries of pastures held by four additional property owners in the area of Moulton's Point (Figure 1.6).

[15] The landing sites are considered defining features of the Bunker Hill Battlefield in the American Battlefield Protection Program survey. Carlson, 9.
[16] Frothingham, 16, 22-24.
[17] Timothy T. Sawyer, Old Charlestown: Historical Biographical, Reminiscent (Boston: J. H. West, Co., 1902) 171-81.

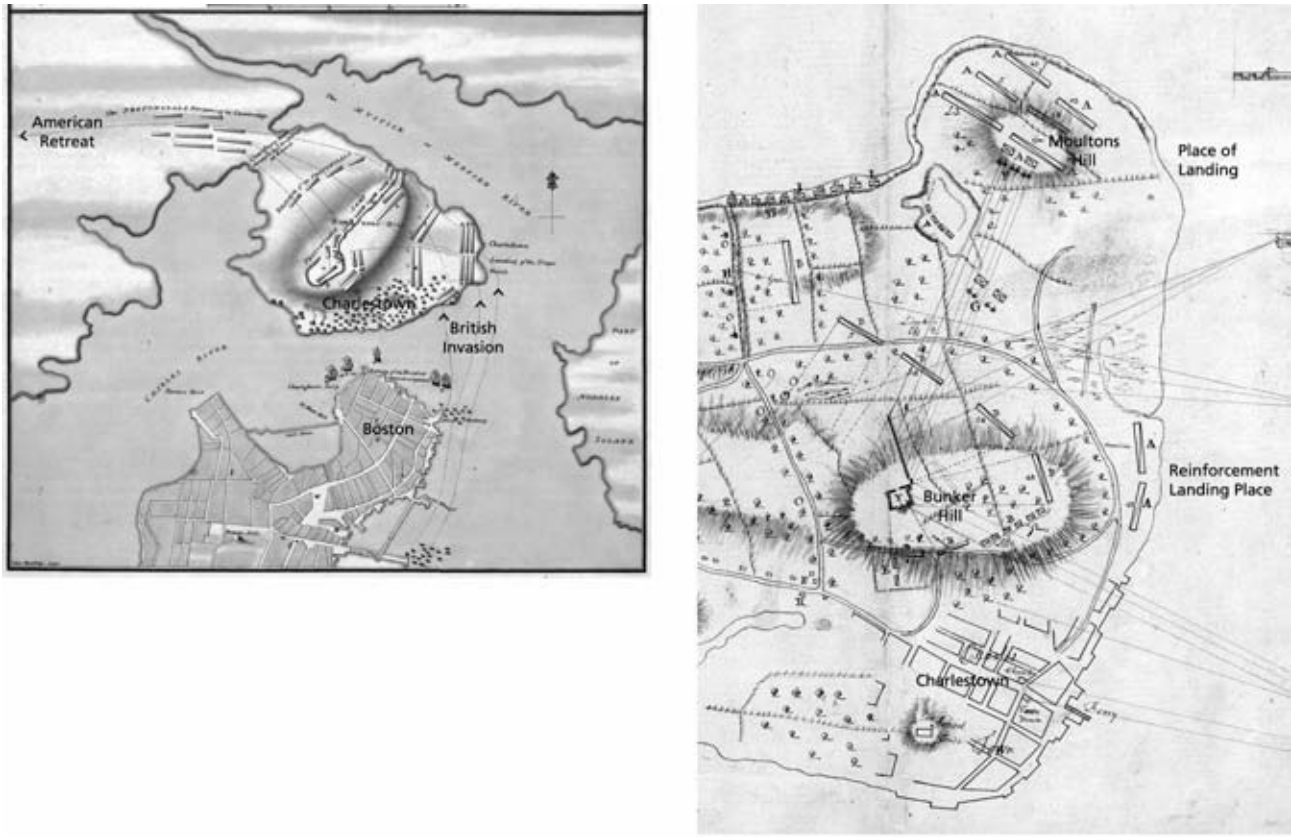


Figure 1.4: Left: Digitally enhanced map depicting the British invasion of Charlestown from Boston in 1775 (John Humphrey map). Right: Digitally enhanced map of 1775 British landing sites near Moulton's and Bunker Hills (Peter Force map, American Memory, The Library of Congress National Digital Library, http://lcweb.loc.gov/rr/geogmap/gmpage.html**).**

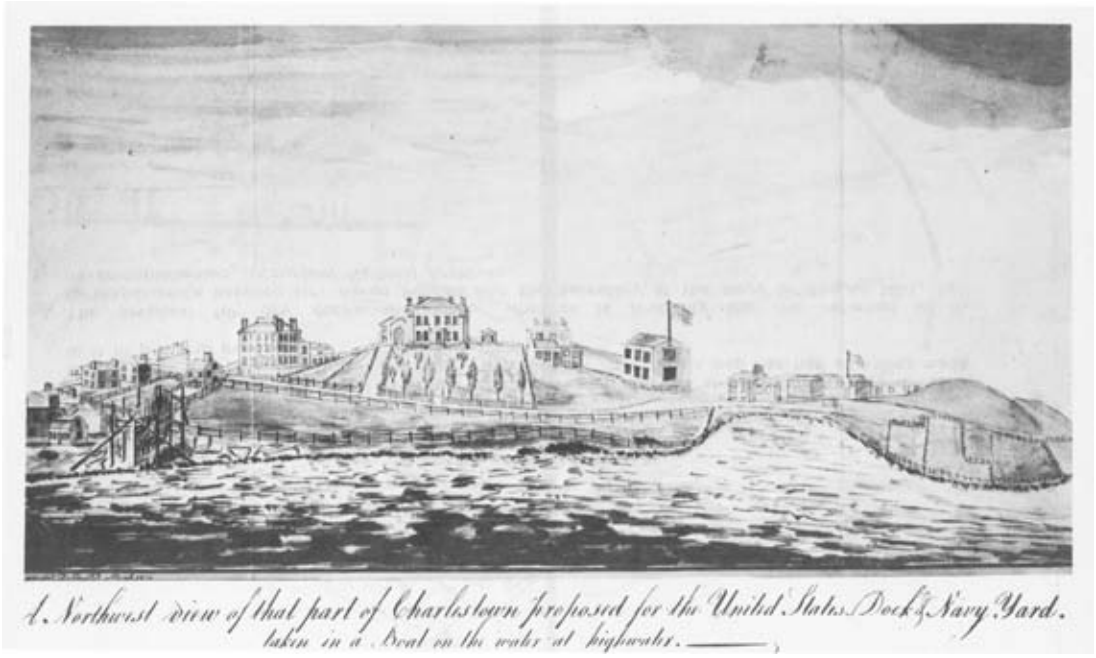


Figure 1.5: A painting by D. Roynerd dated March 1800 and entitled "A Northwest view of that part of Charlestown proposed for the United States Dock and Navy Yard. Taken in a Boat on the Water at highwater." The right portion of the image became the center of the Charlestown Navy Yard and the pasture fences remained for several years (National Archives, RG 45, March 1800 and in Bearss 1984; 1075).

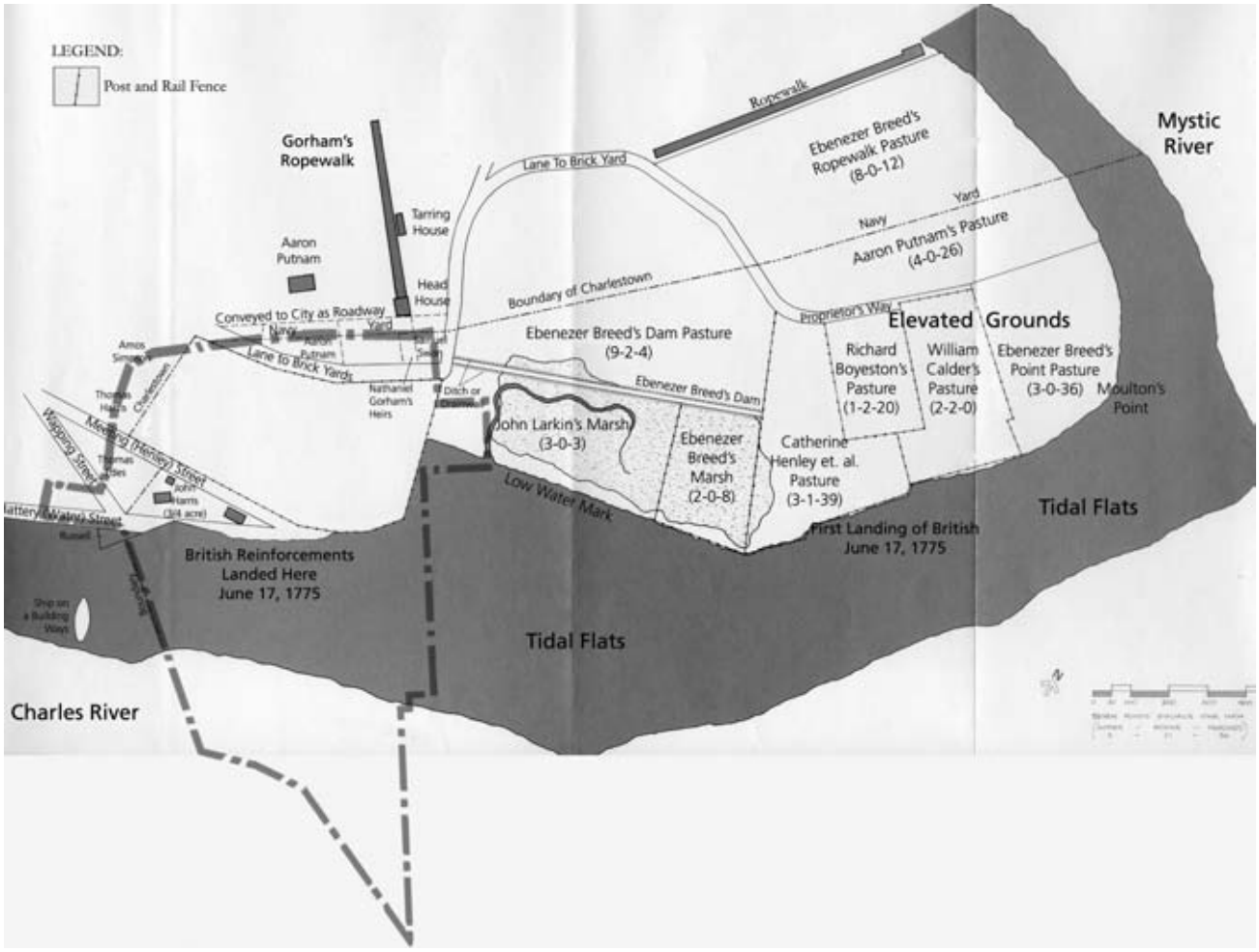


Figure 1.6: Digitally enhanced Historical Base Map showing roads, property ownership, structures, fences, and the waterline in c. 1800. Current park boundary is outlined at the left (National Park Service, Denver Service Center, in Bearss 1984; 1059).

2. ESTABLISHMENT OF THE NAVY YARD, 1800 – 1828

For the American colonies, independence meant the loss of protection once afforded by Britain's powerful navy. In 1793, North African pirates raided eleven American vessels, prompting Congress to enact legislation authorizing the construction, equipping, and manning of six frigates, establishing the foundation of the Unites States Navy. Private commercial yards built the frigates and in 1797, shortly after the USS *Constitution* slid down the ways at Hartt's Yard near Copp's Hill in Boston, President John Adams established a separate Navy Department. First Secretary of the Navy Benjamin Stoddert recommended naval expansion and the establishment of public shipyards to confront French threats to American neutral shipping.[1]

In early 1800 Naval Constructor Joshua Humphreys visited New England in order to evaluate potential dock sites. While Charlestown and Noddles Island sites were considered, Humphreys concluded that Newport, Rhode Island was the best dry-dock location, citing such favorable characteristics as "capacity of harbor, depth of water, use of tide, expense in building docks, prices of land, facility of navigation, and capability of defense."[2] Charlestown residents, disappointed by Humphreys' rejection, convened a seven-member committee to confer with landowners identified in Humphreys' report and to appoint a spokesman, Dr. Aaron Putnam, to plead the town's cause to officials in the federal capital at Philadelphia. Putnam met with President Adams in April and challenged Humphreys' criticism of Boston Harbor. Adams agreed that the Charlestown site should be designated one of the six yards, with the others located in Portsmouth, New Hampshire; New York; Philadelphia; Washington, D.C.; and Norfolk, Virginia. Beginning in May of 1800, Putman acquired a 24½-acre tract determined by Humphreys as sufficient for both a building yard and dock.[3] For the next three decades, the yard sporadically expanded, languished, and reorganized according to strategic and political deliberations, or in response to the immediate demands of war.[4]

SITE ACQUISITION

The site selected for the yard included Moultons Point Field, the adjacent marsh area, a portion of Moultons Hill, and extensive tidal flats. After their first acquisition dated 26 August 1800, the Navy eventually purchased about ten tracts of land.[5] These tracts included Ebenezer Breed's "Point Pasture," "Dam Pasture," and "Marsh" for which the United States agreed to maintain the ditch and dam. Breed retained his upland pastures and the Navy agreed to erect fences along the new boundary.[6] The Navy also acquired pasture parcels bounded by post and rail fences from William Calder, Richard Boyeston, Catherine Henley, and Aaron Putnam, a marsh parcel from John Larkin, and several small building lots from John Harris, Aaron Putnam, Samuel Swan, and Nathaniel Gorham's heirs.

EARLY ROADS AND YARD LAYOUT

In January 1801, residents at a Charlestown town meeting voted that "the roads & streets leading into and through the lands purchased by the United States for the Navy and dock yard, be granted or exchange in such manner as will accommodate the United States without injury to the town, or the inhabitants of the vicinity." Four Charlestown roads traversed the property. Battery (Water) Street ran eastward along the Charles River, terminating at the edge

[1] Bearss, 2-4.
[2] Bearss, 7-9.
[3] Bearss, 12, 15-18.
[4] Carlson, 3, Kenneth J. Hagan, *In Peace and War*, and Hagan, *This People's Navy: The Making of American Sea Power* (New York: Free Press, 1992).
[5] Carlson, 3.
[6] Bearss, 24.

of the Harris tract at a point near the landing site of British reinforcements in 1775 (now in the vicinity of Building 5). Meeting (Henley) Street cut diagonally southeastward, terminating at the same point. The "Lane to Brick Yards" led from the Training Field to the brick yards, running along the southern boundary of Aaron Putnam's residential parcel and roughly in line with Ebenezer Breed's dam, before turning northward and exiting the property near the dam. Finally, Proprietor's Way, an extension of the lane to the brick yards, ran through pastureland at the eastern end of Moultons Point, ending in the vicinity of Breed's "Point Pasture." The town conveyed these four roads to the United States for exclusive use and authorized the selectmen to alter "the road leading from the Training field to the brick yards, by an exchange of land" with the Navy. This forty-foot-wide alternative road later became the Salem Turnpike and then Chelsea Street.[7] Three years later Congress authorized the Navy to convey title to the proprietors of the Salem Turnpike and Chelsea Bridge Corporation a triangular tract at the western corner of the Charlestown Navy Yard that the corporation agreed to maintain as public highway.

In June 1801, Captain Samuel Nicholson became superintendent of the Charlestown Navy Yard. The Navy directed Nicholson to remove and preserve materials from the "old navy yard" [Hartt's] in Boston to the Charlestown Navy Yard and to review and certify repairs needed to United States ships in port.[8] An 1801 map shows the initial configuration of building yards and dry docks envisioned for the yard (Figure 2.1). In late 1801, Congress requested a plan of each navy yard in the nation. The required plan for Charlestown, completed by Carleton Osgood in 1802, divided the grounds into three tracts, which were defined as a waterfront area, a residential and workshop area in the upper yard, and a pasture area in the lower yard (Figure 2.2). The waterfront area, comprised of the 9¾-acre basin of marshland bounded on the south by a wharf, stored most timber received at the yard. The upper yard, a nine-acre area north and west of the "bason," contained storage structures, housing, and shops. Construction and repair materials, as well as cannon, shot, iron, and ballast were stored in this area. Oxen purchased for the yard were also pastured here. The lower yard, the land north and east of the basin, served as pasturage for public oxen.[9] The layout of these areas was irregular and likely based on the natural topography of the land and access to the water channel without extensive filling or dredging. The division of functions was indicative of an organization that remained consistent for the next 170 years.

[7] Bearss, 26.
[8] During the two years of site selection and land acquisition at Charlestown Navy Yard, a change in naval policy, prompted by the ratification of the Paris Convention and the subsequent end of hostilities with France, temporarily staid development at the nation's navy yards. On the day before he left office in March 1801, Adams signed an order calling for the reduction of the naval establishment. The administration of President Thomas Jefferson, however, re-focused attention on the Navy and authorized construction of vessels of war in response to continued pirate raids to the American merchant fleet in the Mediterranean.
[9] Bearss, 41-43.

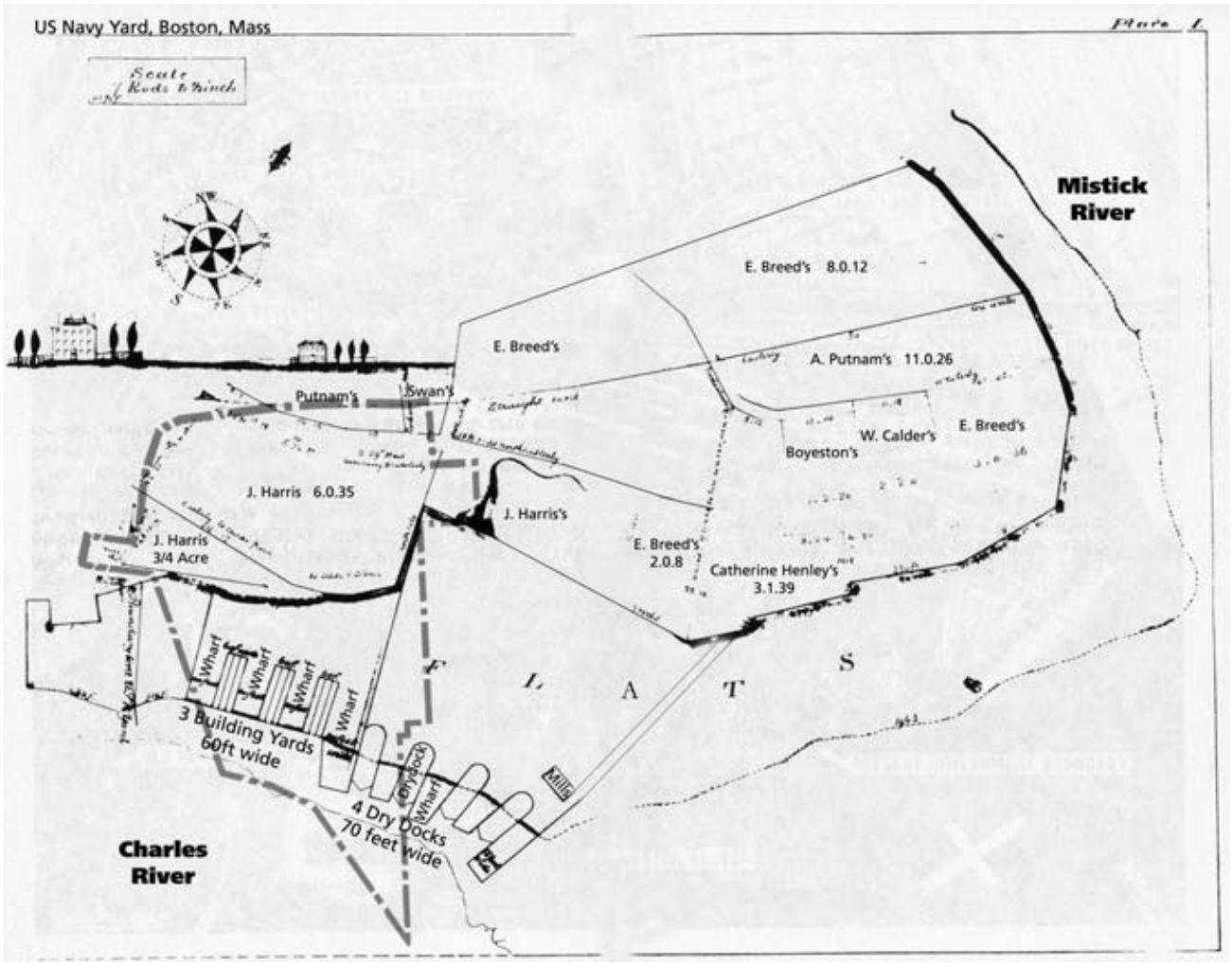


Figure 2.1: Digitally enhanced map of the yard by Peter Tufts in 1801 showing proposed building yards, dry docks, and timber wharves. Current park boundary is outlined (BOSTS-13494 from the National Archives).

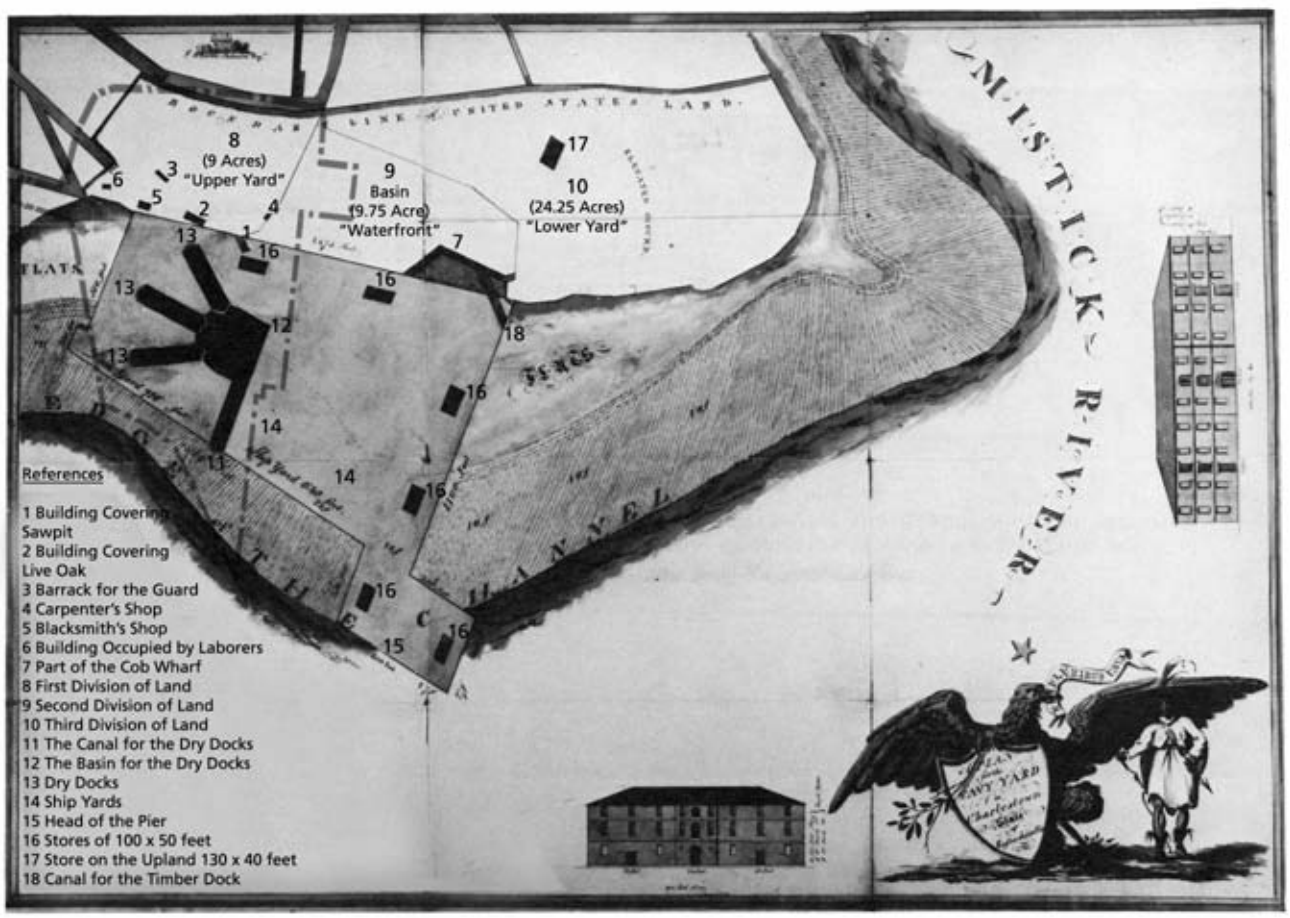


Figure 2.2: Digitally enhanced Carleton Osgood's 1802 drawing of the three tracts of the Charlestown Navy Yard. Current park boundary is outlined (From the National Archives in Bearss, 1081).

WATERFRONT AREA

One of the first waterfront structures built in the center of the yard, was a cobb wharf "for keeping the masts, yard, timbers, etc. in a state of preservation." The wharf consisted of timber cribs with stone ballast and held timbers underwater to slow deterioration. A canal between the wharf and the Charles River facilitated movement of materials. In its first two years, the yard served more as a supply depot than a shipyard since all other construction was postponed and the Navy rented wharves in Boston to repair its vessels.[10]

The building program for the yard began in earnest in January 1802. When a Congressional investigation reviewed the naval program and concluded that the yards at Charlestown and Norfolk were the most eligible for receiving and repairing ships. Necessary improvements to the Charlestown yard included the construction of sheds for storage of oak and pine timbers, a blacksmith shop, carpenter shop, and a temporary navy store.[11] In the vicinity of these buildings the U.S. Marine Corps took possession of a lime shed on the former Harris tract to construct rudimentary barracks for the Marine Guard.[12] None of these original structures remain.

[10] Carlson, 11; Bearss, 32-33, 34; Mary Jane Brady and Merrill Ann Wilson, Historic Structure Report, Pier 1 and 2, Volume 1, Denver Service Center, National Park Service, January 1982, 8.
[11] Although Naval Agent Samuel Brown was to proceed immediately with construction of a three-story storehouse and to submit a plan for the wharf to senior naval officers for review, fragmentary evidence precludes detailed description of early improvements. Bearss, 34-35, 47.
[12] Bearss, 49, 75-76.

UPPER YARD

In 1804, the Navy selected the highest point in the yard for a residence of the superintendent of the yard, formally known as the Commandant's House (Quarters G). Completed in 1805, the three-story brick structure was built "on the most convenient place on the public ground and upon substantial scale" and designed to face Chelsea Street, but also included a back porch and walkway that led directly to the waterfront. In response to Superintendent Samuel Nicholson's request for a garden, the Navy approved plans for the enclosure of a "small piece of ground contiguous [west of] to the House to be built for the Superintendent for a garden," but denied his request for a barn or stable to shelter four cows, two horses, and a chaise for his family as well as two or three yoke of public oxen. A small barn was eventually approved and built southeast of the house (Building 20), but a larger stable was not added until the 1820s.[13]

In June 1810 the Marine Corps selected a site for a new barracks, east of the Commandant's House and south of the Salem Turnpike. This was the first portion of the Marine Barracks that later became "Quarters H-I-K."[14] Plans included excavation of a portion of the hill to the east of the Commandant's House, designs for a garden southeast of the barracks, two wells, and diversion of turnpike drainage through a drain near the fence. Constructed largely by the Marines themselves, it consisted of a single-story central section containing enlisted men's barracks and three-story wings at each end housing officers.[15] Marine Corps Commandant Franklin Wharton's correspondence also suggests that the ground fronting the barracks had been graded. During the following year, Wharton gave instructions for the laying out of a parade ground, including a provision for a "Lane or Alley between the Commanding Officer's garden & the Stables of the Commodore for the former & latter to use." Wharton requested a board fence, rather than post and rail, to enclose the barracks and parade ground. Upon completion of the project in early August, Nicholson complained that the Marines' parade ground, extending 305 feet along the fronts facing the turnpike and the river, was "absolutely spoiling the Navy Yard," but Paul Hamilton, who succeeded Smith as Secretary of the Navy, chose not to intercede (Figure 2.3).[16]

LOWER YARD

In 1802, the U.S. Treasury Department assumed control of a five-acre section of the Charlestown Navy Yard for a marine hospital. During the latter half of the year the boundary was established at the north, or lower, end of the yard and the area surrounding the building was designated the hospital grounds. To protect Boston Harbor, the Army built an earthen half-moon battery, with eight gun platforms resting on stone foundations and armed with ten-pound guns, in the lower yard in 1809 on the current site of the Sheet Metal Shop (Building 103). The War

[13] Bearss, I, p. 58,89,341.
[14] The Marine Barracks is considered to be the oldest Marine Barracks building in the United States. Carlson, 12. Quarters H-I-K has been called Building I since the 1920s.
[15] Over the years, this structure has undergone considerable modifications. In 1870 the original central portion was demolished and replaced by a three-story building. Congress appropriated funds for further alterations in fiscal year 1890, and in fiscal year 1898 authorized the addition of an additional story to the structure. By 1902, it achieved its present four-story configuration. The final major modification came in 1941, when the Works Progress Administration added the fireproof stair towers and present porches. When the yard assigned alphabetical designations to quarters in the 1870s, the barracks itself became Quarters I while the two wings were designated as Quarters H and Quarters K; these designations last appear on yard site plans in 1919. Thereafter, the two wings are shown as Quarters 1 (Commanding Officer) and 2 (Junior Officers), with each floor of the latter being assigned a lowercase letter suffix. Carlson, 12; G. Rodger Evans, Historic Structure Report, Marine Barracks (Bldg. I), Charlestown Navy Yard: Architectural Data, Boston National Historical Park, Charlestown, Massachusetts (draft; Denver: Denver Service Center, 1978), TIC 457/D36; Public Law 114, 50th Cong., 2nd sess., Mar. 2, 1889, Public Law 128, 54th Cong., 2nd sess., Mar. 3, 1897, in Woodbury Pulsifer, comp., Navy Yearbook: Compilation of Annual Naval Appropriation Laws From 1883 to 1912, Senate Doc. No. 955, 62nd Cong., 3rd sess. (Washington: Govt. Printing Office, 1912), p. 102, 273. In 1837 and 1838 yard and Marine Corps officials considered relocating the barracks to a site on the opposite side of the Salem Turnpike (Chelsea Street), but nothing came of this plan. See Bearss, Charlestown Navy Yard, 1800-1842, 1036-1037.
[16] Bearss, 82-84, 89-91.

Department secured permission for the construction of two supporting structures: a Powder Magazine and Gun House.[17] Responsibility for the Powder Magazine and Gun House was shared between the Army and the Navy.[18]

BOUNDARY FENCE

Hamilton authorized the yard's second commandant, William Bainbridge to establish a boundary for the land at the eastern end of the yard allotted to the War Department in 1809 and then "erect a substantial enclosure around that part" belonging to the Navy. Bainbridge proposed an access road extending southward from the Salem Turnpike to the Army Laboratory. In addition, a picket fence beginning at the turnpike and running south to the east line of the magazine fence and on to the harbor line would parallel the Marine Hospital fence and demarcate the boundary. Shortly after completion of the enclosure in late June, Hamilton directed Bainbridge to erect a "temporary fence…running from the fort in a direct line to the turnpike" in order to keep the battery and other structures occupied by the Army distinct from those belonging to the Navy.[19]

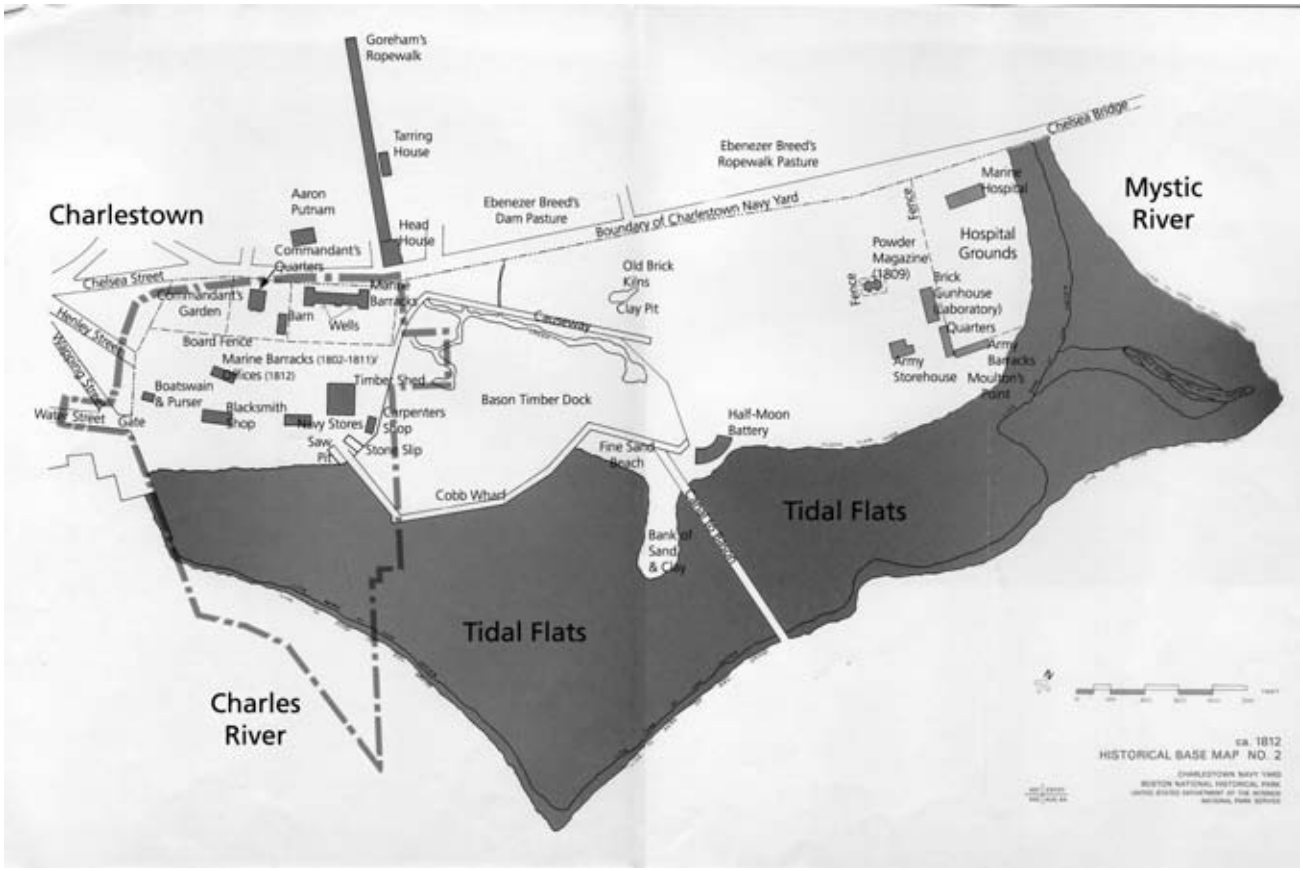


Figure 2.3: Digitally enhanced Historical Base Map of the yard in c. 1812 showing the Commandant's House, Marine Barracks, storage buildings, blacksmith shop, cobb wharf, half-moon battery (center), hospital grounds and War Department buildings (upper right). Current park boundary is outlined (NPS, DSC, 1984 in Bearss, 1063).

[17] The two-story brick Powder Magazine, divided between army and naval stores and surrounded by a fence twenty-five feet from the structure, was constructed 200 yards north of the half-moon battery and a hundred yards south of the Salem Turnpike. The two-story brick Gun House was located nearby, between the magazine and the five-acre Marine Hospital tract. Bearss, 66-67.
[18] Carlson, 13.
[19] Bearss, 109-11.

WAR OF 1812 AND AFTERMATH

In April 1812, as relations with Great Britain deteriorated, Bainbridge wrote to Secretary Hamilton of the yard's neglected condition and noted that fences and wooden buildings were in disrepair. Among the yard's buildings, Bainbridge listed: "one old wooden building," providing office and storage space and "scarcely worth keeping on the grounds;" a "very old small structure nearly in ruins" occupied by the boatswain and purser; two one-story frame sheds under which timber for a 74-gun ship was stored; a blacksmith shop housed in an old frame building; a carpenter shop; a stone landing about twelve feet in width and elevated about three feet from the beach surface; a cobb wharf, fourteen feet-wide and three hundred feet-long, that formed a dam for the timber basin; and temporary fences in "ruins."[20] Bainbridge later complained that he had found Charlestown Navy Yard:

> ...in a state of perfect chaos. The public property in a state of ruin and decay; the establishment, then of twelve years standing, afforded no advantage or facility for naval purposes; a boat could not approach at certain periods of the tide within five hundred feet of the shore—a few temporary wooden buildings were all it contained except the commandant's house and the Marine barracks, unenclosed, it was even exposed to the inroads of the cattle from [the] highway.[21]

President James Madison declared war with Britain on 12 June 1812 and shortly thereafter discovered the inadequacies of the American armed forces. The tiny U.S. Navy fought briefly before the British blockade bottled up its warships for the duration of the war. Early successes, using small, fast frigates and sloops-of-war, prompted Congress to authorize six new frigates and six sloops-of-war. In addition, Congress authorized four 74-gun ships for shoreline defense. Between 1813 and 1822, the hulls of three of these ships (*Independence*, *Vermont*, and *Virginia*) were laid down at Charlestown.

WATERFRONT

During the War of 1812, minimal repairs and improvements were undertaken at Charlestown. Secretary of the Navy William Jones authorized construction of a wharf faced with stone and a shipbuilding way for a 74-gun ship. The wharf, a nearby new Blacksmith shop, and a Navy Store (Building 5) were constructed during the summer and autumn of 1813. Bainbridge, after learning that the Portsmouth yard intended to erect a shelter to protect workmen from bad weather during construction of a gun ship, submitted a similar plan for a shiphouse in Charlestown (Figure 2.4). Construction of the Shiphouse, a large barn-like structure erected over the shipbuilding way on the site of the present Pier 1, commenced immediately upon approval of the plan in September.[22] This shiphouse and subsequent shiphouses dominated the Charlestown Navy Yard waterfront for the rest of the century.

During the War of 1812 the formidable threat posed by British naval power gave rise to security concerns for the yard and, in particular, for the safety of the gun ship under construction. Guards, gun batteries, and cannon were installed to protect the yard's entrance from the British.[23] Around the time that Bainbridge ordered the fortification of the Charlestown Navy Yard, the British consented to direct peace negotiations at Ghent and signed a treaty at the end of 1814. A period of retrenchment followed the cessation of hostilities with Great Britain and, consequently, the modest program of wartime improvements to the Charlestown physical plant came to a grinding halt. Several ships and vessels were ordered to Charlestown Navy Yard for repairs and placed "in ordinary" [in storage]. Soon their outfitting, armament, stores, and ballast began to fill the empty spaces throughout the yard. Prominent along the

[20] In 1811 Secretary of the Navy Paul Hamilton approved Agent Johnnot's request for authority to construct a building slip at the southwestern end of the cobb wharf. Bearss, 69.
[21] Bearss, 99, 101-03, 181.
[22] Bearss, 146.
[23] Bearss, 147-48, 150.

waterfront was the USS *Constitution*, which was in ordinary after the War of 1812. The ship was subsequently repaired, armed, and provisioned before putting out to sea again in 1821.[24]

The first vessel, completed and christened USS *Independence*, slid down the ways into the Charles River with a "federal salute" from USS *Constitution* on 22 June 1814. However, construction on *Vermont* and *Virginia* slowed after critics questioned the 74's strategic value and the two unfinished vessels remained effectively in ordinary in the yard.[25] A violent windstorm in July 1814 destroyed the *Independence* shiphouse. Bainbridge salvaged ironwork and planking and used these materials for construction of a pile wharf in front of the blacksmith shop. In 1816, Commandant Isaac Hull, Charlestown Navy Yard's newly-appointed superintendent, proposed major improvements to the yard but was only authorized to carry out minor work. Most yard improvements were directed towards enhancing production along the waterfront. Upon receiving orders to prepare the yard for construction of a 74-gun ship-of-the-line and a 44-gun frigate, Superintendent Hull directed the clearing and repair of the shipbuilding way in April 1817. Construction of a new shiphouse, known as Shiphouse 1 (later known as Shiphouse G or Building 71) began in the autumn of the same year and was completed in 1818 to house the USS *Vermont*. Workmen installed a permanent pair of shears, for raising masts, at the head of the pile wharf near the shiphouse.[26] Thereafter the wharf was known as the Shear Wharf and eventually became part of Pier 1.

Two additional shiphouses, built in 1820 and 1824, provided additional building sites. Shiphouse 2 (later known as Shiphouse H or Building 68), located between a new timber dock and new wharf, housed construction of the 44-gun frigate *Cumberland*. Shiphouse 3 (later known as Shiphouse I) stood just to the east and contained the 74-gun *Virginia*. A causeway, "piled and built," connected a waterfont smithy and Shiphouse 2 (Figures 2.5-6).[27]

Shiphouses served as the primary location for shipwork until 1827 when the Charlestown Navy Yard was selected as one of two sites for a dry dock (later known as Dry Dock 1), with the other in Norfolk. Excavation began to the east of the stone Shear Wharf and Shiphouse 1, at the site of the old saluting battery and the "new" timber dock.[28] The Navy's Chief Engineer, Laommi Baldwin supervised construction of the dry dock, with Captain Alexander Parris as the assistant engineer.

Laommi Baldwin, Jr. (1780–1838) a lawyer, author, and engineer, is heralded as "the father of civil engineering in America." He built Fort Strong on Long Island in Boston Harbor, executed the design of the Bunker Hill monument as proposed by Horatio Greenough, and was City Engineer for Boston. He was responsible for preparing master plans for all the nation's navy yards. Alexander Parris (1780–1852) was a Boston architect and engineer who designed in the Neoclassical style and was associated with the famed Boston architect Charles Bulfinch during his early career. He worked for the U. S. Navy in Charlestown Navy Yard from 1825 to the 1840s where he designed and oversaw construction of some of the most substantial engineering and manufacturing facilities in the yard, including Dry Dock 1, the Ropewalk (Building 58), boundary wall, sea walls, manufacturing buildings, and much of the manufacturing equipment installed during his tenure. Parris also designed the Quincy Market buildings and St. Paul's Church in Boston in the 1820s, and the "Church of Presidents" in Quincy.

[24] Bearrs, 161, 207-09, 306-29.
[25] Bearss, 120-21, 125-26, 131-33, 138-39 and Handbook, 16-18.
[26] Bearss, 284-85, 333, 355.
[27] Bearss, 214, 337, 362-63.
[28] Carlson, 3.

UPPER YARD

During the summer of 1817, the Navy built a combination guardhouse and two-story brick Porter's Quarters (Quarters A) at the Main Gate at Water Street and relocated a frame building to be used as quarters for the gunner. Superintendent Hull acquired a tract of the Harris estate in order to rid the yard of the "perpetual nuisance" of "shops and houses." The 5,186-foot lot, near the yard's South Gate, was conveyed in turn to the United States at fair market price.[29] Hull commenced relocation of the yard's fences, "throwing them back so as to enlarge the area of the yard, and form it nearly an oblong square" (Figure 2.6).[30] In 1818 a Timber Shed (Building 1), constructed between the commandant's garden and Henley Street, replaced the temporary shed on the site of the original navy store, which had been destroyed by an 1815 fire.

Hull's improvements included the construction of fences and some landscaping in front of the Commandant's House. Laborers established a gunpark to store armament. Carronades—short muzzle-loading ordnance similar to those on the USS *Constitution*—lined "the fence forming the northwest line of the yard, in front of the Commandant's House." Laborers also planted two rows of young Lombardy poplars extending from the house's south porch, along the walkway to the new road, "Maine Avenue," later called "Second Avenue."[31] They also regraded, improved, and ornamented other portions of the yard. A work crew dug a well and opened a trench for an aqueduct supplied by a natural spring.[32] To tend the landscape, Hull requested the authority to hire a man to care for "the public garden, fences and trees and public grounds."[33]

In the early 1820s, the Navy expanded beyond the old Harris tract at the western end of the yard and claimed several inholdings. In 1820, temporary sheds were built along the new western boundary to shelter pine planks, beams, and ledges. In 1823, under the direction of Bainbridge, laborers set out 200 to 300 elms as shade trees in the yard.[34] Three years later an unspecified number of fruit trees were planted to enhance the yard's landscape, which had begun to take on a more integrated appearance.[35] In 1824 Alexander Parris designed a granite block boundary wall that defined the boundary of the upper yard from the Navy Store (Building 5) to and along the Salem Turnpike. Parris also designed a granite Carriage House or Stable (Building 21) to the northeast of the Commandant's House for Commandant Crane. The thirty-by-twenty-foot building, with a roof height of twelve feet was flush with and joined to the wall. Later, the building also served as a watchhouse for the Marine Guards. Adjacent to the structure, an area was designated as a "carriage yard" for the cleaning and harnessing of horses.[36]

LOWER YARD

In 1821, the Army surrendered its reservation in the lower yard, including a brick storehouse (the former laboratory), the magazine, and an isolated wharf, in exchange for storage facilities in the former blacksmith shop and a small frame structure. Four years later, the Treasury Department agreed to relinquish the Marine hospital reservation to the Navy, allowing the Navy to expand eastward beyond the yard's central marsh.[37] Following the transfer of the Marine Hospital back to the Navy, the existing structures were demolished and a new four-unit rowhouse built for the officers. This Lower Officer's Quarters (Quarters L-M-N-O/Building 266) was built of brick and completed in 1826. Six years later a comparable structure was built at the western end of the upper yard.

[29] Bearss, 256-57, 260-61, 330, 337-39.
[30] Bearss, 333.
[31] Preble, 114.
[32] Bearss, 330-33.
[33] Brockway and Todisco, 6.
[34] Bearss, 491-92.
[35] Bearss, 451, 491-92.
[36] Brockway and Todisco, 6.
[37] Bearss, 351, 353.

In 1828, workers replaced the old saluting battery with a new gun battery in the lower yard.[38] During the following year contractors, after leveling the turnpike, began to work in the lower yard adjacent to the wall and used the spoil to fill the marsh east of the Marine Barracks.[39] Contractors also leveled the two-acre knoll near the magazine, dug several fresh-water wells, and used excavated gravel as fill in the marsh fronting the former War Department reservation and for the new building ways. Construction plans for this area marked out "two large roads…to pass from the two extremes at the least possible distance."[40] One road was constructed between the new building ways, effectively linking the two ends of the yard. This would later be named First Avenue.

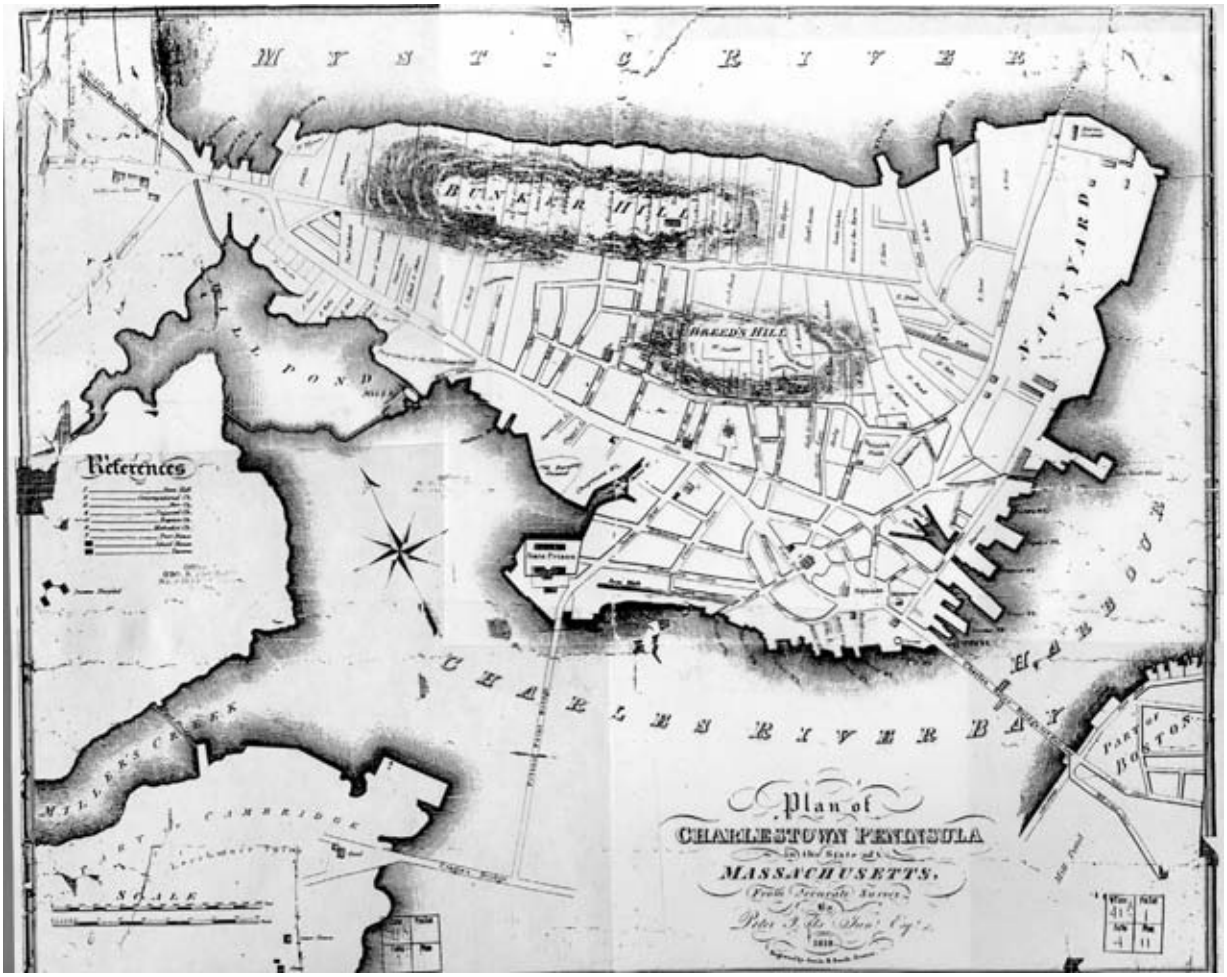


Figure 2.4: Map of Charlestown by Peter Tufts, Jr. in 1818, shows the Navy Yard and surrounding streets. A few of the yard's structures are indicated including Buildings 5, 6, 7, the Commandant's House, Marine Barracks, a timbershed, and the Blacksmith's Shop. At the lower end of the yard (upper right), the Marine Hospital and other buildings are shown (Boston NHP Archives).

[38] The Navy's first iron carriages were added at the end of 1831. Bearrs, 491, 522, 600.
[39] Bearss, 595, 619.
[40] Bearss, 359.

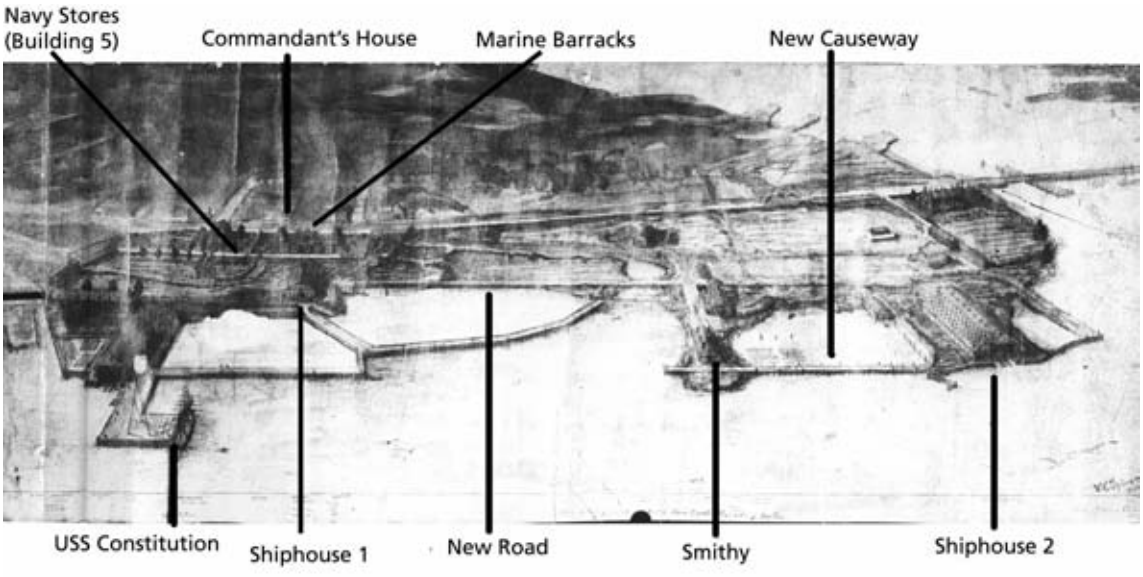


Figure 2.5: 1823 bird's eye view of the yard as interpreted by V.K. Spicer in 1904 (BOSTS-8871).

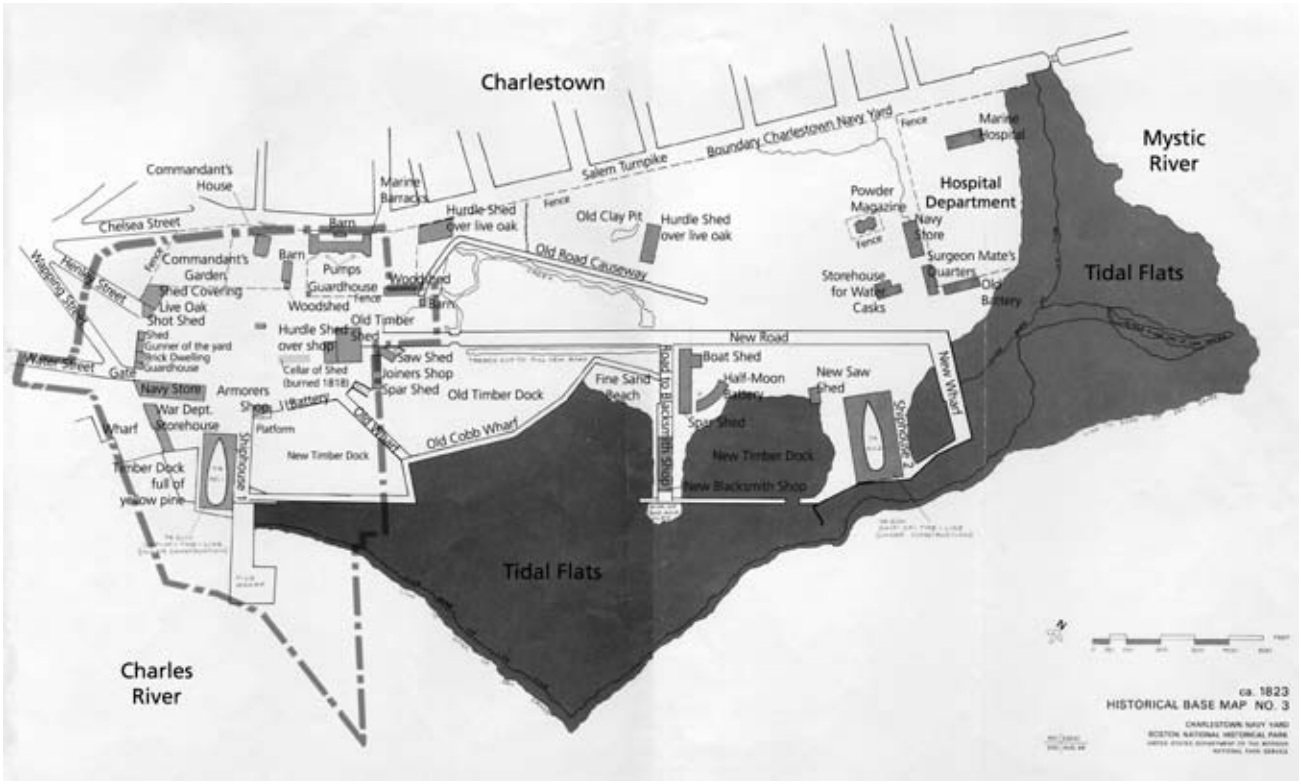


Figure 2.6: Digitally enhanced Historical Base Map of the yard c. 1823 showing the growing residential campus, the dispersed wharves and shiphouses, and relatively undeveloped central portion of the yard (NPS, DSC, 1984 in Bearss, 1065).

BOUNDARY WALL AND GATES

In November 1819, Superintendent Hull proposed a wall to enclose the most valuable parts of the yard, reminding the Board of Naval Commissioners that the wooden fences had been standing for eight years and would soon require replacement. Several Irish laborers were hired to repair existing fences after the Board failed to respond to Hull's request, limiting improvements to immediate construction needs.

In 1823, Bainbridge directed laborers to construct a spruce-post picket fence paralleling the Salem Turnpike. Shortly thereafter the land side of the yard became clearly defined, when the wood fences were replaced with a granite wall from Water Street to and then along the Salem Turnpike (Chelsea Street) to the Mystic River. Construction of the wall began in 1824 and was to both deter trespassers (and naval deserters) and protect the yard from fire spreading into it from adjoining areas.[41] With the approval of the owners of the Salem Turnpike, the Navy straightened the northern boundary of the yard and completed the boundary wall in October 1826. Designed by Alexander Parris, the wall curved into the corners of the Commandant's House, allowing access to the outside without passing through the yard and incorporated portions of the brick wall enclosing the Marine Barracks' stable.[42]

In early 1825, the Board of Naval Commissioners approved plans and estimates submitted by Alexander Parris for gates and iron fencing for the granite boundary wall. The designs included a floor plan for the granite Carriage House or Stable (Building 21) incorporated along its northern elevation into the wall. Parris designed the Stable's hip roof to be flush with the top of the granite wall to make it invisible from the turnpike. A high stone fence, extending from the stable to the corner of the Commandant's House, divided the stable yard from the garden and provided a "covered way from the House to the Privy." In July of 1825, the Board ordered Binney to include an additional set of gates through the wall, to provide access to the commanding officer's wing of the Marine Barracks. Delays in leveling the hill before the Commandant's House postponed installation of the ironwork and gates until January 1826. The commissioners authorized the paving of a five-foot walkway outside of the yard, beginning on a line parallel with the road "leading to Mr. Tufft's and extending east to the gate entering the Marine quarters." Commandant William Crane reported the stone wall, with the exception of a twelve-foot passageway, was completed in October 1826.[43] Around this time, Major Wainwright of the Marines notified Crane that he planned to erect a high brick wall on the east side of the Stable (Building 21) to extend from the Marine Barracks to the wall along the road in order to improve security.[44]

Specifications for the boundary wall foundation trench required, "well filled with clinkers and cinders three feet deep from the surface of the ground & three feet thick," and for a substantial granite wall around 2,400 feet long, nine feet high (exclusive of the capping), and twenty inches thick at the capping. Foundations paralleling the commandant's garden were to be raised to the level of the turnpike, with those in the low, wet section of the yard reinforced with piling or cobbing. A culvert, two bricks in thickness, was designed to drain water from under the wall, in the "low area."[45] These specifications clearly communicated the Navy's intent to demarcate the yard's boundaries and to effect both a physical and visual separation of the public property from contiguous civilian parcels.[46]

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[41] The "great fire" on 25 August 1835 left the yard relatively unscathed. Bearss, 782.
[42] Carlson, 18; Bearss, Charlestown Navy Yard, 1800-1842, 1:450-469; Lalande L. Keeshan, Historic Structure Report, Navy Yard Granite Wall, Charlestown Navy Yard, Boston National Historical Park, Boston, Massachusetts (draft; Boston: Boston National Historical Park, 1981), TIC 457/D6081
[43] Bearss, 466-68, 471-72.
[44] Bearss, 475-78.
[45] Bearss, 460-62.
[46] As the internal and external boundaries of the yard's existing residential complex took on a certain fixity with completion of brick and stone walls, a second campus was under development in the lower yard. In April 1825, the Navy formally took ownership of the Marine Hospital from the Department of the Treasury. The Board approved Binney's proposal for demolition of the old building and

REQUEST FOR A MASTER PLAN

Until 1827, improvements to the country's navy yards had been made without adherence to a master plan. In March 1827, Congress directed the President to "cause the navy yards of the United States to be thoroughly examined, and plans to be prepared … for the improvement of the same." A board of three senior naval officers was set up to carry out the project, and Massachusetts native Colonel Loammi Baldwin was named the board's chief engineer for all naval yards to assist the board in their surveys, and in preparing the plans.[47] In Charlestown, Alexander Parris, the yard's assistant engineer and architect, would be responsible for implementation of the plan.[48]

SUMMARY

By 1828, development of the Charlestown facility remained fairly limited. The yard consisted of two clusters of structures separated by an expanse of open space, with a creek and the surrounding tidal marsh. The appearance of the yard at this time is partially conveyed in c. 1823-1830s graphics and period plans (Figures 2.7-8). The yard occupied a valuable parcel of waterfront property at the confluence of the Charles and Mystic Rivers and was surrounded by fine country estates bounded by picket fences. Within the yard, the Commandant's House occupied the highest point of land. The yard contained pasture, several brick structures interspersed with temporary storage sheds, and workshops. Overall, the low wooden structures and two and three-story Federal style brick buildings were of a relatively modest scale, including the Marine Barracks (Quarters H-I-K) and the Navy Store (Building 5). Below, by the waterfront, a new stone-faced wharf and timber dock extended naval operations into the Charles River, though most of the yard was still bounded by tidal flats. Three wooden shiphouses towered over the low structures and sheds near the shore. Three earthen roads traversed the property from east to west. North of the Commandant's house and outside of the yard's new boundary wall, portions of the former "Lane to Brickyards" became part of the Salem Turnpike, later known as Chelsea Street. A smaller road within the yard was the extension of Henley Street that ran just below and south of the Commandant's House and was known as the new road or Main Avenue. From this road, paths and cart roads led down to the wharf area. A third, less defined road extended east from the intersection of Wapping and Water Streets. Trees, including elms and fruit trees, and gardens beautified the upper eastern corner of the yard surrounding the Commandant's House. Fast-growing Lombardy poplars, planted in 1816, now defined a walk from the Commandant's House to the waterfront. The 200-300 elms planted in 1823 were still quite small. A boundary wall provided a sense of unity for the yard though buildings were in disparate clusters. Clearly, an overall plan was needed.

construction of residential quarters using salvaged materials. During construction, Crane requested several additions to the building plans for the four residences, including two shared wells and oak pumps, four sheds, privies, and pantries, and fences to enclose each yard. The quarters were completed in August 1826. Bearss, 462-63.

[47] Mary Jane Brady and Christopher J. Foster, Inc., Historic Structure Report, Dry Dock 1, Charlestown Navy Yard: Architectural Data, Boston National Historical Park, Massachusetts (draft; Denver: Denver Service Center, 1980), TIC 457/D6059, 47.

[48] It is unclear whether Parris drafted the plan as his name does not appear on the drawings. Carlson, 19.

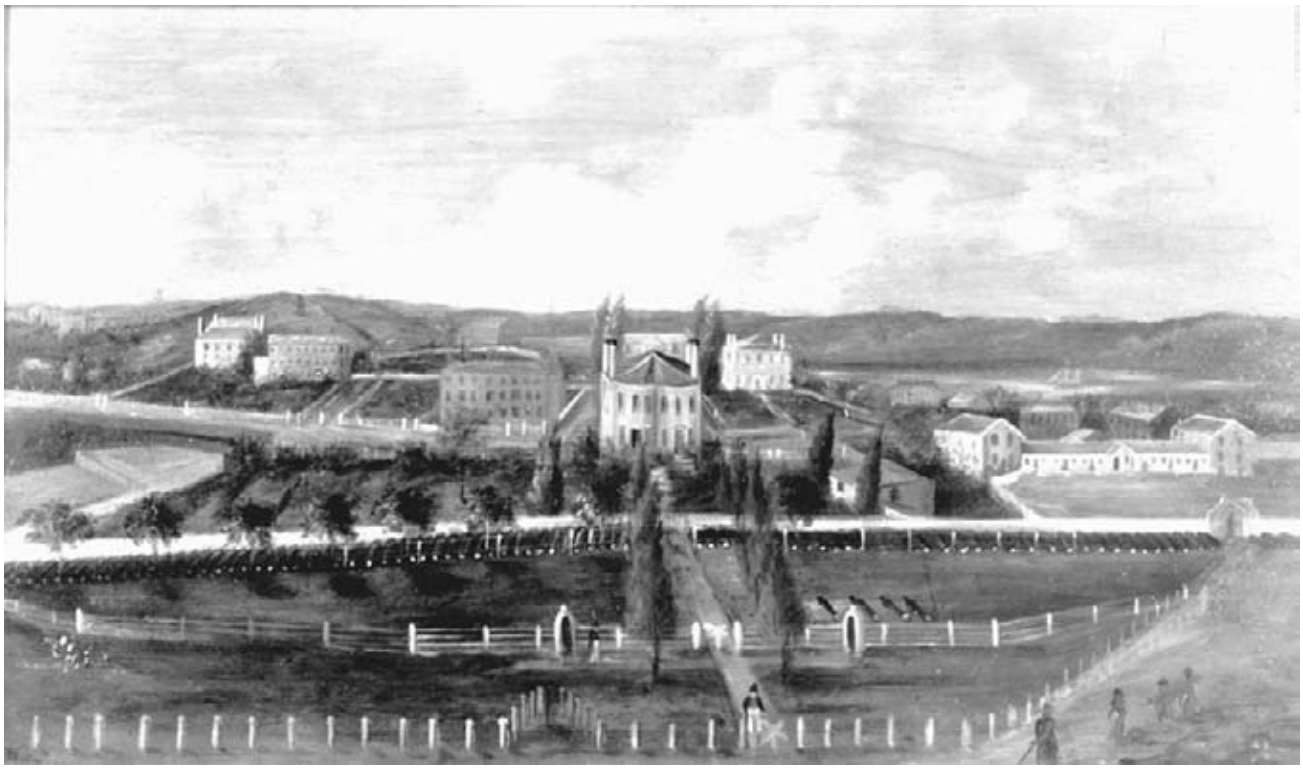
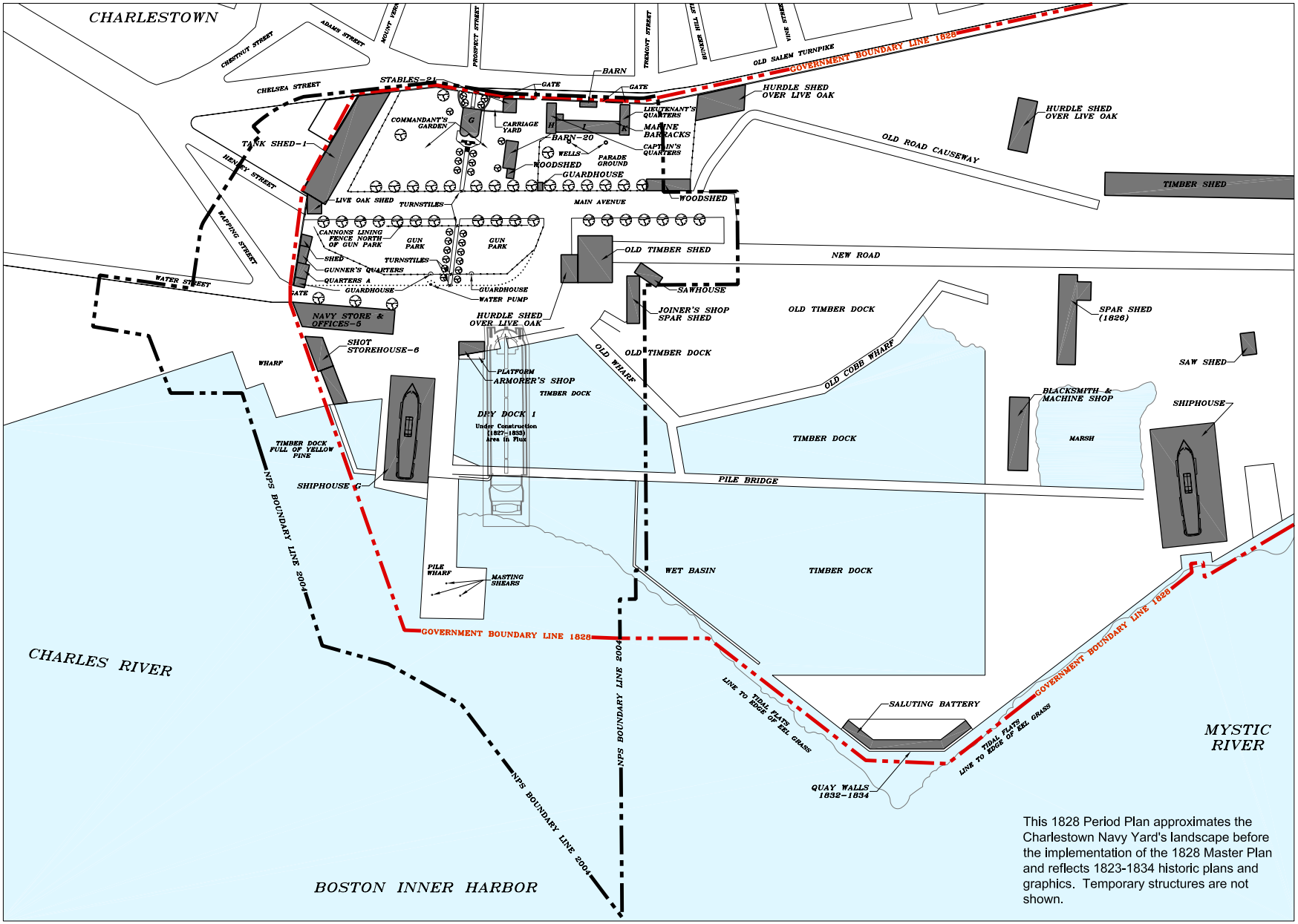


Figure 2.7: View of the Charlestown Navy Yard, showing the Commandant's House (Quarters G) and the Marine Barracks (Quarters H-I-K). The painting is attributed to the wife of then Lieutenant James Armstrong, who was stationed at the yard and probably dates to c.1823. The painting is in the custody of the U.S. Naval Academy Museum.[49] The fence shown in the foreground would have been close to tidal flats along the Charles River (BOSTS 9179).



Figure 2.8: Engraving derived from a c. 1823 painting (Figure 2.8 above) (BOSTS-9179).

[49] Bearss, 1086.



This 1828 Period Plan approximates the Charlestown Navy Yard's landscape before the implementation of the 1828 Master Plan and reflects 1823-1834 historic plans and graphics. Temporary structures are not shown.

Cultural Landscape Report for Charlestown Navy Yard

Figure 2.9

Period Plan 1828

National Park Service
Olmsted Center for Landscape Preservation
99 Warren Street
Brookline, MA 02445
617-566-1689

SOURCES

1. Survey by Carol R. Johnson Assoc. Inc., Boston, MA 1995
2. Historical Base Maps of Charlestown Navy Yard c. 1823 & 1834, DSC August 1984
3. Boston NHP c. 1823-1830's Illustrations

PREPARED BY

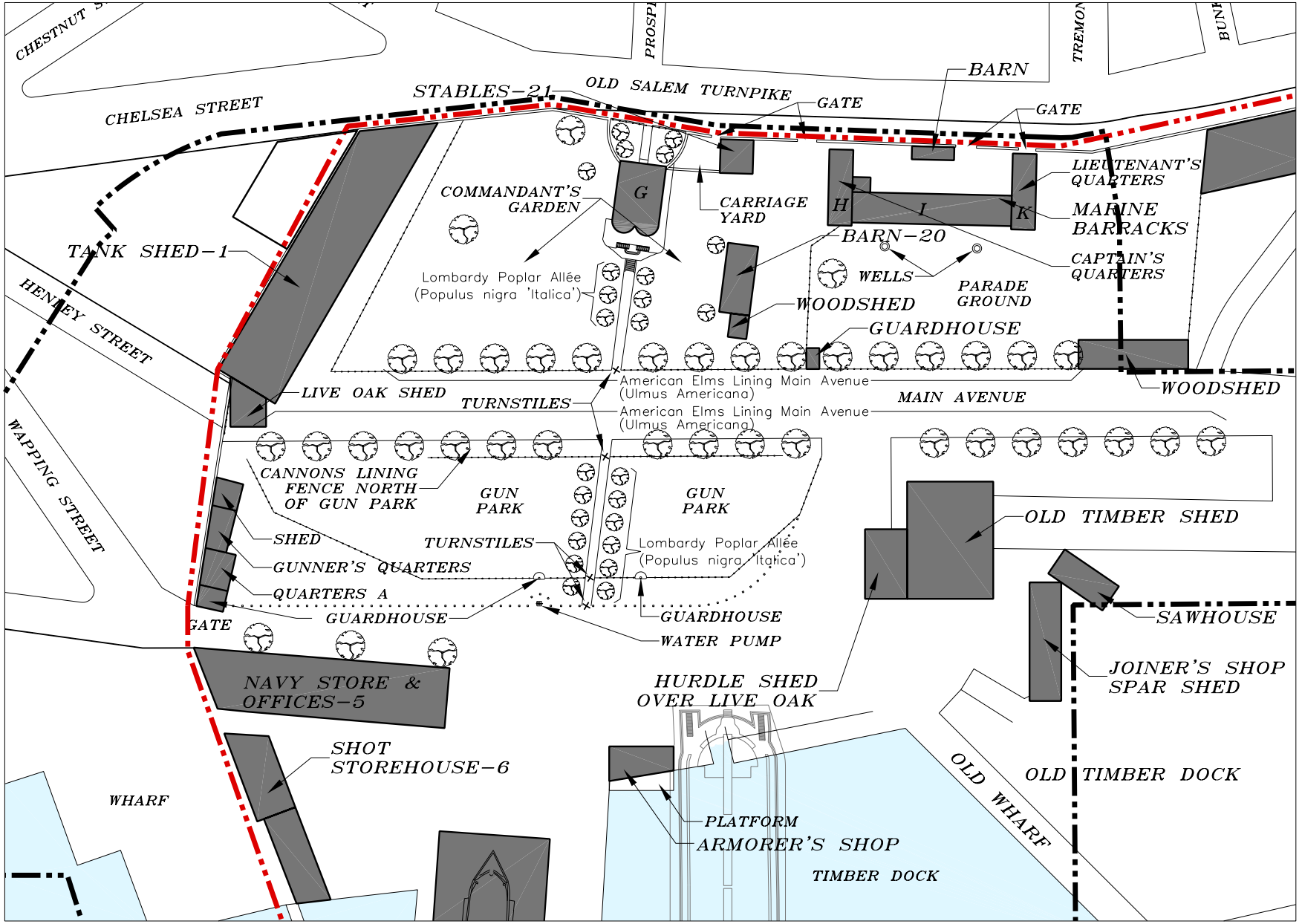
Ryan Reedy & Chris Stevens with AutoCAD 2002. OCLP, June 2005.

Legend

Sym.	Feature
	Brick Paving
	Granite Paving
	Wood Paving
	Concrete Paving
	Chain Link Fence
	Iron Fence
	Fence on Wall
	Wall
	Railway
	Bollard
	Bollard & Chain
	Lamp Post
	Fire Hydrant
	Bench
	Capstan
	Existing Contours
	Deciduous Tree
	Evergreen Tree
	Shrub
	Hedge

SCALE: 1"=200'

0 100' 200'



Cultural Landscape Report for Charlestown Navy Yard

Figure 2.10

Period Plan 1828 Vegetation Plan

National Park Service
Olmsted Center for Landscape Preservation
99 Warren Street
Brookline, MA 02445
617-566-1689

SOURCES

1. Survey by Carol R. Johnson Assoc. Inc., Boston, MA 1995
2. Historical Base Maps of Charlestown Navy Yard c. 1823 & 1834, DSC August 1984
3. Boston NHP c. 1823-1830's Illustrations

PREPARED BY

Ryan ReedY & Chris Stevens
with AutoCAD 2002.
OCLP, June 2005.

Legend

Sym.	Feature
	Brick Paving
	Granite Paving
	Wood Paving
	Concrete Paving
	Chain Link Fence
	Iron Fence
	Fence on Wall
	Wall
	Railway
	Bollard
	Bollard & Chain
	Lamp Post
	Fire Hydrant
	Bench
	Capstan
	Existing Contours
	Deciduous Tree
	Evergreen Tree
	Shrub
	Hedge

SCALE: 1"=80'
0 40' 80'

3. DEVELOPMENT OF THE YARD, 1828 - 1869

From 1828 onward, a master plan guided yard construction, though physical improvements were often delayed or outdated by the time they were constructed. Throughout the mid 1800s, the nation flourished with the development of steam power and iron construction, including an expanding network of railroads for overland transport. Yet the Navy struggled to modernize, due to both its senior staff of seasoned sailors and the lack of modern repair and coaling facilities particularly in the Pacific ports. The Navy relied on its East Coast facilities until the 1850s, when expansionist interests and the Mexican-American War resulted in the establishment of the Mare Island Navy Yard in California. To effectively manage and expand each yard, the Navy sought "industrial specialization" for each yard. Activity at the Charlestown Navy Yard increased dramatically before and during the Civil War, calling greater attention to the yard's technological shortcomings, many of which would not be addressed until the turn of the century.

EARLY NINETEENTH-CENTURY GROWTH, 1828-1853

On 11 August 1828, the Board of Naval Commissioners approved the master plan for the yard, as mandated in the 1827 legislation. It was to be used for reference "whenever improvements" were authorized and on no occasion was it to be "deviated" from without written instructions from the naval commissioners.[1] Under the supervision of the Navy's Chief Engineer Loammi Baldwin, the Assistant Engineer and Architect Alexander Parris oversaw implementation of the plan. Modeled after Britain's royal navy yards, the plan established the spatial organization of the yard, imposing a classical grid of streets, with five broad avenues running west to east and seven cross streets (Figures 3.1 and 3.2). Like the development of the city beyond the yard, the grid responded to the increasing density of urban development along the waterfront and required extensive earthmoving and filling over the next century.

The 1828 plan also reflected the current naval technology of wooden sailing ships. It proposed many timber sheds, including numerous "stores" for rigging, sails, and "articles belonging to ships in ordinary;" a timber dock; a wet basin; three additional dry docks for ship repair; saw and block mills; and, most notably, a rope-manufacturing complex. The manufacturing facilities for sails and rope reflected the Navy's interest in industrial specialization for each of its yards. Most new structures were proposed for the lower yard, with improvements throughout the yard to meet evolving needs of the Navy. [2]

In 1845 deteriorating relations with Mexico spurred increased repair and outfitting activities at Charlestown, although the eighteen-month conflict—consisting principally of land engagements—had only limited impact on the yard. Charlestown Navy Yard worked on ten ships engaged during the Mexican-American War. At the end of hostilities in 1848, the last all sail-powered warship launched at Charlestown Navy Yard, the *Vermont*, slid down the ways to a "vast concourse of people and the firing of cannons," but never saw service as a commissioned warship.[3] Shortly thereafter the Navy dismantled Shiphouse G, which had housed the *Vermont* for over forty years.

[1] Bearss, 507. The Board of Naval Commissioners was established in 1815 and eliminated in 1842 and replaced with five bureaus. Black and Bearss, 9.
[2] Bearss, 507,586; Carlson, 3.
[3] Handbook, 18.

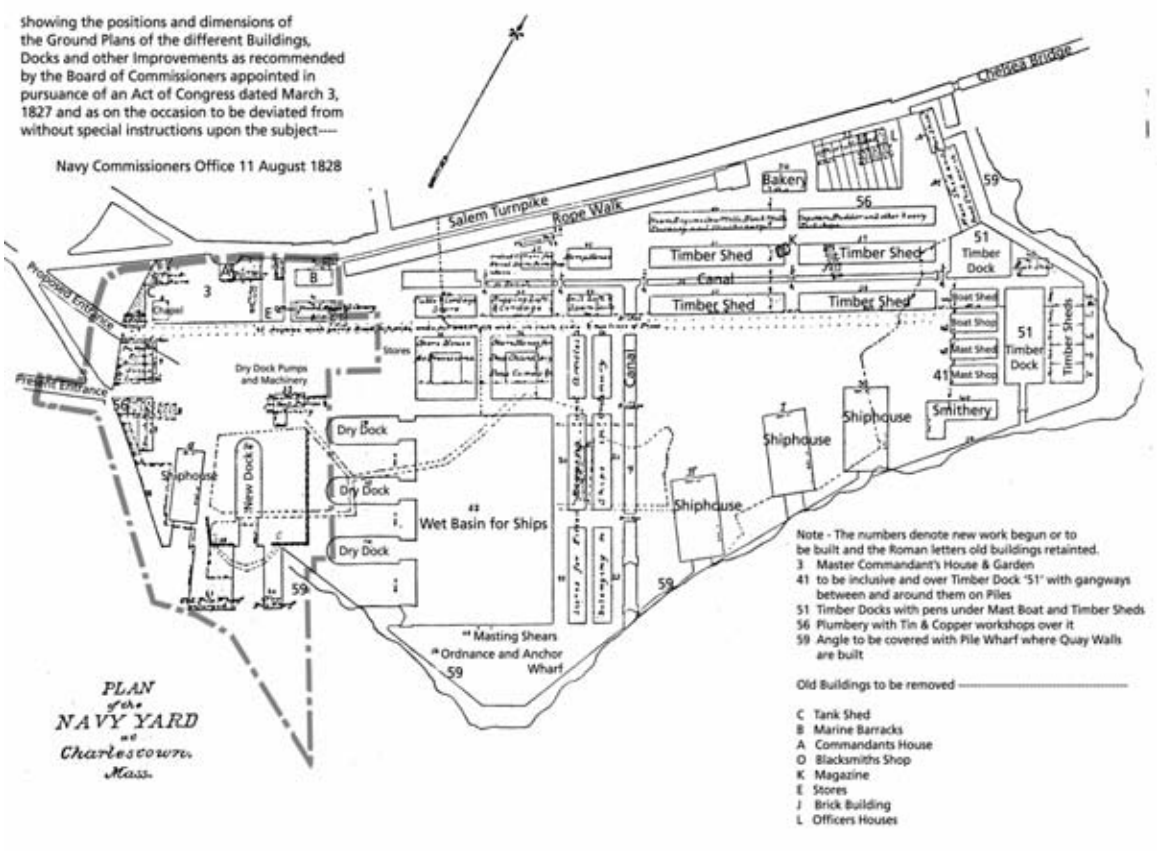


Figure 3.1: Digitally enhanced plan of the yard showing existing conditions and proposed additions, 1828. Current park boundary is outlined (from Prebble, 1875).

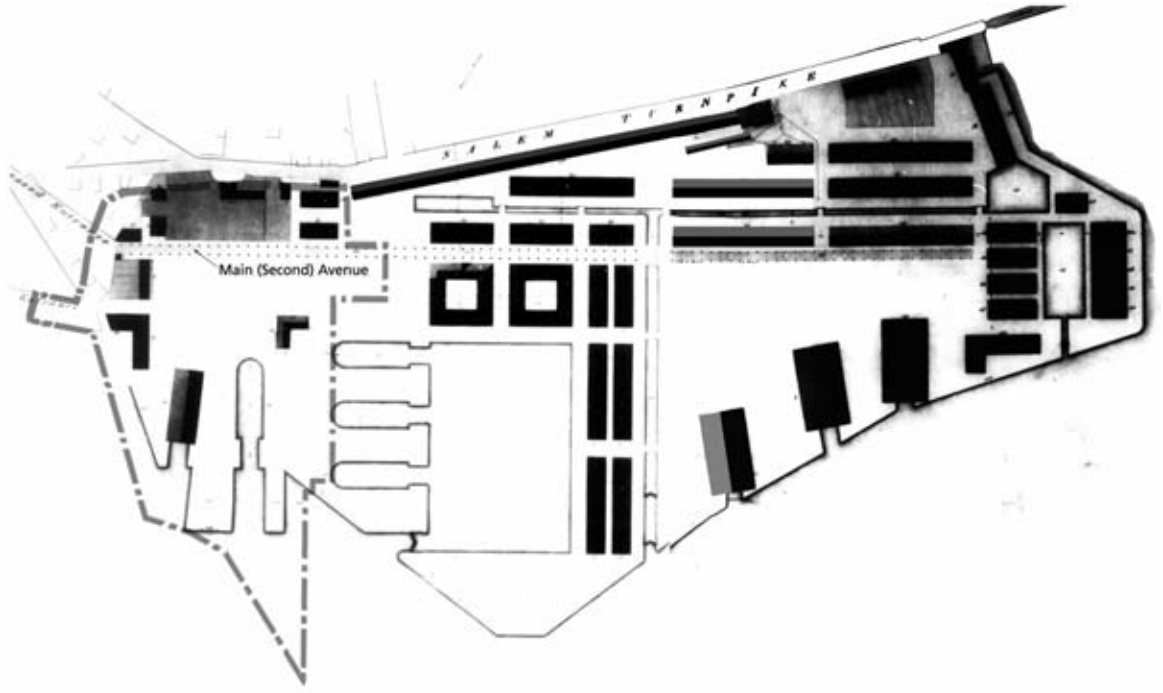


Figure 3.2: Digitally enhanced plan for the Charlestown Navy Yard prepared in 1840. The double row of dots indicates elm trees planned for Main (Second) Avenue. The original plan omitted extant structures identified for removal in the master plan and was color-coded to differentiate the structures that were built from those proposed but not yet built. Current park boundary is outlined (Boston National Historical Park).

ROADS AND UTILITIES

In the 1828 master plan, Second Avenue, running along an earlier east-west main roadbed, served as the major axis and the baseline for measurements in the yard. The plan called for an "avenue with paved road thirty-feet wide and a foot walk fifteen-feet wide on each side." The plan also included a network of canals, basins, and dry docks that were never constructed.[4] In the 1840s and 1850s the Navy proposed the extension of railroad tracks into the yard from the Fitchburg Railroad line's current Charlestown Branch spur that terminated at the western edge of the yard (Figure 3.3 -4).[5] Although the rail connection would facilitate movement of raw materials to manufacturing facilities, the delivery of coal, and outfitting of ships, rails were not installed in the yard until the Civil War.

In the late 1840s, Main (Second) Avenue was graded, graveled, drained by gutters, and later paved along its entire length.[6] Shortly thereafter, the road leading from the Main Gate, described as the frontage road, which later became First Avenue was paved in 1851. "Paving bricks" were also set on the sidewalk along the outside of the boundary wall, Water Street, the area adjacent to the Main Gate, and "220 feet of sidewalk between the Commandant's Quarters and the corner of the yard and Chelsea Street at the stables."[7] Ten years later, the Navy contributed to the cost of paving Wapping Street from the yard to Henley Street.[8]

Coal was of increasing importance to the Navy in the early 1840s as a source of power for the yard's physical plant as well as auxiliary power for ships. The Navy erected several coal sheds in the winter of 1844 to 1845, including one near the Dry Dock on the lot east of the Carpenter's Shop (Building 24). Other improvements contributed to the changing landscape. Natural gas, introduced into the yard in 1856, illuminated three converted oil lamps and three new lights at the end of each shiphouse, extending working hours and the yard's productive capacity.[9]

[4] 1828 "Plan of the Navy Yard at Charlestown, Mass."
[5] "A representative of the Fitchburg Railroad estimated the cost of constructing 1,800 feet of track from the coal house to the end of the Pier No. 65 at $3,840." Black and Bearss, 28.
[6] Bearss and Black, 67, 75, 80.
[7] Bearss and Black, 57-58.
[8] Bearss and Black, 128.
[9] Bearss and Black, 118.

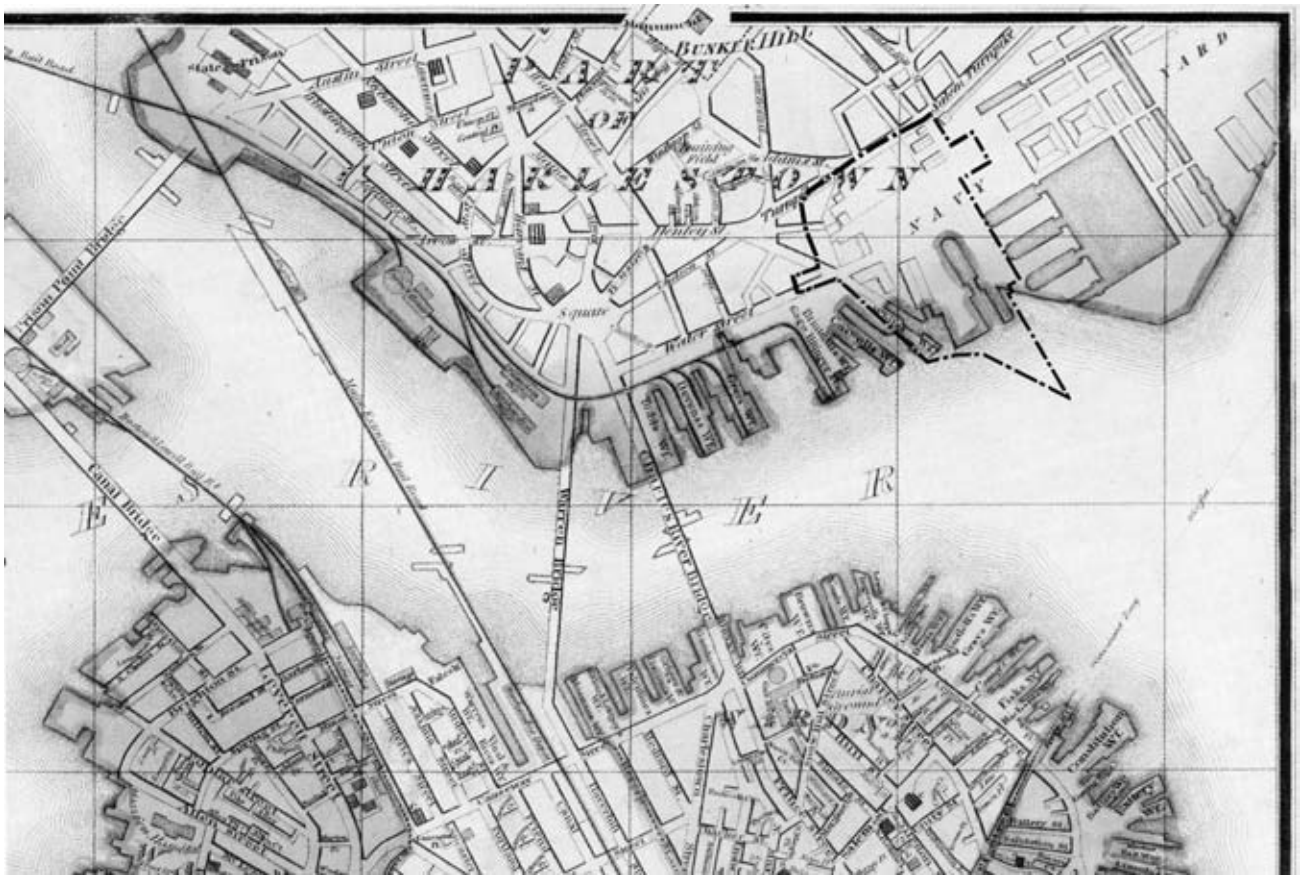


Figure 3.3: A portion of an 1846 map of Boston showing the Charlestown Branch rail lines terminating just west of the Navy Yard. The 1828 master plan was superimposed on the map (From *Mapping Boston,* 2001; 123).

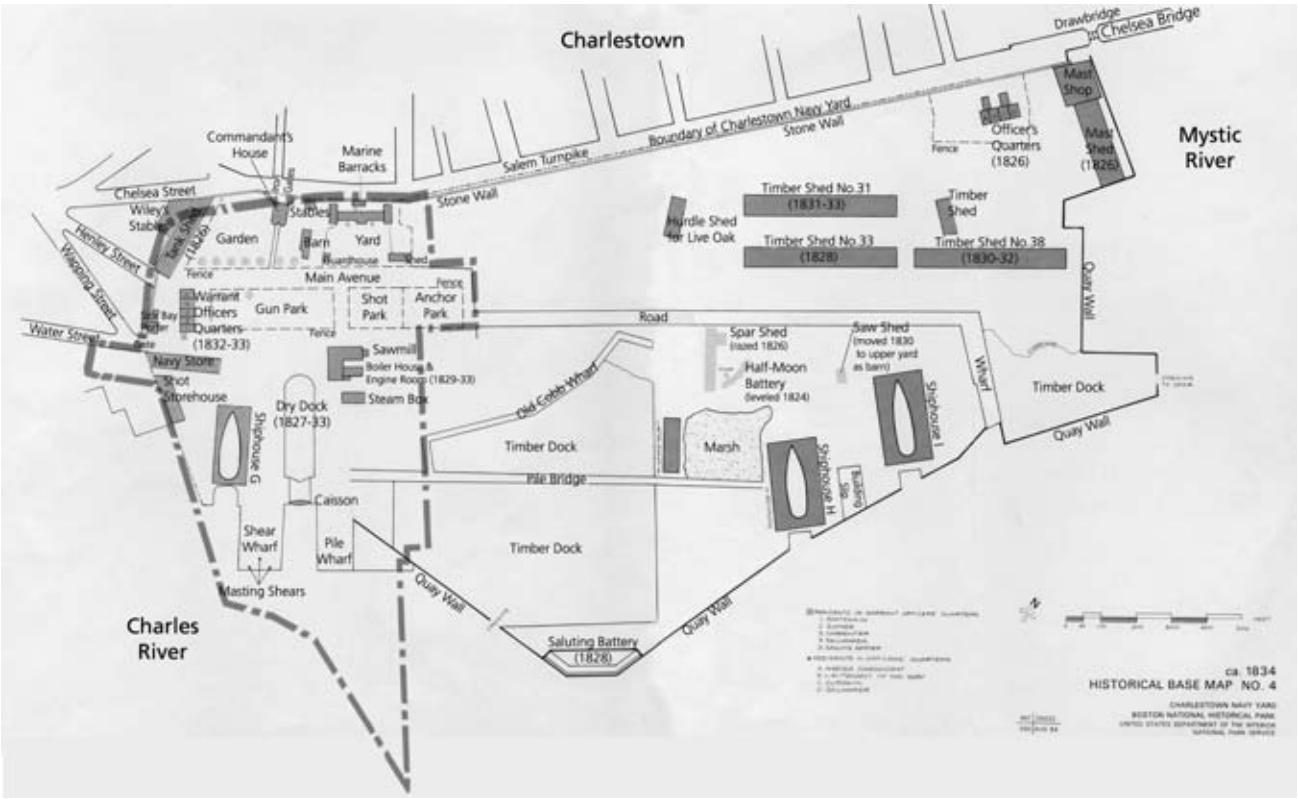


Figure 3.4: Digitally enhanced Historical Base Map of the yard c. 1834 showing the beginnings of First and Second Avenues and several new structures in the upper and lower portions of the yard. Current park boundary is outlined (NPS DSC, in Bearss, 1071).

WATERFRONT

Even before the issuance of master plans for the various navy yards, the Navy received appropriations for the construction of two granite dry docks, one in Charlestown and the other at the Norfolk yard. At Charlestown, the work was completed under the supervision of Loammi Baldwin, with Alexander Parris as assistant engineer (Figure 3.5).[10] With Dry Dock 1 under construction in the late 1820s and completed in 1833, waterfront structures in the vicinity were added and reorganized to accommodate new operations in this portion of the yard.[11] Parris designed the Dry Dock Pumphouse (Building 22), completed in 1832, which served the dry dock until 1905 when a new pump house (Building 123) was built for both Dry Docks 1 and 2. Just six years after completion, Dry Dock 1 barely held *Fulton II*, the Navy's "first" steam-propelled warship, forecasting the need for the extension of the dry dock.

While construction of Dry Dock 1 greatly expanded the yard's ship repair and building capacity, other improvements reflected the Navy's ambivalence between wind and steam technology. By the late 1830s the Philadelphia yard began construction of steam-powered vessels, including two steam-powered paddlewheelers and the first steam-powered, iron-hulled, screw-propelled vessel, the *Princeton*. Meanwhile at the Charlestown yard, orders to produce four sailing frigates necessitated construction of a fourth shiphouse. Shiphouse 39, later named Building 73, was built in the lower yard to the east of Shiphouse G (Building 71) and completed in 1842. Workers laid the wooden keel of the *Bainbridge*, while six other wooden-hulled sailing vessels laid in ordinary at the yard.[12] Within the growing technological disparities amongst the navy's yards, Charlestown remained a facility for the repair and construction of wooden sailing ships, and continued to store and ship provisions to overseas squadrons.

Despite a lack of equipment to service metal hulls and machinery, Charlestown ranked among the Navy's three most important yards in the 1840s.[13] Requirements to build, outfit, and repair larger ships required increased docking capacity. In the early 1840s, only the Shear Wharf could support ships with a deep draft, thus two additional wharves, Nos. 65 and 66 were constructed at the eastern end of the lower yard, near Shiphouses I and 39 to berth large ships. Small buildings were added to the wharves, including coal houses and a pitch house, which would later be replaced with larger, more permanent structures.

During the Mexican-American War, the yard's expanded role in repairs necessitated emergency plant improvements along the waterfront, including the erection of two workshops, a timber shed, brick barn, and frame coalhouse.[14] After the war, a period of naval retrenchment ensued as Congress and the nation turned its attentions to the West and to the slavery question. While only two ships were built at Charlestown Navy Yard during this period, the Dry Dock experienced greater usage after the Navy permitted docking of nonpublic vessels, including coppering of renowned clipper ships built in East Boston. Timber basins, used to store and season building and repair materials, remained a persistent reminder of the Navy's tenuous hold on obsolescent sailing technologies. The yard assumed a more integrated appearance—as materials excavated from the lower yard filled some of these basins and extended the yard toward the edge of the Charles River tidal flats. Massive wooden shiphouses dominated Charles River skyline, while the Bunker Hill monument, completed in 1842, towered over the yard's northern viewshed. Laying beside the wharves in the early 1850s, the ship-of-the-line *Ohio* served as a receiving ship

[10] Davis, Hatch, and Wright, "Alexander Parris," 3, 19. In addition to work for the Navy at the Charlestown Navy Yard, Parris was involved with the Chelsea Naval Hospital across the Mystic River from Charlestown. He also had an involvement with the Army at the Watertown Arsenal. One of the last projects Parris completed was a portfolio of plans showing yard improvements in the 1830s. See Alexander Parris, Plans of Buildings and Machinery Erected in the Navy Yard, Boston, 1830 to 1840, Microcopy T1023 (Washington: National Archives, 1967).

[11] American Society of Civil Engineers web page, History & Heritage of Civil Engineering: Landmarks and Historic Works: Domestic Landmarks: Massachusetts, [http://www.asce.org/history/landmarks/massachusetts.html], accessed Aug. 9, 2001.

[12] Bearss, 569, 807, 940 and Bearss and Black, 4-5, 15, 26-27.

[13] Bearss and Black, 7.

[14] Bearss and Black, 19, 35-36, 49-50.

for the yard, providing sailors with temporary housing between assignments or whose ships were in the yard for repair work.

Between 1847 and 1849, the Navy built a long granite building, the Carpenters & Joiners Shop (Building 34), south of First Avenue and east of Dry Dock 1. The granite structure helped define the grid proposed in the 1828 plan. In 1852, work began on the Pitch House and Oakum Loft (Building 10), which was located on the Shear Wharf, west of the ship-way remaining from Shiphouse G. Completed in 1853, the fifty by thirty five-foot, two-story brick building, rested on piles driven into the peat muck, allowing the yard to expand waterfront operations further into the harbor.

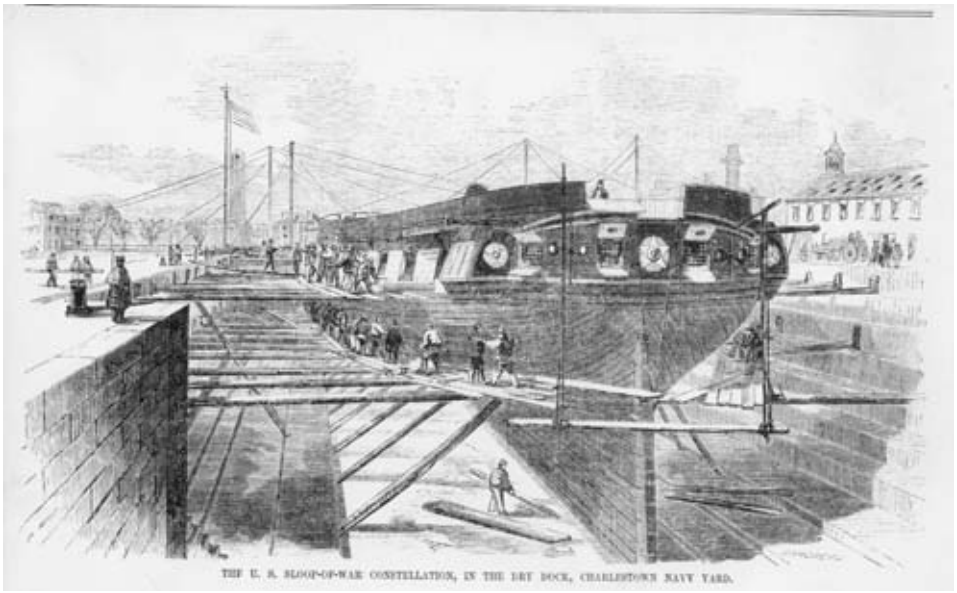


Figure 3.5: Engraving from c. 1859 of Dry Dock 1, which was completed in 1833. Staging installed in the dry dock allowed workers to work on the hull of USS *Constellation* at two levels from *Gleason's Pictorial Drawing-Room Companion* (BOSTS 10721).

UPPER YARD

The 1828 master plan embraced trees as an integral element and proposed an alleé along the Main Avenue across the entire yard (see Figures 3.1 and 3.2). In the upper yard, Commandant Jesse D. Elliott, 1833 to 1835, authorized several aesthetic improvements, including the setting out of trees, the beautification of Main (Second) Avenue, and the laying out of stone runners in the enlarged gun park. In 1839 a local newspaper article praised the "spacious avenue, which runs the…length of the yard, bordered with young and thriving elms."[15] Comparable to the rowhouse built at the eastern end of the yard in the 1820s, the Navy built the larger five-unit Upper Quarters (Quarters B-C-D-E-F/Building 265) in 1833. With front doors facing east, the building enclosed the western end of the yard, creating a campus quadrangle between the Commandant's House (Quarters G), Marine Barracks (Quarters H-I-K), Navy Store (Building 5) and Dry Dock Engine House (Building 22).[16] In the center of the upper yard, post-and-rail fences defined gun, shot, and anchor parks in between what would become First and Second Avenues, creating a space that was both ceremonial and functional for storage.

[15] Bearss, 716, 949.
[16] Since the 1920s, the Marine Barracks has been called Building I instead of Quarters H-I-K.

The grounds around the Commandant's House changed according to the interests of the commandant and his family. Commandant John Nicholson, the yard's ninth commandant who served between 1842 and 1845, built a greenhouse on the grounds. Constructed without authorization, the structure was subsequently dismantled in the 1860s.[17] Several years later a new greenhouse structure was built onto the back of the Stable (Building 21). An engraving of the Commandant's House in *Gleason's Pictorial Drawing-Room Companion* portrays the variety and density of vegetation surrounding the building after nearly fifty years of occupation by about ten commandants (Figure 3.6). Some time before 1852, an arbor was constructed over the walkway leading to the waterfront. Several fence styles, including wood and wrought iron, defined other walkways and garden areas. Historian Lucinda Brockway notes "the garden is densely planted with what appear to be many varieties of ornamental plants; the slope at the rear [south side] of the house is covered in shrubbery."[18]

The yard stockpiled nearly 40,000 cannonballs, which were stacked in pyramids on oak planks in the shot park. Confronted with the shifting of the planks and the subsequent damage of the cannonballs, each pyramid was set on a stone foundation of sufficient depth to "be beyond the reach of frost." Above ground, the foundation was brick bordered with "a plate of cast iron four inches wide and one and a half inch thick" with the face sloped to shed rain. Brick and granite runners later replaced oak planking in the shot park. In 1849, the Commandant indicated the balls would be stacked in forty pyramids of one thousand balls each, or twenty beds of two thousand balls for a cost savings.[19] The Commandant also directed the installation of tracks in the gun park to serve as wheel runners (Figure 3.7).[20]

The emphasis on yard improvements suggests the relatively quiet period at the yard following the Mexican-American War. The character of the yard is captured in an 1851 article in *Gleason's Pictorial.* Gleason's notes the yard's physical plant included "three ship-houses and slips for building vessels under cover….two large store-houses 200 feet by 60 feet built of Quincy Granite…four timbersheds of 450 feet in length, in which are stowed…frames of live oak for sixteen ships of various rates…and the blockmaker's shop with its improved and beautiful machinery." Other notable features were the "magnificent park for heavy cannon…with its seven or eight hundred pieces of the largest caliber…the shot park, with many thousand balls piled in the neatest manner, and an anchor park, in which there are the largest anchors for men-of-war." The yard is described as "laid out into streets and avenues, which are either paved or graveled, and bordered with elms, maples, or ornamental trees, affording one of the most beautiful promenades in this part of the country (see Figure 3.7)."[21]

In front of the Marine Barracks, "fatigue parties" were ordered to regrade the parade grounds in order to drain rain water away from buildings. To accomplish this, the crew installed a paved gutter and cesspool.[22] The Marine Barracks and setting were described in *Gleason's Pictorial* as follows:

> [The barracks are] capable of accommodating a large body of Marines, although at present the establishment is reduced to comparatively few. There are but thirty Marines quartered there at present, sufficient for the duties of the well-regulated establishment. The place of the parade is the prettiest enclosures to be found anywhere, and in the shade of beautiful elms, affords a very pleasant retreat for the leg-wary sentries during the relief from duty, on the hot days of summer (Figures 3.8-9).[23]

The *Gleason's Pictorial* article alludes to the transformation of the yard's landscape during the second quarter of the nineteenth century, as the young trees planted in the early 1800s matured.[24] Set along a classical grid, the yard had

[17] Preble, 371.
[18] Brockway and Todisco, 8-9.
[19] A photograph of cannon balls in 1865 shows stacks contain approximately 700 balls.
[20] Bears and Black, 79-80.
[21] Quoted in Bearss and Black, 65.
[22] Bearss and Black, 88.
[23] Quoted in Bearss and Black, 88.
[24] Twenty four trees died in the winter of 1859 to 1860 and were subsequently replaced. Bearss and Black, 128.

taken on a more organized appearance. Views to the east down First and Second Avenues captured Parris' monumental building designs of finely dressed granite, which conveyed a sense of purpose and permanence. The harmony of the new buildings, trees, lights, and fences communicated the yard's emerging institutional identity, while specialized forms proclaimed the yard's productive roles.



Figure 3.6: Engraving of the Commandant's House and gardens, c. 1852 from *Gleason's Pictorial Drawing Room Companion.* Note the garden fence and elm tree in the foreground along Main (Second) Avenue (BOSTS-9180).

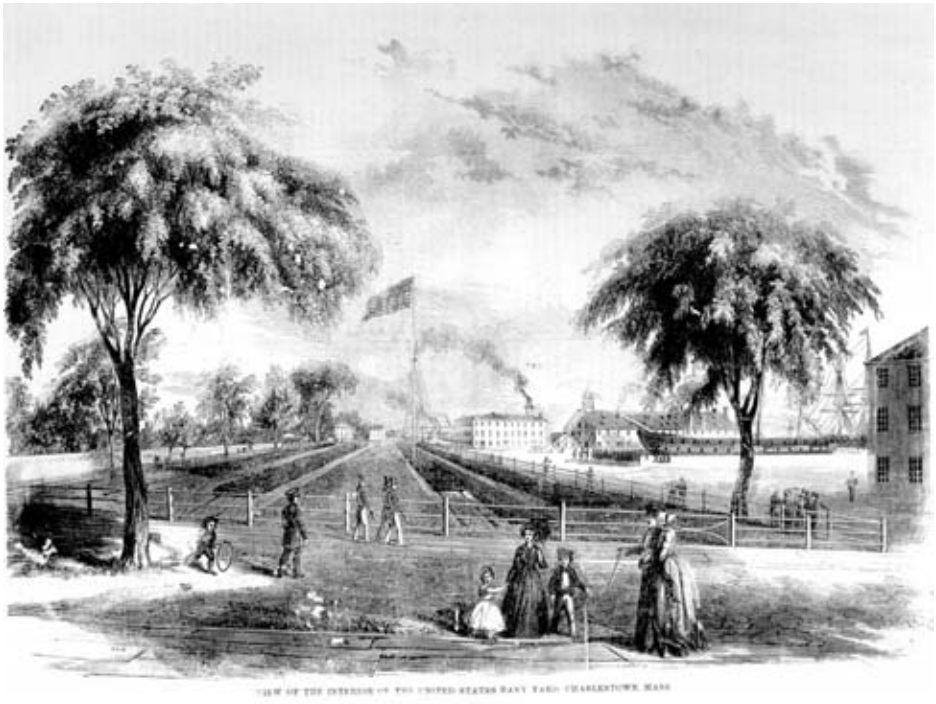


Figure 3.7: 1850s view of the yard from the exterior looking east along First Avenue and the waterfront. Visible to the north (left) is the gun park with rows of cannon set upon stone runners and Main (Second) Avenue. Elm trees line the avenues (From *Gleason's Pictorial Drawing Room Companion*, November 29, 1857, BOSTS 8635).

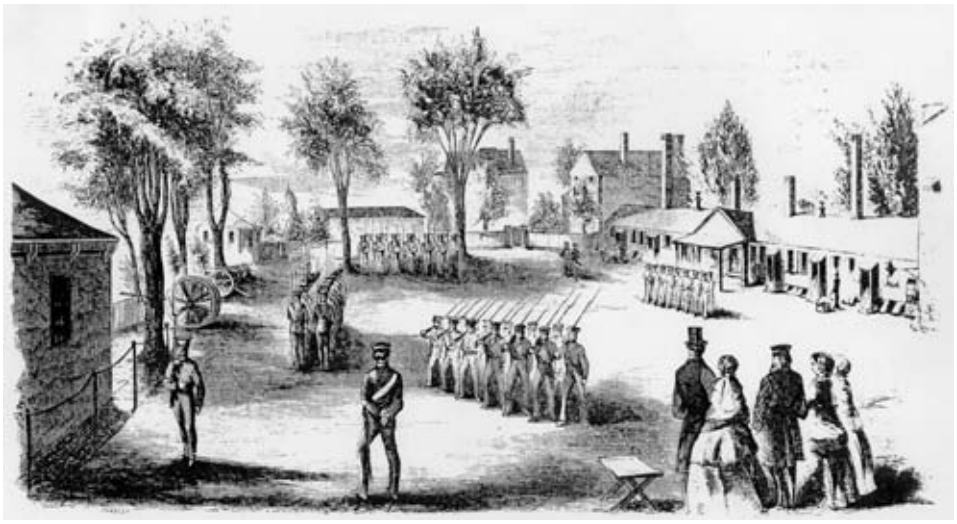


Figure 3.8: An 1856 view looking northwest across the elm-lined parade ground. Cannons and pipe-and-chain fencing line the edge of the parade ground that faced the waterfront. In the distance, a wooden-board fence separates the yard around the Commandant's House. From *Gleason's Pictorial Drawing Room Companion.*



Figure 3.9: The Marine Barracks (right) consisted of a single-story central section with three-story wings in 1856. Elms shaded the parade ground which changed grade at the eastern end just before a vegetable garden to the southeast (BOSTS-9218).

LOWER YARD

Spanning the upper and lower yards along the northern boundary wall, the granite Ropewalk (Building 58) completed in 1837 represented Charlestown Navy Yard's new manufacturing capacity. Parris designed the Navy's only ropemaking facility, a complex that included a quarter-mile rope "laying" area running the length of the building.[25] The Charlestown Navy Yard had been chosen as the site of a ropewalk intended to supply the needs of the entire Navy for a number of reasons: Boston was one of the leading ports trading in hemp, the raw material for rope; the area had a number of commercial ropewalks from which the necessary skilled workers could be drawn; and the area was a major center of innovation in the textile industry (Figure 3.10).[26] Construction of the ropewalk required regrading the eastern edge of the parade ground in front of the Marine Barracks as seen in later images.[27] At the east end of the Ropewalk—near a Timber Shed (Building 75) built in 1831—several buildings supplied the ropemaking facility. In association with the Ropewalk, a Hemp House (Building 62) built in 1837 contained raw materials, a Tar House (Building 60) built in 1838 provided a location to coat the rope with preservative tar. A Storehouse (Building 34) built in 1837 may have been used for rope storage. A Coal House (Building 79) added in 1852 supplied the steam-powered machinery in the Ropewalk and was enlarged six years later to become the Engine House.

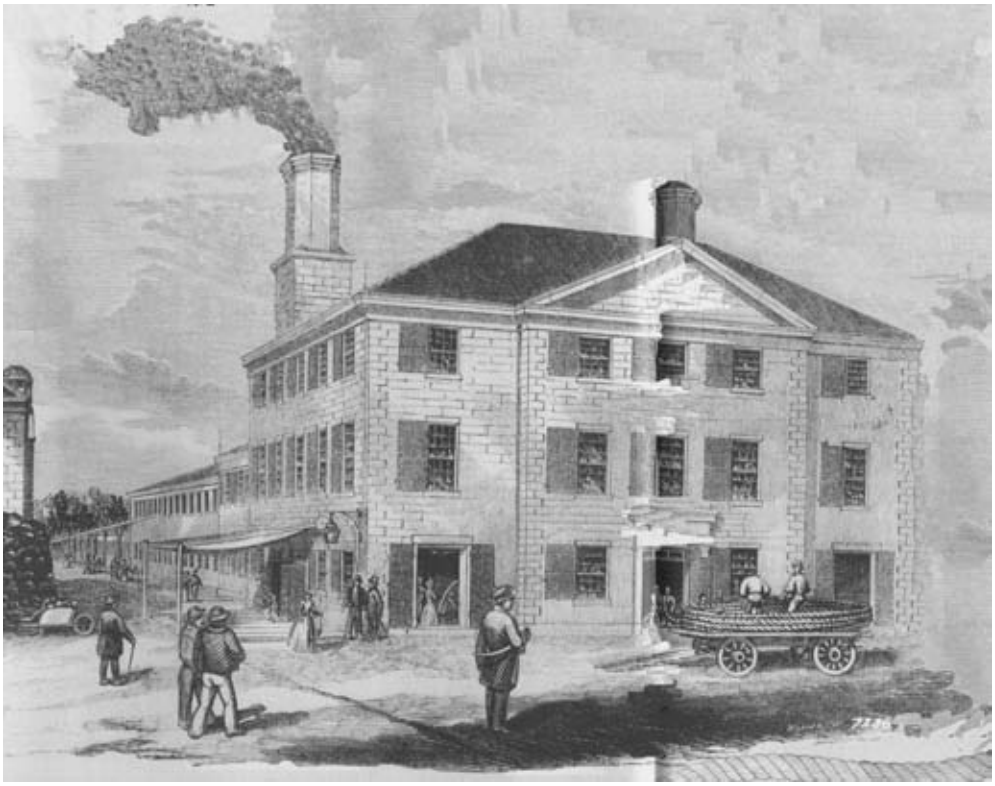


Figure 3.10: Ropewalk (Building 58) designed by Alexander Parris and completed in 1837, from *Gleason's Pictorial Drawing Room Companion,* 1852.

[25] The importance of the Ropewalk to the Navy Yard, especially in the latter half of the 19th century, cannot be understated. As will be discussed below, during the 1880s the Navy embarked on a policy of reducing its shore establishment, a policy that led to the virtual closing of the Charlestown Navy Yard as a ship repair facility. While there were other factors involved, the primary reason that the yard was not closed completely at that time was the value of the Ropewalk.
[26] Carlson, 18. Louis P. Hutchins, *Work, Culture, and Resistance to Mechanization in the American Rope Making Industry, 1830-1850* (typescript; 1999), TIC 457/D6300, p. 34-36; Diana S. Waite, Historical Study of the Charlestown Navy Yard Ropewalk and Tar House (draft, May 1991), TIC 457/D6306, chap. 3, p. 3-5 .
[27] Bearss, 91 and Handbook, 17, 19.

BOUNDARY WALL

In the mid 1840s, the Navy extended the boundary wall toward the tide water mark, near Shiphouse G, at the western edge of the yard and from the masthouse to the east quay wall at the opposite end. This completed the enclosure of the naval installation from the growing commercial district just beyond its boundaries. The Navy opened an entrance near the lower quarters to facilitate traffic at the yard's eastern end, allowing naval personnel more direct access to the Chelsea Bridge.[28] The substantial wall that surrounded the property clearly imposed both a physical and visual separation from the surrounding town, whose burgeoning economy edged toward the Navy's installation. Outside of the yard, Charlestown's ice export trade flourished, trade activities enlivened the wharves that ranged along Water Street, and the rail line that whisked goods from the port inland to the Boston & Lowell Railroad. Inside the wall, the yard's ornamented promenade probably offered a cloistered haven from Charlestown's teeming industrial landscape.

DEVELOPMENT IN THE AGE OF STEAM, 1853-1869

After the Mexican-American War, the Navy stood indecisively at a technological crossroads, subject to the vicissitudes of American foreign relations and domestic crises. In 1853, the Navy had seventy available ships, many of which had languished at the nation's navy yards under the Democratic Party's opposition to naval expansion. Between 1852 and 1855, Charlestown's repair work, limited to ten Navy vessels, reflected the increased competition from docking and repair facilities at Portsmouth, New York, Pensacola, and Norfolk.[29] Yet, Charlestown benefited from a change in the nation's political landscape. In 1853, President Franklin Pierce adopted a vigorous expansionist foreign policy that, together with continued domestic territorial expansion, required modernization of the aging Navy and the nation's outdated naval yards. Congress appropriated funds for construction of six steam-powered, screw-driven frigates. Within two years the steam frigate *Merrimack* was launched from one of the yard's shiphouses (Figure 3.11). The frigate *Cumberland*, returned to Charlestown and was cut down to a 28-gun sloop-of-war that reflected a mid-century trend towards smaller naval vessels.[30] Congressional support for naval construction resulted in a quarter of a million dollars for new structures and improvements at the Charlestown facility.[31]

At the outset of the American Civil War, the volume of activity at the yard exceeded that of any previous period, including repair of twenty ships—many of them powered by steam—and construction of the steam-propeller sloops-of-war *Hartford* and *Narrangansett* (in Shiphouses H and 39 respectively). In 1861, when the seceding Southern states adopted a constitution for the Confederated States of America, yard activity peaked once again to meet war-time needs. Between 1861 and 1865, the yard constructed seventeen new vessels, outfitted and launched twenty-three additional vessels constructed at private yards, converted forty-three vessels, and repaired between 100 and 130 vessels. To carry out this work, yard employment increased to almost 5,000 workers by 1864.[32] At the end of the Civil War, the Union had accumulated a fleet of more than 600 vessels.[33] Since the Confederacy was able to build and acquire ships in England for use as either commerce raiders or blockade runners, the Union Navy faced a formidable fleet and adopted two tactics. Large vessels were needed to establish blockades for major ports along the Atlantic and Gulf Coasts and smaller boats were needed to take control of ports along major inland rivers.[34] The five types of vessels built or outfitted in Charlestown included cruisers, steam sloops-of-war, ironclad

[28] Bearss and Black, 5, 21, 22.
[29] Bearss and Black, 89, 100.
[30] Handbook, 29, 31.
[31] Bearss and Black, 89.
[32] Bearss and Black, 167.
[33] Bearss and Black, 150.
[34] Hagan, This People's Navy, 167.

monitors, small gunboats, and double-end sidewheeler gunboats. The *Monadnock*, a double-turreted ironclad considered the "best monitor afloat" and five double-ended sidewheelers, were destined for the Union's "Brown-water" Navy on the shallow rivers of the South.[35]

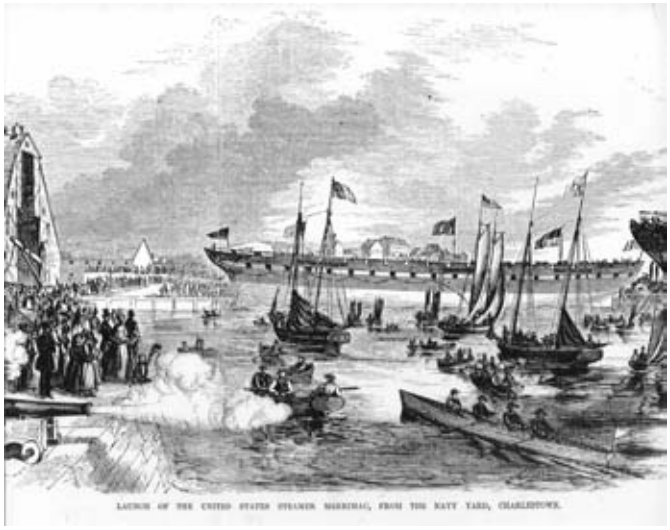


Figure 3.11: Engraving of the launch of the *Merrimack* with a shiphouse in the background (far left). The *Merrimack* was later converted by the Confederacy in to the armor-covered *Virginia* (BOSTS 11979).

RAILROAD LINES AND UTILITIES

The construction of a railroad system for the yard was an important addition during the Civil War, which became operational in November 1865. The Fitchburg Railroad extended the Charlestown Branch Railroad, running along Water Street, into the yard primarily for munitions delivery.[36] This allowed the yard not only to move materials more easily within the yard but also to receive shipments from suppliers by rail. By 1869, the yard had 1,417 yards of rail trackage, including spurs to the wharves and the Machine Shop (Building 42).[37] Paving projects along the Main Avenue and between the timber sheds increased plant efficiency. During the war, the Navy ceased using well water and connected to the Boston water system supplied by Cochituate Waterworks and installed thirty-six hydrants throughout the yard. The yard also installed a connection to the Mystic River as a contingency source.

WATERFRONT

A changing of the architectural guard roughly coincided with Charlestown's financial windfall. Following the completion of the 1840 portfolio, Parris was only hired on a project basis to supervise certain jobs, while the Naval Constructor, Samuel Pook, supervised civil engineering work in the yard. In 1852 Parris died and was succeeded by Joseph Billings. At first Billings continued to design within the classical vocabulary of his predecessor. Parris favored granite and Billings favored brick. With increased appropriations between 1852 and 1855, Billings oversaw construction of the enormous Machine Shop complex (Building 42) with a 240-foot chimney, which would dominate the waterfront when completed in 1859. Construction of Billings' quadrangular design for Building 42, on the site of the former blacksmith's shop, provided space in a machine shop, foundry, and smithy for vital activities in

[35] Handbook, 36, 42.
[36] The railroad track system was originally installed for horse drawn cars. Ann Booth and Edward Henson, "National Register Nomination: Hoosac Stores 1 & 2; Hoosac Stores 3," (1983), Item Number 8, 1.
[37] Bearss and Black, 193-97.

the Navy's conversion from wind to steam power. The new complex represented the most dramatic program of plant expansion since completion of the Dry Dock and Ropewalk in the 1830s and, moreover, the Navy's technological revolution. The brick structure was larger in scale than any previous construction. It was fitting that this emblem of the Navy's growing commitment to steam power rested on fill over a portion of the central timber basin.[38] In 1857 silting near the shoreline, increasingly more acute with tidal flat reclamation, led the yard to acquire a dredge to deepen the Charles and Mystic Rivers where they fronted the yard.

During the Civil War, much of the Navy's construction program reflected the immediate needs of the Union effort, but there Navy made some permanent improvements to the Charlestown Navy Yard during this period. In 1863, Congress authorized payment to the owners of White's Wharf, and the yard took possession of the 2.3-acre property at the boundary along its western shoreline. Increased production and the use of steam technology demanded certain immediate infrastructural improvements. Dry Dock 1 was extended, adding 65 feet to a floor length of 368 feet, and an overall length of 393 feet. Coal was stock piled along the waterfront in many locations since the yard still lacked an internal rail system until 1865. The new Machine Shop (Building 42) served as the hub of operations (Figure 3.12).

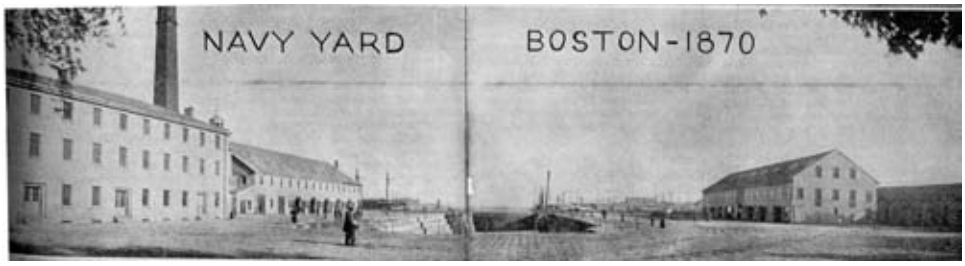


Figure 3.12: Buildings 22 and 24, Dry Dock 1, the Shears in the distance, and the Shiphouse in 1870 (from *Boston Navy Yard News,* 10 February 1945).

UPPER YARD

Joseph Billings maintained his office in the Muster House (Building 31), an unusual structure he built between 1852 and 1854. Commandant Francis Gregory requested a plan for the Muster House "similar to the one in New York." The octagonal brick building, with a surrounding porch, served as the civilian workers' mustering post (Figure 3.13).[39] More importantly, the stylistic departure evident in the Muster House paralleled a transformation in the yard's industrial landscape during Billings' tenure as chief architect and civil engineer. Soon after daily musters were moved to the new Muster House, yard workmen requested a new gate in the yard wall for convenience. In 1853, Gate 4 was opened along Chelsea Street and a guardhouse established at the west end of the Ropewalk (Building 58) in order to accommodate the growing stream of workers.

Civil War activities demanded expedient measures in plant development; temporary buildings, hastily erected and often unnoted in yard records, housed additional tools and stores. These temporary structures, together with large quantities of accumulated stores, probably gave the yard a cluttered appearance. The shot park was expanded to include the site of the anchor park across from the Marine Barracks, and anchor storage was temporarily

[38] Bearss and Black, 89, 111.
[39] Between Fifth and Sixth Streets, the block with the Muster House (Building 31) is owned by the Boston Redevelopment Authority and the block with the Shell House occupied by the Boston Marine Society is within the National Park Service portion of the yard.

transferred to an area south of Building 5 (Figures 3.14 through 3.19).[40] The replacement of twenty-four dead trees enhanced the yard's appearance.[41]



Figure 3.13: A c. 1870 view of the Muster House (Building 31) constructed between 1852 and 1854. The photograph also shows post-and-chain fence, post-and-rail fence, wooden boardwalks, and cobble-lined street drains and granite block paving. A third floor was added in 1871 (BOSTS 9315).

[40] Edwin Bearss and Peter J. Snell, "National Register Nomination: The Historic Resources of the Charlestown Navy Yard," (1978) Item Number 7a, 28.
[41] Bearss and Black, 112, 125-26, 128 and Black, 47.



Figure 3.14: The gun and shot parks in the shipyard mall (recreation area) of the yard, 1874. Tree-lined First Avenue is in the foreground, and tree-lined (elms) Second Avenue is to the north in the background. The Officers Quarters (Building 265) is to the west (left) behind the flagpole in the park (BOSTS-nhf150).

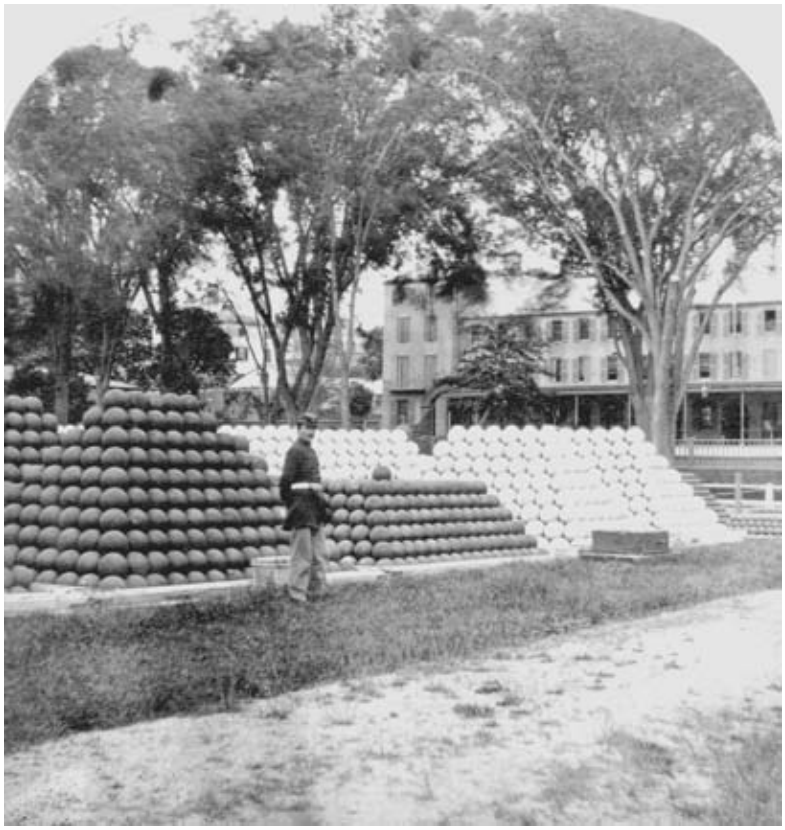


Figure 3.15: Circa 1865 view facing northwest of the shot park between First and Second Avenues with elms fronting the remainder of the parade ground and Marine Barracks. Each pyramid contains approximately 700 cannonballs. After the Civil War, the Navy stored excess armament in the gun and shot parks (BOSTS-8875).





Figure 3.16: View west of shot park with Officers Quarters visible in distance, c. 1870. Note the tree-lined paths and post and rail fence (left: Hawes 269 and right: from Portsmouth Naval Shipyard Archives).



Figure 3.17: Shell House and guns, c. 1870 (from Portsmouth Naval Shipyard Archives).



Figure 3.18: View east of the gun park with Buildings 32, 36, 42 and 22 in the distance and the 240-foot chimney of Building 42, c. 1870 (from Portsmouth Naval Shipyard Archives).



Figure 3.19: Anchors were stored on the west end of the lower yard, c. 1870 (from Portsmouth Naval Shipyard Archives).

SUMMARY

The wartime efforts at the Charlestown Navy Yard contributed to the industrial base of the Navy. Yet, following a precedent set at the conclusion of earlier military campaigns, the end of the Civil War signaled a similar decline in plant expansion at yard. Even before the Confederate surrender at Appomatox, Secretary of the Navy Gideon Welles began a partial demobilization of the naval fleet. By 1865, he had sold half of the Navy's 671 ships, mostly the converted merchant vessels used in blockades. Demobilization activities at Charlestown included off-loading of supplies from ships and subsequent auctioning of accumulated stores, the sale of many vessels, a decline in new construction and ship repair, and reduction of the workforce. Secretary Welles articulated a plan of "rigid economy," a trend that continued until the early 1880s. At the same time Welles advocated for a modern, metal-hulled, steam-powered Navy, together with naval facilities capable of building and maintaining such a fleet. The manufacture of cordage, sails, and other canvas goods continued at Charlestown, albeit at reduced rates of production.[42]

As the yard approached its seventieth year, it portrayed both an ordered and stately appearance with its paved avenues and mature elm and maple trees, and its extensive long buildings of granite and brick, capped by the Machine Shop's 240-foot tower (Figures 3.20 and 3.21). The yard embraced modern amenities including paved streets and sidewalks, a pipe-fed municipal water system, gas lighting, and a network of rail lines. Upon closer inspection, the yard likely had a more cluttered appearance, with numerous temporary buildings and large quantities of stores and materials piled along the waterfront and around manufacturing buildings. Excess armament was stored in gun and shot parks located south of the parade ground, between First and Second Avenues.[43] Numerous vessels lay in ordinary, either unlaunched, unfinished, uncommissioned, or out of commission.[44] Unfortunately, this neglect increased over the next decade.

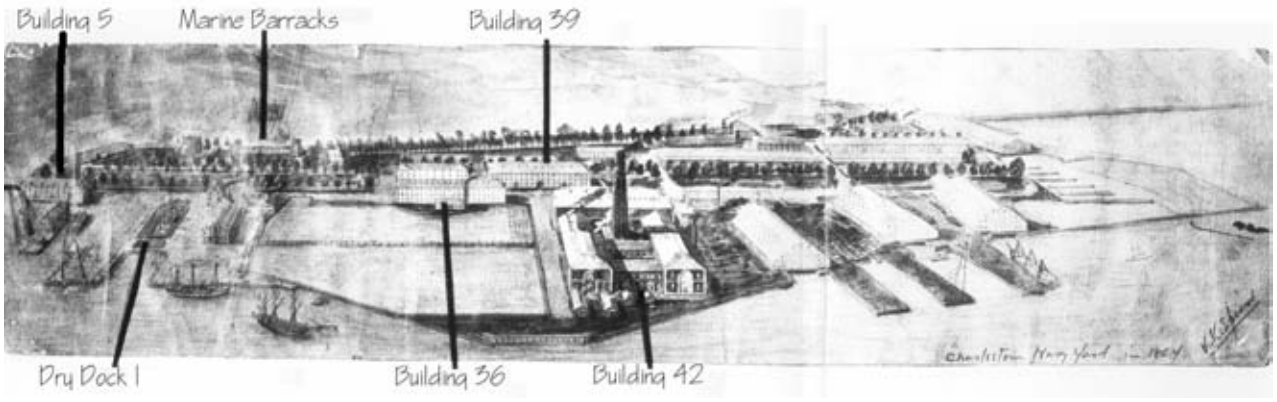


Figure 3.20: 1866 bird's eye view of the Navy Yard as interpreted by V.K. Spicer in 1904 (BOSTS 8871).

[42] Bearss and Black, 180, 210.
[43] Handbook, 29, 31.
[44] Bearss and Black, 178.

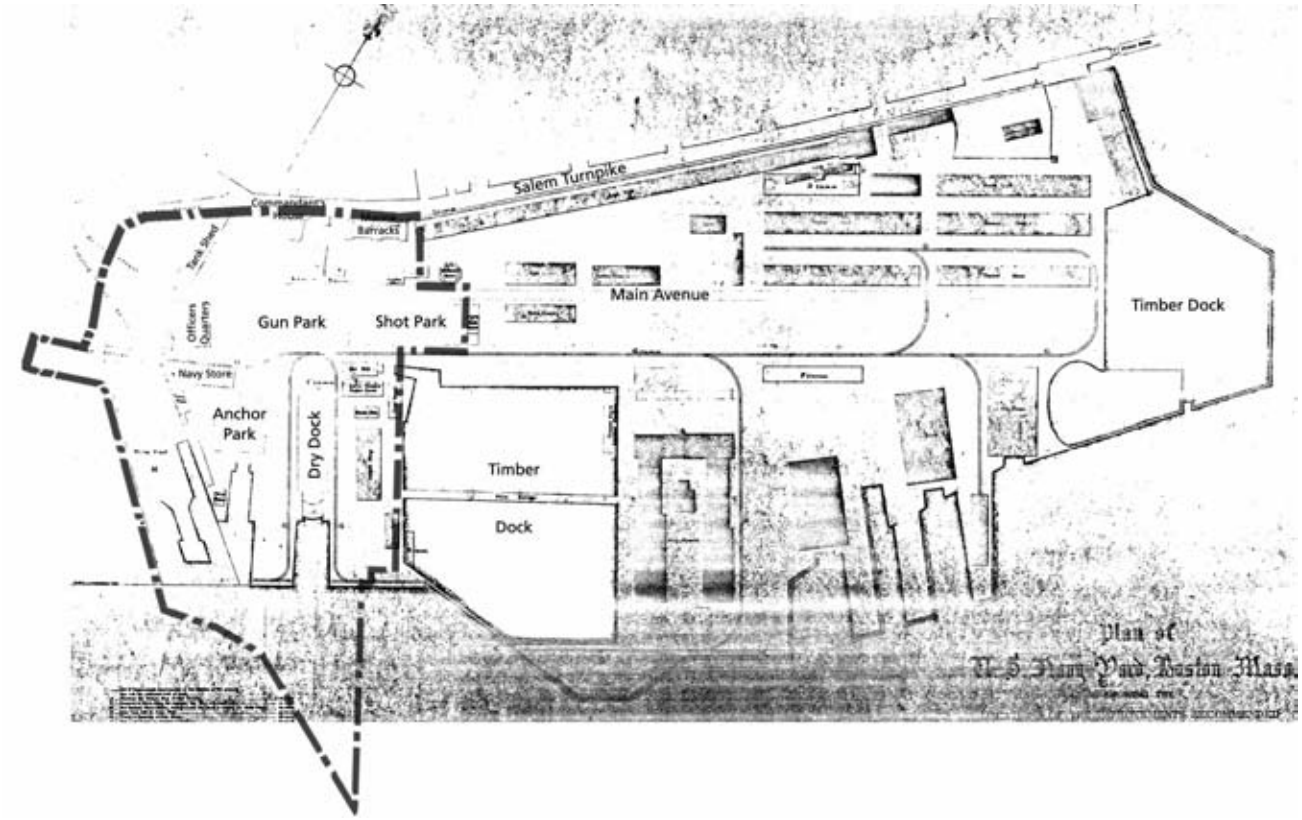


Figure 3.21: 1862 plan of the yard showing proposed rail lines, which were partially installed in 1865 (Boston NHP).

4. POST CIVIL WAR, 1869 - 1898

A radical shift in post Civil War priorities, including the diversion of funding to reconstruction programs, diminished naval activities during the 1870s and contributed to the neglect of the naval yards across the country. While European navies pursued new technologies, the U.S. Navy largely eschewed steam power and iron hulls for traditional wooden-hulled vessels. In 1874, Charlestown was annexed to Boston. In the mid 1870s, Alfred Thayer Mahan, who later became an influential writer on naval strategy, was appointed as the senior aide to the commandant at the Boston Navy Yard. While in this post, he resided in one of the yard's officers quarters and in 1875 wrote "there is little doubt that the Navy is rapidly getting into a deplorable condition, as that the fault lies largely with our present Secretary." Mahan's criticisms also pointed out corruption at the yard and in the Navy at large which crippled this branch of the service during the presidency of Ulysses Grant.[1] The Navy continued to decline in the late 1870s during the presidency of Rutherford Hayes when the U.S. Congress limited naval expenditures. Congress reduced the fleet from over 600 vessels during the Civil War down to 139 ships, with only 50 in commission.

POSTWAR DECLINE, 1882 APPROPRIATIONS, AND MANUFACTURING

By 1870, the Charlestown Navy Yard had tripled its original size of 24.5 acres, mostly through three decades of expansion over tidal flats beyond the granite quay.[2] Most of the buildings rested on driven wood pilings and the filled land was leveled, giving the yard a fairly even topography. During a general period of naval decline that lasted through the 1880s, the yard survived as an important manufacturing and repair facility, but with personnel reductions, the yard's facilities deteriorated. Unlike the extensive yard additions in previous decades, the Navy removed many small and temporary structures.[3] The Navy, however, did construct nine new buildings during the 1870s, four of which were temporary structures. In 1874, Charlestown launched the wooden-hulled screw sloop *Vandalia* and the experimental iron-hulled torpedo vessel *Intrepid*. These concurrent launchings reflected the Navy's "lukewarm and indecisive response to changing naval technology."[4]

In the 1880s, a combination of political, technological, and intellectual changes in Europe influenced American Naval policies, and ultimately affected the Boston Navy Yard. Acting upon the recommendations of Secretary of the Navy William Chandler and Chairman of the Naval Advisory Board Rear Admiral Robert Shufeldt, the House Naval Affairs Committee called attention to the deterioration of the U.S. Navy and rallied support for reform.[5] The Navy Appropriations Act of 1882 made provisions for construction of modern ships of war. These steel cruisers, known as the "ABC" vessels, comprised the initial core of a "New Navy" constructed to meet the challenge of European sea power. For Charlestown, the immediate effect of the new construction campaign was devastating. The same legislation that authorized the "New Navy" established new criteria limiting funds for the repair of sail-powered vessels, effectively suspending repair and construction duties at four naval yards, including Charlestown. Further economizing stripped equipment from the Charlestown yard in order to free funds for the new construction initiative.

In June 1883, Secretary Chandler ordered all work at the yard suspended except for the manufacturing of rope and sails. In December 1886, Chandler's successor, William C. Whitney, decreed that as of February 1, 1887, the yard

[1] Bearss and Black, 279-80.
[2] Filling and seawall construction increased the dry land area to 85.3 acres. Carlson, 17.
[3] Bearss and Black, 281.
[4] Handbook, 37-39.
[5] Hagan, 185-6.

would be used "as a permanent, general manufacturing yard for articles of equipment."[6] By 1890, the yard had become the only naval shipyard producing rope, chain, anchors, and sails. The Department of Equipment remained the largest single employer in the yard; supplying the general needs of the Navy and generating steady—though limited—activity in the lower yard. Though some public figures advocated sale of the yard, it was retained in reserve, to be activated in the event of national emergency. Consequently, the dry dock, wharves, and other critical facilities were ostensibly maintained in a serviceable condition necessary for reactivation. The yard acquired no new industrial, storage, administrative, or residential buildings in the late 1880s. During this time workmen removed nine buildings, mostly decayed wooden sheds.[7] The yard would remained obsolescent until the 1890s when Alfred Thayer Mahan's influential book on naval strategy, *The Influence of Sea Power upon History*, cast a new light.[8]

CIRCULATION AND UTILITIES

The installation of railroad lines beginning in 1865 signaled a shift in both circulation and technology, one in which First Avenue served as the major axis of supply and production. In 1877, the yard's civil engineer reported a general state of disrepair in which "Roads, walks, gutters and drains need a complete overhauling." Wharves, cranes, scales, tracks, and water and gas works required repairs, but the yard would mark time without major improvements for much of the remainder of the century.[9]

Most of the yard's roadways were unpaved, with the exception of portions of Main (Second) Avenue. In 1891, yard workers replaced the cobblestones between the Navy Store (Building 5) and the Dry Dock Engine House (Building 22), along the roadway fronting the gun park. This granite block paving was extended along Main Avenue to the Anchor Shop (Building 40) in 1893. Reconstruction of the yard's railway track system proceeded from the yard entrance to the head of Dry Dock 2 (authorized in 1898) and from the Shear Wharf to the Sawmill (Building 67).[10]

Rehabilitation of the yard's water system included excavation and replacement of old mains, cleaning the reservoir near the Timber Shed (Building 75), and installation and repairs of pipes, hydrants, and fixtures between 1889 and 1892. In 1895, the yard's sewage system connected to the Metropolitan Intercepting Sewer, transporting waste previously discharged into the harbor near the Chelsea Bridge to sewage outfalls at Moon and Deer Islands. Electric lights, powered by the Lighting Plant (Building 28), replaced gas illumination in the yard. By the middle of the decade, all wharves had been repaired and rendered serviceable, with the exception of the thoroughly decayed and irreparable Wharf 4.

WATERFRONT

In 1870, the Navy built a fourth Shiphouse (Building 92) between Wharves 1 and 2 in the vicinity of the yard's former first shiphouse. The new Shiphouse housed the construction of the first iron-hulled vessel, the torpedo ram *Intrepid*, though the Shiphouse itself was considered outdated and torn down twenty years later. Four wharves extended into the harbor, providing the yard with nearly one thousand feet of docking space.[11] Constantly battered by waves, changing tides, and wind, the wooden wharves and many waterfront structures required extensive maintenance and repairs, which the Navy struggled to keep up with (Figure 4.1).

[6] General Order No. 356, Dec. 18, 1886, quoted in Black and Bearss, Charlestown Navy Yard, 1842-1890, p. 372.
[7] Bearss and Black, 350-51, 355-56 and Handbook, 45, 50.
[8] Hagan, 190.
[9] Bearss and Black, 281, 295 and Handbook, 39.
[10] The new track system, which utilized locomotive-driven railroad cars, was again improved in 1902 and 1937.
[11] Bearss and Black, 236.

By 1880, the yard's physical plant reflected the Navy's technological limbo having had few improvements since the 1850s. A coaling wharf to service steamers and a new rolling mill for iron plate coexisted with the large sail loft and wet timber dock that served the Navy's wooden sailing vessels. Though the yard had greater capacity with rail lines, four shiphouses, and two building ways, oxen still pulled timber from docks to the sawmill (Figure 4.2). The waterfront remained relatively unchanged from the late 1860s until the turn of the century, when the timber dock was replaced with a second dry dock. The Machine Shop (Building 42) on the former site of the 1820s blacksmith shop, prevailed over the waterfront with a 240-foot smokestack as a visible reminder of the Navy's incipient transition from wind to steam power (Figure 4.3). The steam frigate USS *Wabash* arrived at the yard in 1875 and eventually replaced USS *Ohio* as the yard's receiving ship until 1912.

In the 1880s, the yard's shoreline illustrated the facility's marginal role in new naval construction. Four vessels remained unfinished on the ways and four more remained in ordinary, provoking an 1882 newspaper article's reference to the Charlestown waterfront as "Rotten Row." In 1884, when the Navy ordered the sale of vessels in ordinary, workers dismantled the nearly completed ship-of-the-line *Virginia*, stored on building ways in Shiphouse I since 1824, as well as two wooden steam ships and a monitor constructed during the Civil War.[12]

Between 1883 and 1897, the Navy used the Dry Dock five times for naval repairs, marking an all-time low in repair work at the yard. Though private firms contracted use of the facility for repair work, the Dry Dock remained in disuse for long periods of time, including a nearly two-year interval between May 1884 and March 1886.

In 1890, the Navy directed the largest of the three "ABC" vessels, the steel cruiser *Chicago*, to Charlestown for repair, but later turned it away from the inadequate and deteriorating Dry Dock. During the previous year, newly appointed Secretary of the Navy Benjamin T. Tracy had observed the "tumble down condition of navy-yard property." Most buildings were in need of repair, the deteriorated Dry Dock was only marginally functional, and most of the yard's thoroughfares remained unpaved and seasonally unserviceable. Only one of the six wharves was in good repair and lacked a crane or shears capable of handling heavy weights. While many of the stone buildings were repairable, the yard was largely "unsightly and unhealthy."[13]

A bright sight amongst the dilapidated shoreline was USS *Constitution*, which in 1897 was towed to Boston to celebrate her centennial, decommissioned, and permanently berthed at the yard. After clearing the Boston Roads in July 1798, USS *Constitution* had entered nearly fifty years of active duty before technological change rendered her obsolescent. During the remainder of the century she fulfilled various ancillary roles, serving as a school ship, a training ship, and finally a receiving ship before returning to her homeport. Though rebuilt in 1906 and 1907, she remained laid up at Charlestown and destined largely for a ceremonial function.

UPPER YARD

During the 1870s and 1880s, the yard was open to visitors every day but Sunday. Residents of Charlestown came to picnic, walk along the elm-lined streets, and admire the gardens of the commandant, which were popular for their selection of ornamental trees and shrubs, flower beds, and winding paths. Both First and Second Avenues were lined with mature elm trees planted as early as 1823.[14] From the back porch, facing the waterfront, the steps of the Commandant's House (Quarters G) descended past a row of fruit trees, then under the arbor constructed during the 1850s. The arbor was covered with dense vines, possibly grapes. A walkway to the east was lined with a short section of wood fence painted white, with round widely spaced pickets. In the eastern lawn, a circular garden bed was filled with herbaceous plants. In the center, a tall post supported a bird house (Figure 4.4).

[12] Bearss and Black, 322, 335 and Handbook, 45-46, 50.
[13] Bearss and Black, 376, Black 23, 41-42, 44, and *Handbook*, 45, 50.
[14] Brockway and Todisco, 3-4.

The most noteworthy construction in the upper yard in 1873 was the yard's new Scale House (Building 19), used for weighing wagons. The Navy built the weighing facility just south of the first gun park (by the present flagpole).[15] Navy plats identified gardens near the Officers Quarters (Building 265) and Commandant's House (Quarters G) and mature trees lined First and Second Avenues (Figure 4.5, 4.6, and 4.7). The enclosed parade ground in front of the Marine Barracks (Quarters H-I-K) and the adjacent shot and gun parks preserved verdant open space.[16]

Awnings graced the former Shell House (Building 32), converted for use as the Commandant's Office, and a tennis court replaced the adjoining shot park. An alleé lined "Flirtation Walk," the boardwalk that ran along the south wall of the Ropewalk (Building 58). Two narrow strips of lawn, which supported the alleé, separated the promenade from the building and the adjoining anchor park (Figures 4.8 and 4.9).[17]

LOWER YARD

Three temporary wood sheds (Buildings 81, 82, and 83) and four industrial shops, including the Iron Platters Shop (Buildings 25, 52, 61, and 66) were built in the central and eastern portions of the yard. Granite-faced buildings lined the gridded streets in the central yard's former open marshland provided storage space for materials associated with the wood-hulled sailing fleet.

By the end of 1890, Commodore Alfred Thayer Mahan's advocated for vigorous maritime commerce and for the creation of a great United States battle fleet second to none. Congress authorized the nation's first full-sized battleships and an appropriation of $152,000 for new machine tools and modernization of the yard.[18] Initial improvements pertaining to the yard's mission to repair modern war ships centered upon outfitting and refitting shops, including repairs to the Machine Shop and Boiler House (Buildings 42 and 43), the installation of new equipment, and the conversion of the Timber Bending Mill/Shipfitters Shop (Building 66) into an iron plate shop. The yard continued the production of both fiber and wire rope and sails.[19] Under Whitney's orders, the production of anchors and anchor chain was shifted to Boston. Anchor chain would become the yard's major industrial activity in the twentieth century. While the capacity of the yard to serve the modern Navy expanded, "progress improving the plant of the Boston Navy Yard in the 1890s proved to be faltering, frequently incomplete, and sometimes temporary."[20]

SUMMARY

The late-nineteenth century was a period of inactivity for the yard and a time for redefining its role with respect to other naval yards. The yard's operations were hampered by the Navy's slow transition from wood and sails to steel and steam. By 1898, the Navy's efforts to divest itself of outdated infrastructure were clearly visible. The Navy razed nearly a dozen wooden buildings, including the recently-built Shiphouse (Building 92) and the Commandant's Office (Building 29). Over burdened with costly naval facilities across the country, the functions of the yard shifted to manufacturing for rope, chain, anchors, and sails.

Walled off from Charlestown, the yard's inactivity contrasted with the commercial and residential growth of Charlestown, now a part of Boston. With few improvements, the upper yard and waterfront retained much of its

[15] This first Scale House, located south of the first gun park near the present flagpole, was later replaced by the current Scale House (Building 19) in 1919. It is pictured in Figures 5.3-5. Bearss and Black, 236 and Handbook, 17.
[16] Since the 1920s, Quarters H-I-K has been called Building I.
[17] Black, 54.
[18] Hagan, 192; Black 41-49.
[19] Black, 49, 51-52, 98-99.
[20] Black, 61.

character from the Civil War era. The extant trees continued to grow and provide shade in the upper yard around the gun park and in the lower yard along Flirtation Walk. Mature elms and other tree species arched over the yard's oldest buildings such as the Commandant's House, Marine Barracks, Officers Quarters, and Navy Store (Quarters G, Quarters H-I-K, Building 265, and Building 5). The Navy surfaced roads and industrial portions of the yard with granite block pavers and cobblestone sidedrains. Planks were used for sidewalks and around piers. Rail lines redefined circulation within the yard, though oxen were still used to move materials. Conversion of ceremonial spaces into recreational spaces or utilitarian functions, such as the conversion of a portion of the shot park into a tennis court, started a trend that would continue into the twentieth century (Figures 4.10 through 4.16). Most of the masted ships that once dominated the viewshed of the yard were scrapped. Only USS *Constitution* remained as an enduring symbol of the first century of the Navy. Like during previous periods, war-time needs soon revitalized the yard.



Figure 4.1: An 1870s view of the waterfront from the Bunker Hill Monument. Note the gun park and alleé along Second Avenue. (From the Society for the Preservation of New England Antiquities, SPNEA 12426B).

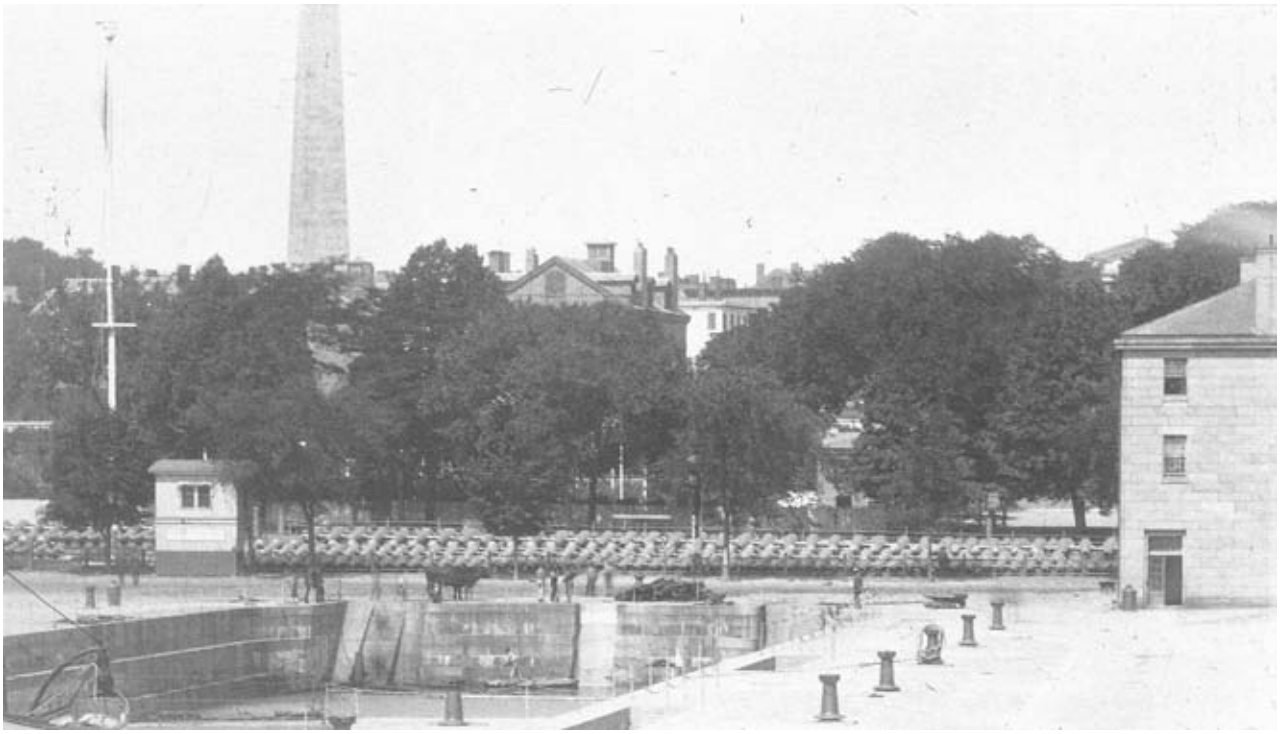


Figure 4.2: View north of the head of Dry Dock 1 in 1872 looking towards the gun park and Bunker Hill Monument. Mature trees lining First and Second Avenues obscure all but the roof of the Commandant's House. Oxen, used to haul timbers, stand by the dry dock (BOSTS-8880).



Figure 4.3: C. 1874 view north of the yard from East Boston. From west (left) to east, buildings include the Smithy with multiple chimneys (removed in 1875), the Carpenters Shop (Building 24), Dry Dock Pump House (Building 22) with a large chimney, the Tinners and Plumbers Shop (Building 28), the long arched wall of the yard's battery, with the flagpole and Magazine (Building 48), and Bunker Hill Monument behind it. In the center is the Machine Shop, Foundry and Smithery (Building 42) with its 240-foot smokestack and several temporary waterfront sheds in front of it. Three Shiphouses (Buildings 68, 71, and 73) are visible to the right and in the water, USS *Wabash,* the yard's receiving ship (BOSTS-8639).



Figure 4.4: Commandant's House (Quarters G) in 1871. Note the garden, fruit trees, and bird house (BOSTS-9181).



Figure 4.5: Officers Quarters (Building 265) in 1882 with elm trees (BOSTS-15782).



Figure 4.6: Shell House (Building 32) Storehouse (Building 34), Gun Sighting Shed (Building 35), and Ordnance Store (Building 39) at eastern end of the gun park with trees along First Avenue, 1874 (BOSTS-9339).



Figure 4.7: View east of Gate 1 in 1874 showing the new granite and iron gateposts with the older wooden picket fence remaining. The roads, surfaced with granite pavers, are in disrepair (BOSTS-8940).

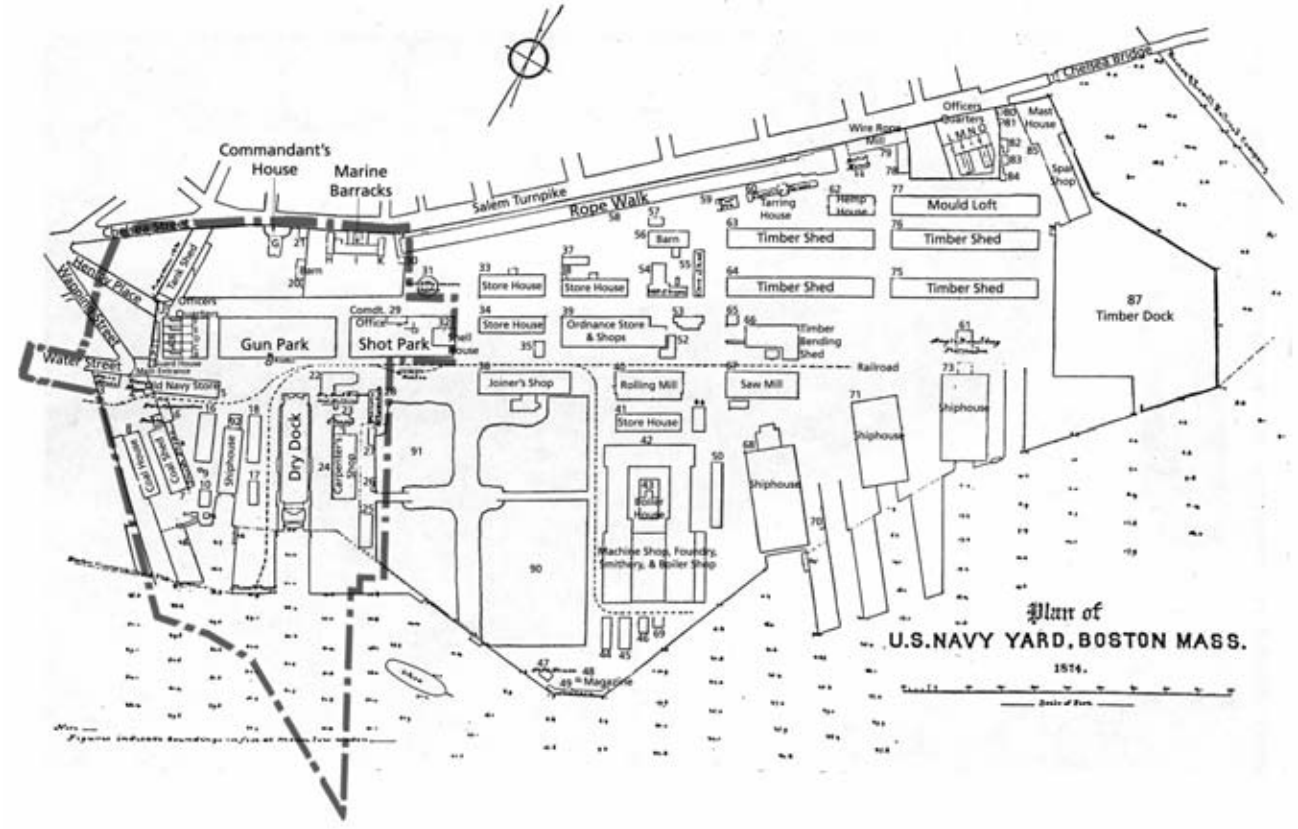


Figure 4.8: Digitally enhanced plan of the yard in 1874 showing the Shiphouse (Building 92) built in the 1870s and demolished in the 1890s between Wharves 1 and 2. Current park boundary is outlined (Prebble, 1875*).*

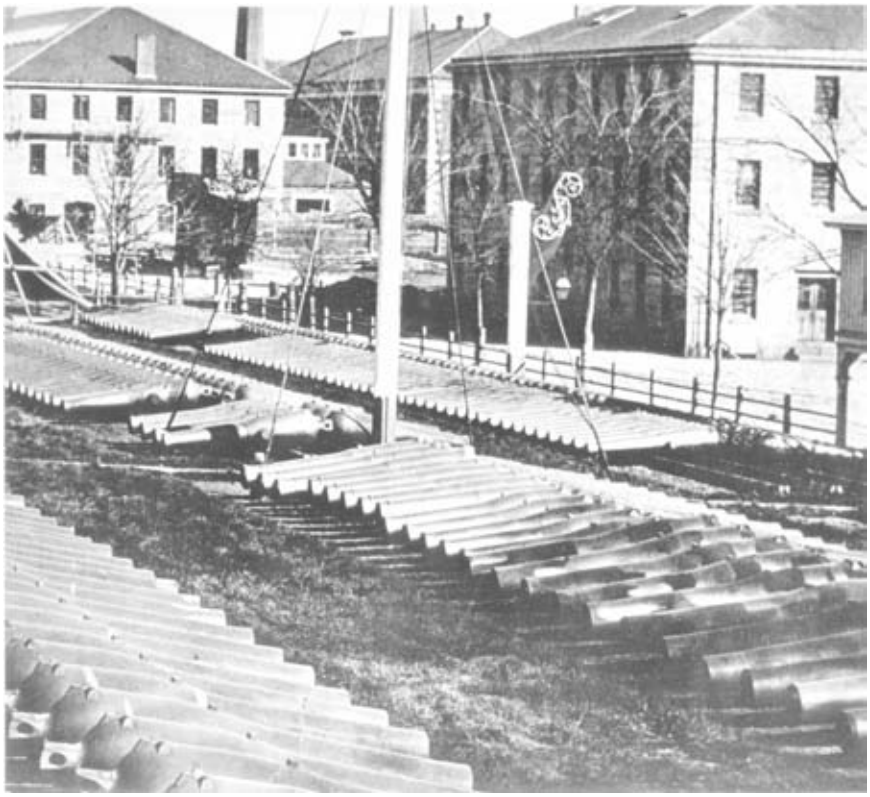


Figure 4.9: The gun park and base of flagpole, c. 1872, with Joiners Shop and Paint Loft (Building 36) and Dry Dock Engine House (Building 22) in the background (BOSTS-8880).

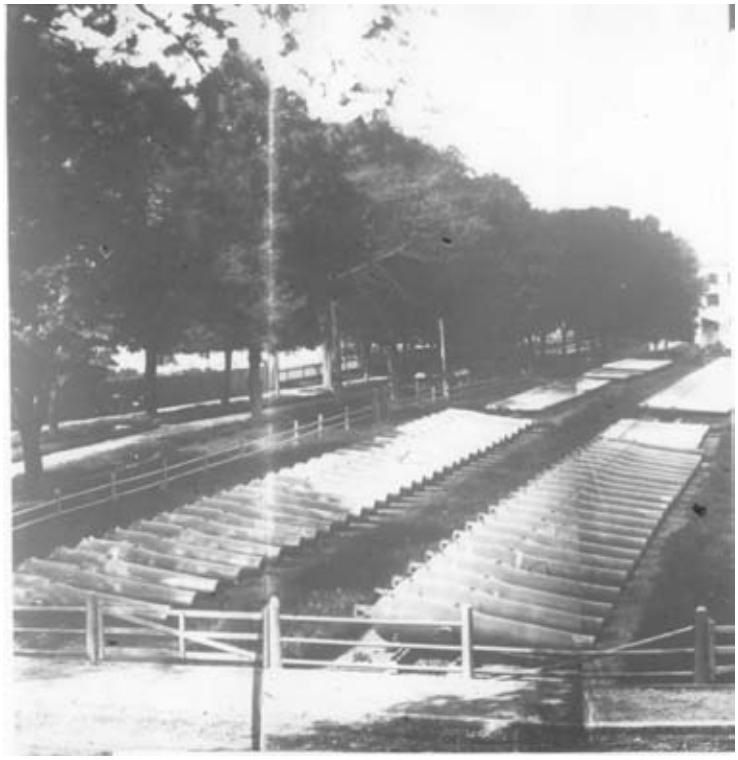


Figure 4.10: The gun park and trees along Second Avenue, c. 1874. Note The post and raol fence and the tree-lined Main (Second) Avenue (BOSTS-8880).



Figure 4. 11: The gun park with Main (Second) Avenue elms and Marine Barracks in background, c. 1874 (BOSTS-9219).



Figure 4.12: View southeast in the 1890s of a cannon ball laden cart rolling over recently installed granite block pavers. Dry Dock 1 and the Carpenter Shop (Building 24) are visible in the background (BOSTS-8788).



Figure 4.13: The Commandant's Office (Building 29) in 1874. Note the elm trees along Main (Second) Avenue (From Prebble, 1875).





Figures 4.14 and 4.15: Left: C. 1890 view of "Flirtation Walk," a promenade lined with elm trees along the Ropewalk (Building 58) with the anchor park to the right. Right: C. 1890 view of anchors in the anchor park, manufactured in the yard, each braced with two notched boards (BOSTS-9512 and BOSTS-8872).

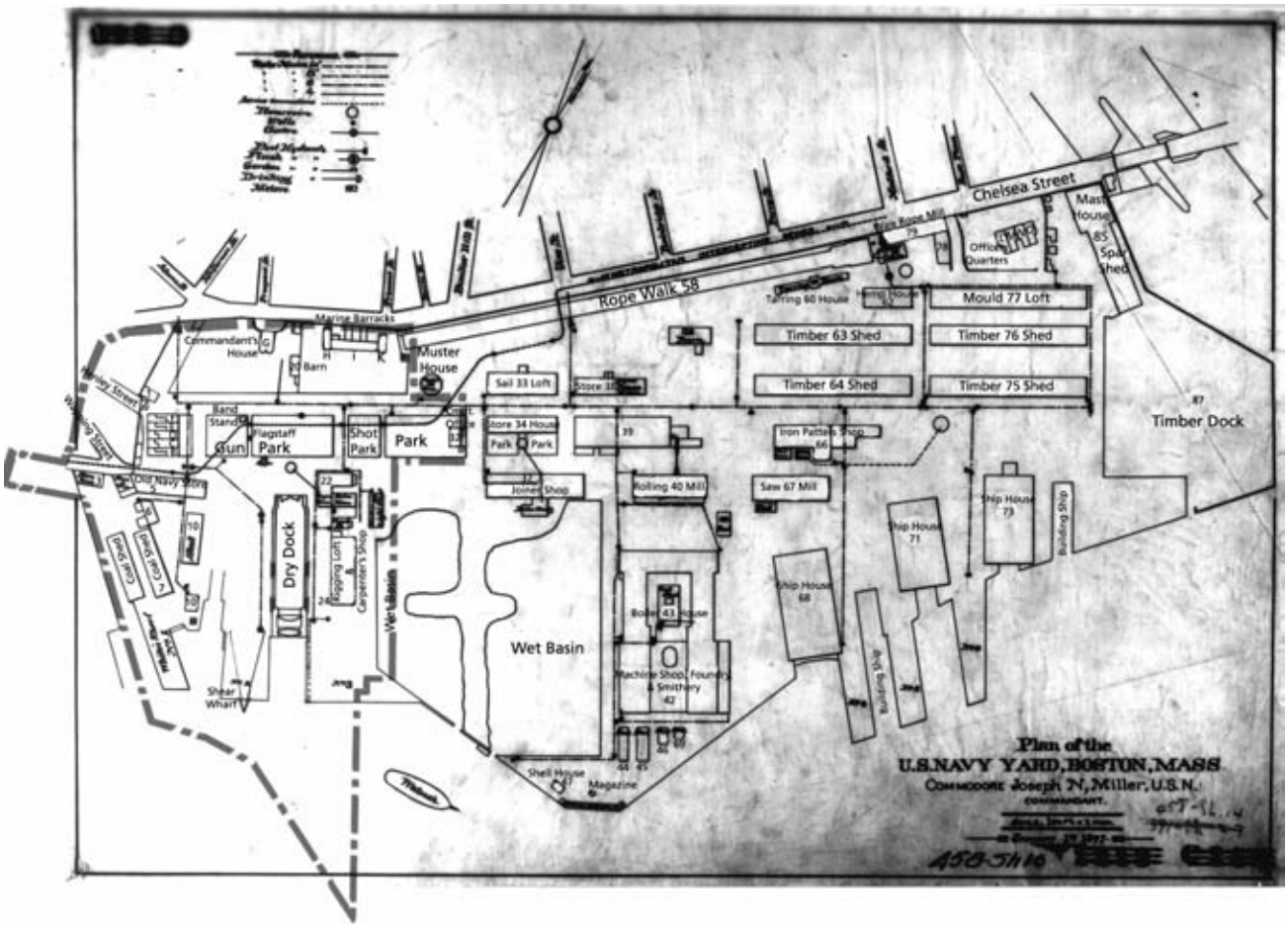
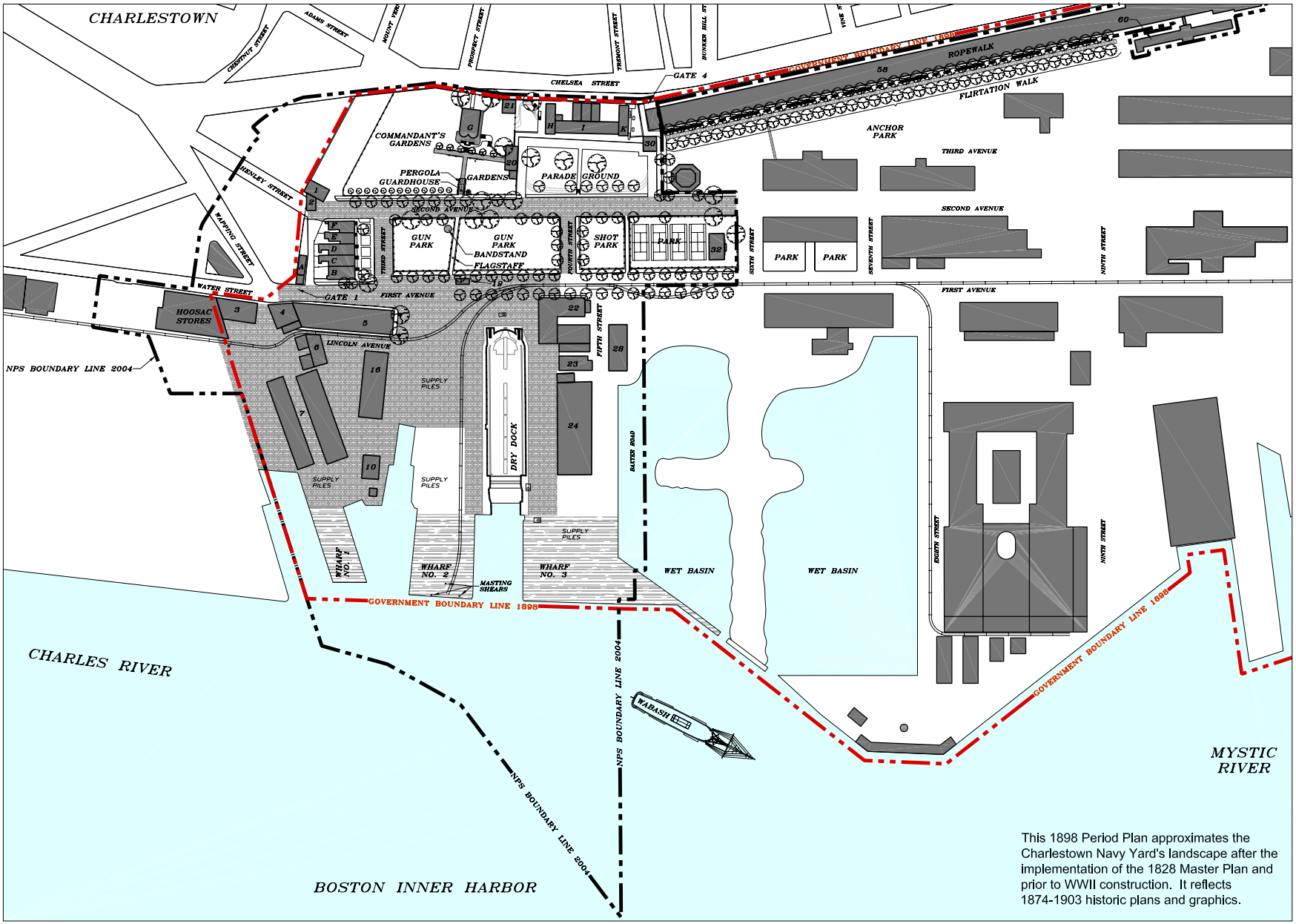


Figure 4.16: Digitally enhanced plan for the yard, 1897 (BOSTS-9048).



Cultural Landscape Report for Charlestown Navy Yard

Figure 4.17

Period Plan 1898

National Park Service
Olmsted Center for Landscape Preservation
99 Warren Street
Brookline, MA 02445
617-566-1689

SOURCES

1. Survey by Carol R. Johnson Assoc. Inc., Boston, MA 1995
2. Map of Boston Naval Shipyard 1874, 1882, 1893, 1897, 1901, & 1903
3. Boston NHP Historic Photographs

PREPARED BY

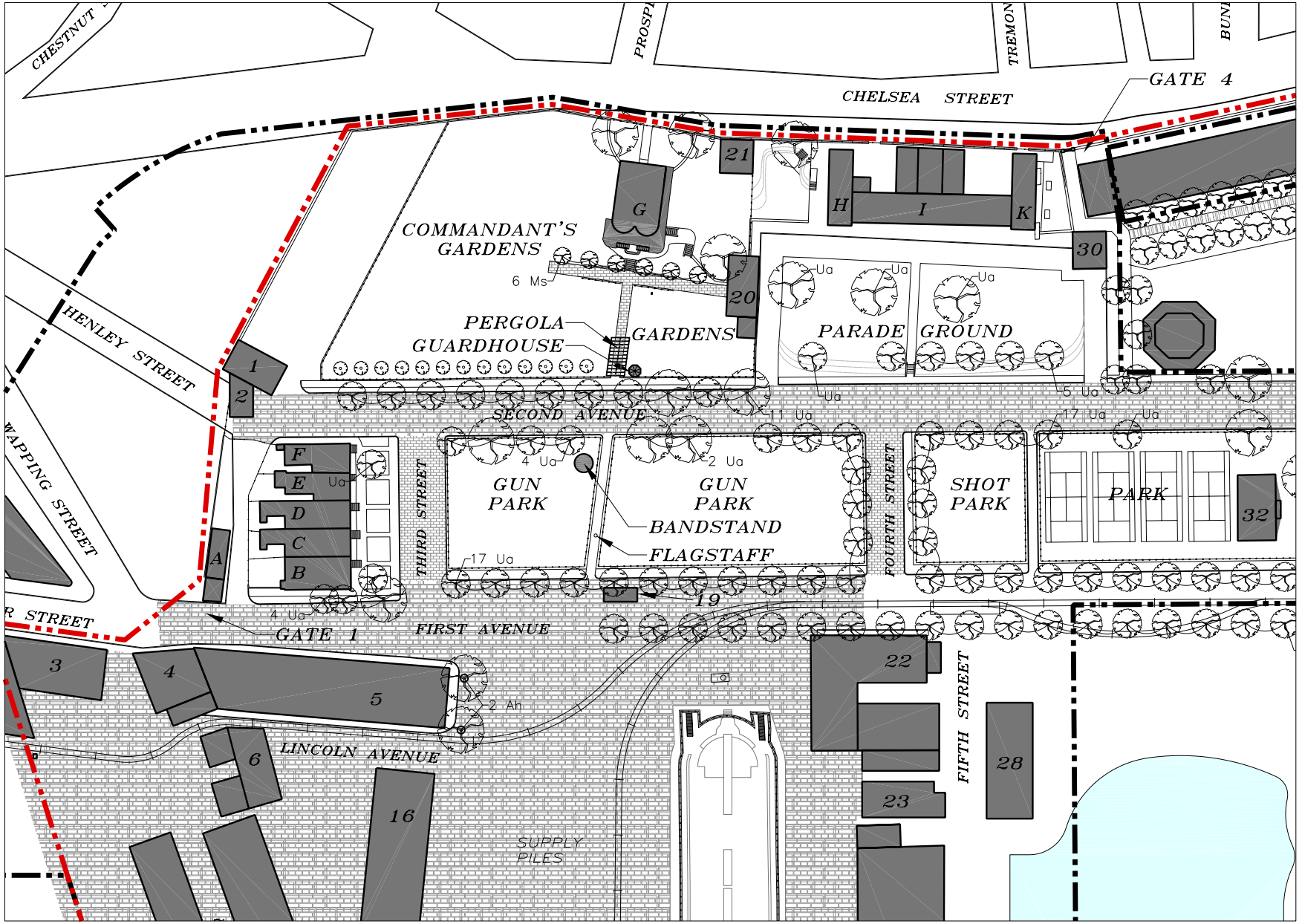
Ryan Reedy & Chris Stevens with AutoCAD 2002.
OCLP, June 2005.

Legend

Sym.	Feature
	Brick Paving
	Granite Paving
	Wood Paving
	Concrete Paving
	Chain Link Fence
	Iron Fence
	Fence on Wall
	Wall
	Railway
	Bollard
	Bollard & Chain
	Lamp Post
	Fire Hydrant
	Bench
	Capstan
	Existing Contours
	Deciduous Tree
	Evergreen Tree
	Shrub
	Hedge

Note: Please Refer To Legend Page for Features, Building/Structure Names, and Plant List.

SCALE: 1"=200'
0 100' 200'



Cultural Landscape Report for Charlestown Navy Yard

Figure 4.18

Period Plan 1898 Vegetation Plan

National Park Service
Olmsted Center for Landscape Preservation
99 Warren Street
Brookline, MA 02445
617-566-1689

SOURCES

1. Survey by Carol R. Johnson Assoc. Inc., Boston, MA 1995
2. Map of Boston Naval Shipyard 1874, 1882, 1893, 1897, 1901, & 1903
3. Boston NHP Historic Photographs

PREPARED BY

Ryan Reedy & Chris Stevens with AutoCAD 2002. OCLP, June 2005.

Legend

Sym.	Feature
	Brick Paving
	Granite Paving
	Wood Paving
	Concrete Paving
	Chain Link Fence
	Iron Fence
	Fence on Wall
	Wall
	Railway
	Bollard
	Bollard & Chain
	Lamp Post
	Fire Hydrant
	Bench
	Capstan
	Existing Contours
	Deciduous Tree
	Evergreen Tree
	Shrub
	Hedge

Note: Please Refer To Legend Page for Features, Building/Structure Names, and Plant List.

SCALE: 1"=80'

0 40' 80'

Legend

Sym.	Feature
	Brick Paving
	Granite/Granolithic Paving
	Concrete Paving
	Chain Link Fence
	Iron Fence
	Fence on Wall
	Wall
	Railway
	Bollard
	Bollard & Chain
	Lamp Post
	Fire Hydrant
	Bench
	Capstan

Sym.	Feature
	Existing Contours
	Deciduous Tree
	Evergreen Tree
	Shrub
	Hedge

Sym.	Building/Structure Name
B–F	Officers Quarters (Building 265)
G	Commandant's House
H,I,K	Marine Barracks
1	Garage & Chauffeur's Quarters (Mason's Shed)
2	Gatehouse 2
3	Storehouse
4	Storehouse
5	Navy Storehouse (Medical Offices)
6	Fire Apparatus House
7	Coal Sheds
10	Pitch House and Oakum Loft
16	C&R Foundry
19	Scale House

Sym.	Building/Structure Name
20	Tool Storage Barn
21	Stable
22	Dry Dock Engine House
23	Chapel
24	Carpenter Shop (Riggers Left)
28	Tin Shop (Electric Light Plant)
30	USMC Officer–of–the–Day's Quarters
32	Shell House (Commandant's Office)
58	Ropewalk
60	Tar House

Plant List

Sym.	Botanical Name	Common Name
Aa	Ailanthus altissima	Tree of Heaven
Ah	Aesculus hippocastanum	Common Horsechestnut
Lt	Liriodendron tulipifera	Tuliptree
Ta	Tilia americana	American Linden
Ua	Ulmus americana	American Elm

Cultural Landscape Report for Charlestown Navy Yard

Figure 4.19

Period Plan 1898 Legend

National Park Service
Olmsted Center for Landscape Preservation
99 Warren Street
Brookline, MA 02445
617-566-1689

SOURCES
1. Survey by Carol R. Johnson Assoc. Inc., Boston, MA 1995
2. Map of Boston Naval Shipyard 1874, 1882, 1893, 1897, 1901, & 1903
3. Boston NHP Historic Photographs

PREPARED BY
Ryan Reedy & Chris Stevens with AutoCAD 2002.
OCLP, June 2005.

5. REVIVAL OF THE YARD AND WORLD WAR I, 1898-1934

Between the years 1898 and 1931, the Boston Navy Yard underwent expansion and modernization in response to the Spanish-American War, World War I, and the mounting tension in Europe. The conversion to steam engines then to diesel, changes in defense technology, and new ship designs necessitated new facilities and larger docking areas. Major changes in the physical plant included the construction of Dry Dock 2, addition of some eighty buildings in the yard, and the extension and reconfiguration of the piers. America had emerged as a world power following the Spanish American War. With the acquisition of colonial possessions, the U.S. needed a strong navy equal or superior to those of the two major European naval powers, Britain and Germany, as well as that of Japan. Technological changes were motivated in large part by innovations in Europe. In the early 1900s, the British launched the large battleship, HMS *Dreadnought,* which was 490 feet long, with large guns, and a maximum speed of 21.5 knots. American development is exemplified by the design of the South Carolina class battleships and by Theodore Roosevelt's dispatch of the Great White Fleet on its around-the-world cruise. Later the potential threat of German *Unterseeboots* or "U-boats" prompted the U.S. Navy to invest in destroyers to escort cargo vessels and troop ships through perilous waters. In the early 1900s, the yard repaired and commissioned destroyers and submarines built at other yards.[1] Yard activity lessened during the 1920s as the nation shifted its attention to private enterprise and business. By the 1930s, the yard resumed its role in shipbuilding and built destroyers in an effort to keep apace with the world's other naval powers.

YARD RESURRECTED, 1898-1920

In April 1898, the United States declared war on Spain to end Spanish control of Guam and the Philippine Islands and bolster Cuban independence. The war, which required naval fleets in both the Caribbean and Pacific, was one-sided and effectively ended three months later but had a broad impact on the United States. The naval campaign during the Spanish-American War increased repair activities at the Boston Navy Yard and marked an enduring expansion in the size and diversity of the yard's workforce. During this brief military contest, the yard performed more work than in the entire previous decade and the civilian workforce grew from 500 to 1,500 workers.[2] War work at the yard generally involved the conversion of civilian vessels to military use and the repair and decommissioning of naval craft at the end of the conflict. Expansion and improvement of the Boston Navy Yard continued into the next decade, as the war underscored the need for a larger fleet and additional docking space.[3]

Upon the August 1914 outbreak of World War I in Europe, President Woodrow Wilson proclaimed American neutrality. The yard adhered to neutrality policies, while at the same time expanding operations, repairing and outfitting private vessels, and increasing storage facilities for provisions. Eager to reactivate the yard's shipbuilding program, a "Build-a-Ship-at-Boston" campaign was supported by yard personnel, the Boston Navy District Office, and the Boston community. Efforts were successful and on 19 February 1914, the Navy Department assigned the construction of a supply ship to the yard. The project, which had been won by the yard in competition with proposals from private shipbuilders, led to major improvements in the yard's shipways. Improvements included four large hammerhead cranes that would visually dominate the yard's skyline until demolished by the Navy following the yard's closure in the 1970s. The yard laid the 423-foot steel keel in May 1915 and thirteen months later launched the yard's largest ship and the Navy's first refrigerated supply ship, the USS *Bridge*.[4]

[1] Black, 164.
[2] Black, 301 and *Handbook*, 51.
[3] Black, 165.
[4] Stephen P. Carlson, "USS *Bridge*: Boston Navy Yard's First Major Steel Vessel," *The Broadside/Boston National Historical Park* (No. 3, 1998), 12.; Black, 364-66.

Reversing his neutral stance, President Wilson proclaimed the battle cry for "incomparably the greatest navy in the world."[5] The entrance of the United States into World War I in the spring of 1917 brought about a considerable increase in work at the yard, which was once again closed to the public. Employment in the yard grew from 2,500 at the end of 1915 to 4,500 shortly after the nation officially entered the war to a high of 12,844 in February 1919.[6] During World War I the yard repaired existing warships and Navy auxiliaries, outfitted and commissioned new vessels, and converted merchant vessels for the war.[7] Following a 1916 Congressional authorization to increase shipbuilding, including 285 destroyers, the Navy acquired a number of new sites and facilities to enhance the ability of private yards to carry out these contracts and subcontracts. In October 1917, Congress authorized development of the United States Destroyer and Submarine Base in Squantum at the mouth of the Neponset River in Boston Harbor. Completed in May 1918, the plant was owned by the Navy and operated by Bethlehem Steel until the cessation of construction activities in May 1920.[8] A similar plant was established at Bethlehem Steel's Fore River Shipyard in Quincy. Both plants delivered destroyers to the main yard in Charlestown for outfitting and commissioning.

In 1919, Boston Navy Yard annexed Lockwood's Basin, a waterfront property in East Boston comprised of five buildings, a marine railway, and a single pier that served as a base for small boats during World War I. During the same year the Commonwealth Dock (later, Naval Dry Dock), a 1,000-foot dry dock on state-owned land in South Boston, was completed. This dock, which could accommodate state-of-the-art battleships (those completed after 1910), was at the time the nation's largest dry dock. The Navy increased the docking capacity of the Boston Navy Yard with acquisition of the dock in 1920, which became the core of the Boston Navy Yard's annex at South Boston.[9]

ROADS, RAILS, AND UTILITIES

Improvements to the yard's circulation systems were necessary to meet both the increasing demands of modern naval design and the administration's appeal for scientific management principles and maximal production (Figures 5.1 through 5.12). A more rational system of nomenclature, surface paving, and railroad tracks facilitated traffic among the sites of increasingly integrated modes of production. In 1902, the yard assigned numbers to its twenty-five thoroughfares and designated the east-west roadways as "avenues" and north-south roads as "streets." Between 1902 and 1904, the Navy replaced the paving along Second Avenue with a wood block surface with cobblestone gutters to provide a quiet road surface near the Commandant's House (Quarters G), reportedly so traffic noise would not interfere with the commandant's wife's sleep (Figure 5.1). The Navy also constructed the Conduit (Structure 280), an underground utility tunnel topped by a concrete sidewalk, along the north side of First Avenue in 1902 (Figures 5.2-7).[10] As part of this construction project, the Navy widened and paved First Avenue with granite Belgian blocks and brick (the section of First Avenue from Gate 1 to Third Street was brick).[11] The Navy paved Sixth Street with granite cobblestones in 1905. The administration experimented with other paving materials including brick, bituminous concrete, and granite and granolithic paving throughout the yard during the years leading up to World War I. For example, brick paving was used for First Avenue and granite paving for the western edge of Pier 1.[12]

[5] Hagan, 204.
[6] Black, 336.
[7] Black, 354.
[8] Designated the United States Destroyer and Submarine Base, Squantum, Massachusetts, the plant served as a storage depot until 1924, when the inoperative facility was leased to a private party. Black, 370-71, 377.
[9] Black, 205, 377-78.
[10] Carlson, 48. The Conduit was later extended along other streets in the yard, including Fifth Street south of First Avenue (parts of this tunnel were demolished when the USS Constitution Museum Connector and South Courtyard were built in the mid-1990s).
[11] Lucinda Brockway and Patrice Todisco, Charlestown Navy Yard, Historic Grounds Management Report, 1985, 22.
[12] Black, 197, 220-28 and Charlestown Navy Yard: Historic Pavement Study (1995), 9-10.

The railroad allowed for the delivery of modern construction materials from across the country.[13] By 1910, a new rail system replaced the yard's antiquated, 1860s flat-type track, extending service along the full-length of all but two piers (Piers 7 and 10), to the shipbuilding ways between the Electric Supply and Shipfitter's Shop (Buildings 103 and 104), and into several industrial and storage buildings. The new rails supported the yard's two locomotives, thirteen dump cars for coal, six flat cars, seven ash cars, four general purpose dump cars, and two general purpose gondolas.[14]

During the early 1900s, the yard switched from gas to electric lighting. In addition, approximately forty telephones were installed throughout the yard. Many of the photographs in this chapter show overhead utility lines. Most of these lines were eventually routed through the utility corridor that ran under First Avenue.



Figure 5.1: Second Avenue repaving project in 1904. Quiet woodblocks paved the street with cobblestone side gutters. Note the mature elm trees lining the road (BOSTS-8656).

[13] Scott Jacobs, Alain Guitian, and Childs Engineering Corporation, Historic Structure Report, Architectural Data Section: The Railroad Tracks, Charlestown Navy Yard, Boston National Historical Park, Charlestown, Massachusetts (Denver: National Park Service, 1983), TIC 457/D2127. The evolutionary drawings in this report cover only tracks in the NPS portion of the Navy Yard.
[14] Black, 212-13.



Figure 5.2: Paving of First Avenue by the Officer's Quarters (Building 265) in 1903. Note the mature elm trees and the Main Gate (Building 97) on the left (BOSTS-9168).



Figure 5.3: Construction of the Conduit (Structure 280) and repaving of First Avenue in 1902. Note the flagpole in the gun park (left center). Trees along the north side of First Avenue have been removed for the project (BOSTS-8654-3).



Figure 5.4: Brick paving of First Avenue in 1903 looking east. The sidewalk slabs to the left cover the newly completed Conduit (Structure 280). Note the flagpole and the gun park to the left and the mature trees to the right. Utility lines and poles marked the road (BOSTS-8654).



Figure 5.5: First Avenue after paving c. 1903. The concrete sidewalk covers the new Conduit (Structure 280). Note the gutter to the left and the flagpole in the former gun park. Utility poles and lines run down the middle of the avenue, and elm trees still line the south side of the street (BOSTS-8654).

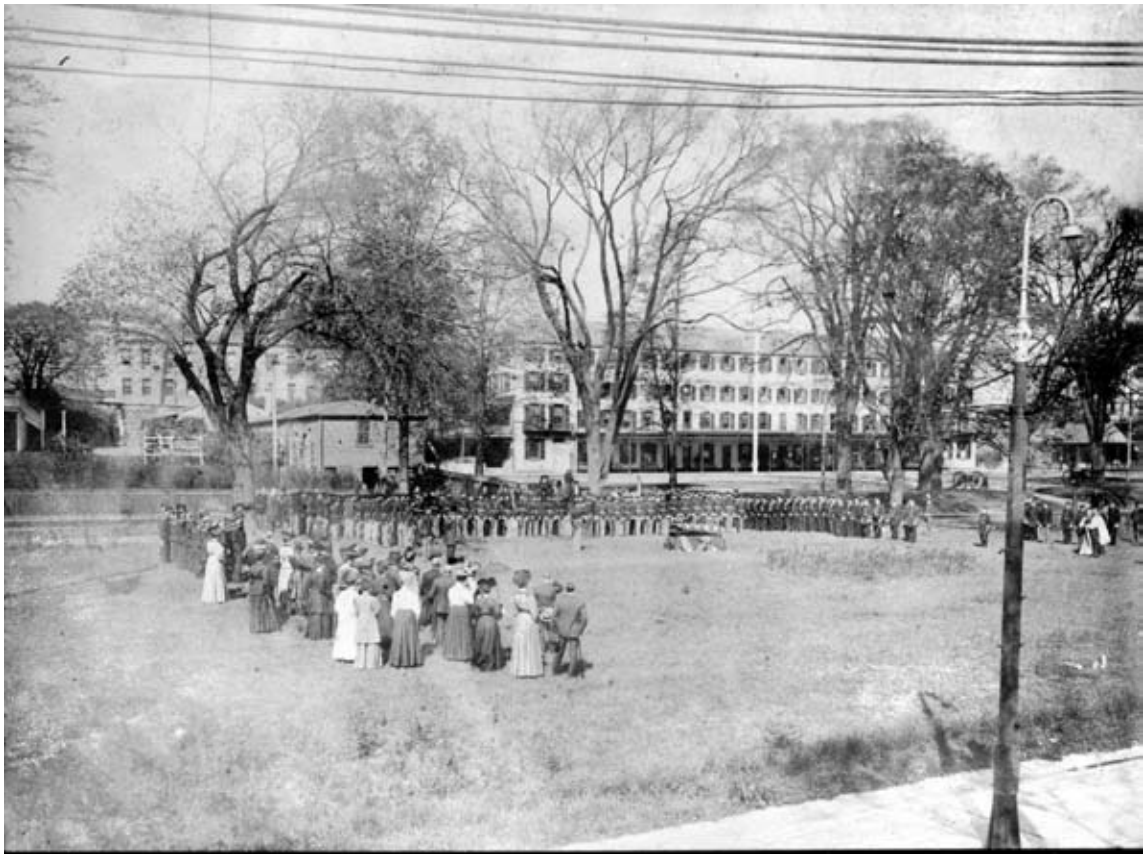


Figure 5.6: 1904 gathering in the former gun park. The newly completed sidewalk and Conduit (Structure 280) along First Avenue are visible at the bottom. The Commandant's Tool Storage Barn (Building 20) and the Marine Barracks (Quarters H-I-K) are visible in the background behind the elm trees lining Second Avenue (BOSTS-9221).



Figure 5.7: First Avenue at Fourth Street in 1902 before repaving. The gun park is to the left, and the Dry Dock Engine House (Building 22) is to the right.



Figure 5.8: Dry Dock Engine House (Building 22) showing granite block paving and rail lines in September 1902 (BOSTS-9288).



Figure 5.9: Resurfacing Lincoln Avenue and First Street between Hoosac Stores (left) and the Storehouse (Building 4) (right) in 1902 with either Belgian block or brick. An additional Storehouse (Building 3), demolished in 1906, is in the center (BOSTS-9251).



Figures 5.10: Granite Belgian block paving between the Storehouse and Navy Store (Buildings 4 and 5) on the left and the railway in 1903 looking east (BOSTS-9256).



Figure 5.11: Railway construction along the south side of the Navy Store (Building 5) in 1902 looking west (BOSTS-9252).



Figure 5.12: In 1918, surface improvements were made to the roads on the east and north sides of the Navy Store (Building 5) including paving around the base of the horse chestnut tree (BOSTS-9257).

WATERFRONT

At the outset of the Spanish-American War, safety and security concerns prompted the commandant to close the yard to the public. When reopened in 1901, major changes were in progress. The Fiscal Year 1899 Appropriations Act funded construction of four timber dry docks at the yards in Boston, Portsmouth, Philadelphia, and Mare Island in California. Congress authorized the Secretary of the Navy to construct one of these structures of granite or concrete faced with granite. Secretary John D. Long selected Boston as the site of construction of the granite dry dock, designed to supplement the docking capacity of the existing 1833 dry dock (redesignated Dry Dock 1). Completed in 1905, the yard's new 750-foot Dry Dock 2 was built on the former site of Timber Dock 91 and a portion of the Wet Basin (Figure 5.13). A substantial amount of fill removed during construction was used to fill the remainder of the basin, which later became a recreation field. Over 11,200 blocks, comprising 21,500 cubic yards of granite for the new dry dock came from both a quarry of extremely dense granite in North Conway, New Hampshire and from the yard's old granite sea wall.[15] The largest single construction project undertaken at the yard, the new dry dock allowed the yard to service and refit the largest battleships in the Navy's modern fleet. Between 1904 and 1905, 20-foot gauge tracks for 40-ton traveling portal cranes were installed from Dry Dock 1 to Dry Dock 2, running along both sides of the docks (Figures 5.14-15). Between 1904 and 1905, the Navy relocated the former Chapel (Building 23) to the east of the Dry Dock Engine House and the Carpenter's Shop (Buildings 22 and 24) and removed the southern three bays of the Tin Shop (Building 28) in order to connect the tracks between the two dry docks. At the lower eastern corner of the new dry dock, the Navy constructed a Pumphouse (Building 123) for Dry Docks 1 and 2 in 1905. Dry Dock 1 was fully repaired in 1907 and 1908. A steel caisson, still in use today, replaced the 1833 caisson in Dry Dock 1.

In 1901, the War Department laid down a new pier and bulkhead line further into the harbor that constituted a new waterfront boundary for the yard. Following its acceptance by state and municipal authorities, the Navy extended the existing piers and constructed five new piers, named 3, 4, 4-A, 5 and 6, in an area absent of piers before 1900. Two of these wharves, Nos. 3 and 4, each sixty-feet-wide, were added to either side of the entrance of the new Dry Dock 2. Increased wharfage, through new construction and extensions, necessitated the institution of a new numbering system for piers in 1900 (Figure 5.16).[16] By 1914, the yard possessed nine industrial piers and one light-usage pier, Pier 10, to access the yard's receiving ship, the *Wabash*. Nine cranes operated along the piers.[17] Much of the waterfront was paved with granite blocks at this time (Figures 5.17 & 21).

[15] Black, 197, 200.
[16] Black, 143, 207.
[17] Black, 207.

The most dramatic alterations took place at the western end of the waterfront. Unlike the other wood decked piers, Pier 1 was designed with a solid core to support a massive new coal facility. The old coaling wharf (Whites Wharf) and the Shear Wharf were extended to form one pier. Piles were driven thirty feet into the water and concrete piers were poured and topped with concrete arches with forty-foot spans. The rear of the arches was backed with concrete curtains to contain fill. Construction of Pier 1 required removal of the western end of the yard boundary wall, the Fire Apparatus House (Building 6), the Coal Shed (Building 7), and a shipbuilding slip. Buildings retained during the work included the Storehouse, Navy Store, Foundry, (Buildings 4, 5, and 16) and the Pitch House (Building 10) which the Navy moved several feet to the east (Figure 5.17). A small Boathouse (Building 94) was also retained but shortened and later removed in 1904. The large shears at the end of the former Shear Wharf were moved to another pier but subsequently removed by 1908. Just to the west of the new Pier 1, the Navy shared a slip known as the "Fitchburg Slip" with the Fitchburg Railroad Company, who owned the abutting Hoosac Pier. As shown on the 1902-03 map of the yard, the slip held USS *Constitution* during this period.

When Pier 1 was complete, the Navy built an enormous new Coaling Plant (Building 109) (Figures 5.18-20).[18] Completed in 1904, the concrete and corrugated iron structure covered an area of 75 by 420 feet on the east side of the pier. The structure was capable of storing 12,500 tons of coal, but difficult access for ships and the transition to fuel would render the facility obsolete within twenty years. The Navy also erected a wireless (radio) tower on Pier 1 in 1912 northwest of Building 10 which became the Wireless Station (see Figure 5.35).

Between Dry Docks 1 and 2, the Navy built a new Pitch House (Building 110) in 1901, a Latrine (Building 124) in 1904, and the Paint Shop (Building 125) in 1903-1906. Completion of the Paint Shop was delayed by the 1905 construction of an eight-foot diameter subsurface culvert that ran from Dry Dock 1, under Dry Dock 2, to the Pump House (Building 123).[19] The Navy relocated the Pitch House in 1918 from west of the Paint Shop to its current location just north of it in connection with the building of the Marine Railway. Nearby, the Carpenter's Shop (Building 24) suffered its second and more severe fire in 1910 and was totally reconstructed within four years.[20] Figure 5.21 depicts the Carpenter's Shop in 1900 following its first fire.

Between 1915 and 1919, the Navy constructed thirty-six new buildings in the yard, though seven were temporary and two-thirds were storage facilities in the lower yard. In contrast the Navy only constructed two buildings between 1920 and 1934. The Navy also further extended the bulkhead line in 1918, though war-time production took precedent over pier extensions. As with earlier wars, many yard improvements were proposed during World War I but carried out after the armistice in November 1918. During the war, the Navy worked on many small vessels for use as harbor patrol craft, minesweepers, and for anti-submarine activities. The Navy proposed a marine railway to more easily service smaller ships of up to 2,000 tons.[21] Work began in early 1918, when the Navy awarded a contract to the Boston firm, Crandall Engineering Co. to build the railway immediately east of Pier 2, with its machinery housed in the Carpenter's Shop (Building 24). The railway's timber cradle was unlike the typical steel construction at other Navy yards. The railway became operational on 2 June 1919, when it lifted the Coast Guard cutter *Ossippee*.[22] From 1918 to 1919, yard workers constructed a new brick Scale House (Building 19) just east of the preexisting structure and north of the Dry Dock Engine House (Building 22) (Figure 5.22).

[18] Brady, Historic Structure Report, Pier 1 and 2; Bruce Craig, Building 109 Historical Survey Section (Apr. 1978), TIC 457/D6038.
[19] This culvert completed in August 1905 remains today, although it is sealed at both ends.
[20] Black, 213, Carlson, 48.
[21] Originally designated "Dry Dock No. 3," the railway was renumbered No. 4 after the Navy acquired a dry dock at its South Boston annex, and redesignated "Marine Railway No. 11" during World War II. *Handbook*, 57, Black 372-75.
[22] Carlson, 56, 59; Black, 373; U.S. Navy Bureau of Yards and Docks, *Activities of the Bureau of Yards and Docks, 1917-1918,* p. 211-214; Mary Jane Brady and Crandall Dry Dock Engineers, Inc., *Historic Structure Report, Marine Railway No. 11, Architectural Data Section, Charlestown Navy Yard, Boston National Historical Park, Boston, Massachusetts* (Denver: Denver Service Center, National Park Service, 1982), TIC 457/D1879, p. 2-9, 21-23. The facility became known as Marine Railway No. 11 after the acquisition of the Chelsea Annex during World War II, since that site housed two railways, designated as Marine Railways No. 12 and No. 13 by the Navy. See U.S. Navy Bureau of Yards and Docks, [*Ship Repair Facilities*], Jan. 1, 1944, 2, 4. James L. Crandall was a leading engineer in the field, and his expertise was employed by the Navy for all of the railways built in this time period.

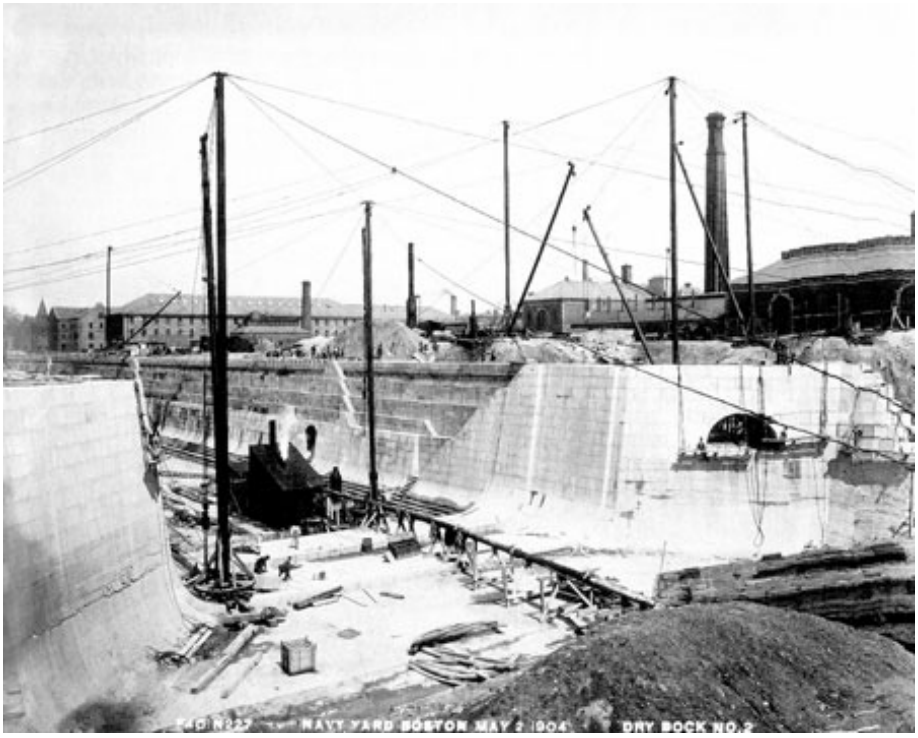


Figure 5.13: Dry Dock 2 under construction in 1904, showing the dramatic transformation of this portion of the yard (BOSTS-8808).



Figure 5.14: Improvements to the yard in 1904 included installing additional crane and rail tracks as seen from the northeast corner of Dry Dock 2. In the distance are the tennis courts, Muster House (Building 31), and Commandant's Office (Building 32), while trees obscure the Marine Barracks (Quarters H-I-K) (BOSTS-8656).

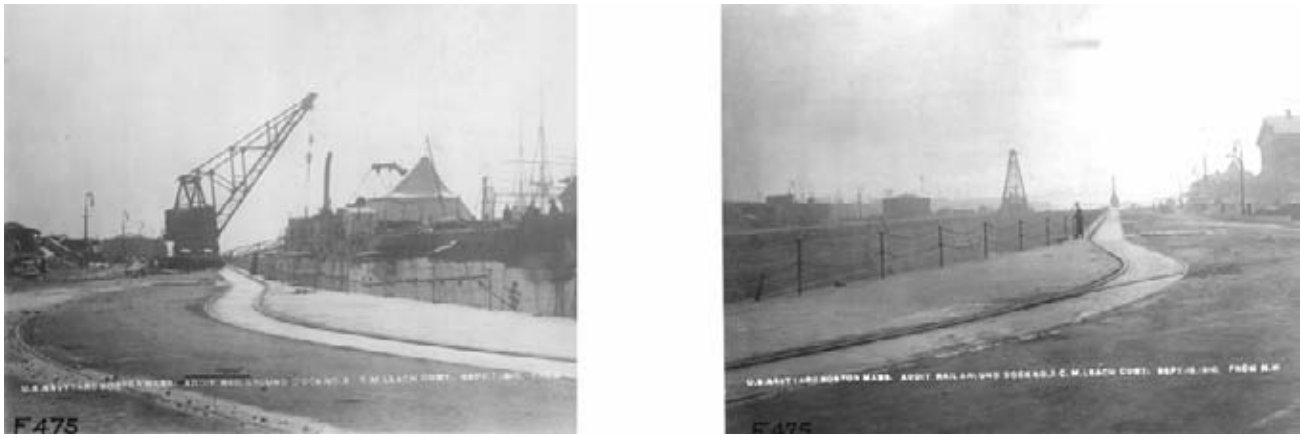


Figure 5.15: 1910 views of the forty-ton portal crane and its twenty-foot gauge tracks as well as railroad tracks around Dry Dock 2 (BOSTS-8810b).

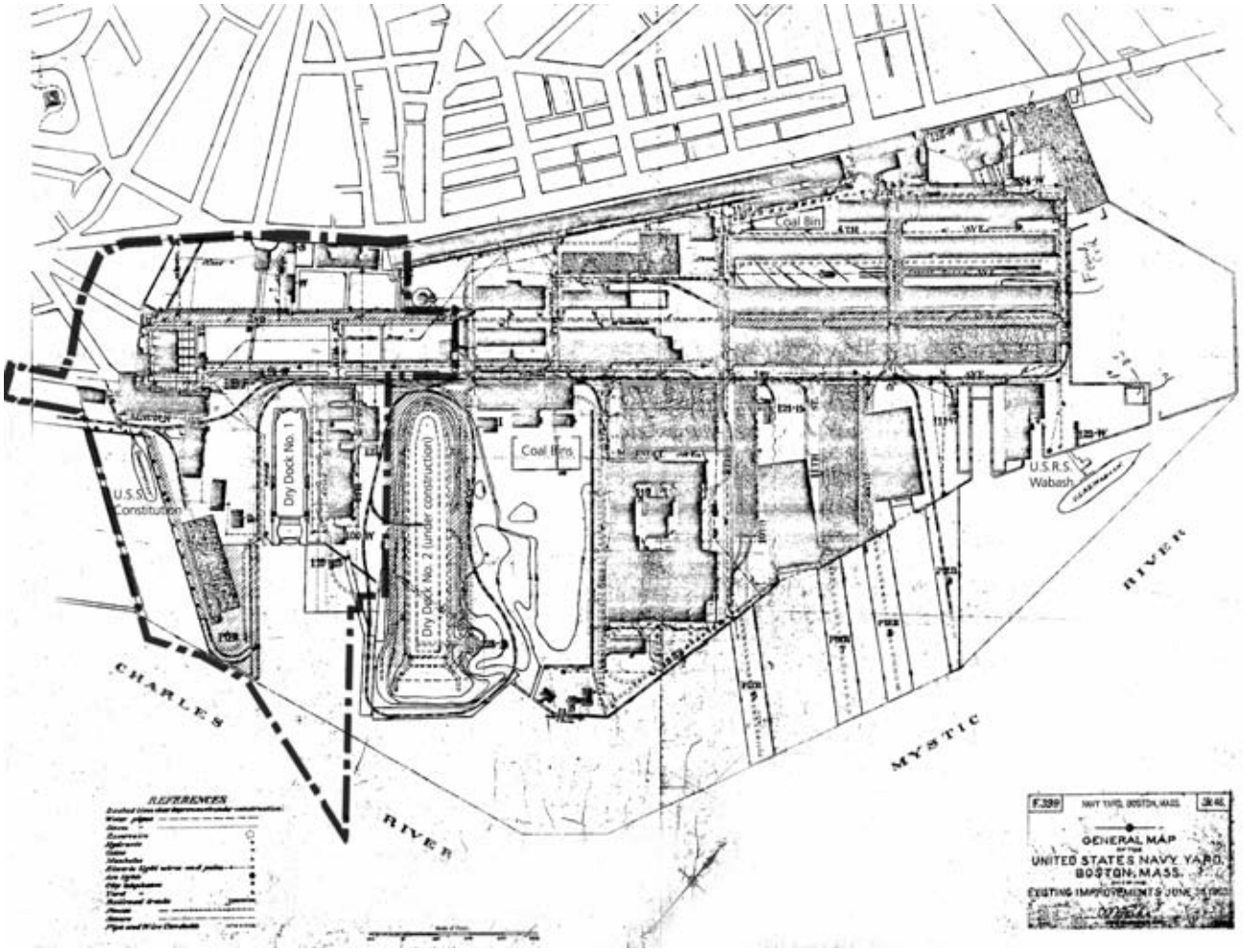


Figure 5.16: Digitally enhanced plan for the yard in 1902-03 showing the new bulkhead line with the existing piers extended, Dry Dock 2 under construction, and relocation of Buildings 10. Current park boundary is outlined (Courtesy of Boston NHP Archives).



Figure 5.17: North and east sides of the relocated Pitch House (Building 10), 1901. Then used as a paint shop, with granite pavers in foreground, stone cobble paving around building, and the new Coaling Plant (Building 109) in the background (BOSTS-9270).



Figure 5.18: Pier 1 under construction in 1902 with the Navy Store (Building 5) to the left north of the Pitch House (Building 10) in the center right (BOSTS-9807 or 9808).

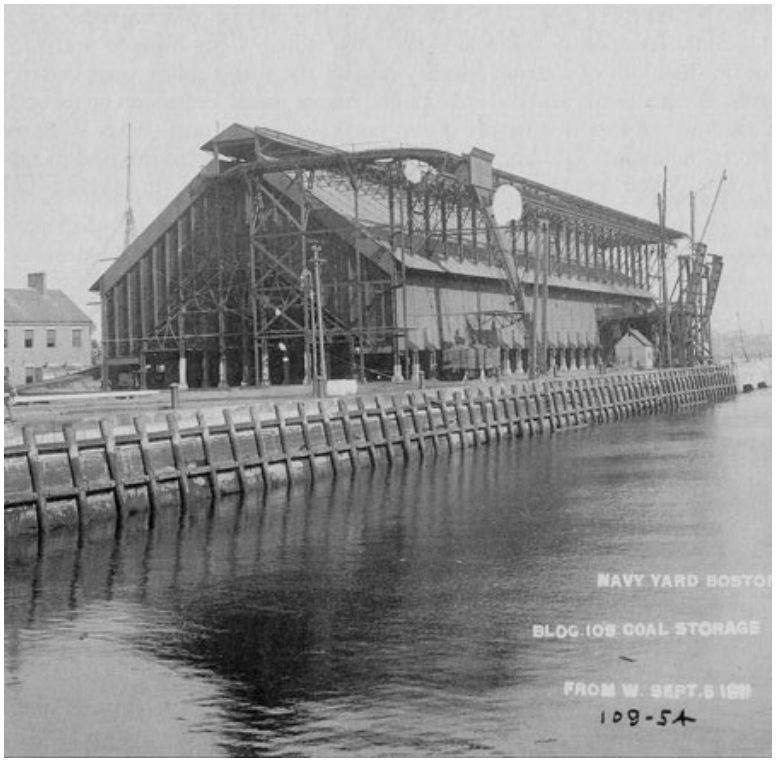


Figure 5.19: 1911 view of the enormous new Coaling Plant (Building 109) completed in 1904 on Pier 1 (BOSTS-9807,9808).

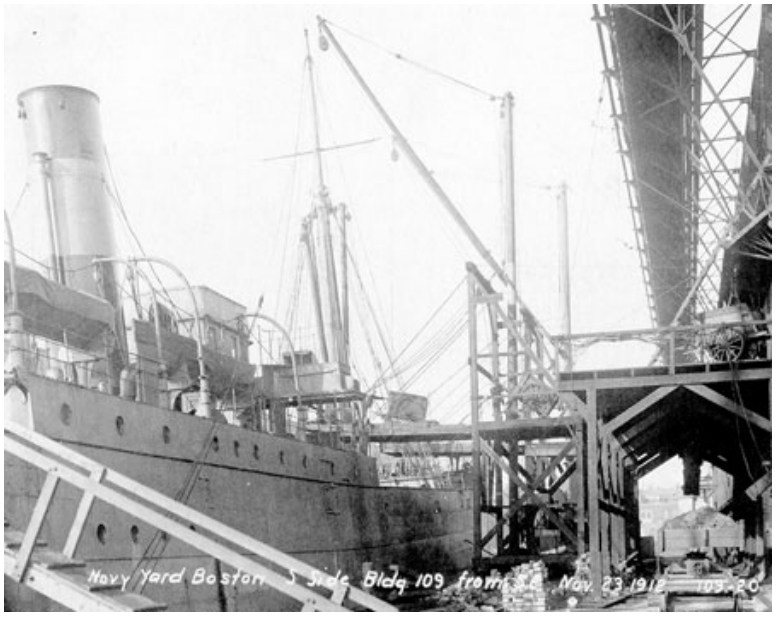


Figure 5.20: 1912 view of the Coaling Plant (Building 109) in operation with a rail line and one of the yard's thirteen dump cars for coal in the foreground (BOSTS-9807,9808).



Figure 5.21: In 1900 circulation materials differed on either side of the Carpenter's Shop (Building 24). Left, granite paving against the west façade facing Dry Dock 1. Right, a wooden boardwalk paralleled the building's east façade and Dry Dock 2. The cleared area between the building and the boardwalk is Fifth Street (now covered by a WWII building addition). The soaring smokestack of the Dry Dock Engine House (Building 22) can be seen in the background (BOSTS-9298).



Figure 5.22: Left: The Scale House (Building 19) shortly after its relocation and construction (1918-1919), flanked by two of the yards' many elm trees. First Avenue is in the foreground and the Dry Dock Engine House (Building 22) is in the background. Right: The Scale House (Building 19) and rail scales in 1933. The Dry Dock Engine House (Building 22) is to the left and Gate 1 is in the background through the arching canopy of elm trees. Note the young spruce trees planted east of the Scale House (BOSTS-9280 and 9281-8133).

UPPER YARD

The gardens around the Commandant's House (Quarters G) contrasted with the industrial character of the piers below. An elaborate arbor and a gated wooden fence backed by shrubs separated the commandant's yard from Main Avenue and a nearby guardhouse at the turn of the century (Figures 5.23-24).[23] Only a few trees were located on the south and west sides of the house, allowing for views to the yard and waterfront. In contrast, a grove of deciduous trees clustered on the north side of the house, just inside the boundary wall, provided a screen from Chelsea Street (Figure 5.25). By 1911, the Navy had constructed the west driveway that curved from Second Avenue to a loop by the house's west facade.

[23] The term "arbor" is used here because the structure also provided a sheltered walkway. The latticework may also be referred to as a "trellis" that is supporting the vines.

Of the forty new buildings added to the yard between 1899 and 1914, only two were added to the upper yard north of First Avenue and west of Sixth Street, though several others received additions. In 1903, the Navy erected an elegant new brick and stone Main Gate (Building 97) (Figure 5.26).[24] In 1909, the Navy demolished the small one-story structure at the east end of the Marine Barracks parade ground that had served as the USMC Officer-of-the-Day's Quarters (Building 30) and constructed a new three-story Marine Corps Administration Building (Building 136) in its place. The Navy enlarged the Marine Barracks (Building I) throughout the twentieth century (Figure 5.27).[25] In 1910, the Navy enlarged the Commandant's Office (Building 32), located in the former Shell House at this time (Figure 5.28).

By expanding the yard's piers further into the harbor, the Navy was able to preserve open spaces for recreation and ceremonial purposes in the upper yard. By the early 1900s, many trees planted nearly a century earlier declined and required replacement, thus the rows of trees along First and Second Avenues were a mix of mature and newly planted trees. The Navy dismantled the gun park and either scrapped the cannon or half-sunk them in the ground as bollards around the dry docks and in the upper yard. The flagpole was retained along the walk that extended from the Commandant's House (Quarters G) down to the waterfront. In 1903, the Navy built the Wireless Telegraph Station (Building 129) near the corner of First Avenue and Third Street. In 1904, the Navy completed landscaping the former gun park. [26] Four tennis courts, shown on the 1914 plan for the yard, covered a former portion of the shot park behind the Commandant's Office (Building 32) adjacent to the Muster House (Building 31) (Figures 5.28-29). Residents of the yard flooded the courts in the winter to enjoy ice skating.

In 1917, the Navy constructed a new Bandstand (Building 163) along Second Avenue, across from the Commandant's House (Quarters G). Half-buried cannons, topped with cannonballs were placed beside the bandstand. A large elm shaded the bandstand and a young tree was planted along the road, presumably to replace a mature street tree that had been removed (see Figure 5.40).

Before and during World War I, James Downes served as the gardener for Commandant William Rush. Downes tended the grounds around the Commandant's House, which included a small vegetable garden and ornamental flower beds with geraniums, primroses, tulips, gladiolas, roses, and snapdragons. Downes also supervised a larger garden in Hingham at the Ammunition Depot, which provided fresh vegetables for the Commandant's household. In 1918, Commandant Rush directed the planting of eighteen European or silver lindens along Second Avenue by the Commandant's House.[27]

[24] U.S. Bureau of Yards and Docks, Specification No. 1192 for New Gate House, Building No. 97, at the United States Navy Yard, Boston, Mass. (Oct. 1901), Record Group 1, Public Works Dept., Design Division (Code 440), Completed Design Projects, Building 97, NPS Catalog No. BOSTS-13347, Box 76.
[25] The Marine Barracks was called Quarters H-I-K prior to the 1920s and Building I since then.
[26] Annual Report of the Civil Engineer for FY 1905, Charlestown Navy Yard, Boston National Historical Park.
[27] Micholet, 7-18, 49-50.



Figure 5.23: The Commandant's House (Quarters G), c.1910, showing arbor, wooden fence and gate, guardhouse, electric and gas lights. There are no trees to the south or east of the house (BOSTS-14957).



Figure 5.24: The south side of the Commandant's House (Quarters G) in 1901 showing the arbor without vines, the wooden fence along Second Avenue, guardhouse and guard (BOSTS-9182).

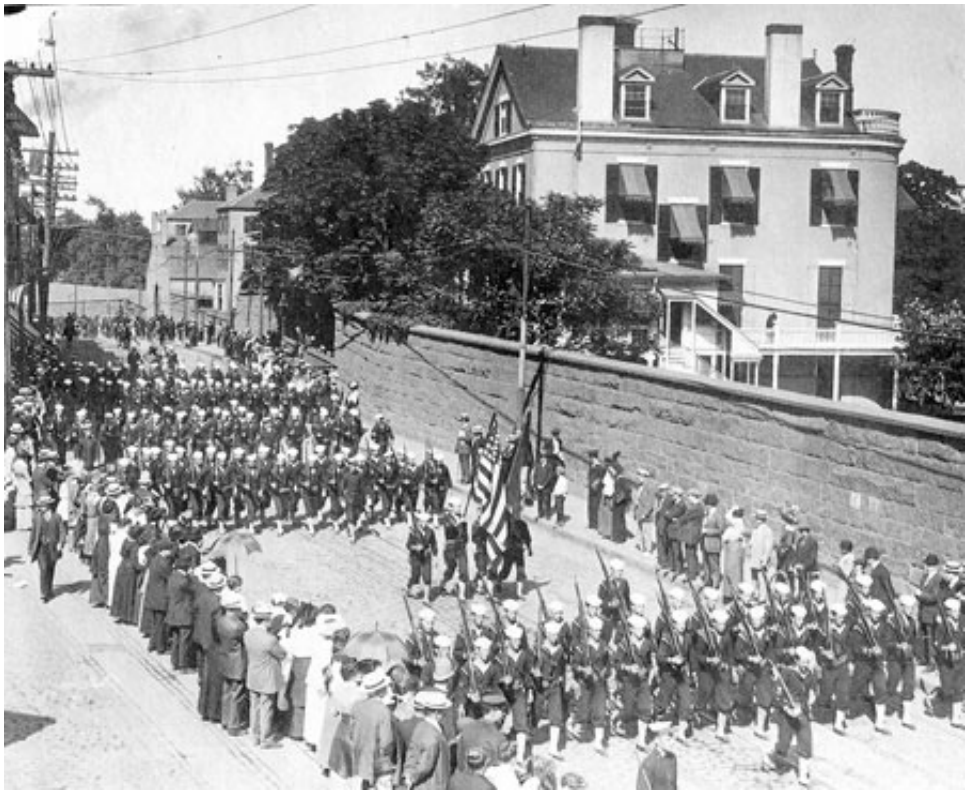


Figure 5.25: The Bunker Hill Day parade along Chelsea Street in 1914, showing the perimeter wall and Commandant's House (Quarters G). A row of trees screens the front of the house from the street. An ornamental shrub is visible at the southwest corner of the house, but there are no trees or vines on the west side of the house. A wrought iron fence in front of the house allows direct but secured access from Chelsea Street (BOSTS-10085).

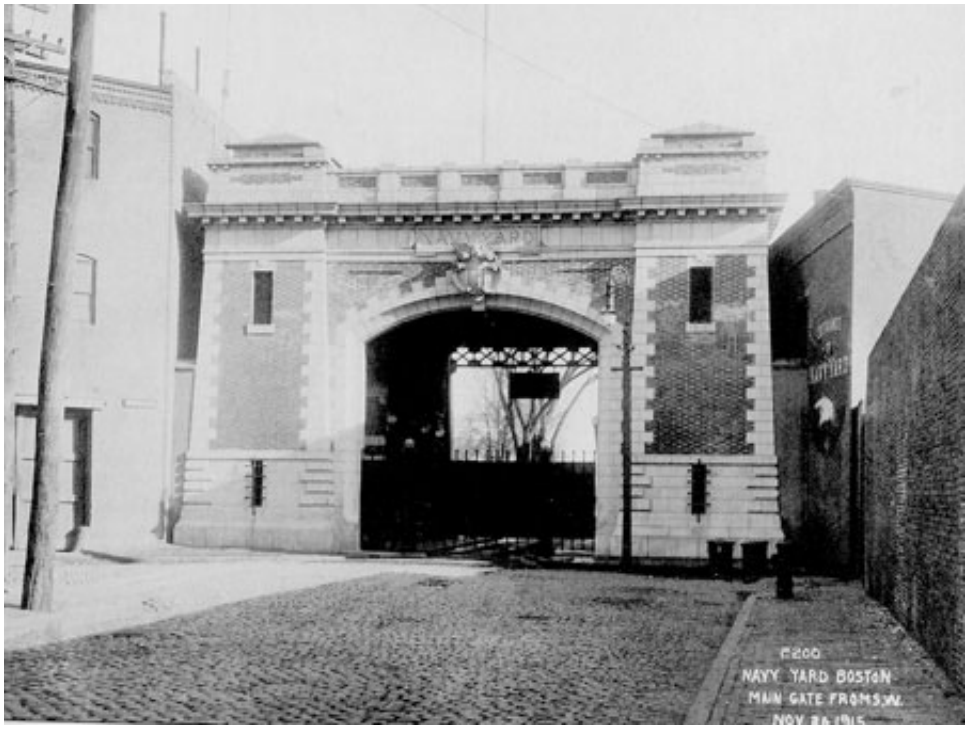


Figure 5.26: Main Gate (Building 97) on 26 November 1915. Built in 1903, it was demolished in 1958 to improve truck access (BOSTS-8943).



Figure 5.27: Marine Barracks (Quarters H-I-K) in 1902 with fourth floor addition to the central portion of the building (BOSTS-9220).



Figure 5.28: The Shell House (Building 32) between 1902 and 1910, then used as the Commandant's Office with tennis courts behind (BOSTS-9323).



Figure 5.29: The Muster House (Building 31) in 1904 showing mature elm trees and lawn within the yard, with tennis courts in the background. (BOSTS-9316 da508).

LOWER YARD

Most buildings added to the lower yard in the early 1900s, often brick over steel framing with a granite base and slate roofs, were probably designed by the Bureau of Yards and Docks in Washington. The Navy constructed similar buildings at other Navy yards.[28] To make way for the new buildings, the Navy demolished the remaining wooden shiphouses and many of the less substantial nineteenth-century structures. The new "factory" buildings introduced a new standard of height and massing to the eastern end of the yard. With a few exceptions, the yard retained the grid pattern (Figure 5.30). The Navy constructed the Public Works Shop and the Forge Shop (Buildings 107 and 105) between 1904 and 1905.

A notable structure that impacted the entire yard was the 1904 Yards & Docks Power Plant (Building 108). This building became the Central Power Plant in 1905 following legislation to consolidate the individual power plants previously established under each of the yard bureaus. The central plant provided greater power for the machine tools as well as increased lighting in the shops and on the piers.

[28] For example, compare the design of the Metal Workers' Shop (Building 106) at the Charlestown Navy Yard with the Forge Shop (Building 6) at the Charleston (S.C.) Navy Yard and the Machine Shop (Building 66) at the Puget Sound Navy Yard. See Jim McNeil, *Charleston's Navy Yard: A Picture History* (Charleston, S.C.: Coker Craft Press, 1985), p. 45; Louise M. Reh and Helen Lou Ross, *Nipsic to Nimitz: A Centennial History of Puget Sound Naval Shipyard* (Bremerton, Wash.: Olympic Peninsula Chapter, Federally Employed Women, 1991), p. 20.

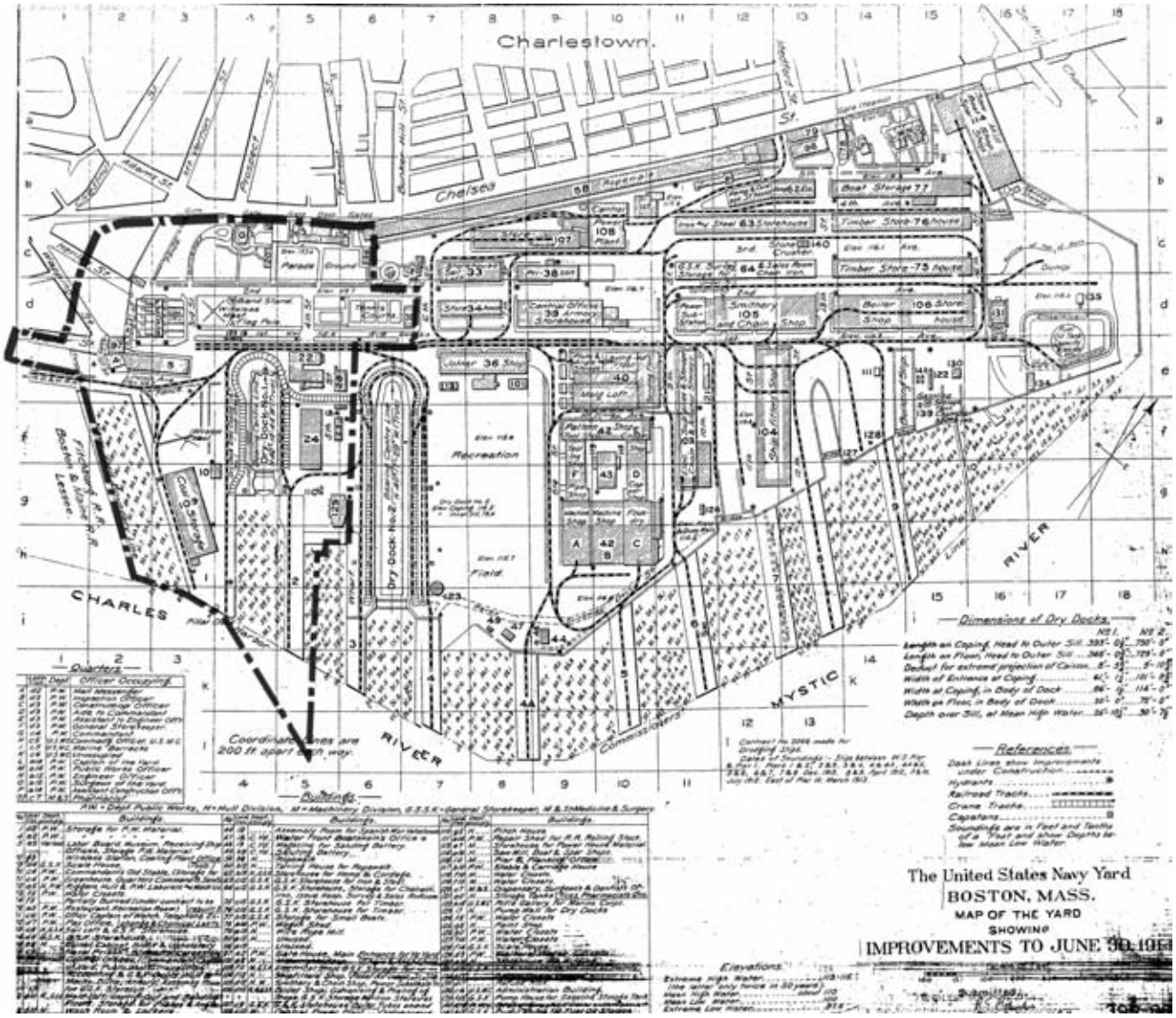


Figure 5.30: Digitally enhanced plan for the yard in 1914. Current park boundary is outlined (Courtesy of Boston NHP).

THE STAGNANT 1920S, 1920-1934

By the 1920s, the Navy and its yards declined as the nation shifted its attention to private enterprise and business. The Five-Power Naval Treaty, negotiated in 1921-22, set limits on new ship construction and fleet size, including a ten-year moratorium on capital ship construction.[29] The decreased work, together with the diversion of much of the American fleet to the West Coast in response to tension with Japan, further reduced activities at the main yard. After the launching of the destroyer tender *Whitney* in 1924, construction work at Charlestown halted for the remainder of the decade. Repair work was largely limited to naval battleships and some passenger liners. Fiscal austerity limited both improvements to and maintenance of the yard's buildings, facilities, and grounds (Figures 5.31-32).

[29] The treaty was negotiated between the United States, Great Britain, Japan, Italy, and France. Black, 425.

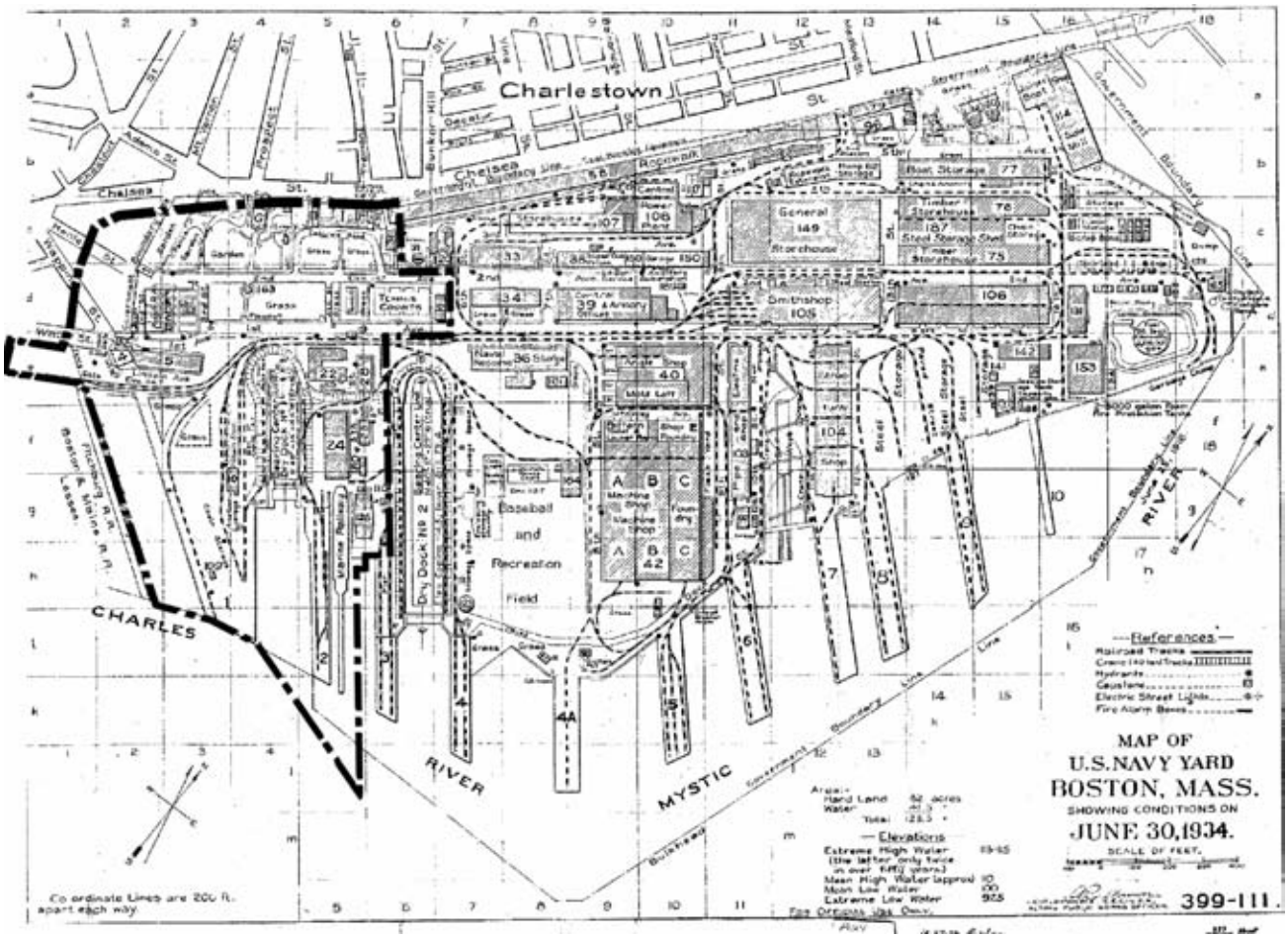


Figure 5.31: Digitally enhanced plan for the yard in 1934. Current park boundary is outlined (Courtesy Boston NHP).



Figure 5.32: Aerial photograph of the yard c. 1921 showing 29 battleships, cruisers, destroyers, and submarines docked for maintenance and repair. USS *Constitution* is shown east of Dry Dock 2 at the left. Note the trees at the Commandant's House (upper left) and along Second Avenue and the former Flirtation Walk south of the Ropewalk (Building 58) (top center) (National Geographic Society Image Collection, Photograph by Hamilton Maxwell).

WATERFRONT

During the 1920s, only two new buildings a Pump House and the Electric Substation (Buildings 191 and 192) were erected in the waterfront. While some important new machinery was installed in several shops, improvements to the main yard's physical plant were limited to completion of the Marine Railway, repairs to some of the piers, the installation of a crane on Pier 2, reconstruction of the Machine Shop (Building 42), and small paving projects at the intersection of First Avenue and Ninth Street and at Dry Dock 2 (Figures 5.33-39)[30] In addition, several small, temporary structures erected at the main yard during the war effort were transferred to the South Boston Annex.[31] In June 1927, USS *Constitution* entered Dry Dock 1 (Figure 5.40). During a three-year restoration process, the venerable ship attracted a large number of visitors to the waterfront.[32] An athletic field and two concrete tennis courts occupied the area between the Machine Shop (Building 42) and Dry Dock 2 that had previously accommodated storage facilities.

The Navy assigned the construction of two destroyers to the main yard in September 1931 thereby resurrecting the shipbuilding facility. For the remainder of the decade, the yard received orders under the annual naval construction programs for pairs of ships. During this period, the Navy used Dry Dock 2 as a construction basin rather than a repair area. The Navy "floated" ships built here by having the dock flooded rather than launching them in the traditional way by sliding them down inclined ways into the water.

The built industrial landscape of the waterfront did not contain much vegetation. Pier 1 contained a panel of lawn with trees or shrubs just to the south of the Navy Store (Building 5).

UPPER YARD

A 1921 collection of photographs documented the appearance of the upper yard (Figures 5.41-47). In the 1920s, William Otis, who was trained as civil engineer, served as the gardener for Rush's successor, Rear Admiral Phillip Andrews. Historian Micholet writes, "Otis carried out an ambitious program of grounds beautification including the planting of flowers, shrubs, and trees. His assistant was William Donnell, a former cavalryman noted for his ability to handle men and direct work." Together, with the assistance of three men, they planted apple and pear trees in the Commandant's parcel and tended a vegetable garden on the west side of the house. They also tended lattices supporting shrubs of Dorothy Perkins roses.[33] A description of the yard in a July 1929 newspaper article highlights the vegetation in the yard. "All who visit the Yard are familiar with the great elms that make leafy arches above the main entranceway."[34] The article listed vegetation added to the yard by Otis and Donnell (Table 5.1), although some of the quantities seem greatly exaggerated.

By the late 1920s, the arbor, fence, and guardhouse were gone from the commandant's grounds and a privet hedge separated the commandant's gardens from Second Avenue. The Navy removed the Commandant's Tool Storage Barn (Building 20) from the southeast lawn during the 1920s and replaced it in 1929 with the smaller Garage (Building 245) linked to Second Avenue with the former barn's driveway. This structure probably served as a car garage too.

The lavish attention expended on the yard grounds was short lived, and by 1930, features had begun to disappear (Figure 5.46). The arbor, small garden fences, perimeter fence, and guardhouse were removed, and instead, a privet hedge defined the edge of the property. Most of the fruit trees along the south façade were removed, though few

[30] Black, 396, 401-03.
[31] Black, 402-05, 429-31 and *Handbook*, 57.
[32] Black, 433.
[33] Micholet, 50.
[34] Boston Globe, 28 July 1929.

remained in the lawn area near the driveway. Ornamental shrubs remained along the south façade and scattered about the lawn. Extensive herbaceous beds remained along both sides of the walkway between the house and Second Avenue (Figure 5.47). Views to the waterfront were enhanced by the removal of overhead wires and telephone poles earlier in the century. A new style of electrical lights was introduced both along the Commandant's walkway and along Second Avenue. Mature elms began to succumb to Dutch elm disease, leaving gaps along the avenues for replacements with alternative tree species.

Table 5.1. List of plants added to the Boston Navy Yard in 1929. Some of the quantities appear to be too large.

COMMON NAME	SCIENTIFIC NAME	NO.	COMMON NAME	SCIENTIFIC NAME	NO.
TREES			SHRUBS		
Mountain ash	*Sorbus aucuparia*	1	Rose of Sharon	*Hibiscus syriacus*	3
Common ash	*Fraxinus americana*	25	Barberry	*Berberis* sp.	4
Birch	*Betula* sp.	1	Bladder senna	*Cassia* sp.	3
Catalpa	*Catalpa speciosa*	2	American hazelnut	*Corylus americana or avellana*	3
Washington hawthorn	*Crataegus phaenopyrum*	18	Corchorus ? (a globe flower)	*Corchorus capsularis (tropical herb)*	7
Chinese elm	*Ulmus parviflora*	3	Red flowering dogwood	*Cornus florida 'Rubra'*	102
Black walnut	*Juglans nigra*	4	Slender deutzia	*Deutzia gracilis*	2
Japanese flowering crabapples	*Malus floribunda*	3	Euonymus	*Euonymus* sp.	2
Maple	*Acer* sp.	17	Forsythia	*Forsythia* sp.	103
Oak	*Quercus* sp.	9	Snowball hydrangea	*Hydrangea arborescens*	9
Pine	*Pinus* sp.	600	Winterberry	*Ilex verticillata*	2
Poplar	*Populus* sp.	9	Lilac	*Syringa vulgaris*	3
Spruce	*Picea* sp.	338	Bush honeysuckle	*Lonicera tatarica*	10
Apple	*Malus* sp.	16	Mock orange	*Philadelphus coronarius*	12
Pear	*Pyrus* sp.	6	Privet	*Ligustrum* sp.	55
			Purple-leaved plum	*Prunus cerasifera 'Atropurpurea'*	8
PERENNIALS			White kerria	*Kerria* sp.	4
Phlox	*Phlox* sp.	75	Sumac	*Rhus* sp.	5
Polemonium	*Polemonium* sp.	15	Buckthorn	*Rhamnus* sp.	2
Heuchera	*Heuchera* sp.	20	Garland spirea	*Spiraea x arguta*	8
Globe flower	*Trollius europaeus*	15	American elder	*Sambucus canadensis*	2
Iris	*Iris* sp.	100	Snowberry	*Symphoricarpos rivularis*	4
Japanese ivy	*Ampelopsis tricuspidata*	10	Japanese tree lilacs	*Syringa reticulata*	2
Philodendron	*Philodendron* sp. (not hardy to northeast)	2	Fragrant viburnum	*Viburnum carlesii*	5
			Weigela	*Weigela* sp.	98

LOWER YARD

Since the 1880s, the main yard had been the primary chain manufacturing facility used by the Navy. Prior to the early 1910s, chain was hand-forged from wrought iron bars produced in the yard's rolling mill. In the period between 1912 and 1914, the yard introduced mechanized steam hammers to eliminate some of the tedious hand-welding process. The steam hammers sped up the forming and bending of bar stock which was then welded into links. Production of cast steel chain began in 1918. When it was adopted as the Navy standard in 1921, the Norfolk Navy Yard was designated as the sole production facility. Then in 1926, civilian personnel at the Boston Navy Yard developed the die-lock chain making process and began producing chain for the Navy that by 1936, superseded cast-steel chain for all sizes. This innovation restored the yard's chain shop to its former prominence as a manufacturing facility.[35] With further refinements, die-lock chain became the standard anchor chain for the Navy in 1928. Made in sizes up to 3-3/8 inch diameter for use on battleships, manufactured chain was stockpiled in several areas along the waterfront.

[35] Black, 435-36 and *Handbook*, 60.

In 1929, the Navy demolished a quarter-mile section of the yard's boundary wall paralleling the Ropewalk (Building 58) and replaced it with a wrought iron fence with concrete posts (Figures 5.48-49). [36] Circa 1930, the Navy removed the Muster House (Building 31) porch.



Figure 5.33: The east and south facades of the Navy Store (Building 5) in 1921. Note the painted exterior (BOSTS-9309-5835).



Figure 5.34: Dry Dock 2 with rail crane (BOSTS-9690).

[36] Carlson, 19.



Figure 5.35: 1921 southwest view of Pier 1 with the Pitch House (Building 10) in the center and the Coal Storage & Handling Plant (Building 109) just behind. Note the Dry Dock 1 stairs in the lower left and the orderly lay down space and wireless radio mast at center right (BOSTS-9258).



Figure 5.36: The Dry Dock Engine House (Building 22) in 1921 surrounded by granite paving (BOSTS-9285).



Figure 5.37: The former Chapel (Building 23) in 1921 (BOSTS-9296).



Figure 5.38: The Lighting Plant (Building 28) in 1921 (BOSTS-9296).



Figure 5.39: 1930 view of Pier 3 (BOSTS-8711).

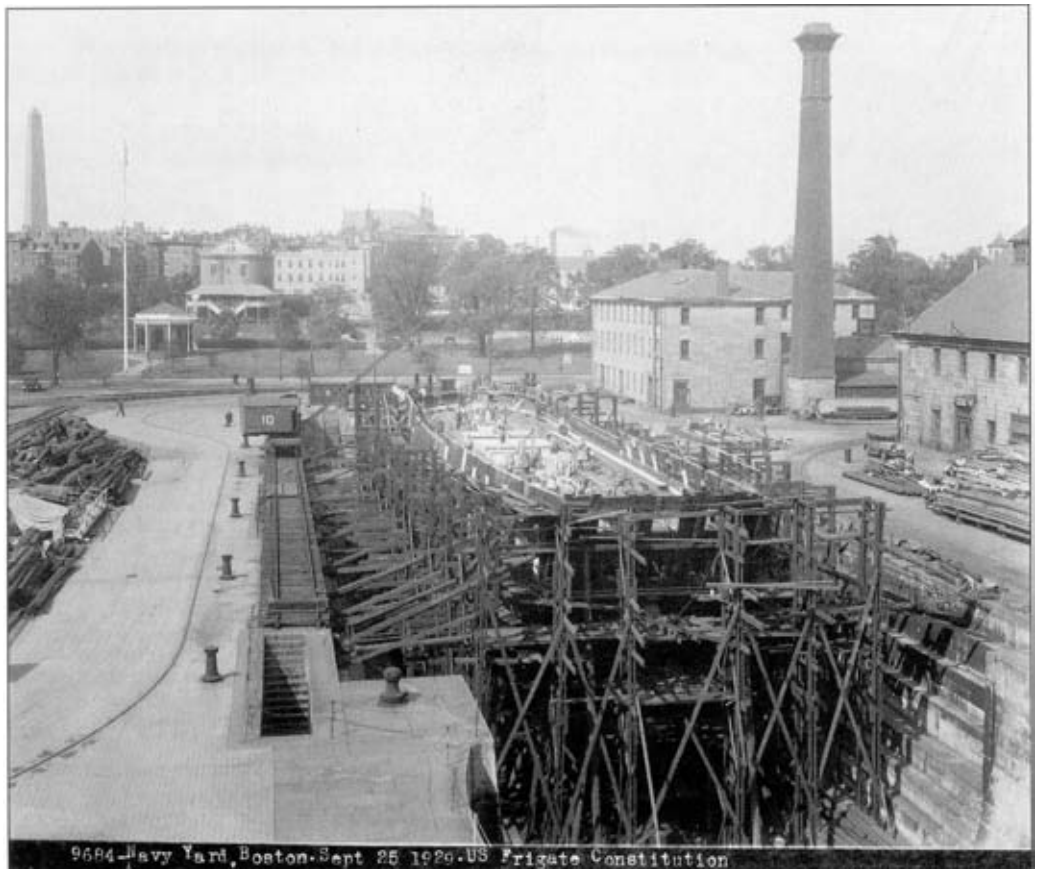


Figure 5.40: USS *Constitution* sits in Dry Dock 1 during its restoration in the late 1920s. The Bunker Hill Monument rises in the distance with the Commandant's House (Quarters G) with awnings and two grand staircases is in the background left of the dock with the Bandstand and flagpole in the shipyard mall. Many trees line the mall and the avenues. The Dry Dock Engine House (Building 22) is right (east) of the dock's head. Note the temporary crane tracks along the west side (BOSTS-10748).



Figure 5.41: The Commandant's barn or tool storage (Building 20) in 1921. The shrubs are likely lilacs, and the trees in the background are likely lindens (BOSTS-9271das163).

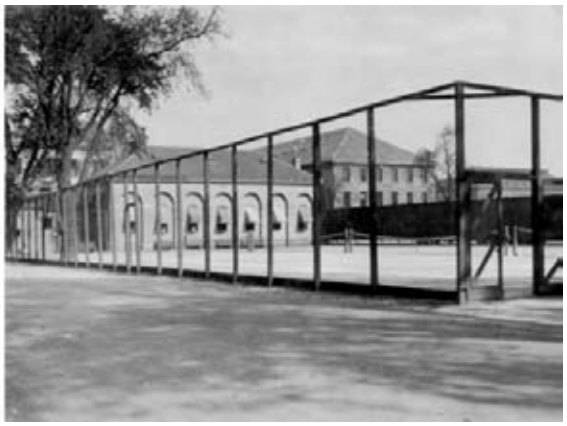


Figure 5.42: The Stable (Building 21) and Greenhouse in 1921. The yard's granite boundary wall is incorporated into the north façade of the building, and the large building in the background was located on the north side of Chelsea Street (BOSTS-9284).



Figure 5.43: The Officers Quarters (Building 265) in 1921 showing a replacement tree where a large elm once stood (see center of Figure 5.2). A pin oak grows there today (BOSTS-9164).





Figures 5.44: 1920s views of the Commandant's Office (Building 32, the former Shell House). The photograph on the left shows the west façade embellished with flower boxes and awnings. On the right is a longer view of the same building elevation with three adjacent tennis courts (BOSTS-9324).



Figure 5.45: Muster House (Building 31) porch in the 1920s, brick paving, tennis court and view of a ship in Dry Dock 2 (BOSTS-14516).



Figure 5.46: The Commandant's House (Quarters G) in c. 1930. The arbor, guardhouse, and wooden fence along Second Avenue are gone, and a privet hedge defines the property. An electric light post is visible southeast of the Garage (Building 245) that replaced the Tool Storage Barn (Building 20) (BOSTS-9183).



Figure 5.47: The south facade of the Commandant's House (Quarters G) as it appeared in 1934, just before WPA work enclosed the main floor porch (HABS photo (MA-2-10), LC HABS, MASS,13-CHAR,2-2).



Figure 5.48: Removal of the rubble-filled granite boundary wall between the Ropewalk (Building 58) and Chelsea Street in 1929 (BOSTS-8951).



Figure 5.49: Gate 4 after the Navy replaced the granite boundary wall along the Ropewalk (Building 58) with concrete posts and wrought iron fence in 1929 (BOSTS-8951).

SUMMARY

Between the Spanish-American War and the outset of World War I, a relatively short period in the yard's history, demolition and construction projects dramatically altered the operations and scale of the yard, particularly with the extension of the piers to the new bulkhead line and the construction of Dry Dock 2. New crane and train lines, improved road surfaces, an enlarged coaling plant, and a central power plant all represented the technological readiness of the new Navy. Between 1898 and 1915, some fifty new buildings both replaced outmoded facilities and filled many voids in the grid of the 1828 master plan, particularly along the waterfront and the lower yard. [37]

Between the United States 1917 entry into World War I and 1921, the yard added some forty-eight new structures. Nearly two-thirds of these were temporary, filling what had been open space. However, during this period the Lower Yard received its first high rise, the ten-story General Storehouse (Building 149), while the waterfront saw changes with the construction of the Marine Railway and the demolition of the landmark chimney during the reconstruction of the Machine Shop and Foundry (Building 42).

After World War I, the 1922-1932 period of federal naval retrenchment marked little change on the physical plant. The Navy did not extend piers to the new 1918 bulkhead line, erected only two new buildings, and eliminated or moved more than one dozen temporary and portable buildings. The Navy made little changes to road surfaces, although inspection maps and paving plans were completed. The increasing presence of automobiles and trucks resulted in extensive asphalt paving and street tree removal by the end of the decade. Pier 1, cleared of all but one of the small structures associated with the former Coal Storage and Handling Plant (Building 109), provided space for chain storage. Recreational facilities, primarily tennis courts filled open areas in the upper yard and east of Dry

[37] New construction for non-industrial use included a main gate and entrance house (Building 97) at Gate No. 1, a two-story dispensary (No. 120) near the western end of the Ropewalk (Building 58), an administration building for the Marine Corps (Building 136) on the southwest corner of the parade ground, and Quarters P in the lower yard. Black, 229.

Dock 2. The installation of double rail tracks on many of the piers and increasing number of cranes promised a larger industrial role in the future.[38]

[38] Black, Notes to "Chart No. 4," (n.p.).

6. WORKS PROGRESS ADMINISTRATION AND WORLD WAR II, 1934-1945

During the years preceding World War II, the Boston Navy Yard was transformed from a repair facility to a shipbuilding yard. Responding to growing threats of expansionism by both Japan and Germany in 1934, Congress authorized additional naval construction. With the passage of the Vinson-Trammel Act, Congress further committed to the expansion of the fleet. This reverse of naval policy brought swift and significant changes to the Boston Navy Yard. Later that year USS *MacDonough*, a modern destroyer incorporating sixty years of technological advances and the first warship built at Charlestown since 1874, "floated" from Dry Dock 1. The Navy issued a policy statement that explicitly established the main yard's primary function as destroyer production and its secondary function as manufacture of cordage and anchor chain. For the remainder of the 1930s, the yard benefited tremendously from the nation's naval expansion program.[1]

YARD IMPROVEMENTS AND SHIP PRODUCTION

As part of federal efforts to bring the nation out of the Great Depression, the yard facilities were modernized through the Works Progress Administration (WPA). Between 1936 and 1942, WPA projects included paving streets, installing new equipment, and reconditioning or expanding buildings. For example, in November 1938 the yard employed 1,406 WPA workers to initiate wartime expansion of Charlestown's physical plant.[2] Most of the yard's shade trees were lost to this expansion.

With the outbreak of World War II in Europe in 1939, Charlestown's construction program accelerated and the yard became known as the "destroyer yard."[3] The yard prepared eighteen World War I-era four-stacker destroyers for transfer to Great Britain under the 1940 destroyers-for-bases agreement.[4] At this time the yard's Public Works Officer reported most of the Charlestown or "main yard" buildings and industrial facilities in good condition, and several important additions underway. United States' entry into the war following the 1941 Japanese raid on Pearl Harbor intensified mobilization activities at Boston Navy Yard. During the war effort the yard constructed almost 300 vessels, repaired or overhauled more than 3,000, converted 74, and outfitted 1,100.[5]

CIRCULATION

In the late 1930s, WPA crews paved most of the streets in the yard with asphalt and many trees were cut down to allow for street widening. The increasing number of automobiles and trucks and the need for parking redefined much of the yard's open space as parking or loading areas. Fragments of green space were retained around buildings such as the Officers Quarters (Building 265), the Commandant's House (Quarters G), and the Marine Barracks (Building I). The purchase of diesel locomotives to replace steam-powered engines led to the modernization of the yard's railroad system.

[1] Black, 500-01.
[2] Black, 475-76 and *Handbook*, 65.
[3] *Handbook*, 63-65.
[4] *Handbook*, 65.
[5] *Handbook*, 65-66, 74-75. Carlson, 41.

WATERFRONT

Between 1933 and 1940, the main yard produced fourteen destroyers in the dry docks following the 1934 precedent in which most keels were laid in Dry Dock 2 and hauled to Dry Dock 1 for completion. The main yard constructed two other ships during this period on the shipbuilding ways. With both dry docks given over to construction work, ships in for repair were floated into a large cradle and hauled up the tracks of the yard's marine railway or taken to the South Boston dry dock. Charlestown's accelerating construction program revealed the yard's deficiencies, including the lack of proper shipbuilding ways that relegated construction to its dry docks. Many of the shops and other buildings had insufficient space, poor layouts, outdated equipment, and suffered from neglect.

WPA projects in the waterfront area included the complete interior reconstruction of the Navy Store (Building 5), reconditioning of the Storehouse (Building 4), remodeling of the Dry Dock Engine House (Building 22), which housed tinsmiths and shipwrights, and extensive paving (Figures 6.1-2). At the head of Pier 1, south of the Navy Store (Building 5) and near the former lawn area, WPA labor constructed the "Navy Exchange Service Station" (Building 194) in the vicinity of the former lawn area (Figures 6.2-3). The gas station was later expanded to include a service bay and served the yard's needs until its removal in the 1970s. To assist in the management of increased water traffic, the Pier 1 Substation (Building 109), the last remnant of the old Coal Storage & Handling Plant, was enlarged in 1942 and again two years later to provide office space for the yard's harbormaster.

In 1937, Pier 1, the Marine Railway, Dry Dock 1, and Dry Dock 2 all received repair work. The Navy made extensive changes along the waterfront east of Dry Dock 2. Between 1937 and 1939, the WPA erected a new Pipe Shop (Building 195) on what had been open space used as athletic fields between Dry Dock 2 and the Machine Shop (Building 42). During World War II, Piers 5 and 10 were enlarged, Pier 7 eliminated, Pier 11 constructed, and two new shipways, Nos. 2 and 3, came into service in 1941. Thereafter, new construction ceased at Dry Docks 1 and 2.[6] Shipway 3 evolved into a shipbuilding dry dock, which was designated Dry Dock 5 in 1944.[7] Wharfage increased with the extension of Piers 4, 7, 6, and 9 to the 1918 bulkhead line, and a new Pier 5 replaced 4-A.[8] Many buildings along the waterfront were removed to make way for new construction. The yard purchased portal and locomotive cranes to operate along the piers and dry docks (Figures 6.4-5). Three of the portal cranes from the American Hoist and Derrick Company in use during World War II, Nos. 30 (63), 62, and 65 remain today. Eventually, eleven piers and twenty-one cranes were in service.

UPPER YARD

WPA projects in the upper yard included replacement of the rear porches of the Officers Quarters (Building 246) and the construction of a new sun porch on the south façade of the Commandant's House (Quarters G) along with an addition containing a new brick kitchen and butler's pantry (Figures 6.6-8). 1930's photographs show the south grounds with carefully maintained flower beds on both the lawn and along the central path. Some traces of the Victorian shrub and tree remain, but the plantings were less dense by this time.

Access to the house changed during World War II. In 1941, due to security concerns, the Navy filled in the gate in front of the Commandant's House (Quarters G) with granite blocks and mortar atop a concrete footing. At this time the exedra walls in front of the house were cut down to half height. With no access to Chelsea Street, the west

[6] Of the 173 vessels constructed at Charlestown's shipbuilding facilities between 1933 and 1954, only 24 (DDs, LSDs, and LSTs) were constructed in Dry Docks 1 and 2. The remaining 86 percent were constructed at facilities in the lower yard. While repairs of battleships, carriers, cruisers, and other large ships were undertaken at the South Boston Annex, a large number of smaller craft went to the dry docks in the main yard. Black, 528-30, 601, 626.
[7] The structure, located just east of Pier No. 10, was redesignated Dry Dock 5 in 1944.
[8] Black, 530, 532-34.

side entrance on the basement level gained prominence with access to the west driveway from Second Avenue (Figures 6.9 and 6.10). During World War II, a large water tank was buried beneath the Commandant's House front lawn southwest of the house, and another water tank was installed beneath the Marine Barracks (Building I) Parade Ground. The Commandant's House served as the home for the yard's commandant and family until 1945, when the functions of yard commandant and commandant of the First Naval District were separated. For the next thirty years the district commandant occupied the house. The shipyard's commandant was relocated to Quarters P in the eastern end of the yard.[9]

To the west of the Commandant's House, the WPA built the Garage and Chauffeur's Quarters in 1936 (Figure 6.11) with the Quarters B-F Garages (Building 269) to the north. These new structures along with the new drive to the Commandant's House reduced the green space associated with this corner of the yard. In 1941, with the opening of Gate 2, a gatehouse was added to Garage and Chauffeur's Quarters which then became Building 1 with the razing of the existing Building 1. WPA workers added fireproof stair towers and open porches to the Marine Barracks (Building I). The WPA crews also enlarged the south end of the Marine Corps Administration Building (Building 136), which was later demolished in the 1970s (Figure 6.12). Similarly the WPA improved the tennis courts in front of the Marine Barracks but their work was subsequently obliterated in 1940 with the construction of a three-story, wood-frame Temporary Storage Structure (Building 198) (Figure 6.13-15). This building also housed Women Accepted for Volunteer Emergency Service (WAVES) during the war. The Navy constructed three new tennis courts in 1946 in the area south of the Commandant's House (Quarters G) between First and Second Avenues and Third and Fourth Streets.

The industrial labor force at Charlestown yard and its three annexes expanded from 4,000 workers at the beginning of the war to about 50,000 in 1943, including over 7,000 women workers. Women comprised from fifteen to twenty percent of the workforce, though they were prohibited from positions that required boarding commissioned ships. More than 2,300 African American workers represented a smaller proportion of the workforce, after an executive order banned racial discrimination and increased employment opportunities in defense industries. This larger, diversified workforce required certain alterations, including additional gender-segregated lockers and lavatories. To help cope with the increasing stream of applicants, the Navy enlarged the pedestrian Gate 4 in 1942 and added a ramp and turnstiles to direct access to time clocks.[10] The Navy removed twenty feet from the western end of the Ropewalk (Building 58) to make way for the expansion. The Navy also added a two-story wooden structure to the west end of the Ropewalk (Building 58) with a direct entrance to Chelsea Street so that applicants did not need to enter secure areas of the yard to process papers. In order to facilitate increased vehicle traffic, a portion of the granite wall was removed at Henley Street to create Gate 2. Thereafter, traffic entered along Water Street through Gate 1 and exited the yard through Gate 2.

There were other hasty efforts to accommodate the yard's wartime responsibilities. In 1942, just outside Gate 2, the Navy acquired a garage built in 1927 to serve as the Garage and Transportation Office (Building 204). This building was just on the other side of the wall of the recently WPA rebuilt Garage and Chauffeur's Quarters (Building 1) (Figure 6.16). The Navy also acquired an additional parcel outside of the boundary wall between Gates 1 and 2 in order to remove the existing building, Riordan's Stables, constructed against the wall.

LOWER YARD

Between 1941 and 1944, approximately twelve new buildings were constructed in the lower yard, including the second General Storehouse (Building 109) which replaced Buildings 76 and 77. Expansion of the Muster House,

[9] Carlson, 22 and f.62.
[10] Black, 532, 559, 572, 594 and *Handbook*, 65.

Central Power Plant, and the Dispensary (Buildings 31, 108, and 120) eliminated Flirtation Walk, the tree-lined boardwalk that led from Gate 4 to the lower officers' quarters. Some of Flirtation Walk's trees persisted into the 1950s though (Figure 6.15). As temporary structures and building extensions intruded upon secondary streets and avenues, the main unit seemed to have reached its maximal capacity. Crowding at the main yard, together with its limited anchorage, led to an aggressive program of external plant expansion, particularly at the South Boston Annex. Structural improvements at South Boston Annex included construction of twenty-five new buildings and expansion of docking capacity to service large warships. Additional quarters for crews of destroyers of the North Atlantic patrol supplemented those at Frazier Barracks in the main yard. In addition, the Navy retook possession of Lockwood's Basin facilities (leased in 1934 to the Bureau of Marine Fisheries of the Commonwealth of Massachusetts) and developed the U.S. Naval Fuel Annex in the Orient Heights section of East Boston.[11]

SUMMARY

Following the war's end, the Boston Navy Yard's multi-site facility was designated the Boston Naval Shipyard beginning in November 1945 and remained busy converting troop transports, deactivating ships, and completing ship construction (Figures 6.17-18). The demobilization of the fleet included mothballing several vessels, as well as completion of construction, repairs, and outfitting, and preparation of some vessels for scrapping. Demobilization and the paring of the civilian labor force dictated removal of surplus equipment, material, and supplies, including excess cranes, trucks and passenger cars and stockpiled shipbuilding materials in the immediate post-war years. In addition, the yard became responsible for maintenance and security of local deactivated facilities, including Hingham's Bethlehem shipyard, renamed the U.S. Naval Storehouse in Hingham.[12]

At its peak of activity during World War II, the Charlestown yard appeared congested and chaotic. Most of the roads had been quickly and efficiently paved with bituminous concrete and asphalt by WPA work crews. Antiquated buildings that had been upgraded by the WPA were overshadowed by new multi-story industrial buildings—constructed of brick, steel, and concrete—which replaced much of the yard's open, recreational space. The creation of Gate 2 and greater use of Gate 4 increased the amount of vehicular and pedestrian traffic in the upper yard. New construction extended onto nonessential streets, and temporary or semi-permanent frame structures filled pockets of open space between the larger buildings (Figure 6.18). Large overhead cranes and construction equipment prevailed along the waterfront, replacing the former shiphouses as both the dominant visual element and symbol of naval technology along the shoreline. The Navy removed mature elms to allow for street widening or because they had succumbed to Dutch elm disease. Although the Navy installed replacement trees, the yard lost its pleasant park-like setting that had attracted tourists and city residents. Wartime security and production took precedence of aesthetic considerations.

[11] Black, 534, 536-38.
[12] Black, 637-40, 642, 662 and *Handbook*, 71.



Figure 6.1: WPA repairs and improvements to the north façade of the Navy Store (Building 5) in 1937. First Avenue and Third Street are paved with brick, and a mature horse chestnut tree stands northeast of the building.



Figure 6.2: Area paved by WPA and crews Navy Exchange Service Station (Building 194) in 1936 (BOSTS-15755).



Figure 6.3: The new Navy Exchange Service Station (Building 194) on Pier 1 in 1937 (BOSTS-15755).



Figure 6.4: A portal crane in 1940 (BOSTS-15673).



Figure 6.5: A locomotive crane in 1940 (BOSTS-15673).



Figure 6.6: The Commandant's House (Quarters G) in 1936 during construction of the new sun porch. Note the garden beds along the walkway (BOSTS-9185).



Figure 6.7: WPA crews constructing the kitchen and butler's pantry on the east side of the Commandant's House (Quarters G) in 1938. The Stable (Building 21) and attached greenhouse are in the background (BOSTS-9185).



Figure 6.8: The Commandant's House (Quarters G) new kitchen and butler's pantry east wing in 1938 (BOSTS-9185).



Figure 6.9: The Commandant's House (Quarters G) west yard and boundary wall in 1942 (BOSTS-9187).



Figure 6.10: The Commandant's House (Quarters G) west yard and boundary wall in 1942 (BOSTS-9187).



Figure 6.11: The completed Garage and Chauffeur's Quarters (Building 1) in 1936 (BOSTS-9250).



Figure 6.12: The Marine Corps Administration Building (Building 136) in 1937 after being enlarged to the south by the WPA (BOSTS-9883).



Figure 6.13: WPA crews improving the tennis courts in 1937 (Future site of the Temporary Storage Building (Building 198)) (BOSTS-1660).



Figure 6.14: Tennis courts improved by WPA in 1937 (BOSTS-15660).



Figure 6.15: Aerial photograph of the yard in 1945 showing the impact of the Temporary Storage Building (Building 198) (highlighted with a dashed line) on the upper yard. Note trees along First and Second Avenues in the upper yard and along the former Flirtation Walk south of the Ropewalk (Building 58) (BOSTS-8615).



Figure 6.16: Looking west down Henley Street in 1937, showing the Transportation Office (Building 204) outside the wall and the original Building 1 inside the wall, lower right. This section of wall was removed to create Gate 2, and the original Building 1 was replaced by a gatehouse addition to the WPA Garage and Chauffeur's Quarters (new Building 1). Riordan Stables on the left was demolished during World War II (BOSTS-9155).

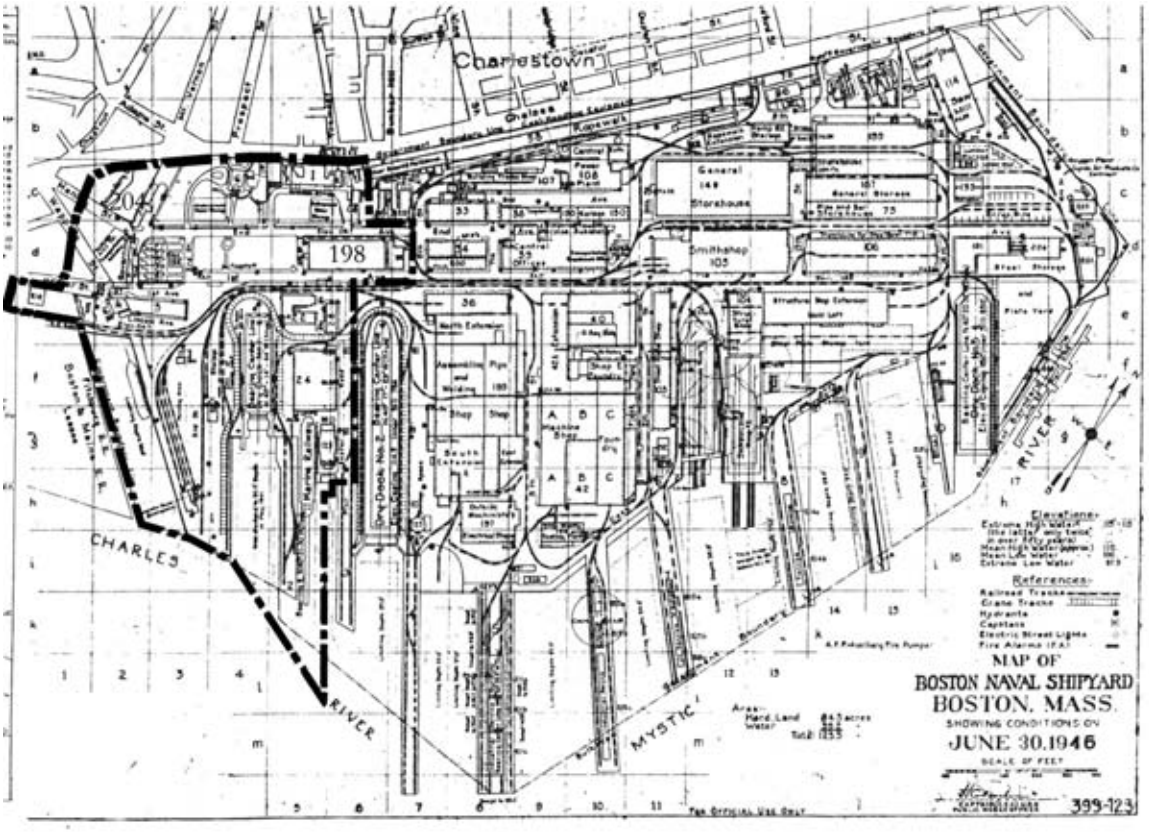


Figure 6.17: Plan of the yard in 1946 showing the extended bulkhead line, and the congested post-war yard, including the Temporary Storage Building (Building 198) and the Transportation Office (Building 204) in the upper yard and Navy Exchange Service (Building 194) on Pier 1. The current park boundary is outlined (Boston National Historical Park).

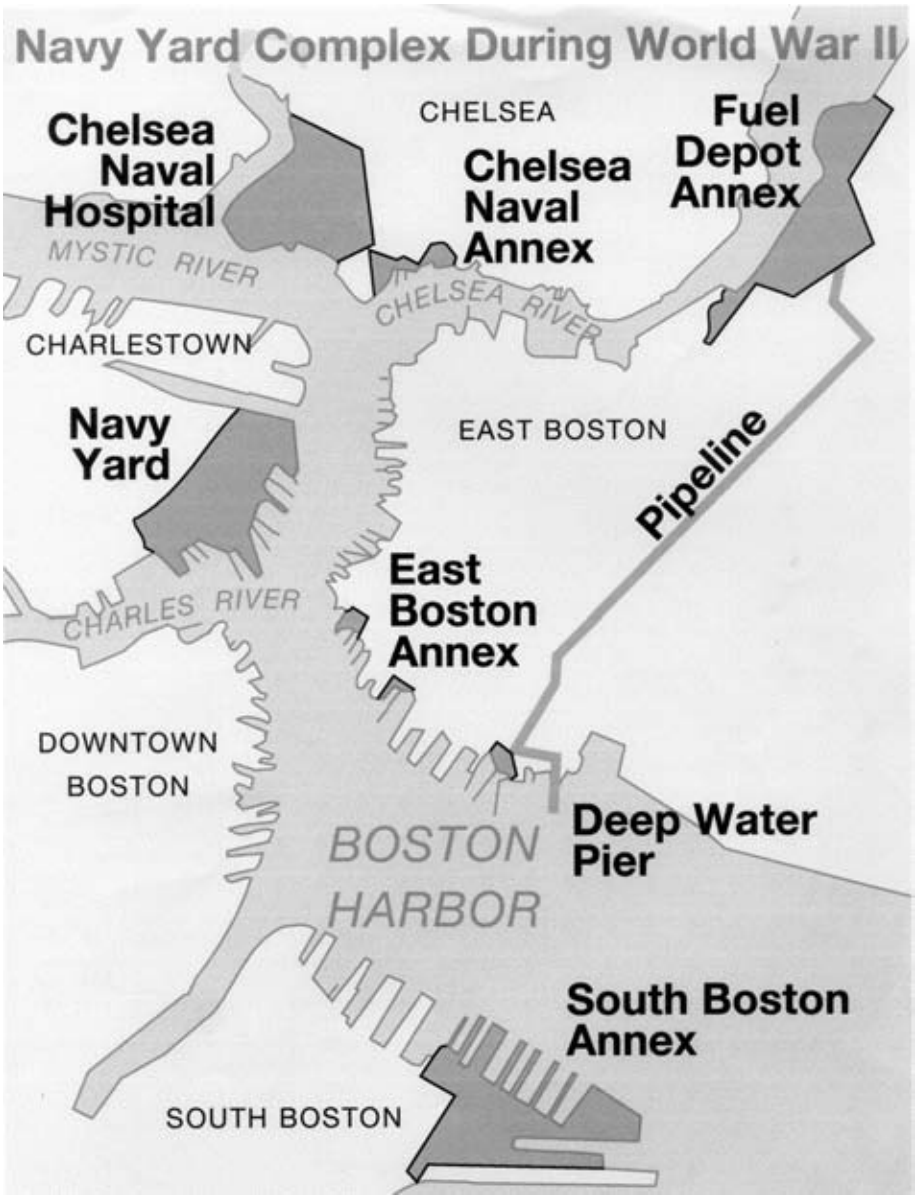
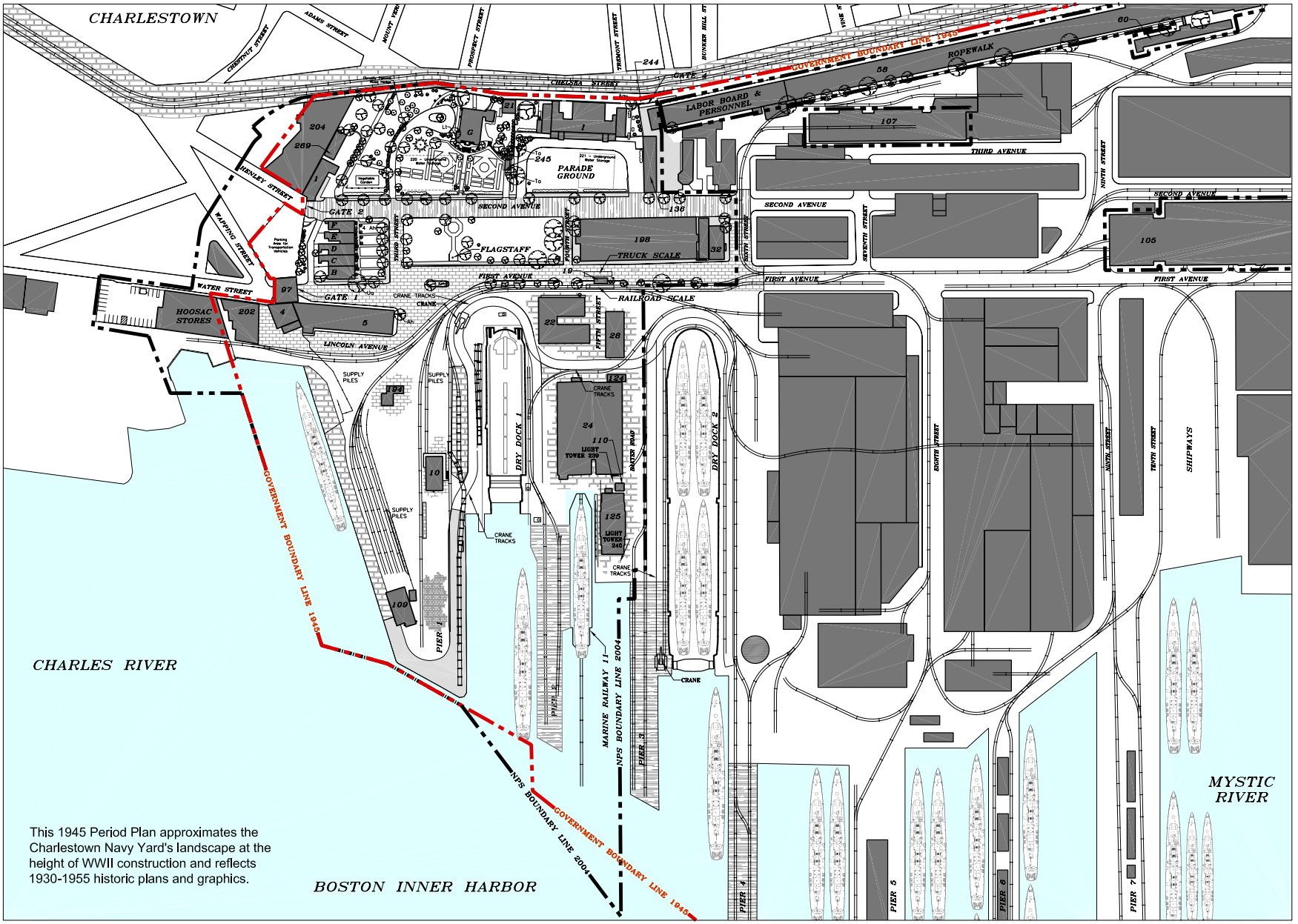


Figure 6.18: Plan of the multi-site Boston Naval Shipyard during World War II (Boston National Historical Park).



Cultural Landscape Report for Charlestown Navy Yard

Figure 6.19

Period Plan 1945

National Park Service
Olmsted Center for Landscape Preservation
99 Warren Street
Brookline, MA 02445
617-566-1689

SOURCES

1. Survey by Carol R. Johnson Assoc. Inc., Boston, MA 1995
2. Maps of Boston Naval Shipyard, 30 June 1945 & 30 June 1946
3. Boston NHP Historic Photos & Historic Grounds Management Report 1985

PREPARED BY

Ryan Reedy & Chris Stevens with AutoCAD 2002.
OCLP, June 2005.

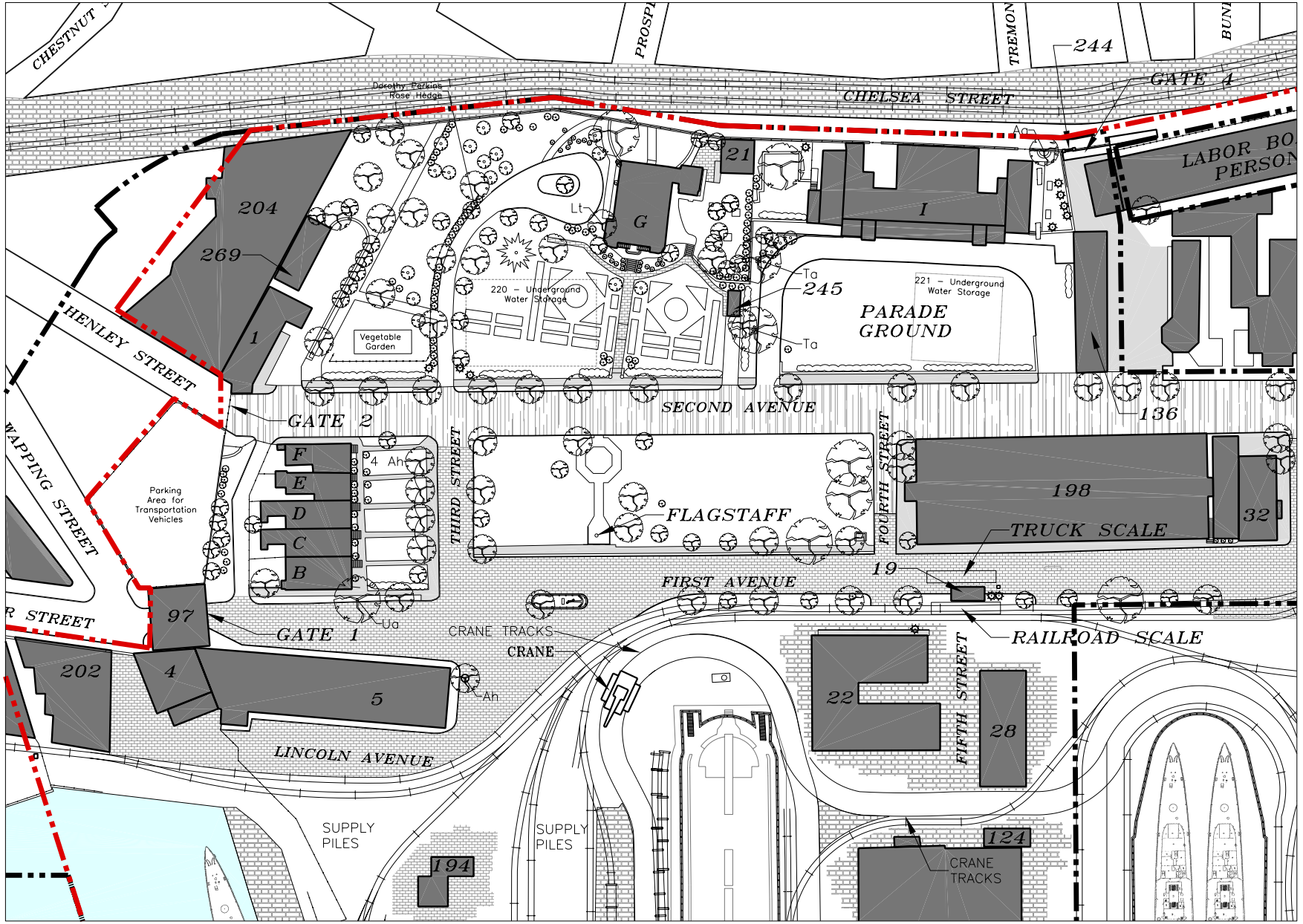
Legend

Sym.	Feature
	Brick Paving
	Granite Paving
	Wood Paving
	Concrete Paving
	Chain Link Fence
	Iron Fence
	Fence on Wall
	Wall
	Railway
	Bollard
	Bollard & Chain
	Lamp Post
	Fire Hydrant
	Bench
	Capstan
	Existing Contours
	Deciduous Tree
	Evergreen Tree
	Shrub
	Hedge

Note: Please Refer To Legend Page for Features, Building/Structure Names, and Plant List.

SCALE: 1"=200'

0 100' 200'



Cultural Landscape Report for Charlestown Navy Yard

Figure 6.20

Period Plan 1945 Vegetation Plan

National Park Service
Olmsted Center for Landscape Preservation
99 Warren Street
Brookline, MA 02445
617-566-1689

SOURCES

1. Survey by Carol R. Johnson Assoc. Inc., Boston, MA 1995
2. Maps of Boston Naval Shipyard, 30 June 1945 & 30 June 1946
3. Boston NHP Historic Photos & Historic Grounds Management Report 1985

PREPARED BY

Ryan Reedy & Chris Stevens with AutoCAD 2002. OCLP, June 2005.

Legend

Sym.	Feature
	Brick Paving
	Granite Paving
	Wood Paving
	Concrete Paving
	Chain Link Fence
	Iron Fence
	Fence on Wall
	Wall
	Railway
	Bollard
	Bollard & Chain
	Lamp Post
	Fire Hydrant
	Bench
	Capstan
	Existing Contours
	Deciduous Tree
	Evergreen Tree
	Shrub
	Hedge

Note: Please Refer To Legend Page for Features, Building/Structure Names, and Plant List.

SCALE: 1"=80'

0 40' 80'

Legend

Sym.	Feature
	Brick Paving
	Granite/Granolithic Paving
	Concrete Paving
	Chain Link Fence
	Iron Fence
	Fence on Wall
	Wall
	Railway
	Bollard
	Bollard & Chain
	Lamp Post
	Fire Hydrant
	Bench
	Capstan

Sym.	Feature
	Existing Contours
	Deciduous Tree
	Evergreen Tree
	Shrub
	Hedge

Sym.	Building/Structure Name
B–F	Officers Quarters (Building 265)
G	Commandant's House
I	Marine Barracks
1	Garage & Chauffeur's Quarters (Officer's Garage)
4	Storehouse (Labor Board)
5	Navy Storehouse
10	Pitch House and Oakum Loft (Laundry)
19	Scale House
21	Stable (Greenhouse)
22	Dry Dock Engine House (Storage)
24	Carpenter Shop (Riggers & Loborers)

Sym.	Building/Structure Name
28	Tin Shop (Restaurant)
32	Shell House (Yard Pay & Disbursing Office)
58	Ropewalk
60	Tar House
97	Main Gate
105	Chain Forge (Smithery)
107	Public Works Shop
109	Waterfront Office
110	Lead Shop
124	Latrine
125	Paint Shop
136	Marine Corps Administration Building
194	Naval Exchange Service Station

Sym.	Building/Structure Name
198	Temporary Storage Building (W.W.II)
202	Ammunition Inspection Office
204	Transportation Garage
220	Underground Water Storage
221	Underground Water Storage
242	Flagpole (First Avenue)
244	Gate 4 Gate
245	Garage
269	Officers Quarters Five Bay Garage

Plant List

Sym.	Botanical Name	Common Name
Aa	Ailanthus altissima	Tree of Heaven
Ah	Aesculus hippocastanum	Common Horsechestnut
Lt	Liriodendron tulipifera	Tuliptree
Ta	Tilia americana	American Linden
Ua	Ulmus americana	American Elm

Cultural Landscape Report for Charlestown Navy Yard

Figure 6.21

Period Plan 1945 Legend

National Park Service
Olmsted Center for Landscape Preservation
99 Warren Street
Brookline, MA 02445
617-566-1689

SOURCES

1. Survey by Carol R. Johnson Assoc. Inc., Boston, MA 1995
2. Maps of Boston Naval Shipyard, 30 June 1945 & 30 June 1946
3. Boston NHP Historic Photos & Historic Grounds Management Report 1985

PREPARED BY

Ryan Reedy & Chris Stevens with AutoCAD 2002.
OCLP, June 2005.

7. COLD WAR ERA, 1945-1974

The post-war years followed earlier precedents of personnel and production cuts. Yet, unlike previous post-war lulls, the likelihood of yard closure increasingly overshadowed yard improvements. Changes in the yard's landscape were minimal with the exception of repairs and removals, particularly for waterfront facilities. The United States' status as a global power prompted repairs in the late 1940s. An emerging rivalry with the Soviet Union required military preparedness, placing unusual peacetime demands on the nation's navy yards. Though the Charlestown plant revealed numerous deficiencies, the Cold War debate over the size and character of the American military establishment precluded a significant program of improvements.[1] In 1947, the Navy's Bureau of Ships defined Boston Naval Shipyard's main mission as the construction, docking, overhaul, and alteration of smaller commissioned warships, a definition later modified to include vessels "up to aircraft carriers." During the following year, yard administrators developed a long-range plan, referred to as the 1948 master plan, for development in preparation for future global conflicts.[2] The yard continued to manufacture items for the Navy, including large anchor chain for a new class of super carriers (Figure 7.1). In addition, the yard served as a repair center for electronic equipment. In 1950, the yard initiated a major conversion program, upgrading radar and sonar systems with a laboratory and techniques that were later adopted at other naval repair stations.[3]

During the early 1950s, the commitment of American forces and aid to Asia (South Korea, the Formosa Straits, and Indo-China) necessitated activation of reserve fleet vessels and conversion or new construction of other ships. Boston Naval Shipyard performed most of its ship work—limited largely to activation and conversion—at its Charlestown facilities, but few of the plant's deficiencies identified in the 1948 master plan had been addressed with a limited program of improvements.[4] A shortage of space and funding largely dictated the modernization and enlargement of existing structures, rather than construction of new facilities (Figure 7.2). In the mid 1950s, the yard laid down the keel of the LST *Suffolk County*, its only postwar construction and the last vessel built at the Charlestown yard. The yard also converted the destroyer *Gyatt* into the world's first guided missile destroyer.[5]

In 1964, Secretary of Defense Robert McNamara cited preliminary studies of excess capacity and high costs at government navy yards as justification for closure of some facilities. The Navy invested little for maintenance and modernization of the main yard facilities and closed inefficient or superfluous bases. In November, the US Navy Department announced intentions to close shipyards and selected the New York Naval Shipyard and the repair facility at San Diego in this first round of deactivation.[6] Escalating costs for American forces in Vietnam forced the Department of the Defense to adopt stringent fiscal measures later in the decade, including reduction of the naval fleet. The resulting decline in the number of destroyers severely reduced Boston Naval Shipyard's repair program.[7]

A preliminary evaluation of Boston Naval Shipyard, conducted between 1966 and 1968, noted the yard's inefficient layout and general facilities and later recommended consolidation and relocation of operations to a modernized South Boston plant. A portion of the "E" Street Annex at South Boston was declared excess to operations and transferred to Massachusetts Port Authority in 1969. The rest of this annex was disposed of during the 1970s. The consolidation plan was never funded, and in 1972, the idea was abandoned in favor of modernizing the Charlestown

[1] Black, 635.
[2] During the first post-war decade ship work at the Boston Naval Shipyard included repair and preservation of decommissioned and inactivated ship in the Boston Group of the Atlantic Reserve Fleet, primarily at South Boston facilities. The yard performed 1,050 overhauls, 13 conversions, 1,199 dry-dockings, and shipwork on 33 vessels as part of Congressionally-authorized program of peacetime military aid. Black, 710-11, 717.
[3] Black, 708 and *Handbook*, 71.
[4] Black, 726-27.
[5] *Handbook*, 72, 77.
[6] *Handbook*, 72.
[7] Black, 731, 749, 804-05.

yard. However, modernization never came to fruition because of the decision to include the yard on the 1973 list of naval facilities to be closed.

A new direction for the flagging Charlestown yard was marked by the designation of the Boston Naval Shipyard as a National Historic Landmark in 1966 as described below.[8]

> The Boston Naval Shipyard is one of the Nation's oldest, and for over 150 years has built, repaired and serviced naval vessels. The installation introduced the use of shelters for shipways, erected one of the Nation's first drydocks [sic], and pioneered in modern ship construction. She also manufactured all of the Navy's rope for over a century.

The Boston Redevelopment Authority and National Park Service (NPS) prepared plans for management of the older portion of the Charlestown yard as an historic park.[9] Following the Navy's plans to consolidate the yard to the South Boston plant, a 1971 study of the Boston Naval Shipyard commissioned by the Boston Redevelopment Authority called for a mixed-use plan, consisting of a naval park, museum and tourist facilities. Another 1971 study completed by the NPS proposed that the western portion of the yard be incorporated into a larger Boston National Historic Sites park, comprised of a number of Revolutionary War-era sites in and around Boston. In 1973, following a recommendation by the Navy that a portion of the yard be administered by the NPS in a partnership to protect USS *Constitution*, the NPS proposed a boundary for the park that encompassed the western portion of the yard. In this way the ship could remain in Charlestown.

CIRCULATION

Most pedestrians entered the yard through Gate 4 on Chelsea Street after arriving on trolley or by foot (Figures 7.3-4). Turnstiles at this gate slowed the steady stream of workers, so security workers could inspect them coming and going.[10] Some pedestrians also entered the yard through Gate 1 where they parked nearby. By the 1950s, many workers owned cars and yard operations depended on trucking and less on rail transport (Figures 7.5-9). To expedite truck access, the Navy demolished the 1903 Main Gate (Building 97) in 1958 and erected a new modern Gatehouse (Building 267) (Figure 7.8). The Navy had also discussed extending Bunker Hill Street through the Rope Walk to the Central Power Plant (Building 108) to improve truck traffic but decided against it. At this time, the Navy paved over the wood block paving on Second Avenue with bituminous concrete.[11] Throughout the yard, open space was used to park vehicles to accommodate seventy-five percent of the yard's workers who commuted to the yard. In the 1960s, parking also covered much of the area just outside of the boundary wall between Gates 1 and 2, near the Hoosac Stores, which was no longer used by the railway company but leased as warehouse space (Figure 7.9). Parking spaces were limited, though, and regulated with parking permits. Permits allowed parking along First and Second Avenues and immediately surrounding many of the buildings.[12]

Cleanliness was one of the major campaigns waged in the post-World War II period, and the Navy installed square yellow trash receptacles along the yard's roads and walkways and near building entrances. The design of the trash receptacles was heralded in the shipyard newspaper and was the focal point of numerous "Keep Your Shipyard Clean" cartoons in the paper, many of which were drawn by nationally significant African-American artist Allan Rohan Crite.

[8] National Survey of Historic Sites and Buildings, "Boston Naval Shipyard, Massachusetts," Oct. 10, 1966, enclosed in Howard R. Stagner to Paul H. Nitze, Nov. 15, 1966, Boston Naval Shipyard NHL Reference File, Division of Cultural Resources, Boston NHP.
[9] Black, 815.
[10] Rose, 2003.
[11] Historic Pavement Study, 17.
[12] Rose, 2003.

During the 1950s, Boston journalist William Schofield suggested linking historic sites in the City of Boston, so visitors and residents could find them more easily. Mayor John Hynes agreed, and plywood signs were created to direct visitors to the sites. By 1958, the Freedom Trail and The Freedom Trail Foundation were created, and a red line was painted to connect most of the sixteen selected sites. In 1955, the Navy constructed a visitor parking area for USS *Constitution* between the Storehouse (Building 4) and the Hoosac Stores.[13] A concrete wall with two curtain gates marked the visitor entrance to the lot and the yard. The project eliminated First Street.

Construction of the Mystic River Bridge (opened in 1950) presented a visual barrier, separating the yard from Charlestown to a greater degree than the yard's perimeter wall. With the bridge's disruption of Chelsea Street's traffic flow, many workers began to park on Chelsea Street and under the bridge itself. The increase in roads, connectors, and parking areas marked a dramatic increase in asphalt surfacing (Figures 7.10-11).

WATERFRONT

A modest program of improvements enabled the Charlestown yard to service the post-war Navy. With the exceptions of Piers 1 and 5, all of the yard's wharves were constructed of light timber on wood piling supports, structures incapable of sustaining the weight of mobile cranes.[14] In 1948, the Commonwealth of Massachusetts drew a new pier and bulkhead line. The wharves in the lower yard were renumbered, accordingly. Outward portions of Dry Docks 1 and 2 were reconstructed, and Dock 1 was extended to a length of 404 feet. In 1947 and 1948, the Navy installed a saluting battery (Structure 261), a pair of three-inch salute guns on a concrete platform, and constructed an Explosives Bunker (Building 272) at the end of Pier 1.

In the early 1950s, involvement in the Korean War required the yard to take vessels out of reserve and retrofit them for continued service. The Navy installed electronic devices, including radar and sonar. The Navy also installed guided missiles into ships in place of guns to counter new threats from aircraft and submarines. Propeller and sonar pits were added to Dry Dock 1, and the wooden Piers 4, 6, 7, and 11 were all replaced by new concrete piers (Figure 7.12).[15] The Pitch House (Building 10) was expanded to accommodate a sonar test tank.[16]

The Navy constructed the large Grit Hopper (Building 259) on Pier 1 in 1952-1953. The Navy added a second, smaller Grit Hopper (Building 273) in 1962-1963. Trucks supplied the abrasive grit to the yard's hoppers. The grit was in turn pumped by hose to Dry Dock 1 to sandblast steel ships.

In 1956, the Navy converted the water tank below the Commandant's House (Quarters G) front lawn into a Fuel Oil Tank (Structure 220). Pipelines connected the tank to Pier 1 and the Power Plant (Building 108) as the Navy converted if from coal to oil burning facility. [17]

The transducer facility, one division of the electronics shop, was relocated from the Pitch House (Building 10) to the South Boston Annex in 1958. In 1958, the "K" Street Annex, adjacent to South Boston Annex, was sold as surplus. The Bureau of Ships ordered inactivation of the South Boston Annex, although its implementation was delayed until completion of repairs to Dry Dock 2 at the main yard in Charlestown. However, Dry Dock 3 in South Boston remained open for ship work on carriers until closure of the entire yard. The East Boston Fuel Annex ceased operations and was placed in maintenance status two years later.[18]

[13] Carlson, 149.
[14] The absence of connecting trackage isolated Dry Dock 5's portal cranes, while Pier 11 lacked cranes and tracks. Black, 669-71.
[15] In response to the heightened activity during the Korean War, pier improvement resumed in 1955 with the replacement of Piers 4, 6, 7, and 11. Pier 11 was improved to accommodate aircraft carriers. The steel and concrete structures were completed several years later, as were repairs to the quay walls near Piers 5, 6, and 7. Black, 664-65, 667, 676-78. Carlson, 17.
[16] Carlson, 126.
[17] Carlson, 149.
[18] Black, 746, 748.

A large portion of the yard's open space was used for parking. The only vegetation retained at the west end of the waterfront, was a small planting around the Navy Store (Building 5). The area just north of the Dry Dock Engine House (Building 22) near the Scale House (Building 19) was surfaced with gravel, (an area that is now grass lawn). Keel blocks, made of concrete and reinforced by steel, were a common site around the waterfront. The Navy used the blocks to hold ship keels upright in the dry docks, to test and balance cranes, and to block motor vehicles for security.[19]

During the 1960s, yard activities included outfitting vessels, missile and antisubmarine warfare (ASW) conversions, and Fleet Rehabilitation and Modernization (FRAM) overhauls that ranged from brief dockings to extensive operations. Floodlights installed on building roofs and towers provided illumination for Dry Dock 2. Completed pier improvements included installation of track on Pier 4 and its integration with tracks on Piers 5, 6, and 7 into a system connected to twenty-foot wide crane tracks serving Dry Docks 1 and 2. Additional minor construction included several industrial service buildings on Piers 4, 6, and 7, fire pump houses, garages, and other small structures.[20]

The 1960s also brought an appreciation of the yard's historic heritage. In 1961, the Navy placed a bronze plaque in front of the Commandant's House (Quarters G) along Second Avenue. The freestanding plaque was placed in a recessed nook within the flat stone retaining wall along the house's front lawn and sidewalk. It listed all of the yard's commandants. In 1966, the Secretary of the Interior designated the Boston Naval Shipyard as a National Historic Landmark, and the Navy installed the landmark plaque on a marble base near the Finger Pier. The plaque and base was moved to the west side of Pier 1 during the 1970s.[21]

The Navy sandblasted the Officers' Club (Building 5, former Navy Store) in 1960 to remove the paint from its brick walls, and in 1972, the Navy installed a large picture window to the south side.[22] The entrance to the building on the east facade was covered at this time with a blue and yellow canvas awning.[23]

In 1970, the yard's docking officer evaluated Marine Railway No. 11 as unusable. The Navy closed main yard's Marine Railway and Ropewalk (Building 58) in 1971. The Navy also ordered closure of the Forge Shop (Building 105), transferring foundry work to the Philadelphia shipyard as part of a consolidation plan for the East Coast.[24] Only five new structures were erected between 1963 and 1973, including an Electrical Substations (Building 276) and a Sand Hopper (Building 273) on Pier 1.[25]

USS *Constitution* berthed at Pier 1 attracted an increasing number of tourists. The Navy operated a small souvenir sales trailer in USS *Constitution* visitor parking area between the Storehouse (Building 4) and the Hoosac Stores. In 1969, the Navy converted the first floor of the Storehouse (Building 4) into public restrooms.[26] In 1972, USS Constitution Museum Foundation was formed and the non-profit took over souvenir sales.[27] The same year, the Navy added an exterior platform to the Pitch House (Building 10) on Pier 1 so visitors could observe USS *Constitution* while it was in Dry Dock 1 for rehabilitation. Building 10 served as the first USS Constitution Museum. A chain link fence line path led visitors from the visitor parking area across Pier 1 to Building 10 preventing public access to other parts of the yard.

[19] Rose, 2003.
[20] Black, 759, Chart No. 6 [n.p.].
[21] Carlson, 149.
[22] Carlson, 142.
[23] Rose, 2003.
[24] Black, 746, 756, 807, 810.
[25]). At the eastern end of the waterfront, Shipways 1 and 2 were converted to parking lots with waste material filling the slip portions of the ways. Black, 755, Chart No. 7, [n.p.].
[26] Carlson, 142.
[27] Carlson, 52.

UPPER YARD

In 1951, Shipyard Commander Pleasant D. Gold Jr. described the site as a "densely congested area of buildings and facilities, hemmed in by the Mystic and Charles Rivers on three sides and the overhead Mystic River Expressway on the fourth side" (Figure 7.12).[28] The Muster House (Building 31), having been stripped of its porch c. 1930, looked even more stark by the close of the 1950s after hurricanes had destroyed many of the remaining trees along Second Avenue in the upper and lower yards. Now virtually no vegetation surrounded this building or its neighbors, the Marine Administration Building, the Temporary Storehouse, and the Shell House (Buildings 136, 198, and 32). At this time, yard employees parked their cars on angle against each of the buildings further adding to the cramped conditions.

One respite to the loss of vegetation was the Commandant's gardens. Admiral John L. McCrea, who relocated from the Hawaiian Islands and resided in the house in the early 1950s, lived off the land as much as was possible in an urban setting. His gardener, Tom Little, tended a garden plot on the western side of the grounds and used the greenhouse for growing flowers. Fences surrounded the garden and separated the pen, where Little raised chickens and turkeys for the commandant's table. In 1958, site improvements and additional landscape work was completed on the grounds.

Rear Admiral Joseph H. Wellings, who resided in the house beginning in 1962, was very interested in the gardens. In an interview Wellings related, "In addition to several small spruce trees, I improved considerably the landscaping to the south of the Commandant's House. I also improved the landscaping all around the immediate building, and in the general garden area." The spruce trees planted by Wellings flourished and eventually obscured the house (Figure 7.13).[29] Wellings' vegetable garden was located in the southwest lawn behind the current rose garden. The Wellings family filled the greenhouse and sun porch with plants and also used the vegetable garden, but was discouraged by the urban soot and grime that coated the flowers and vegetables.[30] The greenhouse was in poor repair, and Wellings had it removed in 1963.[31] Overall the Commandant's grounds, the most planted portion of the yard, were formal but not showy.[32]

Manard Spekin, who worked at the yard from 1941 to 1975 and continued for two years with the NPS from 1976 to 1977, provided another description of the grounds. Spekin, who worked as a contract coordinator, recalled in a 1985 interview, that an outside contractor cared for most of the trees and shrubs in the yard. He remembered a small vegetable garden near Second Avenue next to the fence that was tended by the Admiral's steward. NPS employees installed a larger vegetable garden in the late 1970s and maintained it until the early 1980s. Spekin described flower beds along the walkway between the house and Second Avenue filled with tulips in massed groups of color in the spring. "These bulbs were then pulled out and given to Navy Yard employees, then the beds were filled with red geraniums – I remember 350 geraniums at one time – which stayed until the fall when they were given away and the tulips were planted before winter."[33] When the last resident, Admiral Roy D. Snyder, departed in 1976, the Commandant's grounds were documented with photographs showing lush and mature vegetation through out the site, including azaleas and rhododendrons. The boundary wall was covered with Virginia creeper (*Parthenocissus quinquefolia*) and shaded by tree-of-heaven (*Ailanthus altissima*).

Vegetation also highlighted the grounds of the Officers Quarters (Building 265) and the Marine Barracks (Building I) (Figure 7.14). In 1964, the 1.35-acre parcel encompassing the Marine Barracks (Building I), the parade ground, and

[28] Black, 669.
[29] Brockway and Todisco, 11-12.
[30] Micholet, 50-51.
[31] Carlson, 142.
[32] Rose, 2003.
[33] Brockway and Todisco, 12.

the Marine Corps Administration Building (Building 136) was transferred to the Marine Corps then returned to the Navy just before the yard closure in 1974(Figure 7.15).[34] In the 1970s, the Marine Barracks (Building I) had a training yard in front of the building, and a climbing rope on a metal support is all that remains.[35] Marines had to climb that rope to the top each day if they wanted to earn breakfast.[36] There were stairs cut into the concrete retaining wall along the Parade Ground at this time linking it to Second Avenue.

During World War II, the Navy removed the Bandstand (Building 163) located southeast of the Second Avenue and Third Street intersection in the shipyard mall (recreation area). After this time, the Navy constructed a wooden reviewing stand (Structure 260) around the base of Flagpole (Structure 242) facing First Avenue on the southwest corner of the mall (Figure 7.16). There had been a flagpole in the same location since the early-nineteenth century marking the site of many yard ceremonies. 1957 design drawings show a proposed expansion of the reviewing stand with the addition of trees, shrubs and groundcover. In 1959, the wooden reviewing stand was replaced with a new concrete terrace with an aluminum post and chain railing. At this time, a granite slab with the bronze War Memorial (Structure 279) was moved from a traffic island in the middle of First Avenue and relocated on the sidewalk in front of the new Reviewing Stand (Structure 260).[37] The Commandant often addressed yard workers from the platform. The traffic island, removed in 1959 to better facilitate truck transportation, had also contained a large anchor and was surrounded by a metal post and chain fence (Figure 7.17). By 1962, the Navy substantially regraded the area and added a concrete walk.[38] The area north of the flagpole near Second Avenue was used as a baseball field during this period and included a backstop. The Navy had constructed three new tennis courts in 1946 east of the flagpole and Reviewing Stand (Structure 260).

SUMMARY

As the yard prepared for closure in 1974, its abandoned physical plant reflected the end of an era for the US Navy and the promise for a bright future as a park and redeveloped residential and commercial community. After several in depth studies, the western portion of the yard was delineated as a park (Figure 7.18).

While the more industrial waterfront was cluttered with materials such as stockpiles, cranes, light towers, and keel blocks, the upper yard reflected two centuries of meticulous care. An assortment of lawn, ornamental shrubs, and shade trees (some dating to the nineteenth century) surrounded the Commandant's House (Quarters G) and Officers Quarters (Building 265) along with several beds for herbaceous flowers and vegetables. Important symbols of the Navy's presence remained in good condition, including the Flagpole, Reviewing Stand, and War Memorial (Structures 242, 260, and 279). The surrounding Shipyard Mall (recreation area) also reflected the Navy's presence with its tennis courts and shade trees. As reflected in the Navy's 174 years of records, annual work plans, and requests for maintenance funds, the yard required an enormous amount of upkeep, which would now become the responsibility of the National Park Service and Boston Redevelopment Authority.

[34] Carlson, 14 and f 28.
[35] Brockway and Todisco, 15.
[36] Rose, 2003.
[37] The Reviewing Stand (Structure 260) was officially referred to as "Bandstand" by the Navy.
[38] BOSTS-13437-1957 and BOSTS 13437-1962.



Figure 7.1: Yard-manufactured dielock chain stored in piles, 1943 (BOSTS-9669).

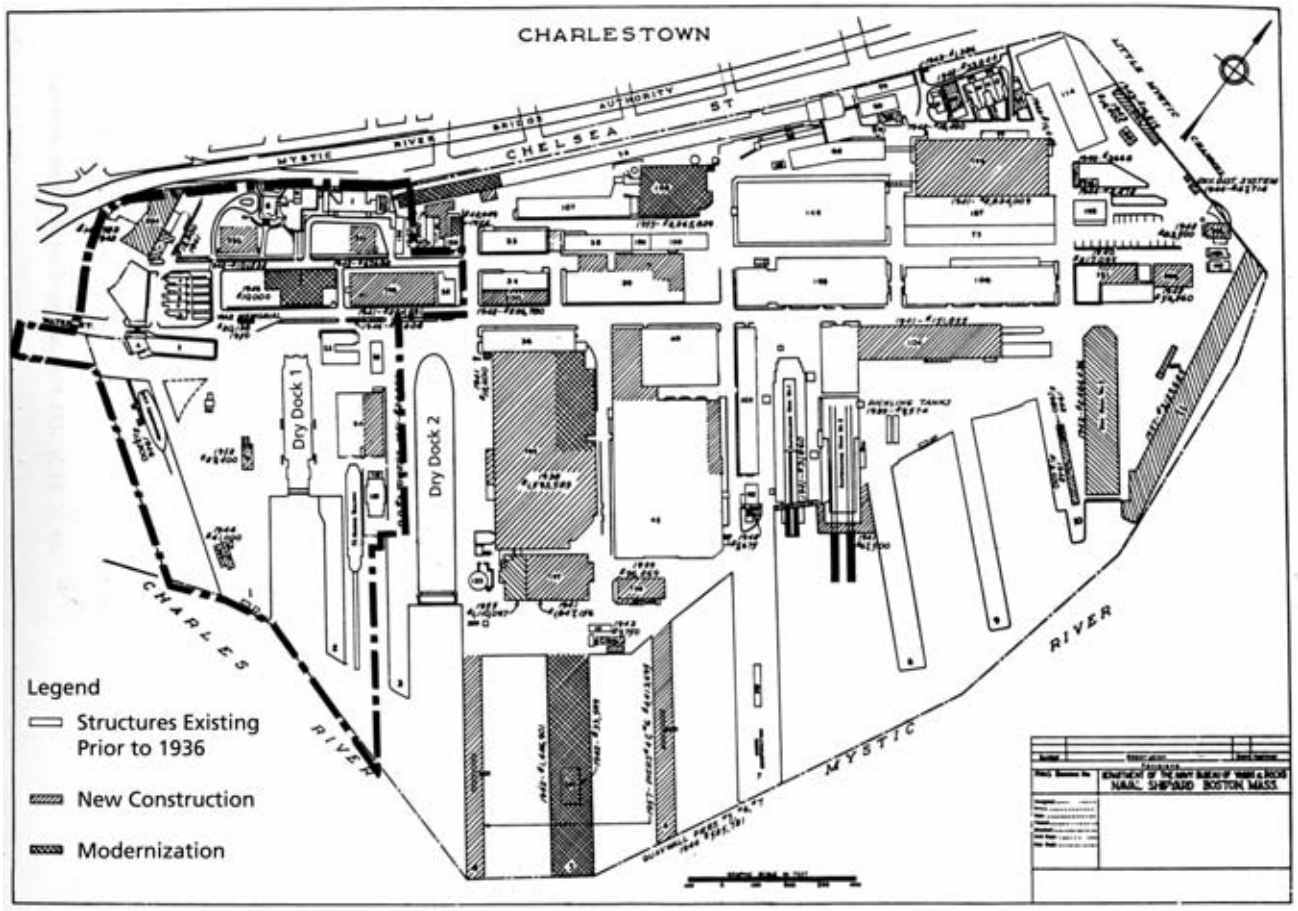


Figure 7.2: A shortage of space and funding favored the modernization and enlargement of existing structures, rather than construction of new facilities as recorded in 1957. Current park boundary is outlined (Boston National Historical Park).



Figure 7.3: The pedestrian Gate 4 looking into the yard from Chelsea Street in 1977. The Muster House (Building 31) is to the left, the Temporary Storehouse (Building 198) is in the center, and the Marine Corps Administration Building (Building 136) is to the right (HAER photo).



Figure 7.4: The Chelsea Street trolley tracks, the Ropewalk (Building 58) wooden second-story addition, and pedestrian Gate 4 in 1977 (HAER photo).



Figure 7.5: The west and south facades of the Storehouse (Building 4) and the Navy Store (Building 5) in 1955. Pier 1 is to the right. The Police Booth, used to screen cars, sits in the corner of the two buildings. Vehicles on Lincoln Avenue are leaving the yard by the "out" gate between the Storehouse (Building 4) and the Hoosac Stores (BOSTS-15714).



Figure 7.6: The west and south facades of the Storehouse (Building 4) and the Navy Store (Building 5) in 1974. The Police Booth adjacent to the Storehouse (Building 4) and the chain link fence and gate that ran between Building 4 and the northeast corner of Pier 1 are gone. The "in" gate is visible to the left of Building 4 (BOSTS-8869).



Figure 7.7: An October 1954 aerial view of a parking lot outside the Yard's western wall, between Gates 1 and 2. The Officers Quarters (Building 265) are seen at the top of the image, and Gate 1 (Building 97) is in the upper left attached to the Storehouse (Building 4) (BOSTS-8665).



Figure 7.8: Gate 1 Gatehouse (Building 267) constructed in 1959 (BOSTS-8949das163a).



Figure 7.9: USS *Constitution* parking area south of Gate 1. Left: 1955 view of the construction looking northwest as seen from Pier 1. Right: 1959 view from First Avenue looking southeast. The Storehouse (Building 4) is left of the gate, and the Hoosac Stores are to the right (Boston Naval Shipyard News and BOSTS-15655).

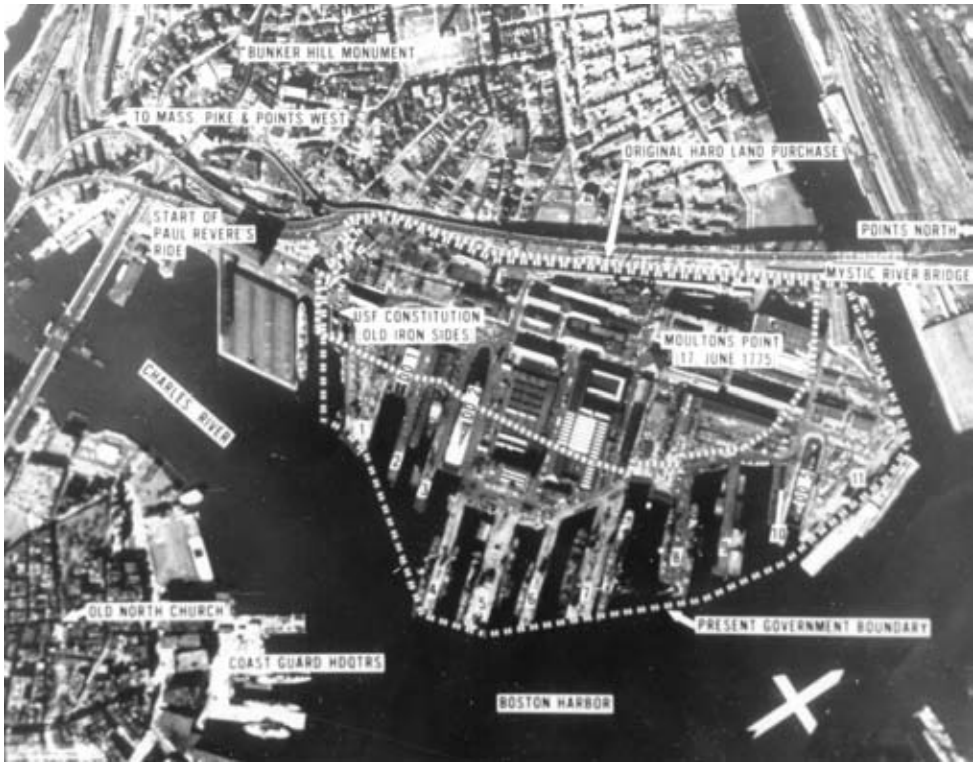




Figure 7.10: Aerial photographs in 1966 showing Mystic River Bridge along the northern boundary of the yard (Boston NHP).



Figure 7.11: By 1974, the parking area had increased with the demolition of several buildings outside the yard. The Mystic River Bridge and Central Artery connector is on the left, and the Hoosac Stores building is on the right. The northern boundary wall remains in its original configuration, and the white, cube-shaped Transportation Garage (Building 204) still stands west of the Commandant's House (Quarters G) (BOSTS-8874, 8674).



Figure 7.12. The densely congested yard, hemmed in by the Mystic and Charles Rivers on three sides and Charlestown on the fourth side as seen in July 1945. The only trees are located in the upper yard mainly at the Commandant's House (Quarters and along First and Second Avenues by the Shipyard Mall (recreation area). Some trees remain along the former Flirtation Walk south of the Ropewalk (Building 58) (BOSTS-8615-1073).



Figure 7.13: Commandant's House, c. 1966. Note the large spruce trees (BOSTS-9192).



Figure 7.14: Officers Quarters (Building 265) in 1948. Hedges line the front walkways and a horse chestnut tree grows along Third Street. A large elm tree grows south of the building along First Avenue (BOSTS-9167).



Figure 7.15: Marine Barracks (Building I), driveway, and Parade Ground, 1974. Note the privet hedges and the linden trees to the left (BOSTS-9228).



Figure 7.16: Anchor in the Shipyard Mall (recreation area) by First Avenue and Fourth Street in 1967. One of the tennis courts, Second Avenue, and the Marine Barracks (Building I) are in the background (BOSTS-7553).



Figure 7.17: Flagpole, Reviewing Stand, and War Memorial (Structures 242, 260, and 279). The Flagpole has historically been the center of yard ceremonies. Left: November 1957 funeral procession of Adm. William V. Pratt passes between the flagpole and the First Avenue traffic island bearing the war memorial and an anchor. Right: The formal disestablishment of the Boston Naval Shipyard on July 1, 1974. The War Memorial stands on the sidewalk at the base of the stand and the flagpole (BOSTS-7543 & 7617).

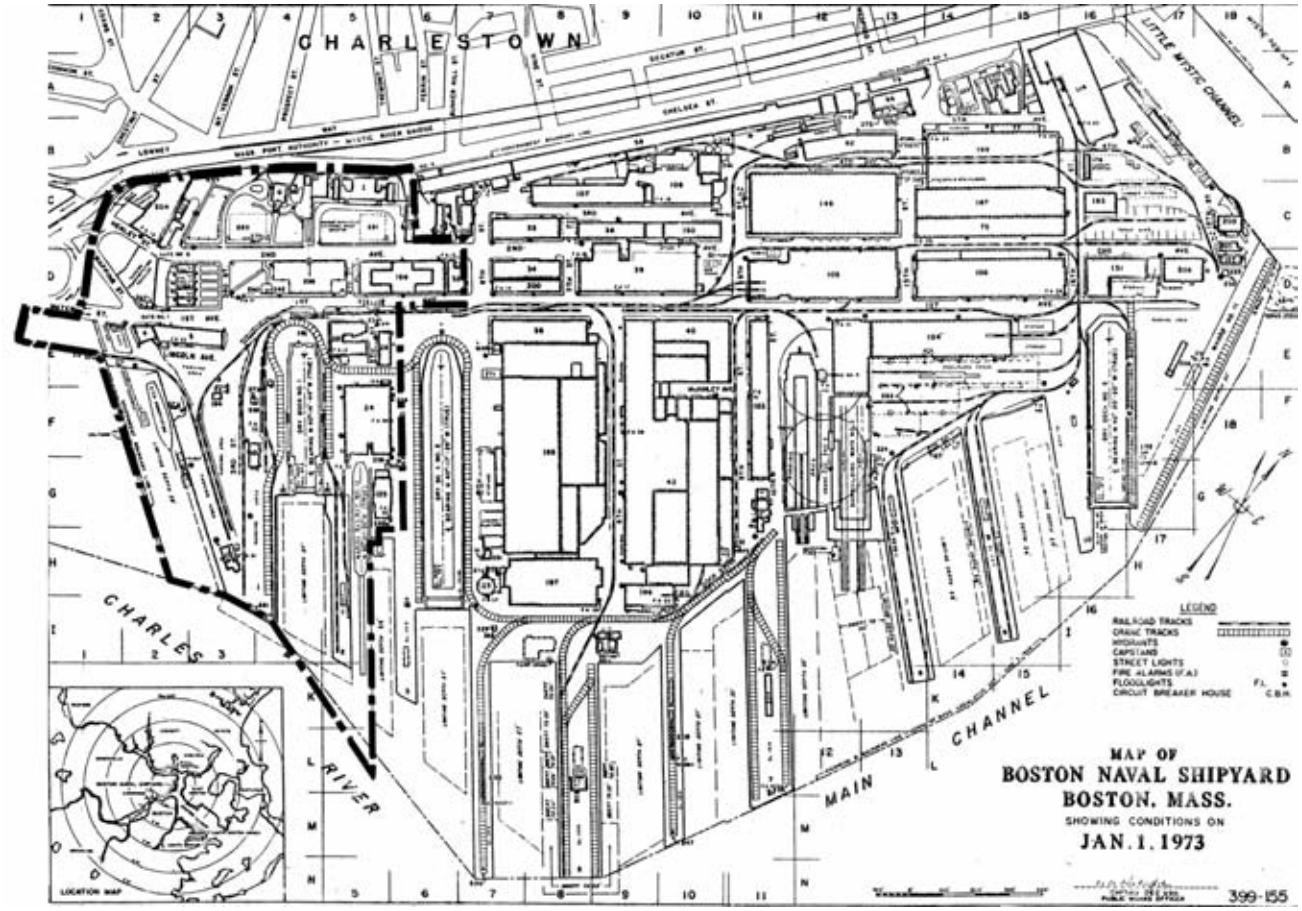
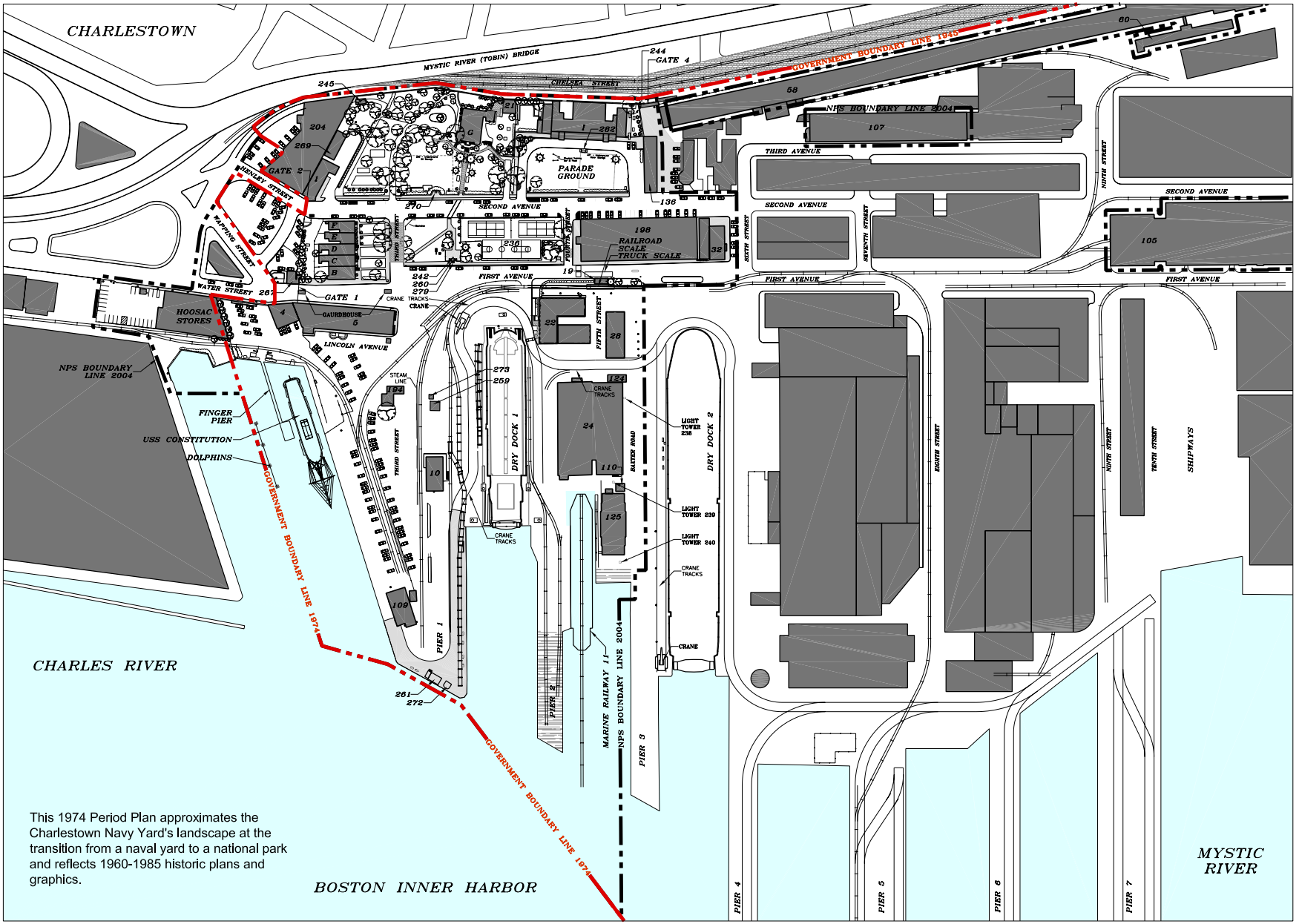


Figure 7.18: 1973 plan from the yard's annual report. Current park boundary is outlined (Boston National Historical Park).



Cultural Landscape Report for Charlestown Navy Yard

Figure 7.19

Period Plan 1974

National Park Service
Olmsted Center for Landscape Preservation
99 Warren Street
Brookline, MA 02445
617-566-1689

SOURCES

1. Survey by Carol R. Johnson Assoc. Inc., Boston, MA 1995
2. Map of Boston Naval Shipyard, 1 January 1973
3. Boston NHP Historic Photos & Historic Grounds Management Report 1985

PREPARED BY

Ryan Reedy & Chris Stevens with AutoCAD 2002. OCLP, June 2005.

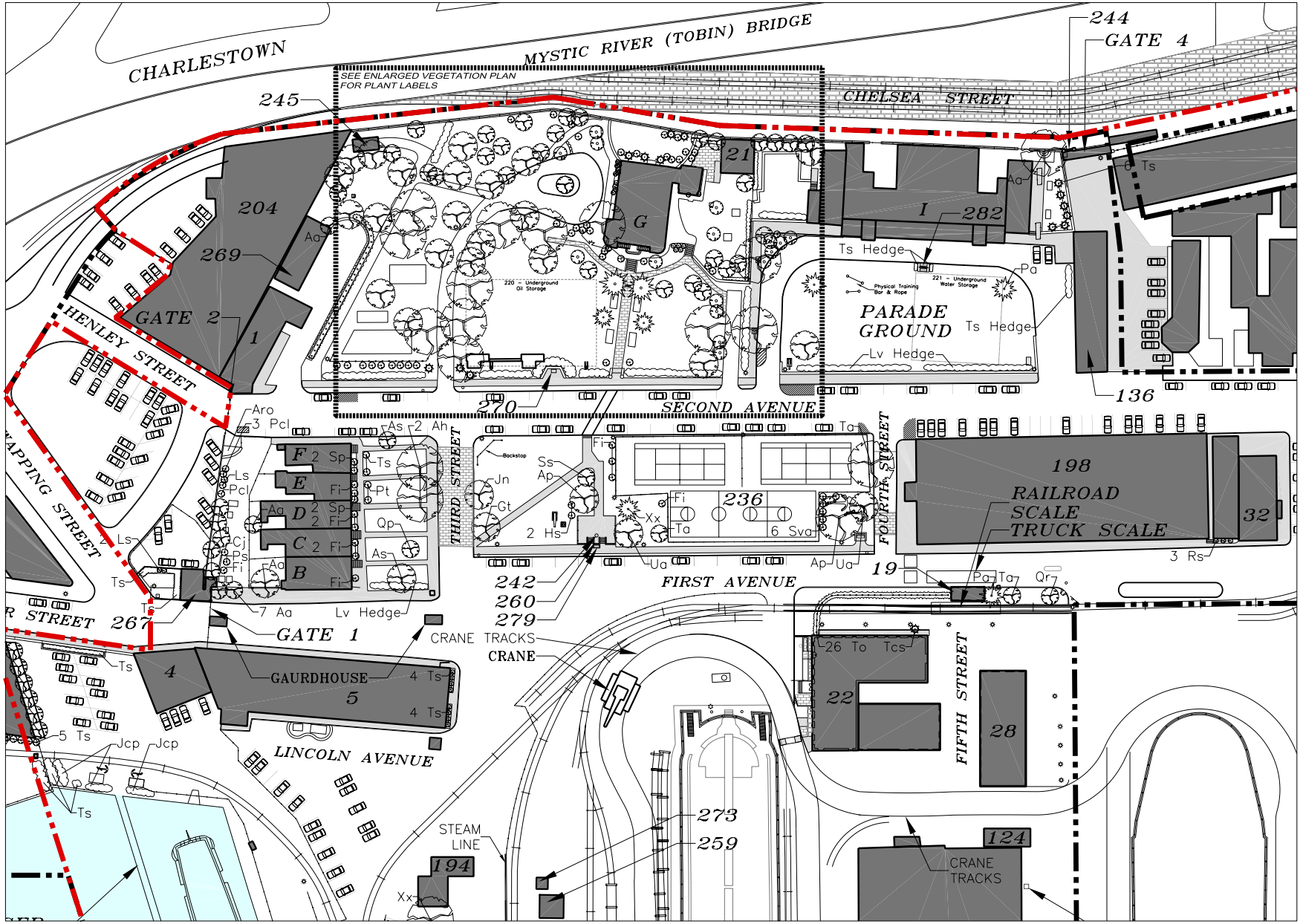
Legend

Sym.	Feature
	Brick Paving
	Granite Paving
	Wood Paving
	Concrete Paving
	Chain Link Fence
	Iron Fence
	Fence on Wall
	Wall
	Railway
	Bollard
	Bollard & Chain
	Lamp Post
	Fire Hydrant
	Bench
	Capstan
	Existing Contours
	Deciduous Tree
	Evergreen Tree
	Shrub
	Hedge

Note: Please Refer To Legend Page for Features, Building/Structure Names, and Plant List.

SCALE: 1"=200'

0 100' 200'



Cultural Landscape Report for Charlestown Navy Yard

Figure 7.20

Period Plan 1974 Vegetation Plan

National Park Service
Olmsted Center for Landscape Preservation
99 Warren Street
Brookline, MA 02445
617-566-1689

SOURCES

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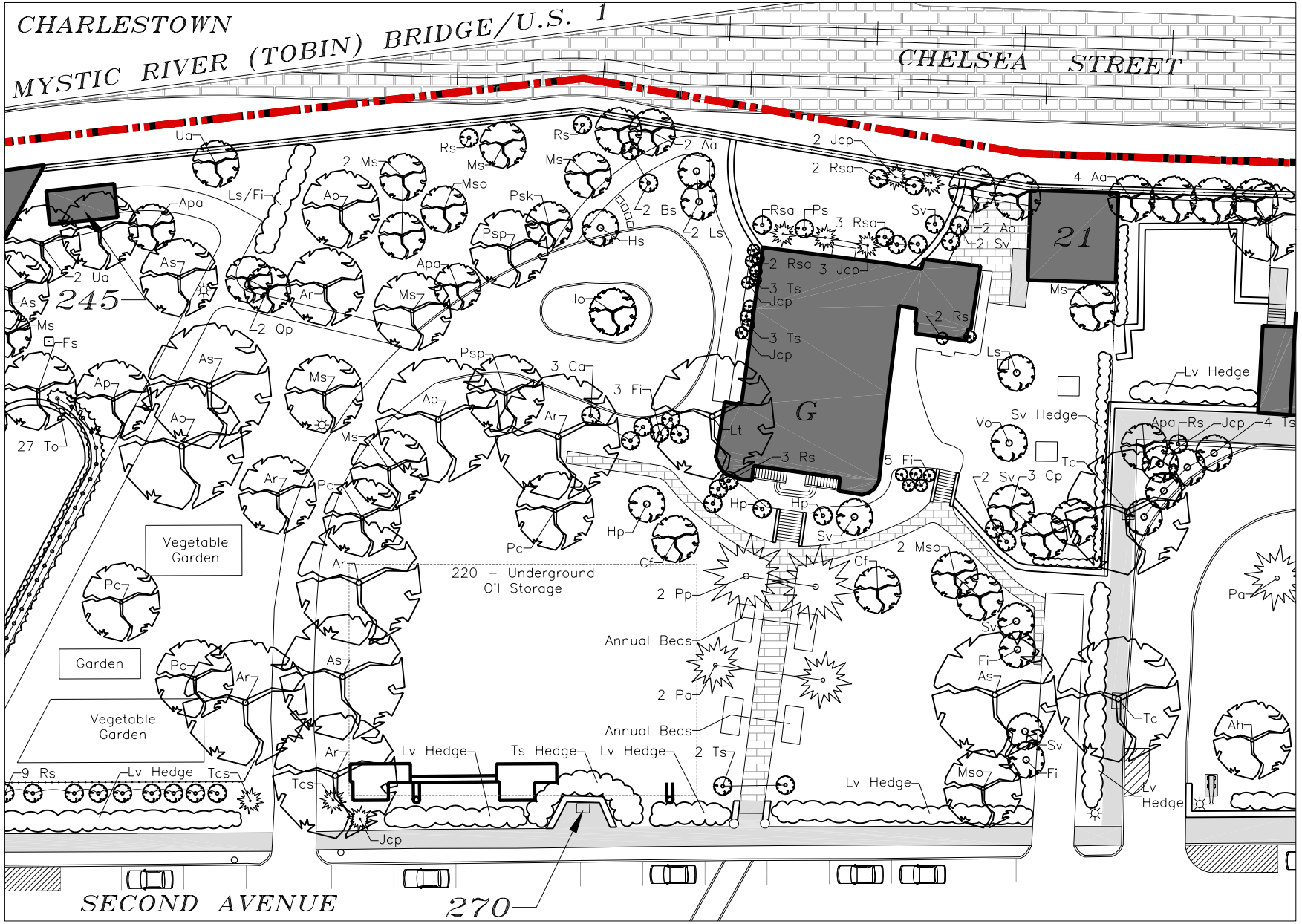
Legend

Sym.	Feature
	Brick Paving
	Granite Paving
	Wood Paving
	Concrete Paving
	Chain Link Fence
	Iron Fence
	Fence on Wall
	Wall
	Railway
O	Bollard
	Bollard & Chain
	Lamp Post
	Fire Hydrant
	Bench
	Capstan
	Existing Contours
	Deciduous Tree
	Evergreen Tree
	Shrub
	Hedge

Note: Please Refer To Legend Page for Features, Building/Structure Names, and Plant List.

SCALE: 1"=80'

0 40' 80'



Cultural Landscape Report for Charlestown Navy Yard

Figure 7.21

Period Plan 1974 Enlarged Vegetation Plan

National Park Service
Olmsted Center for Landscape Preservation
99 Warren Street
Brookline, MA 02445
617-566-1689

SOURCES

1. Survey by Carol R. Johnson Assoc. Inc., Boston, MA 1995
2. Map of Boston Naval Shipyard, 1 January 1973
3. Boston NHP Historic Photos & Historic Grounds Management Report 1985

PREPARED BY

Ryan Reedy & Chris Stevens with AutoCAD 2002. OCLP, June 2005.

Legend

Sym.	Feature
	Brick Paving
	Granite Paving
	Wood Paving
	Concrete Paving
	Chain Link Fence
	Iron Fence
	Fence on Wall
	Wall
	Railway
	Bollard
	Bollard & Chain
	Lamp Post
	Fire Hydrant
	Bench
	Capstan
	Existing Contours
	Deciduous Tree
	Evergreen Tree
	Shrub
	Hedge

Note: Please Refer To Legend Page for Features, Building/Structure Names, and Plant List.

SCALE: 1"=30'

0 15' 30'

Legend

Sym.	Feature
	Brick Paving
	Granite/Granolithic Paving
	Concrete Paving
	Gravel Surface
	Supply Piles
	Chain Link Fence
	Iron Fence
	Fence on Wall
	Wall
	Railway
O	Bollard
	Bollard & Chain
☼	Lamp Post
+O+	Fire Hydrant

Sym.	Feature
	Bench
O	Capstan
	Existing Contours
	Deciduous Tree
	Evergreen Tree
	Shrub
	Hedge

Sym.	Building/Structure Name
B–F	Officers Quarters (Building 265)
G	Commandant's House
I	Marine Barracks
1	Garage & Chauffeur's Quarters
4	Storehouse (Constitution Office)
5	Navy Storehouse (Officer's Club)
10	Pitch House and Oakum Loft (Battery Charging)
19	Scale House
21	Stable
22	Dry Dock Engine House (Substation)
24	Carpenter Shop
28	Tin Shop (Lab)
32	Shell House (Bank)

Sym.	Building/Structure Name
58	Ropewalk
60	Tar House (Storage)
105	Chain Forge
107	Public Works Shop
109	Waterfront Office
110	Lead Shop
124	Latrine
125	Paint Shop
136	Marine Corps Administration Building
194	Naval Exchange Service Station
198	Temporary Storage Building (W.W.II)
204	Transportation Garage
236	Playing Courts
242	Flagpole (Bandstand, First Ave.)

Sym.	Building/Structure Name
244	Gate 4 Gate
245	Garage (Garden Shed)
259	Grit Hopper
260	Reviewing Stand (First Avenue)
261	Saluting Battery
267	Gatehouse (Gate 1)
269	Officers Quarters Five Bay Garage
270	Yard Commandants Plaque
272	Explosives Bunker
273	Sand Hopper
279	War Memorial (First Avenue)
282	Marine Barracks Torri Gate

Plant List

Sym.	Botanical Name	Common Name
Aa	Ailanthus altissima	Tree of Heaven
Ah	Aesculus hippocastanum	Common Horsechestnut
Ap	Acer platanoides	Norway Maple
Apa	Acer palmatum	Japanese Maple
Ar	Acer rubrum	Red Maple
Aro	Alcea rosea	Hollyhock
As	Acer saccharum	Sugar Maple
Bs	Berberis spp.	Barberry
Bse	Buxus sempervirens	Common Box
Ca	Cornus alba	Tatarian Dogwood
Cc	Cotinus coggygria	Common Smokebush
Cf	Cornus florida	Flowering Dogwood
Cj	Chaenomeles japonica	Japanese Floweringquince
Cp	Crataegus phaenopyrum	Washington Hawthorn
Fi	Forsythia x intermedia	Border Forsythia
Fs	Fraxinus spp.	Ash
Gt	Gleditsia triacanthos	Common Honeylocust
Hh	Hedera helix	English Ivy
Hp	Hydrangea paniculata	Panicle Hydrangea
Hs	Hybiscus syriacus	Rose-of-Sharon Althea
Io	Ilex opaca	American Holly
Jcp	Juniperus chinensis 'Pfitzeriana'	Pfitzer Juniper
Jn	Juglans nigra	Black Walnut
Kl	Kalmia latifolia	Mountain Laurel
Ls	Lonicera spp.	Honeysuckle
Lt	Liriodendron tulipifera	Tuliptree
Lv	Ligustrum vulgare	European Privet
Ms	Malus spp.	Crabapple
Mso	Magnolia x soulangeana	Saucer Magnolia

Sym.	Botanical Name	Common Name
Pa	Picea abies	Norway Spruce
Pc	Pyrus communis	Common Pear
Pp	Picea pungens	Colorado Blue Spruce
Pq	Parthenocissus quinquefolia	Virginia Creeper
Ps	Pieris spp.	Pieris
Pcl	Pyracantha coccinea 'Lalandei'	Firethorn
Psk	Prunus serrulata 'Kwanzan'	Kwanzan Cherry
Psp	Prunus subhirtella 'Pendula'	Higan Cherry
Pt	Prunus tomentosa	Manchu Cherry
Ptr	Parthenocissus tricuspidata	Boston Ivy
Qp	Quercus palustris	Pin Oak
Qr	Quercus rubra	Red Oak
Rs	Rosa spp.	Rose
Rsa	Rhododendron spp.	Rhododendron [azalea cultivar]
Rsr	Rhododendron spp.	Rhododendron [rhododendron cultivar]
Sa	Salix spp.	Willow
Sp	Spiraea prunifolia	Bridalwreath Spirea
Ss	Sorbus spp.	Mountainash
Sv	Syringa vulgaris	Common Lilac
Sva	Spiraea x vanhouttei	Vanhoutte Spirea
Ta	Tilia americana	American Linden
Tc	Tilia cordata	Littleleaf Linden
Tcs	Tsuga canadensis 'Sargentii'	Sargentii Canadian Hemlock
To	Thuja occidentalis	Eastern Arborvitae
Ts	Taxus spp.	Yew
Ua	Ulmus americana	American Elm
Vo	Viburnum opulus	European Cranberrybush Viburnum
Xx	Unknown	Unknown

Cultural Landscape Report for Charlestown Navy Yard

Figure 7.22

Period Plan 1974 Legend

National Park Service
Olmsted Center for Landscape Preservation
99 Warren Street
Brookline, MA 02445
617-566-1689

SOURCES

1. Survey by Carol R. Johnson Assoc. Inc., Boston, MA 1995
2. Map of Boston Naval Shipyard, 1 January 1973
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PREPARED BY

Ryan Reedy & Chris Stevens with AutoCAD 2002.
OCLP, June 2005.

8. YARD CLOSURE AND NATIONAL HISTORICAL PARK, 1974 - 2004

On 16 April 1973, the yard commander, Captain R.L. Arthur, announced the closure of the Boston Naval Shipyard. All fleet servicing and manufacturing operations ceased as of 31 December. A formal disestablishment ceremony at the main yard's flagpole on 1 July 1974 marked the official closure. At the time of closure, the main yard comprised approximately 131 acres (83.9 land acres, 46.07 water, and 1.34 marine railway). Ten piers extended into the harbor, and industrial buildings and structures, cranes, dry docks, slips, and residential and administrative quarters stretched from the waterfront to the yard's boundary at Chelsea Street.

NATIONAL PARK SERVICE

On 1 October 1974, President Gerald Ford signed the Boston National Historical Park Act of 1974. This legislation authorized the establishment of Boston National Historical Park, a unit of the National Park System. The park was not a single, contiguous piece of property. Rather, it was a collection of seven sites in downtown Boston and Charlestown, the purpose of which was to "preserve for the benefit and inspiration of the people of the United States … certain historic structures and properties of exceptional national significance … associated with the American Revolution and the founding and growth of the United States."[1] The seventh site listed in the park's legislation was the main yard, now referred to by its original name, Charlestown Navy Yard. The act defined the yard "to include the United States Ship *Constitution*" and approximately thirty acres at the west end. It also authorized the National Park Service (NPS) to enter into written agreements with the Navy to "permit the continued use of any such buildings and facilities as the Secretary of the Interior determines to be necessary for the preservation and maintenance of the *Constitution*."[2]

In July 1976, the Navy formally established the USS *Constitution* Maintenance & Repair Group to oversee continued maintenance of the ship. Originally attached to the Supervisor of Shipbuilding, Conversion, and Repair, Boston, it became part of the new Naval Historical Center Detachment, Boston, on its creation in 1991.[3] By that time, plans were well underway to dry dock the ship for a twelve- to fifteen-month inspection and repair period in preparation for her bicentennial in 1997. USS *Constitution* entered Dry Dock 1 in September 1992, immediately after her participation in Sail Boston 1992, the city's celebration of the 500th anniversary of Christopher Columbus' voyage in 1492.[4] The U.S. Navy continues to be an integral presence at the yard with sailors living here while caring for USS *Constitution*.

The Charlestown Navy Yard was ultimately divided into four separate parcels in 1976 (Figure 8.1). This division greatly affected the subsequent treatment of the yard, as well as determining the fate of individual buildings and structures. The NPS acquired one parcel, which became a unit of Boston National Historic Park (BNHP). The thirty-acre contiguous parcel, which comprised the Charlestown Unit of the new historical park, consisted of the old administrative and ceremonial center of the Navy Yard, including the Commandant's House (Quarters G) and the Marine Barracks (Building I), as well as Piers 1 and 2, Dry Dock 1, and USS *Constitution*.[5] The remaining three parcels were acquired and managed by the Boston Redevelopment Authority (BRA). These included the Historic Monument, Public Park, and New Development Areas. The Public Park Area included Piers 3 and 4, Dry Dock 2, and the Pipe and Shipfitting Shops (Building 195). The Historic Monument Area encompassed the northeastern quarter of the yard north of First Avenue. This area was defined as high intensity to include major public

[1] Boston National Historical Park Act of 1974, Public Law 93-431, Oct. 1, 1974, § 2 (a), 88 Stat. 1184.
[2] Ibid., § 2 (d).
[3] Martin, Tyrone, *A Most Fortunate Ship*, p. 365, 371.
[4] "USS *Constitution* Enters Dry Dock 1," *The Broadside/Boston National Historical Park* (Autumn 1992), p. 3.
[5] For maintenance of the USS *Constitution*, the NPS authorized the Navy continued use of the yard's facilities.

attractions, retail and commercial uses, and housing and related services. The New Development Area, the largest of the three parcels, consisted of many of the existing piers (#5-11) and buildings in the southeastern quarter of the yard. This highly desirable area with its harbor views was defined to include housing and hotels and retail and commercial space.

A boundary enlargement report completed by the NPS Denver Service Center in December of 1978 noted historically "exceptional" and "primary" resources outside the park boundary, apparently in an effort to stem the tide of extensive alterations to the yard.[6] In 1976, the Navy had removed the caisson of Dry Dock 2 and flooded the structure before transferring the dock to the BRA. The boundary report objected to the flooding of the dry dock, stating that it would, among other things, cause damage to building foundations and utility tunnels south of First Avenue.[7] During the 1980s, subsequent Congressional legislation amended the original boundary by adding four buildings outside park boundaries to BNHP; the Ropewalk (Buildings 58), the Tar House (Building 60), the Chain Forge (Building 105), and the Public Works Shop (Building 107).[8] These buildings, now part of the park's noncontiguous legislative boundary, remain officially in BRA ownership except for Building 107, which has been deeded back to the United States as part of an exchange of real property.

In 1980, the Charlestown Navy Yard General Management Plan (GMP) identified several structures for adaptive reuse to provide visitor services; the Shell House (Building 32) for orientation, the Navy Store (Building 5) as an activity center with food service concessions, the Pitch House (Building 10) as the main interpretive center, and the Commandant's House (Quarters G), the Marine Barracks (Building I), the Ropewalk (Building 58), and the Chain Forge (Building 105) as theme museums.

By the mid-1980s, the park recognized that many of the GMP goals were unrealistic or had been made unworkable by other developments. Thus in mid-1986, the park revised the GMP, and following public review, approved the plan in March 1987.[9] The revision scaled back many of the original plans, revised the preservation zoning to allow for the development of visitor amenities, and adjusted the locations of facilities. The plan shifted the proposed food service to the Pitch House (Building 10) and the yard's interpretive center to the Paint Shop (Building 125). The Shell House (Building 32) remained as the offices and museum of the Boston Marine Society. To fund yard development, the plan promoted reliance on private partnerships rather than on Congressional appropriations. The updated GMP scrapped plans for developing the entire Ropewalk (Building 58) and Chain Forge (Building 105) into museums, instead encouraging commercial redevelopment through either the NPS Historic Leasing Program or the Boston Redevelopment Authority with space reserved for major exhibit components.

CIRCULATION

Early park and BRA planning documents call for visual easements to protect axial views that survive from the historical building pattern of the yard. Most of these views follow historic circulation routes that traverse the yard. Historic American Engineering Record (HAER) photographs taken in 1977 document the yard's historic buildings

[6] Exceptional were buildings 34, 42, 58, 60, 62, 75, 79, 105 and Shipway 1. Primary were buildings 31, 33, 36, 38, 39, 40, 42, 96, 103, 106, 107, 108, 114, 120, 123, 143, 149, 150, 195 (already demolished), 197, 199, 222, 264, 266 (LMNO), 268 (ash silo), Dry Docks 2 and 5, Shipway 2, Piers 3 and 11 (or wharf 11), all crane and railroad tracks, and a construction area around Shipway 1. Boundary Enlargement Report: Charlestown Navy Yard. (Denver: Denver Service Center, National Park Service, 1978), 43-44.

[7] Boundary Enlargement Report: Charlestown Navy Yard, 43-46.

[8] Deed, Boston Redevelopment Authority to United States of America, Feb. 7, 1985 (Suffolk Deeds, Book 11511, p. 200), Quitclaim Deed of Easement, United States of America to Boston Redevelopment Authority, Feb. 8, 1985 (Suffolk Deeds, Book 11511, p. 202), Quitclaim Deed of Easement, United States of America to Boston Redevelopment Authority, Dec. 4, 1985 (Suffolk Deeds, book 12092, p. 300), Deed of Release, United States of America to Boston Redevelopment Authority, Portion of Parcel No. 1, Historic Monument Parcel, Charlestown Section, Boston, Massachusetts, Aug. 20, 1982 (Suffolk Deeds, Book 11511, p. 195), Boston NHP Deed No. 7, Deed Files, Division of Cultural Resources, Boston NHP.

[9] Boston National Historical Park, *Final Revised General Management Plan/Volume II, Boston National Historical Park, Charlestown Navy Yard* (Boston: Boston National Historical Park, 1987), TIC 457/D6175A.

while inadvertently providing a snapshot of the conditions at the yard. In general, few changes had been made since the yard's closure. Photographs show that the streets were completely paved to the facades of buildings, with few sidewalks and almost no curbing (Figures 8.2-8.7). Railroad and crane tracks were extant, as were numerous chain link fences.

The most significant post-World War II changes to the circulation system at the yard occurred in the early 1980s. Construction of the Mystic River Bridge had made Chelsea Street dead end, making it little more than a cobbled driveway for yard workers. Charlestown planners realized the need for reviving the street, and in 1980-1981, they built the Chelsea-Water Street connector and paved Chelsea Street with asphalt. This project necessitated shifting much of the yard's granite boundary wall further south especially near the Commandant's House (Quarters G). The granite wall was split into five sections, which were moved intact to their new locations and reassembled. The Transportation Garage (Building 204) was also razed for this project with parts of its concrete wall remaining attached to the relocated boundary wall. At the same time, access to the BRA portion of the yard was greatly enhanced by the addition of vehicular access through Gate 4 and the expansion of Fifth Street. This project required the demolition of the Marine Corps Administration Building and the Temporary Storehouse (Buildings 136 and 198) which were within or bordered the NPS portion of the yard (Figures 8.8 and 8.9). The concrete pedestrian gateway was shifted east to make way for the road bed, and the retaining wall along the Marine Barrack's Parade Ground was extended. The NPS made other minor changes to curbs and lighting to accommodate accessibility and safety issues. The NPS converted Gates 1 and 2 from vehicular into pedestrian only, and the Scale House (Building 19) became the main entry to the park.

A repaving project in 1999 and 2000 included all of the public streets within the park. In making changes to improve accessibility for visitors, the NPS utilized the results of the 1995 Charlestown Navy Yard Historic Pavement Study. The study showed that historically a number of materials had been used to pave the yard and that most of these were lifted or subsequently covered with concrete and asphalt.[10] The preferred alternative in the plan involved treatment of the Freedom Trail (brick), First Avenue (brick) beginning at Gate 1, 3rd Street (mainly yellow brick), 4th Street (brick and wood block), and Pier 1 edging (granite) (Figure 8.10). The preferred alternative for First Avenue and Pier 1 was abandoned in favor of asphalt for cost reasons. However, when much of Pier 1's historic granite paving (including strips of granite block paving in the center of the pier and along the west side) was discovered to be largely intact, it was retained uncovered. Remaining areas to be addressed with the study included the treatment or removal of some of the railroad tracks on Pier 1, which were considered a hazard to pedestrians. Rubber crossing pads were to be laid on the tip of exposed crane rails to avoid tripping. Also on Pier 1, traffic and parking were reconfigured away from USS *Constitution*. The plan also called for resurfacing of the concrete deck and stabilization of the end.[11] By 2002, Fourth Street's wood blocks, dimensioned like standard brick pavers and laid in a running bond pattern, had failed. The impervious concrete layer under the wood collected rainwater causing the blocks to float out of place.[12] Historically the wood block paving in the upper yard was laid atop a pervious base. The park repaved this section of Fourth Street with asphalt.

In response to the 11 September 2001 terrorist attacks on the United States, the NPS placed jersey barriers around USS *Constitution* to prevent vehicles from approaching too closely. The Jersey barriers here and elsewhere were replaced with new movable steel bollards and chains in 2004. In 2003, the NPS installed an arm gate to the Scale House (Building 19) gate on First Avenue and added two-lane pop-up barriers (Structure 285) here. A small modern

[10] Archeological work conducted for the project indicated that historic material still existed on Pier 1, First Avenue, and 3rd and 4th streets.
[11] Archetype Architecture, Inc., "Charlestown Navy Yard Historic Pavement Study." (Boston: Prepared for National Park Service, September 1, 1995), 2-3.
[12] Rose, 2003.

Guard Booth (Structure 288), reminiscent of the guard houses that have historically been located at the gates, was installed in 2004 to allow close supervision of the barrier controls.

WATERFRONT

During the late 1970s, many buildings along the waterfront had small, semi-permanent mid-twentieth century additions, which partially obscured the original nineteenth-century grid pattern of the yard. These additions consisted mainly of sheds, small connecting buildings, storehouses, substations, and service buildings. Railroad, hammerhead, and portal cranes, grit hoppers, and large incandescent spotlight fixtures on steel towers towered over the piers and waterfront. Street lighting consisted of florescent, incandescent, and mercury vapor types. The Navy signage on many of the buildings was still present.

The private, non-profit USS Constitution Museum opened in 1976 in the former Dry Dock Engine House (Building 22). In 1978, USS *Cassin Young*, a WWII destroyer, was permanently berthed at Pier 2. In 1993, the USS Constitution Museum expanded with the construction of a connector to the former Tin Shop (Building 28).[13] The expansion took place incrementally with the Tin Shop (Building 28) rehabilitated in 1996 and the final landscaping competed in 1997. The NPS replaced a gravel area adjacent to the USS Constitution Museum (Building 22) with turf. In 1989, the NPS converted the Pitch House (Building 10) into a food service building offering concessions.

During the 1970s, the NPS added a wooden post and rail fence around Dry Dock 1 for safety reasons. This fence was replaced during the 1990s with a synthetic lumber fence with the materials donated by the manufacturer. The original pipe and chain fence still stands to the inside of this newer barrier along the edge of the dock.

During the 1980s, the BRA established the public Shipyard Park surrounding and to the east of Dry Dock 2. The BRA also removed the outer end of Pier 3 and established an MBTA water shuttle at Pier 4.

Pier 1 was rehabilitated in 1980. In the following years, the Navy rehabilitated Finger Pier, and the park began rehabilitating Pier 2 but stopped the work in 1987 due to environmental concerns allowing the end of the pier to deteriorate.

In 1986, USS *Cassin Young* was designated a National Historic Landmark, as the park sought to interpret the role played by the Charlestown Navy Yard in World War II.

The same year, a Memorandum of Agreement (MOA) cleared the way for demolition of the nearly collapsed Marine Railway superstructure on Pier 2, although some portions were retained for later interpretation of the site. The park removed about half of the superstructure in 1987, and the Army Corps of Engineers removed the rest in 1995.

The 1990 Master Plan for the Yard's End proposed a Korean War Veterans Memorial for the public Shipyard Park to commemorate the armed services commitment to democracy and South Korea. This memorial was realized in 1993 and is now part of the BRA's 13-acre park that includes the permanently flooded Dry Dock 2.

The USS Constitution Museum installed five flagpoles at the head of the Dry Dock in 1990 under a Section 106 action with an annual review option. The installation was intended to be a one-year temporary experiment meant to attract people to the museum. The Section 106 files show that in 1992, although there was no evidence that the flags increased visitation, the park considered allowing the poles to remain "on an indefinite basis pending the preparation and implementation of a "Cultural Landscape Treatment Plan" for the yard. The merits of the flagpoles have not been reevaluated, and they remained in 2004.

[13] Carlson, 157. The substation area of Building 22 became the theater.

Snow plows had damaged the yard's landmark plaque's marble base on the west side of Pier 1. In 1999, the NPS demolished the base and moved the plaque to the Reviewing Stand (Structure 260).[14]

UPPER YARD

The upper yard's formal landscaping was limited to the Commandant's House (Quarters G), Marine Barracks (Building I), the Officers Quarters (Building 265). NPS employees continued to maintain the Commandant's vegetable garden for their own use until lead was discovered in the soil during the early 1980s. The Chelsea-Water Street Connector project of 1980-1981 resulted in the relocation of the northwestern boundary wall of the yard to the south, eliminating open space in front and sides of the Commandant's House. As a result, the NPS relocated the Garden Shed (Building 245) to its original location and shortened a path. The NPS removed much of the plants from the north side of the house and the northwest corner of the grounds transplanting some elsewhere including a Japanese maple, two honeysuckles, and seven azaleas.[15] The NPS removed other plants permanently including elms, honeysuckles, maples, oaks, apples, cherries, and trees of heaven. A hedge of Dorothy Perkins roses was removed from the edge of the driveway and another established along a wooden lattice fence running parallel to Second Avenue southwest of the house by this time. The park late removed the fence. Between 1985 and 2002, the NPS replaced two large blue spruce trees planted in 1962 from the front lawn, and replaced them with a dwarf variety of Blue Spruce. As of 2004, some historic yard light fixtures still stood in the yard including a simple crook neck lamppost by the Commandant's House (Quarters G) driveway. It is typical of the twentieth-century lamps made in the yard shops.[16]

Additional period alterations involved "beautification" of the Parade Ground, the lawn bordered by a privet hedge between the Marine Barracks (Building I) and First Avenue. Sometime between 1976 and 1985, the NPS removed most of the training equipment from the Parade Ground (Building I). The NPS also planted a yew hedge in the spot where the Marine Corps Administration Building (Building 136) had stood and planted turf on the site of the demolished Temporary Storage Building (Building 198). In 1984, the yard to the east of the barracks was landscaped.[17] In 1985, the garden in the yard to the west of the barracks, was overgrown and neglected, but by 2004, it was well maintained with a lawn surrounded by a border of ornamental shrubs and perennials.

When the NPS acquired part of the yard, the area around the Scale House (Building 19) on First Avenue was planted with trees and arborvitae shrubs. This planting still survived by 1985, but as of 2004, only one red oak stood east of the building. The NPS has made few changes to the recreation area (shipyard mall). By 1978, the NPS removed the backstop and baseball field at the northwestern end of the recreation area and made changes to the plantings in the vicinity of the Officer's Quarters (Building 265).[18]

LOWER YARD

One of the first BRA contracts established early in the 1970s entailed the removal of many post nineteenth-century buildings and structures. This contract was aesthetically rather than historically driven. The World War II wooden addition at the west end of the Ropewalk (Building 58) was removed and the "original" roofline was restored

[14] Carlson, 169. The Reviewing Stand (Structure 260) was officially referred to as "Bandstand" by the Navy.
[15] Historic Grounds Management Plan, 51.
[16] Rose, 2003.
[17] Historic Grounds Management Plan, 84.
[18] Lucinda A. Brockway and Patrice A. Todisco, "Charlestown Navy Yard: Historic Grounds Management Report." (Document prepared September, 1985. On file at the Northeast Museum Services Center, National Park Service BOST-S.025 CRBIB#400284).

without the appropriate skylights.[19] Within the lower yard, three of the noncontiguous BNHP buildings (owned by the BRA) have remained vacant awaiting rehabilitation and reuse; the Ropewalk (Building 58), the Tar House (Building 60), and the Chain Forge (Building 105). Another noncontiguous building owned by the park, the Public Works Shop (Building 107) contains BNHP administrative offices as well as the NPS public works department facilities. Now housing the park's maintenance operations, the building has resumed its historic function. Although plans were drawn up in 1980 and 1981 to consolidate park offices on the second floor of the Public Works Shop (Building 107), they were never implemented. Instead, in the mid-1980s, the Maintenance Division occupied offices at the east end of that floor. Between 1988 and 1990, the remainder of the second floor became the park's curatorial storage facility and offices for the Cultural Resources Division. Improvements were made to Gate 5, and a new vehicular gate, Gate 6, was constructed requiring the demolition of a wing of Building 114.

The Fifth Street project of 1980-1981, included demolition of the World War II addition to the Muster House (Building 31). At this time the octagonal Muster House porch was reconstructed having been removed c. 1930.

The 1990 Master Plan for the Yard's End proposed that Flirtation Walk be restored with the replanting of an alleé of Dutch-elm-disease resistant hybrid elm tress to replace those that once graced this promenade. This proposal has not been realized, but as of 2004, the BRA and NPS were working on guidelines to replace the historic walk with a "reminiscent" one that can incorporate the NPS laydown space and the last remaining railroad tracks in the lower yard. Second Avenue has been rehabilitated in the lower yard as the Second Avenue Pedestrian Mall. The BRA repaved the route with Belgian Blocks and replaced the sidewalks, gutters, and curbing. The BRA also planted an alleé of honey locust trees to suggest the elm trees that historically lined the avenue.

SUMMARY

The landscape of the Charlestown Navy Yard Unit of Boston National Historical Park has not changed dramatically since becoming a park in 1974. As a guardian, the park service has maintained the yard's diverse resources remaining from its 174 years of service under the U.S. Navy.

Construction of the Chelsea-Water Street Connector in 1980-81 necessitated the relocation of much of the yard's granite boundary wall to the south reducing the size of the Commandant's House (Quarters G) grounds. The project ultimately enhanced circulation within the yard with the Fifth Street expansion project. The park resurfaced its roads and much of its piers two decades later. Shortly after these improvements, the park tightened security along these routes with gates and barriers to protect against acts of terrorism.

The USS Constitution Museum was developed privately in the Dry Dock Engine House and the Tin Shop (Buildings 22 and 28) with its associated landscape during its first three decades. During this time the park maintained the landscaped grounds of the upper yard much as they had been during the close of the US Navy's tenure. With the razing of the Temporary Storehouse (Building 198), the park restored the open space of the Shipyard Mall's (recreation area) to pre-World War II levels.

Pier 1 has remained the center of tourism for the yard, with USS *Constitution* and USS *Cassin Young* berthed here. The park and U.S. Navy maintains piles of ship-related materials on the pier as has been done historically. With the resurfacing project at the turn of the century, the park exposed historic granite paving in the center of the pier and along the western edge by USS *Constitution*.

[19] It is clear that the addition, while not architecturally in keeping with the rest of the structure, would today be seen as significant and retained because it was the employment and training office established to accommodate the vast increase in the number of workers to meet the needs of World War II, one of the most significant periods in the yard's history.

The Boston Redevelopment Authority (BRA) has reinvigorated its waterfront portion of the yard with residential and commercial development and with the public Shipyard Park along Dry Dock 2, although parts of the latter seem neglected and underutilized. The BRA also revitalized part of the lower yard with institutional development and the Second Avenue Pedestrian Mall. Parts of the Historic Monument Area though including the Ropewalk, Tar House, and Chain Forge (Buildings 58, 60, and 105) have languished with little activity except for stabilization. The proposed rehabilitation of Flirtation Walk would enhance this area.

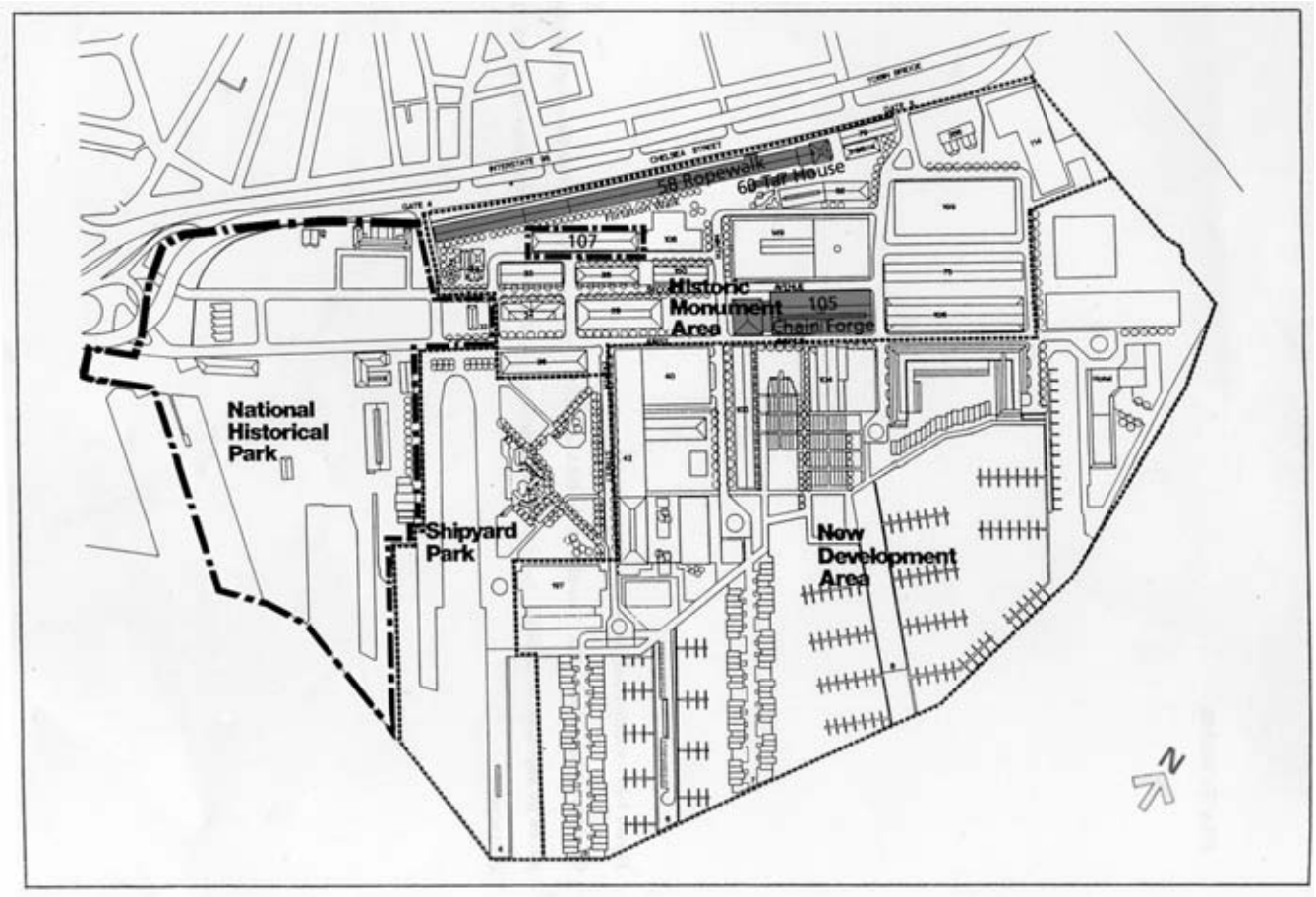


Figure 8.1: Charlestown Navy Yard plan showing National Park Service property (dashed lines) and Boston Redevelopment Authority property (dotted lines). The three noncontiguous properties that are included in the park's legislative boundary are highlighted in gray and include the Ropewalk (Building 58), the Tar House (Building 60), and the Chain Forge (Building 105) (General Development Plan, 1980).



Figure 8.2: View looking east on Second Avenue in 1974 (BOSTS-8671).



Figure 8.3: View of the Muster House (Building 31) without its porch at the intersection of Second Avenue and Fifth Street. The World War II addition (behind) and the Marine Corps Administration Building (Building 136) would soon be razed (BOSTS-8671).



Figure 8.4: The Muster House (Buildings 31) and the Dispensary (Building 120) in 1977 before the porch was restored to the former (HAER MA-90-119).



Figure 8.5: 1975 view of one of First Avenue's few remaining historic trees at the northwest corner of the Dry Dock Engine House (Building 22). Courtesy Boston National Historic Park (BOSTS-9290).



Figure 8.6: The pedestrian Gate 4 in 1977 before Fifth Street was extended to Chelsea Street. Note the concrete gate structure to the left (west) side (with the 2 square windows) before it was moved to the right (east) side (HAER MA-90-113).



Figure 8.7: The pedestrian Gate 4 in 1977 before Fifth Street was extended and the concrete gate to the right (west) was relocated to the left (east) (HAER MA-90-114).



Figure 8.8: 1974 view of Marine Corps Administration Building (Building 136), built in 1909, enlarged in 1937, and demolished in 1979 to make way for Fifth Street improvements (BOSTS-8671).



Figure 8.9: Temporary Storage Building (Building 198) in 1977 prior to demolition with the Shell House (Building 32) to the east and Muster House (Building 31) to the north. The Bunker Hill Monument is in the background, and First Avenue is in the foreground (HAER-MA-90-117).

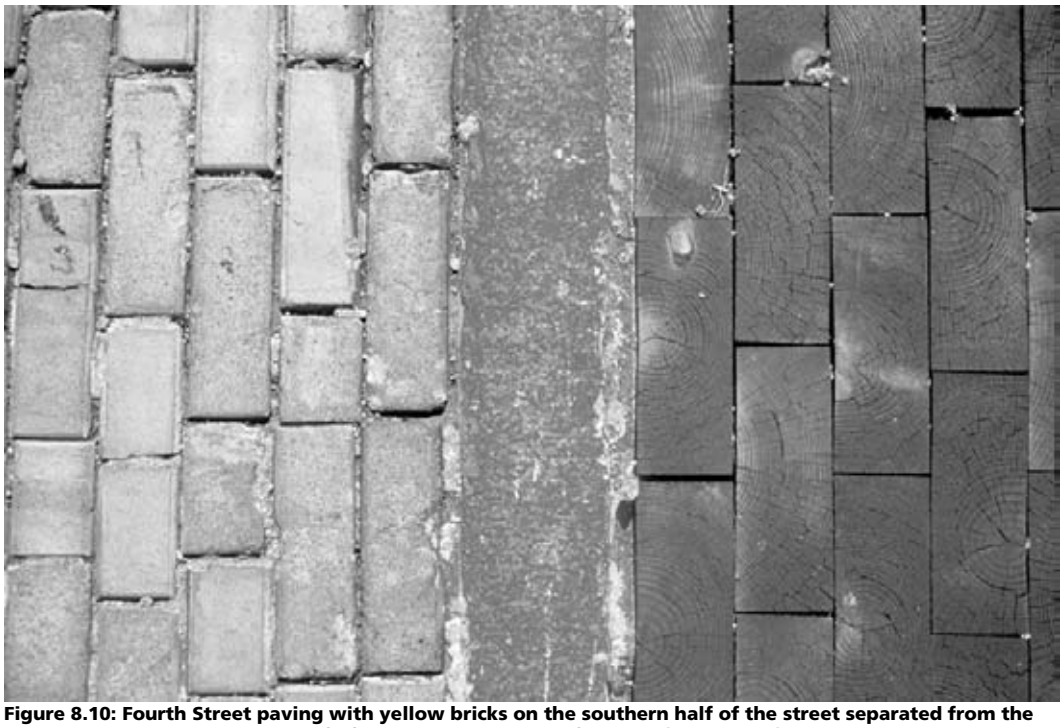


Figure 8.10: Fourth Street paving with yellow bricks on the southern half of the street separated from the wood blocks on the northern half of the street by a strip of granite (OCLP, 2002)



Charlestown Navy Yard, Boston National Historical Park, 2004 (NPS Unigrid).

EXISTING CONDITIONS

GENERAL DESCRIPTION

LANDSCAPE CHARACTERISTICS AND FEATURES

EXISTING CONDTIONS

This section of the cultural landscape report (CLR) describes the existing conditions of the National Park Service (NPS)-owned portion of the Charlestown Navy Yard recorded with photographs, text, and a plan from January 2002 to the September 2003. The first part of this section provides a general description of the existing landscape. The second part describes landscape characteristics and features for the waterfront and the upper yard as defined by the park service's *A Guide to Cultural Landscape Reports*. Landscape characteristics are divided into thirteen categories under which individual associated features can be grouped. For example, the landscape characteristic, small scale features, may include such features as a keel block, bollard, and bench. All characteristics are not always present in any one landscape. Though not part of the NPS-owned property, this study also includes the area immediately around Dry Dock 2. For each landscape characteristic, this report describes areas beginning with Gate 1, moving counter-clockwise along the waterfront to the upper yard, and ending with the Officers Quarters (Building 265) and Gate 2.

GENERAL DESCRIPTION

The Charlestown Navy Yard is located in Charlestown, Massachusetts at the confluence of the Charles and the Mystic Rivers at the head of Boston Harbor. This location offers a protected marine setting with a deep shipping channel. Once a tidal marsh, the waterfront is now bounded by piers and granite seawalls over extensive fill. The topography of the yard is nearly level with a rise in the land near the Commandant's House (Quarters G) and the Marine Barracks (Building I) where concrete retaining walls provide level areas. Beyond the boundary wall of the yard, the land ascends more steeply to Breed's Hill.

The park occupies approximately thirty acres of the original 130-acre yard, and the Boston Redevelopment Authority (BRA) owns the remainder, which is not documented in this report, except for Dry Dock 2. The park is bounded to the south by the Charles River, to the west/northwest by a portion of *Constitution* Road, land bordering Chelsea Street, and the Hoosac Stores, to the north/northeast by Chelsea Street, and to the east by Fifth Street, Sixth Street, and Dry Dock 2. The park includes the administrative, ceremonial, and housing units of the Navy and Marines that support USS *Constitution*.

A grid of streets organizes the park spatially with First Avenue as the primary east-west artery bisecting the site. Second Avenue parallels First Avenue to the north. Both are open to vehicles within the NHP, but only First Avenue permits access from outside the park boundary. Most of the numbered streets preserve the grid first proposed in 1828, and are secondary circulation routes that connect the major avenues and meld into the piers. Sidewalks line most streets and avenues. The streets and sidewalks consist of a variety of materials, including bituminous paving, concrete, granite brick, and wood. Bituminous material is most widely used for paving streets and piers and concrete is most often used for sidewalks. Granite blocks, cut to varying dimensions, are used throughout the park for both vehicular and pedestrian surfaces, and much of the curbing is granite. Brick is widely used in the park for utilitarian and decorative purposes. The range of styles includes standard pavers, roman (narrower, longer profile) pavers, and yellow pavers. Wood decking covers portions of some of the piers.

First Avenue has historically separated industrial and institutional use to the south (the waterfront) and residential use to the north (the upper yard). Brick, granite, and wood are the primary construction materials for the yard's buildings and structures. None of the buildings are more than four stories tall. The park's waterfront includes Gate 1, the Storehouse (Building 4), Navy Store (Building 5, proposed Visitor Center), Restaurant (Building 10, former Pitch House), the USS Constitution Museum (Buildings 22, former Dry Dock Engine House and 28, former Tin

Shop), Carpenter's Shop (Building 24), Waterfront Office (Building 109), and Paint Shop (Building 125). These buildings are located along Pier 1, Dry Dock 1, Pier 2, Pier 3, and Dry Dock 2 where expansive paved open areas support marine-related activities and visitor circulation. The granite and wooden piers are built on reclaimed marshland. Wooden utility sheds, temporary metal or synthetic shelters, supply piles, and a network of rail and crane tracks cover the piers. Three cranes and two grit hoppers also remain. Pier 1 provides much open space with visitors gathering here to board either USS *Constitution* or USS *Cassin Young* or to visit the USS Constitution Museum. The scale, structure, and spacing of buildings are lighter in the residential upper yard. This area includes Gate 4, Officers Quarters (Building 265), Commandant's House (Quarters G), and Marine Barracks (Building I). These buildings surround lawns, gardens, the Parade Ground, Playing Courts (Structure 236), and the Reviewing Stand (Structure 260)/War Memorial (Structure 279).[1]

Many features and details contribute to the yard's character including historic marine and military relics, memorials, visitor amenities, signs, and security devices. Few plants grow in the industrial waterfront area, while the upper yard has a park or campus-like feel with expansive lawns, shade trees, hedges, and gardens. Historically, plantings such as alleés covered the yard unifying the two areas.

From the park, there are views south and west across the harbor to downtown Boston and the Leonard P. Zakim Bunker Hill Bridge. The Bunker Hill Monument is visible to the north from the waterfront. The Mystic River (Tobin) Bridge is also part of many northern views. To the east, long broad views extend down the straight First and Second Avenues. USS *Constitution* and cranes dominate the skyline when viewing the park from Boston or the water.

LANDSCAPE CHARACTERISTICS AND FEATURES

NATURAL SYSTEMS AND FEATURES/TOPOGRAPHY

The Charlestown Navy Yard is located at the confluence of the Charles and the Mystic Rivers at the head of Boston Harbor. This location offers a protected marine setting with a deep shipping channel. Once a tidal marsh, the waterfront is now bounded by piers and seawalls over extensive fill.

The topography of the yard is nearly level with a rise in the land near the Commandant's House (Quarters G) and the Marine Barracks (Building I). The Commandant's House sits on the highest point of the yard, and the surrounding grounds are formally terraced with earthen banks (Figure 9.1). The semicircular section of wall north of the house retains fill making the former entrance area even with Chelsea Street (Figure 9.2). In front of the Marine Barracks (Building I), the level Parade Ground is maintained with a retaining wall along Second Avenue and part of the drive. Beyond the boundary wall of the yard, the land ascends more steeply to Breed's Hill.

SPATIAL ORGANIZATION/LAND USE

The park occupies approximately thirty acres of the original 130-acre yard. The park is bounded to the south by the Charles River, to the west/northwest by a portion of Constitution Road, land bordering Chelsea Street, and the Hoosac Stores, to the north/northeast by Chelsea Street, and to the east by Fifth Street, Sixth Street, and Dry Dock 2.

[1] The Reviewing Stand (Structure 260) was officially referred to as "Bandstand" by the Navy.

The National Park Service-owned portion of the Charlestown Navy Yard is organized by a grid of streets, with avenues running east to west and streets north to south (Figure 9.3). The waterfront is located south of First Avenue and includes the piers and dry docks, and the upper yard is located north of the avenue and includes residential and ceremonial areas. Large residential buildings surround the open gardens, Shipyard Mall, and Parade Ground of the upper yard to the east and north. The openness of the upper yard projects across First Avenue onto the waterfront like fingers where industrial buildings and features line the piers.

The main entrance to the yard, Gate 1, is located at the west end of First Avenue, and the buildings lining this portion of First Avenue make this threshold a corridor (Figures 9.4-5). Southeast of Gate 1, Pier 1 projects south into the harbor and covers approximately six acres. This open area has little shelter from the wind or sun and combined with large crowds and inadequate seating can be inhospitable. A few buildings and structures and many piles of industrial material are scattered across the pier. USS *Constitution* is berthed on the west side of the pier and USS *Cassin Young* on the east (Figures 9.6-7). A small finger pier is located to the west of USS *Constitution*. Located between Piers 1 and 2, Dry Dock 1 measures 398 feet in length and 30 feet deep (Figure 9.8). Designated a National Historic Civil Engineering Landmark by the American Society of Civil Engineers, Dry Dock 1 is poorly maintained. The dock has leaks, and generally looks to be in a state of disrepair. The numerous supply piles surrounding the dock and the ship resting on keel blocks in the dock provide the area with a congested industrial feel. Adjacent to Dry Dock 1, large industrial buildings anchor the northern end of Piers 2 and 3. An open courtyard is located on the south side of the breezeway connecting the buildings of the USS Constitution Museum (Buildings 28 and 22) (Figure 9.9). Both piers are open around this building cluster and at their southern ends. Dry Dock 2, east of Pier 3, extends 750 feet into the harbor. With the dock flooded, there are two wide-open planes, the decking and the internal water surface.

Across First Avenue from Dry Dock 1, the Shipyard Mall or recreation area (the former gun and shot parks) composes the central strip of the park. The area is bordered by Second Avenue on the north, First Avenue on the south, Fifth Street on the east, and Third Street on the west. It is bisected by Fourth Street in the middle. This area is open for recreation as it has traditionally been. The eastern portion, nestled between Fourth and Fifth Streets, is a flat expanse of turf within the concrete foundation of former Building 198. The western portion, located between Third and Fourth Streets, houses fenced tennis courts to the north and a basketball court to the south. Tree-shaded lawns mark the southeastern corner and the western half by Third Street.

Gate 4 is located north of the Shipyard Mall at the intersection of Fifth Avenue and Chelsea Street. This corridor to the park is open passing between low retaining walls. The Marine Barracks (Building I) and the Parade Ground are just west of Gate 4 and Fifth Street. The main façade of the barracks is oriented to the south, facing the vast open Parade Ground, a historic part of the yard landscape. Smaller, more intimate spaces are adjacent to both the east and west sides of the building (Figure 9.10). The shadier area to the east is narrow, and the sunnier space on the west is elevated a few feet from the surrounding barracks grounds. West of the barracks, the Commandant's House area includes the house, former garages, lawns, gardens, carriage house, and shed. The house sits on the highest ground and faces south. The original front entrance to the house on the Chelsea Street side is obscured from view and unused because of the wall that surrounds the yard. The symmetry of the south side of the house mimics the symmetry of the landscape. The front (south) porch covers a terrace below. The grounds are terraced down from the house with trees enclosing some areas and open lawn and beds in other areas. The Marine Barracks (Building I), the Commandant's House (Quarters G), and the Officers Quarters (Building 265) surround the Shipyard Mall. The Officers quarters are located west of the Shipyard Mall, southwest of the Commandant's House, and north of Gate 1. The quarters include five connected brick townhouses with front and back yards. The front yards are open lawn enclosed with a few large trees, and the back yards are fenced like enclosed courtyards.

CIRCULATION

First Avenue is the primary east-west artery bisecting the yard. Second Avenue parallels First Avenue to the north. Both are open to vehicles within the NHP, but only First Avenue permits access from outside the park boundary. First and Second avenues are paved with bituminous material. Second Avenue is lined with concrete sidewalks on both sides and First Avenue only on its north side. First Avenue's sidewalk conceals the historic utility tunnel beneath. Parking lines most of Second Avenue. Most of the numbered streets preserve the grid first proposed in 1828, and are secondary circulation routes that connect the major avenues and meld into the piers. Sidewalks line most streets and avenues.

The streets and sidewalks consist of a variety of materials, including bituminous paving, concrete, granite brick, and wood. Bituminous material is most widely used for paving streets and piers and concrete is most often used for sidewalks. Granite blocks, cut to varying dimensions, are used throughout the park for both vehicular and pedestrian surfaces. Much of the curbing is granite, although First Avenue's curbing is concrete. Brick is widely used in the park for utilitarian and decorative purposes. The range of styles includes standard pavers, roman (narrower, longer profile) pavers, and yellow pavers. Wood decking covers portions of some of the piers.

Gate 1 is a primary entrance for visitors arriving at the park via the Freedom Trail, the current visitor center on Constitution Road (outside the park's boundary), or from parking facilities to the west, along Constitution Road. Most pedestrians who live or work in the yard use this gate to commute to downtown Boston. The gate is typically closed to vehicular traffic and only opened occasionally for service vehicles. Unlike some of the piers, the road and sidewalk are clearly defined (the Freedom Trail travels down the center of the street). First Avenue is paved with bituminous material and the sidewalks are concrete with six-inch granite curbs. Two out-of-service curtain gates marked "in" and "out" stand southwest of Gate 1 by the former USS *Constitution* visitor's parking lot.

Lincoln Avenue runs along the northern edge of Pier 1 from the railroad gate to Third Street. Third Street runs from Second Avenue to the end of the pier. Much of Pier 1 is used for parking (Figure 9.11). Traffic lanes are not well demarcated and there are no designated walkways for pedestrians. Railroad tracks run through the pavement with flangeways filled to reduce tripping hazards. The variety of paving material reflects different periods of the Navy's use of the pier. Asphalt has predominated since the 1950s. Historic granite block paving has been exposed along the western edge by USS *Constitution* and in the center of the pier along with areas of brick paving. West of USS *Constitution*, a fence blocks pedestrian access to the Finger Pier. The eastern side of the pier, along Dry Dock 1, has taken on the form of a storage yard and is difficult to maneuver (Figure 9.12). The southern tip of the pier is bordered by a concrete deck supported by stone piers. There is no sidewalk on the south side of First Avenue between the proposed Visitor Center (Building 5, the former Navy Store) and the USS Constitution Museum (Building 22, the former Dry Dock Engine House).

The area surrounding Dry Dock 1 is paved with bituminous material near First Avenue. At the head of the dock outside the post-and-pale fence, the paving is composed of concrete scored with a grid pattern. Metal grating covers the platform inside the fence. The length of the dock is cluttered with industrial debris on both sides. Crane tracks surround the dock, and the road along the east side of the dock is referred to as Dry Dock 1 East. Steps lead to a wooden footbridge that crosses the dock's caisson, connecting Piers 1 and 2.

Directional signs are absent near the USS Constitution Museum (Buildings 22 and 28), and pedestrians and vehicles (mostly service oriented) share the area. A brick walk leads from the breezeway connecting the museum buildings to the main walk paralleling First Avenue. An accessibility ramp rises south from the northwestern corner of the building until it meets the steps at the west façade's double doors. Here a brick sidewalk and granite curb run above the roadbed.

Baxter Road travels east of the museum along the western side of Dry Dock 2, passing through two restricted parking areas and ending at Pier 3 (Figure 9.13). There is perpendicular parking along much of this road. East/west circulation south of the USS Constitution Museum is controlled by fences located between the buildings (see Figure 9.14). The area south of the museum is paved with bituminous material and off-limits to visitors for safety reasons. Some historic granite pavers are exposed northwest of and along the edge of Building 24. Steel plates cover a sink hole at the bulkhead near the capstan house. Pier 2 consists of wood decking on wood pilings and is in poor condition with only pilings remaining at its southern tip. Most of Pier 3 is paved with bituminous material, and a chain link fence blocks access to severely deteriorated southern half of Pier 3 (Figure 9.15). Failure of the bulkhead has contributed to its poor condition.

Dry Dock 2 is bordered to the west by Baxter Road, to the east by Terry Ring Way (Sixth Street), and to the north by First Avenue. Piers 3 and 4 flank its opening. There is a wide expanse of brick paving between the avenue and the wood decking that surrounds the dock. The twenty-foot gauge tracks that surround the dock are in-filled with wooden decking. This area is designed for pedestrian use, and many yard visitors arrive from Boston via water shuttles that stop at the southeastern end of the Dock.

The Shipyard Mall or recreation area, north of Dry Dock 1, is bordered by Second Avenue on the north, First Avenue on the south, Fifth Street on the east, and Third Street on the west. It is bisected by Fourth Street in the middle. Fourth Street: is mostly paved with bituminous material except for a small section paved with yellow bricks. Granite blocks provide curbing on the east and west sides (Figure 9.16). There are two concrete paths, a northeast/southwest transverse from the corner of First Avenue and Third Street and a north/south dogleg between the Reviewing Stand (Structure 260) and Second Avenue.

Gate 4 at the intersection of Chelsea Street and Fifth Street serves as one of the main entry points for vehicles entering the yard (Figure 9.17). Fifth Street is paved with bituminous material and lined with concrete sidewalks of uneven width. The wider walk on the east side has more lampposts than the one on the west. Crosswalks are located at First and Second Avenues. The NPS gate at the intersection of Fifth Street and Second Avenue is closed to vehicular traffic, fortified with keel blocks (Figure 9.18). Vehicles entering the NPS portion of the yard at the intersection of First Avenue and Fifth Street are subject to search at the NPS-staffed security checkpoint located at the Scale House (Building 19). An arm gate and pop-up barriers (Structure 285) restrict the flow of traffic past this checkpoint (Figure 9.19). A small modern Guard Booth allows close supervision of the barrier controls. Movable steel bollards prohibit vehicles from circumventing the security check by restricting vehicular access to the old rail bed. A brick walkway parallels the avenue and the cinder rail bed, and pedestrians may pass the Scale House Gate without restriction. The added security features are the result of the 11 September 2001 terrorist attacks on the United States.

A one-way, semicircular drive separates the Marine Barracks (Building I) from the Parade Ground. Wide enough to permit parallel parking on its right side, the bituminous drive enters on the east side, travels counter-clockwise, and exits to Second Avenue on the west. A concrete sidewalk on its outside edge borders the drive. A walkway parallels this drive and branches off on the east and west sides of the barracks to two small courtyard gardens.

The original front entrance to the Commandant's House (Quarters G) is on the Chelsea Street side; obscured from view and unused because of the wall that surrounds the yard. A central brick walkway incorporating brick gutters leads directly from Second Avenue to the south façade, the current front of the house (Figure 9.20). Two short flights of steps climb the change in grade of approximately five feet at the head of the walkway. A landing leads to two longer flight of steps, which rise opposite each other to the second floor porch. The brick path diverges, the east branch leads to the carriage house, while the west branch leads to the arcade (Figure 9.21). A brick walkway borders the lawn east of the Commandant's House. Concrete steps ascend the slope, and the path continues past a

white-painted wooden arbor to the carriage house in the rear and a brick patio by the eastern section of the curved stone wall.

The Commandant's House asphalt entry drive climbs from Second Avenue southwest of the house and ends at a turn-around near the west door (Figure 9.22). A flight of steps leads from the turn-around to the north (former front) door (see Figure 9.2). Another driveway from Second Avenue serves Buildings 1 and 269 west of the Commandant's House grounds and is separated by a concrete retaining wall. An asphalt walkway from Second Avenue parallels this wall and the western hedge and then curves east where it joins with the Commandant's House driveway turn-around.

A smaller network of concrete paths connects units of the Officer's Quarters (Building 265) with the street and one another. A flight of steps leads from each front door to a concrete front walk that terminates at Third Street, which is lined with granite curbing and paved in a running bond pattern with historic yellow bricks (Figure 9.23). Another concrete walk at the base of the steps runs perpendicularly to the front walks and connects First Avenue (south) with Second Avenue (north). Gate 2, located at the western end of Second Avenue, is closed to vehicular and pedestrian use (Figure 9.24). The iron gates are blocked with three keel blocks.

BUILDINGS AND STRUCTURES

A small modern, metal, brick, and glass Gatehouse (Building 267) stands along the north side of First Avenue at Gate 1. Pier 1 has three buildings and many structures and utilities. The pier includes the future Visitor Center (Building 5, former Navy Stores), Food Concession (Building 10, former Pitch House), and Waterfront Office (Building 109) The first two buildings are typical nineteenth-century brick structures, while the latter is a cementitious/asbestos shingle covered wooden building. Two of the most identifiable structures are the metal grit hoppers which were used to hold sand or other abrasive materials needed for sandblasting vessels in the dry dock. Old steam lines, which bisect the pier, are raised several feet above the ground and are located south of the Restaurant (Building 10). Some, but not all, of the rail and crane tracks remain, looping around the pier. The Explosives Bunker (Building 272), located at the far end of the pier, has a flat façade with yellow and black warning stripes and is covered with earth and grass (Figure 9.25). USS *Constitution*, a forty-four-gun wooden frigate constructed between 1794 and 1797, is docked along the pier's northwestern side. A wooden platform with an aluminum pier stand, gangway, and mechanical chair lift lead allow visitors access to the ship. USS *Cassin Young*, a World War II era steel destroyer, is docked along the pier's southeastern side. A small wooden NPS kiosk stands near the ship's gangway, and the USS Cassin Young Workshop, a portable gray shed, sits on the pier north of the ship.

Several boats, dinghies, and tenders lie in and around Dry Dock 1. Most notable is the SS *Nobska*, a 1925 steamer that has been in the dock for repair since 1996. Funding from its owner the New England Steamship Foundation (NESF) has dwindled and repairs to the ship no longer continue. In 2004, the park and U.S. Navy ordered that the steamer be removed from the dry dock or scrapped. Rail and crane tracks are set within the bituminous paving. A steel caisson holds back harbor water on the south (Figure 9:26).

Piers 2 and 3 are the only park structures that extend outward of the sea wall. The landward base of the piers retains its industrial character with several large buildings including the USS Constitution Museum, the Carpenter's Shop, the Pitch House, the Latrine, and the Paint Shop (Buildings 28, 24, 110, 124, and 125), crane and train tracks, cranes, and floodlights. One of the cranes, Portal Crane #30, stands near a temporary shed on the west side of the Carpenter's Shop (Building 24) (Figure 9.27). Another crane is sited between Buildings 28 and 124, and a third is located toward the southern end of the pier along Dry Dock 2 (Figure 9.28). Three floodlight towers are spaced approximately 175 feet apart west of Baxter Road (Figure 9.29). The Navy occupies and operates the Carpenter's Shop (Building 24) under an agreement with the NPS. The building houses the Naval Historical Center

Detachment for Boston and a maintenance facility that supports USS *Constitution*. The adjacent Paint Shop (Building 125) houses the park's exhibit, "Serving the Fleet." This exhibit is no longer open to the public and will be moved to visitor center proposed for Building 5. The remnants of the Marine Railway (chains, rails, runners, etc.) are located west of Building 125 and are in poor condition. A wooden stairway spans the landward end. The USS Constitution Temporary Storage Shed sits in the middle of Pier 2 and is used for storage by the Navy (Figure 9.30). In severe disrepair, with more than 3,000 square feet of decking missing completely, the end of Pier 2 is impassable. Pilings are all that remain.

Dry Dock 2 is constructed of granite and extends 750 feet. The Navy relocated the caisson to Portsmouth and thereby permanently flooded the structure in 1976 before transferring it to the Boston Redevelopment Authority (Figure 9.31). Twenty-foot gauge crane tracks parallel the dock, and a crane is located on the east side, toward the end of Pier 3.

Within the Shipyard Mall, a level playing field is supported by a concrete retaining wall along First Avenue between Fourth and Fifth Streets (Figure 9.32). A smaller terrace bordered with granite blocks provides an interval between the playing field and Fourth Street. These retaining walls are the foundation remnants of the Temporary Storage Building (Building 198). The middle section of the Shipyard Mall, between Third and Fourth Streets contains the Playing Courts (Structure 236) introduced in 1946 and enclosed by a chain link fence (Figure 9.33). The Reviewing Stand (Structure 260) is a small concrete platform enclosed by pipe-and-chain on its east and west sides, is located in the western end of the area along First Street (Figure 9.34). The War Memorial (Structure 279) is a freestanding stone monument located directly in front of the Reviewing Stand.

A concrete gateway marks the pedestrian gate east of Fifth Street at the intersection with Chelsea Street. The yard's stone boundary wall turns the corner at Fifth Street and runs south along Fifth Street just past the Marine Barracks (Building I). Here the boundary becomes a wrought iron fence with vertical members and continues to the south side of First Avenue. The fence is punctuated by pedestrian and vehicular gates with brick gate posts at both First and Second Avenues. The Scale House (Building 19) and a Guard Booth (Structure 288) watch over the pop-up security barriers (structure 285)of the park's main gate near the intersection of First Avenue and Fifth Street.

There have been many alterations to the brick Marine Barracks (Building I), one of the oldest buildings at the yard. It is now a four-story building that houses the NPS' Northeast Museum Services Center, seasonal housing for park rangers, and the administrative office for Boston National Historic Park. A concrete retaining wall lines the south and east edges of the Parade Ground. The Commandant's House (Quarters G) area includes the house, former Garage (Building 245), and Carriage House (Building 21). The original Chelsea Street entrance is obscured from view and unused because of the stone wall that surrounds the yard (Figure 9.35). Some remnants of the curved portion of the original wall are visible above several cubic yards of fill. The former Garage (Building 245) borders the lawn to the east, and the stone Carriage House (Building 21) sits northeast of the house and is structurally part of the boundary wall. The Officers Quarters Five Bay Garage (Building 269) and the former Garage and Chauffeur's Quarters (Building 1, now the park's grounds maintenance shop) are located west of the house grounds. These buildings are the last complete WPA structures to survive in the yard.

The Officers Quarters (Building 265) area includes five east-facing, contiguous brick townhouses divided by party walls. Between the fenced rear yards of the Officers Quarters and the granite boundary wall, the path of the former Second Street (abandoned mid-1950s) is now grass covered and enclosed by stockade fencing at both ends. The southern end of the boundary wall here incorporates the brick wall of the former Quarters A. The exterior portion of the boundary wall between Gate 2's small brick gatehouse (part of Building 1) and Chelsea Street is concrete, a remnant wall of the former Transportation Garage (Building 204). The granite block wall continues along Chelsea Street topped with a chain link fence. The granite wall is only one course high topped with a capstone and chain

link fence east of the Commandant's House (Quarters G). Granite Pillars with iron gates, now blocked with other fencing, compose the gates to the Marine Barracks (Building I). The north section of the barracks, the former stable, is incorporated into the wall. East of Gate 4 and Fifth Street, a steel picket fence with concrete posts parallels the Ropewalk (Building 58), having replaced the original granite wall in 1929.

Three additional buildings included within the park's legislative boundaries, but owned by the BRA are the Ropewalk (Building 58), the Tar House (Building 60), and the Chain Forge (Building 105). The first two, symmetrically arranged long granite block buildings used for manufacturing rope, await rehabilitation and reuse. The third building used for making the historic die-lock chain, a large brick building, also awaits rehabilitation. The noncontiguous Public Works Shop (Building 107), another large brick building, is owned by the NPS and contains BNHP Cultural Resources and Maintenance Division offices and shops.

SMALL SCALE FEATURES

Several small-scale features mark the western side of the yard, particularly outside of Gate 1 including signs, keel blocks, and anchors. Keel blocks are utilized as barriers at the gate. An NPS sign outside the gate identifies the park, while another reminds visitors to visit the USS Constitution Museum. A dumpster, anchor, and keel block stand against the two metal curtain gates and wall that separates the Storehouse (Building 4) and the Hoosac Stores. Near the curtain gates, a bronze wayside proclaims the home of USS *Constitution*, and within the parking area behind the gates, there are a drinking fountain and a winch for moving USS *Constitution*. An anchor marks the entrance to the USS Constitution offices in the addition at the west end of Building 5. HVAC condensers surrounded by a brick wall and railroad track bollards are located nearby. A 1930s bronze plaque on the east end of the south side of Building 5 marks the point where the British reinforcements landed during the Battle of Bunker Hill. Two anchors flank the entrance to the finger pier just west of USS *Constitution*, and a chain link fence blocks it.

Pier 1 contains many small scale features. Several boats are stored seasonally on the northern end of the pier. Other marine-related features include cleats, bollards, anchors, keel blocks, chain, and two lifesaving rings. The bollards and cleats can be found along both sides of the pier. Several piles of ship repair related materials, such as live oak lumber or masts, clutter the central part of the pier. One of the grit hoppers supports an industrial safety sign directing workers to 'play it safe' and 'wear safety shoes.' There is an outside covered seating area north of Food Concession (Building 10). Security and safety features protect USS *Constitution* and guide visitors including moveable steel bollards with chain, bicycle fencing, a Visitor Screening (Structure 287) area, and Guard Booth (Structure 286)(Figure 9.36). Waysides are located near USS *Constitution* and USS *Cassin Young*. A wooden NPS visitor kiosk and wooden steps mark the entrance to USS *Cassin Young*, and nearby yellow trash receptacles are labeled with the request to "Keep Your Shipyard Clean" (Figure 9.37). Floodlights dating to World War II remain on the Waterfront Office (Building 109). Historically, the saluting battery was located on the southern end of the pier near the Explosives Bunker (Building 272). A monument to USS *Boston* and two pieces of artillery now occupy the site (Figure 9.38). There is a large park sign at this end oriented such that it may be read from the water.

Dry Dock 1 is surrounded by a recently built post-and-pale fence. The posts are wooden and the rails and palings are grey recycled plastic timbers (Figure 9.39). The original pipe-and-chain railing, painted yellow and set in the granite coping, is located just inside this new barrier. The Portable Steel Shed (Building M-37) and the frame of the Navy M&R work tent are currently stored at the bottom of the dock. There are five flagpoles and two outdated waysides that describe the restoration of the SS *Nobska* at the head of the dock (Figure 9.40). A historic concrete light pole stands among the flagpoles. An exhibit of old masts is displayed horizontally and parallel to First Avenue. The accompanying wayside is poorly located, often going unnoticed (Figure 9.41).

Portable steel bollards prohibit vehicles from circumventing the security check on First Avenue by the Scale House (Building 19) by restricting vehicular access to the old rail bed.

A capstan, historic cannon, and wooden barrel trash receptacle stand to the right of the USS Constitution Museum's (Building 22) main door (west façade). An iron fence borders the courtyard on the south side of the connector between the USS Constitution Museum buildings (Buildings 22 and 28). The courtyard contains benches and lighting. The paving material is "memorial" brick with donor descriptions. Another courtyard, enclosed by iron fence and brick posts is attached to the east side of Building 28 and stores an anchor and cannon (Figure 9.42). Crook-neck lampposts provide illumination in the courtyard. Bollards shield utility transformers and condensers from vehicles on the south side of Building 22.

As one travels south toward Piers 2 and 3, the amount of industrial equipment and supplies increases. Capstans appear to be the only historic small scale features. Non-historic features include line, timber, and unused/discarded Navy material. There are no interpretive waysides in this area between Dry Docks 1 and 2. Small-scale features along Baxter Road include anchors, bollards, hydrants, and traffic signs. Bollards line the northern end of the road. A concrete base supports a large capstan next to an anchor along the road by the Carpenter's Shop (Building 24). East/west circulation is controlled south of the museum with a high chain link fence between the Pitch House (Building 110) and the Carpenter's Shop (Building 24) and an iron fence between the Latrine (Building 124) and the USS Constitution Museum (Building 28). There are no small scale features on Piers 2 and 3, and fencing blocks access to their deteriorating ends.

Metal bollards line the edge of First Avenue at the northern end of Dry Dock 2, and two large granite circles are set into the paving, each displaying a large anchor (Figure 9.43). A pipe-and-chain railing, set in the granite coping, lines the dock. A row of black crookneck lampposts borders the outside of the rail. Benches are symmetrically placed on both sides of the dock in groups of four. They are constructed of metal ends connected by wooden slats. A trash receptacle is included in each grouping.

In the Shipyard Mall, two anchors are mounted in the parcel at the corner of Fourth Street and First Avenue. A bench and wayside are nearby (Figure 9.44). The Reviewing Stand (Structure 260) and the War Memorial (Structure 279) are to the west of the chain-link fenced Playing Courts (Structure 236). Within the Reviewing Stand, a bronze plaque and Flag Pole (Structure 242) stand between the two flights of steps that lead from First Avenue, and a pipe-and-chain railing lines the terrace. Benches are sited in the shade. A cannon and stack of shot are exhibited just west of the memorial, while several benches and trash receptacles are sited nearby on First Avenue. Fifth Street is lined with lamppost standards. Keel blocks and a fence block traffic access to Second Avenue at its intersection with Fifth Street.

There are a few small scale features in front of the Marine Barracks (Building I). A long exercise rope hangs between two pipes in the northwest corner of the Parade Ground. East of the rope and opposite the barracks's main entrance, a small flagstone-paved pad holds a bench and a brass bell hanging from the Torii Gate (Structure 282) (Figure 9.45). Utility covers lie flush in the turf on the south side of the Parade Ground, and two concrete plinths that once held cannon are located at the Second Avenue corners. The area east of the barracks contains an outdoor table and chairs, a moveable barbecue grill and a hammock, and the space on the west is host to picnic tables and a built-in barbecue in the northwest corner.

Two large mounted cannon balls mark the pedestrian walkway to the Commandant's House (Quarters G) from Second Avenue. Weep holes in the front of the stair cheekwall conduct runoff from the upper landings into the gutters lining either side of the walkway. Exposed valves and pipes along the southern side of the lawn are associated with the Underground Fuel Tank (Structure 220) buried beneath the lawn. A shallow, brick-lined pit with an unknown purpose lies near the center of the lawn. The Officers Quarters' (Building 265) back yards are

bounded on the north and south by a wooden stockade fence. The iron gates of Gate 2 at the western end of Second Avenue are blocked with three keel blocks.

VEGETATION

The yard's waterfront has very little vegetation. Ivy covers the yard's stone boundary wall outside Gate 1. Ornamental trees and shrubs including yews and crabapples are located along the perimeter of the parking lot between the Storehouse (Building 4) and the Hoosac Stores. Yews mark the entrance to the Finger Pier. The Explosives Bunker (Building 272) at the end of Pier 1 is covered with earth and grass. Dry Dock 1 and Pier 2 support no vegetation except for weeds growing on the structure. Pier 3 also has weeds at the southern end of the structure. The USS Constitution Museum's (Buildings 22 and 28) courtyard contains turf and ornamental plants and is bordered by turf on its north side.

The section of the Shipyard Mall from Third Street east to the Playing Courts (Structure 236) is well-maintained turf with a few trees (Figure 9.46). The manicured lawn is bisected by a diagonal path. There are large trees along the perimeter of the lawn. Areas to the south and east of the basketball court are planted with turf and shade trees and provide a shady respite from the surrounding open areas. A level area of turf occupies the section between Fourth and Fifth Streets. A few pin oaks grow along Fifth Street near Gate 4.

The Marine Barracks (Building I) Parade Ground consists of level, well-maintained turf with evergreen trees located in the corners. There is a hedge planted along the top of the retaining wall adjacent to Second Avenue. Square-pruned yews flank the small memorial area at the top of the Parade Ground in front of the barrack's main entrance. Ivy covers the wall and fence to the north and a hedge supplements the boundary. A small retaining wall on the west and north hold beds planted with ornamental vegetation in a more intimate garden.

A privet hedge runs the full width of the Commandant's House (Quarters G) property along Second Avenue, with a curved section of yew hedge above the Yard Commandants Plaque (Structure 270). The brick walkway between the building steps and Second Avenue is flanked by four rectangular beds, two on each side of the walkway, containing herbaceous plant material and separated by compact blue spruce. A flowering dogwood is planted on each side of the main walkway at the base of the house terrace providing a visual anchor (Figure 9.47). Ornamental trees and shrubs serve as foundation plantings at the top of the slope. A privet hedge borders the lawn east of the Commandant's House. The lawn on the west side extends west to the drive and north to the stone boundary wall. The only vegetation on the north side of the Commandant's House is a foundation planting of azalea. Weeping hemlock flank the drive entrance and an American holly grows in the center of the turn-around (Figure 9.48). A hedge of arborvitae along the western edge of the property effectively screens the Officers Quarters Five Bay Garages (Structure 269) and the Garage and Chauffeur's Quarters (Building 1), now the park's grounds maintenance shop (Figure 9.49).

At the Officers Quarters (Building 265), foundation plantings of forsythia flank each set of steps, and there are large trees line Third Street. The front yards are panels of turf, while the back yards have private, individual courtyard gardens tended by the residents. Bounded on the north and south by a stockade fence, a common area of grass (the former Second Street) extends between the back yards and along the boundary wall. There are shrubs and planting beds along the boundary wall.

VIEWS AND VISTAS

The view east from Gate 1 includes a long expanse of asphalt extending across the yard, and a partial view of the façade of the USS Constitution Museum (Building 22) with the BRA-owned portion of the yard in the distance. As

visitors progress east along First Avenue, they can see the Bunker Hill Monument, the Leonard P. Zakim Bunker Hill Bridge, and USS *Constitution*. Pier 1, Dry Dock 1, and Pier 2 provide better views of these landmarks in addition to views of Boston Harbor and downtown Boston (Figure 9.50). The yard buildings owned by the Boston Redevelopment Authority are visible to the east from the park. The view from the Scale House gate into the NPS portion of the yard, down First Avenue, includes the Navy Store (Building 5) and a distant view of Gate 1. The Mystic River (Tobin) Bridge dominates many northern views from the yard's waterfront and upper yard areas (Figure 9.51).

The Shipyard Mall provides views of the upper yard buildings, the piers and dry docks, Boston Harbor, cranes, USS *Constitution*, and downtown Boston. The view from Gate 4, down Fifth Street, includes cranes, Dry Dock 2, and the harbor beyond. From the buildings of the upper yard, there are views of the cranes on the piers, USS *Constitution*, the harbor, and downtown Boston. The view from Gate 2, down Second Avenue, includes lawn areas bounded by hedges and street trees.



Figure 9.1: The south elevation of the Commandant's House (Quarters G) and landscape terracing (OCLP, 2002).



Figure 9.2: The change in grade between the inside (left images) and outside (right images) of the eastern (top images) and western (bottom images) portions of the old boundary wall where it curves toward the former front (north) door of the Commandant's House (Quarters G) forming a semicircle. A staircase negotiates the western portion, bottom left (OCLP, 2002 and 2005).

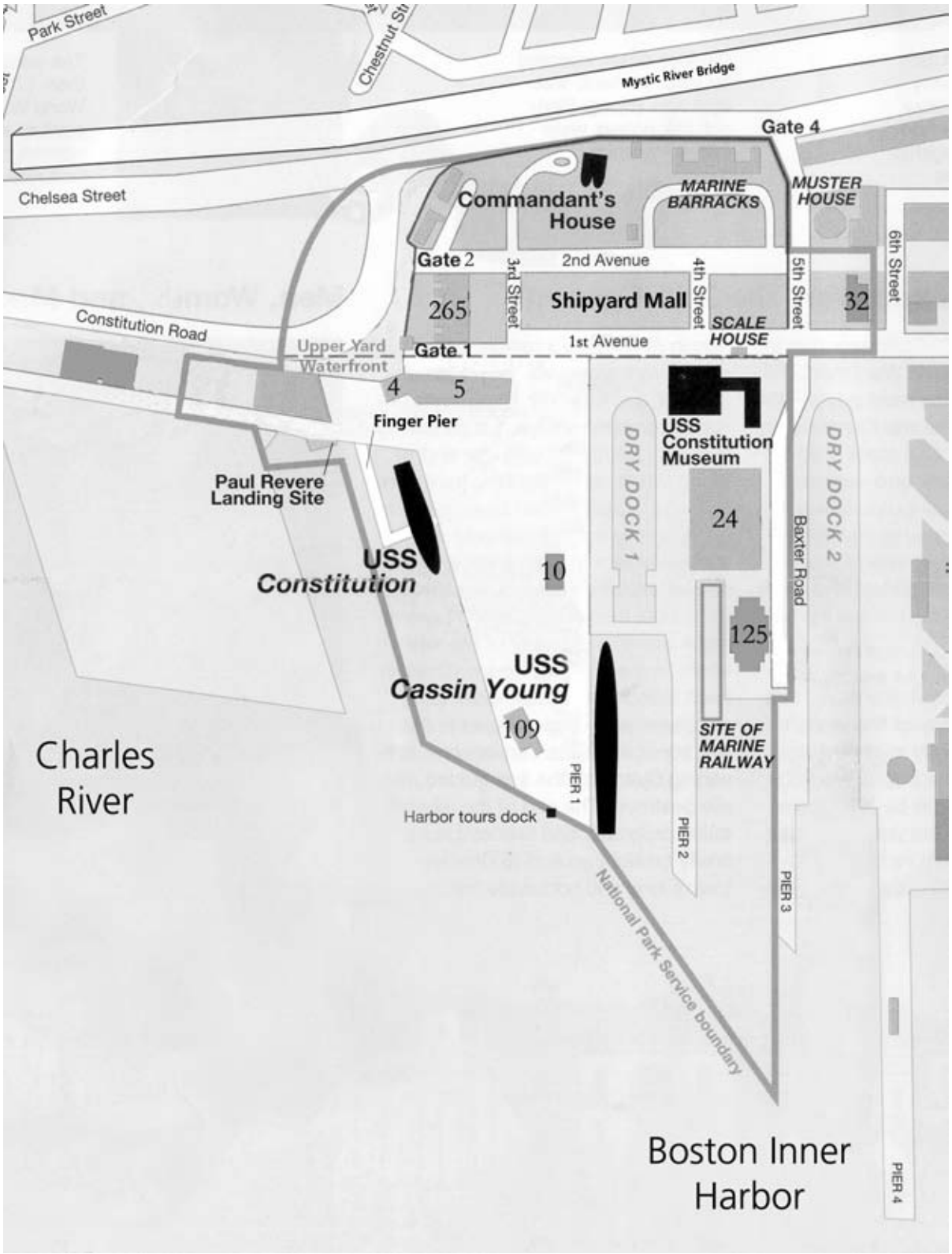


Figure 9.3: Spatial organization of the park portion of the Charlestown Navy Yard, 2004 (NPS Unigrid).



Figure 9.4: Outside Gate 1 looking into the park. Note the park sign, brick-marked Freedom Trail in the pavement, Gatehouse (Building 267), "Gate 1" sign, and keel blocks. The park sign is very similar to the one that faces the harbor from the end of Pier 1 (OCLP, 2003).



Figure 9.5: Outside Gate 1 looking south toward the curtain gate and USS *Constitution* (left). Inside Gate 1 looking west (right). The Freedom Trail is visible in both images (OCLP 2003).



Figure 9.6: The broad view south from First Avenue toward Pier 1. USS *Constitution* is at the left by Building 5 with the Boston skyline across the harbor. The Grit Hoppers are in the center, and USS *Cassin Young* is to the left in the distance (OCLP, 2003).



Figure 9.7: Pier 1 looking north. From left to right, Building 109, USS *Constitution*, Building 5, Building 10, USS Cassin Young Workshop (M-40), USS *Cassin Young*. Note the exposed granite cobbles in the center of the pier (OCLP, 2003).



Figure 9.8: Dry Dock 1 and the SS Nobska looking south with Pier 1 and the Boston skyline to the right. The ship rests on keel blocks and is stabilized by the vertical shoring (OCLP, 2003).



Figure 9.9: The south elevation of the USS Constitution Museum (Building 22) (right) with the courtyard and connector connecting it with Building 28. Note the crook-neck lamps typical of historic ones manufactured at the yard (OCLP, 2002).



Figure 9.10: View of the courtyards on the west (left) and east (right) sides of the Marine Barracks (Building I) (OCLP, 2002).



Figure 9.11: Parking on Pier 1. Note the rails, historic granite paving, elevated steam pipes, and USS *Cassin Young* (OCLP, 2003).





Figure 9.12: Pier 1 looking southwest showing rails, historic granite paving, supply piles, bollards, and Building 10 (left) and northwest showing rails, historic granite paving, supply piles, USS *Constituiton*, Grit Hoppers, and Building 5 (right). (OCLP, 2003).





Figures 9.13: View north between Buildings 24 and 110 with Baxter Road left of the parked cars (left). Granite curbing separates the parking area from pedestrian traffic. View south from the same location (right). A large capstan rests atop a concrete base next to the anchor (OCLP, 2002).



Figure 9.14: A high chain link fence runs between Buildings 110 and 24 (left), while an iron fence with brick posts runs from Building 124 to 28 (right). The bottom part of a floodlight tower is seen in the image on the left. A crane is visible on the right (OCLP, 2002).



Figure 9.15: This image of Pier 3 shows its deteriorated condition. Pilings are all that remain of the end of Pier 2 (right) (OCLP, 2003).



Figures 9.16: Fourth Street looking northeast. The former Building 198 foundation acts as a retaining wall for part of the Shipyard Mall. The Muster House and Mystic River (Tobin) Bridge are in the background (OCLP, 2003).



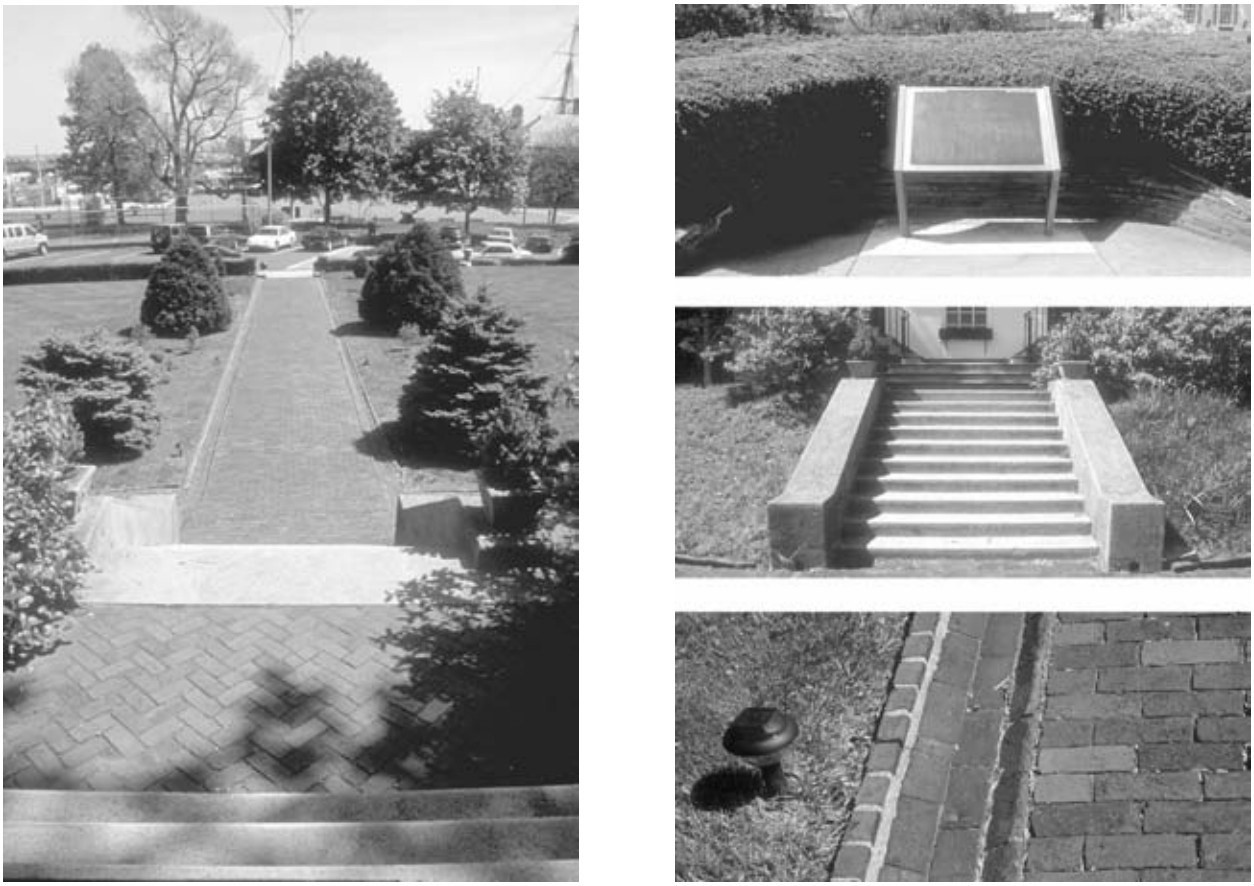
Figure 9.17: Fifth Street from First Avenue to its intersection with Chelsea Street. Keel blocks, left, prevent vehicular access through the gate at Second Avenue. The Marine Barracks (Building I) is to the left, the Mystic River (Tobin) Bridge is straight ahead, and the Ropewalk (Building 58) and Muster House (Building 31) are to the right (OCLP, 2002).



Figure 9.18: The pedestrian entrance at Second Avenue looking east toward the BRA portion of the yard. An iron gate, keel blocks and a dumpster prevent vehicular use (OCLP, 2002).



Figure 9.19: View east of the park's main vehicular entrance on First Avenue near the intersection with Fifth Street. From left to right: the pop-up barriers, the new Guard Booth, the Scale House (Building 19), and the moveable steel bollards along the brick pedestrian walkway. The Muster House (Building 31) is at the far left and the USS Constitution Museum (Building 22) is to the far right (OCLP, 2005).



Figures 9.20: The brick walkway between the Commandant's House (Quarters G) steps and Second Avenue is flanked by two garden beds separated by evergreen trees (left). A yew hedge (top, right) runs the full width of the property along Second Avenue, bowing in near a memorial plaque. Weep holes in the foot of the stair cheekwall (center, right) conduct runoff from the upper landings into the gutters(bottom, right) lining either side of the walkway (OCLP, 2002).



Figures 9.21: View of west (left) and east (right) walks that connect the main walk to areas on either side of the Commandant's House (Quarters G). A glimpse of the terrace under the porch can be seen on the left (OCLP, 2002).



Figure 9.22: The turnaround at the head of the driveway circles an American holly (left). Boston Ivy covers the wall and a portion of the house. The main porch and its open passage beneath are seen beyond the trees. Large trees and ornamental plantings line the driveway as it curves from the house to Second Avenue (right) (OCLP, 2002).



Figure 9.23: A concrete walk connects First and Second Avenues (left) and the Officers Quarters' main entrances. Bunker Hill Monument is visible in the distance. Perpendicular walks (right) also connect the front of the quarters with Third Street (OCLP, 2003).



Figure 9.24: Second Avenue and Officers Quarters' individual yards enclosed by brick walls and former Second Street enclosed with stockade fence (left). The masts of USS *Constitution* are visible over Building 5. Keelblocks prevent use of Gate 2 (right) (OCLP, 2002).



Figure 9.25: Explosives Bunker (Building 272) at the end of Pier 1. USS *Cassin Young* is to the left (OCLP, 2003).



Figure 9.26: Dry Dock 1 caisson with the Leonard P. Zakim Bunker Hill Bridge and USS *Constitution* in the background (OCLP, 2003).



Figure 9.27: Pier 3 with Building 24, the Navy's USS *Constitution* maintenance shop, on the left. Crane # 30 is in the center, and Dry Dock 1 is to the right. A temporary shed between the building and crane provides additional workspace for the facility (OCLP, 2003).



Figure 9.28: Pier 3 from Pier 2 with one of the cranes. Part of the pier is closed due to severe deterioration. The large building in the background is Flagship Wharf condominiums, part of the parcel administered by the Boston Redevelopment Authority (OCLP, 2002).



Figure 9.29: Pier 3's floodlight towers (right) are typical of those installed throughout the yard in the 1960s. Dry Dock 2 and a crane are on the left, Baxter Road is in the center, and Buildings 125 and 24 are on the right (OCLP, 2002).



Figure 9.30: West elevation of the southern portion of Pier 2 showing the long USS Constitution Temporary Storage Shed, (OCLP, 2002).



Figures 9.31: Dry Dock 2 looking north. Floodlight towers and cranes are next to the Carpernter's Shop (Building 24). The Muster House is at the head of the dock, and the Mystic River (Tobin) Bridge and Bunker Hill Monument is in the background (OCLP, 2002).



Figure 9.32: A level playing field is supported by a retaining wall along First Avenue (right). A smaller terrace bordered with granite blocks provides an interval between the playing field and Fourth Street. The retaining walls are foundation remnants of the World War II Temporary Storage Building (Building 198). A small corner parklet with a wayside, bench, and anchors is locared across Fourth Street south of the tennis courts (left). The Marine Barracks (Building I) and the Mystic River (Tobin) Bridge are visible in the background (OCLP, 2003).



Figure 9.33: Two tennis courts are laid end-to-end, paralleling Second Avenue. The basketball court is to the south, along First Avenue. The masts of USS *Constitution* and buildings of downtown Boston are seen in the distance (OCLP, 2002).



Figure 9.34: A pipe-and-chain railing and flagpole no. 242 define the concrete terrace of the Reviewing Stand (Structure 260) (left- view west, right- view east). A cannon and stack of shot are displayed west of the stand, and benches sit along First Avenue (OCLP, 2003).



Figure 9.35: The yard's granite block boundary wall northwest of the Commandant's House (Quarters G). The concrete footings were poured during the relocation of the wall in 1981-82 (OCLP, 2003).



Figure 9.36: Security and safety features protect USS *Constitution* and guide visitors including moveable steel bollards with chain, bicycle fencing, and Visitor Screening (Structure 287) (left) and Guard Booth (Structure 286) (right foreground) (OCLP, 2005).



Figure 9.37: NPS Kiosk, wooden steps, and "Keep Your Shipyard Clean" trash cans at USS *Cassin Young* on Pier 1 (OCLP, 2003).



Figure 9.38: Explosives Bunker (Building 272), two pieces of artillery (saluting battery), gangway, "Keep Your Shipyard Clean" trash can, benches, bollards, USS *Boston* memorial (bell), and lifesaving ring at the end of Pier 1 with Boston in the distance. The plaque on the memorial reads "From 1776 to tomorrow, dedicated to all shipmates who served on the seven vessels named USS *Boston*, July 2001…" (OCLP, 2002).



Figures 9.39: Synthetic material is used to create a post-and-pale fence around Dry Dock 1. The pipe-and-chain railing that also surrounds the dock is just inside this fence (OCLP, 2002).



Figure 9.40: View west along First Avenue with USS *Constitution*, the Leonard P. Zakim Bunker Hill Bridge, the Navy Stores (Building 5), and the Officers Quarters (Building 265) in the background. The head of Dry Dock 1 with outdated waysides describing the restoration of the SS *Nobska* and flagpoles is to the left, the Freedom trail and a capstan are in the center, and a mast display and the Flagpole No. 242 are to the right (OCLP, 2003).



Figure 9.41: An installation of masts is displayed south of First Avenue north of Dry Dock 1 and Pier 1. The accompanying wayside is poorly located between masts, is difficult to read, and often unnoticed. The masts are surrounded by historic brick paving and rails. The Navy Stores (Building 5), the Leonard P. Zakim Bunker Hill Bridge, the Officers Quarters (Building 265), the Reviewing Stand (Structure 260)/War Memorial (Structure 279), and the Playing Courts (Structure 236) are in the background (OCLP, 2003).



Figure 9.42: Baxter Road, the USS Constitution Museum (Building 28) courtyard,, and the Carpenter's Shop (Building 24) (OCLP, 2003).



Figure 9.43: The northwest corner of Dry Dock 2 showing First Avenue, the pipe-and chain fence, one of the two anchors resting on granite blocks set within brick paving, and typical bench and trash receptacles. Crane tracks lead to the crane at the southern end of the dock. To the right, crook neck lamps and bollards line the dock along Baxter Road (OCLP, 2003).





Figure 9.44: Left – The Reviewing Stand (Structure 260) and War Memorial (Structure 279) "Dedicated to the men of the Boston Naval Shipyard who made the supreme sacrifice in defense of their country in all wars. 1800-1950." Flagpole No. 242 stands in the middle. Several small-scale features near the memorial include trash receptacles, waysides, and benches. Right - A small shaded area with a bench facing the rear of a wayside is adjacent to the Playing Courts (Structure 236) and Fourth Street in the Shipyard Mall. Two large anchors are on display (OCLP, 2002).



Figure 9.45: The top of the Parade Ground in south of the main entrance to the Marine Barracks (Building I). Torii Gate (Structure 282) with bell and a bench sit on a flagstone terrace flanked by yews (OCLP, 2003).



Figures 9.46: Southwestern corner of the Shipyard Mall at the intersection of Third Street with First Avenue. The manicured lawn is bisected by a diagonal path, and surrounded by shade trees (OCLP, 2002).



Figure 9.47: Dogwoods provide a visual anchor at the base of the slope on which the Commandant's House sits. The trees in the background line the driveway up to the house. Part of the submerged fuel tank is seen in the lawn, on the leftside of the image, just behind the young shrub on the far side of the main walk. The north end of Officers Quarters (Building 265) is seen in the background of the image, on the left. (OCLP, 2002).



Figure 9.48: Weeping hemlocks flank the Commandant's House (Quarters G) driveway entrance off Second Avenue. The yard's granite boundary wall is in the background (OCLP, 2002).



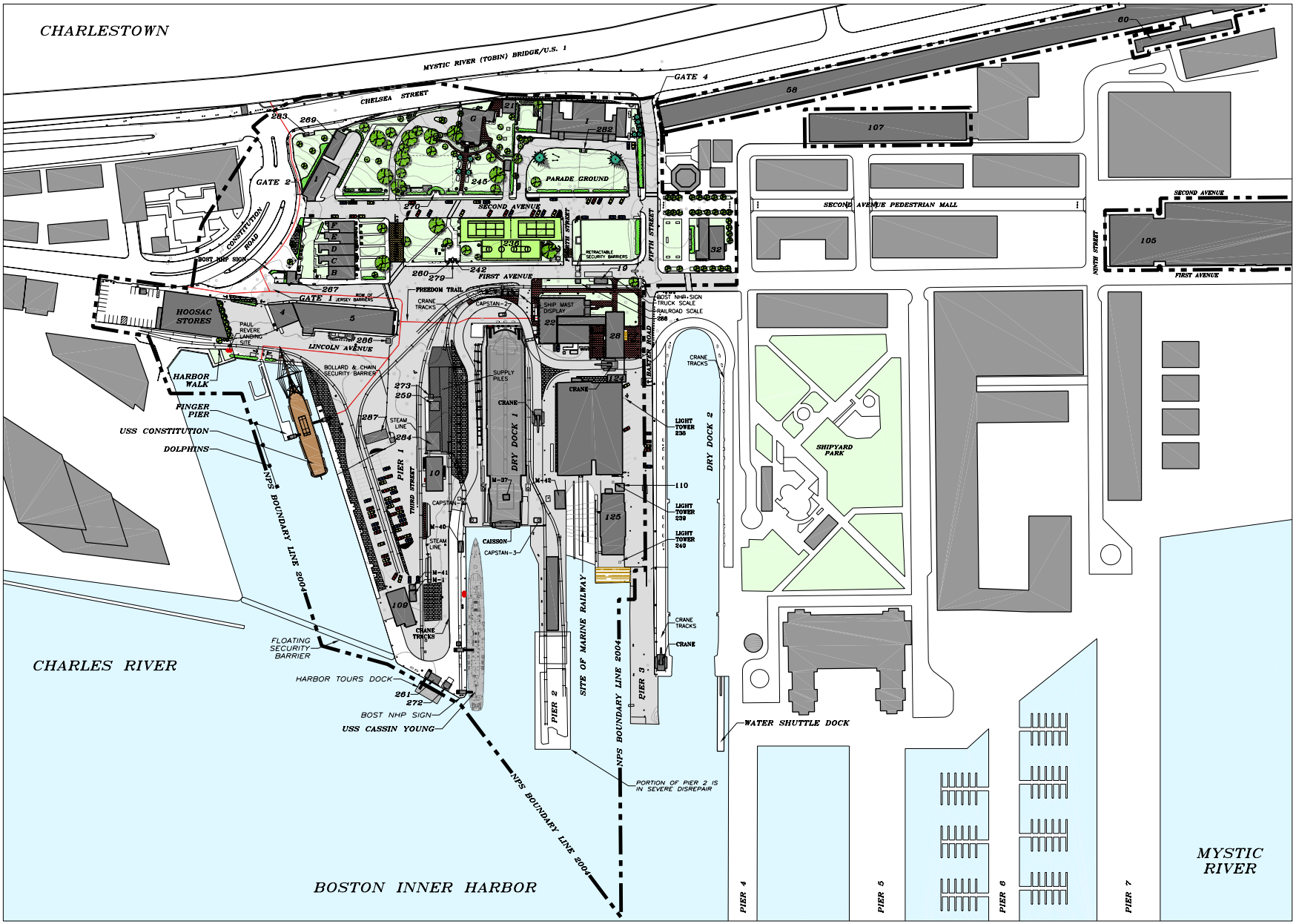
Figure 9.49: Trees grow along the Commandant's House (Quarters G) driveway. The yard's granite boundary wall is to the right and an arborvitae hedge screens a park maintenance facility in the background (OCLP, 2003).



Figure 9.50: The Bunker Hill Monument is visible from many parts or the yard especially the waterfront. Here a historic cautionary safety sign is mounted on a grit hopper with Bunker Hill in the background of the laydown (storage) space west of Dry Dock 1. The edge of the Outside Seating Area (Structure 284) is to the left (OCLP, 2003).



Figure 9.51: The Mystic River (Tobin) Bridge dominates many yard views including this one from Dry Dock 2 (OCLP, 2002).



Cultural Landscape Report for Charlestown Navy Yard

Figure 9.52

Existing Conditions 2004

National Park Service
Olmsted Center for Landscape Preservation
99 Warren Street
Brookline, MA 02445
617-566-1689

SOURCES

1. Survey by Carol R. Johnson Associates Inc., Boston, MA 1995.
2. BRA Orthophoto 2003
3. Site Visits, 2002-2004.

PREPARED BY

Ryan Reedy & Chris Stevens with AutoCAD 2002. OCLP, June 2005.

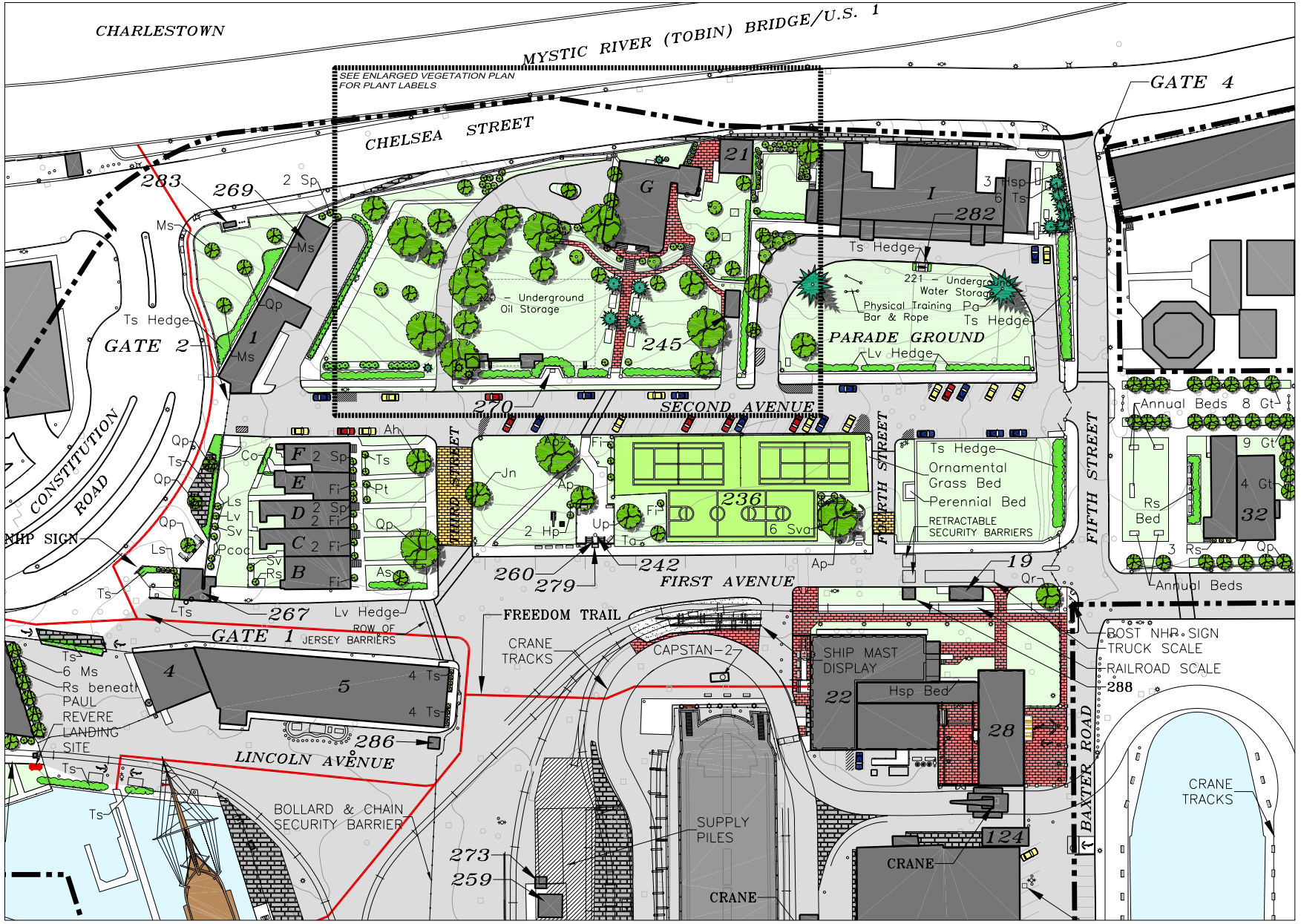
Legend

Sym.	Feature
	Brick Paving
	Granite Paving
	Bit. Concrete Paving
	Concrete Paving
	Wood Paving
	Gravel Surface
	Supply Piles
	Chain Link Fence
	Iron Fence
	Fence on Wall
	Wall
	Railway
	Bollard
	Bollard & Chain
	Lamp Post
	Fire Hydrant
	Bench
	Capstan
	Permanent Wayside
	Existing Contours
	Deciduous Tree
	Evergreen Tree
	Shrub
	Hedge

Note: Please Refer To Legend Page for Features, Building/Structure Names, and Plant List.

SCALE: 1"=200'

0 100' 200'



Cultural Landscape Report for Charlestown Navy Yard

Figure 9.53

Existing Conditions 2004 Vegetation Plan

National Park Service
Olmsted Center for Landscape Preservation
99 Warren Street
Brookline, MA 02445
617-566-1689

SOURCES

1. Survey by Carol R. Johnson Associates Inc., Boston, MA 1995.
2. BRA Orthophoto 2003
3. Site Visits, 2002-2004.

PREPARED BY

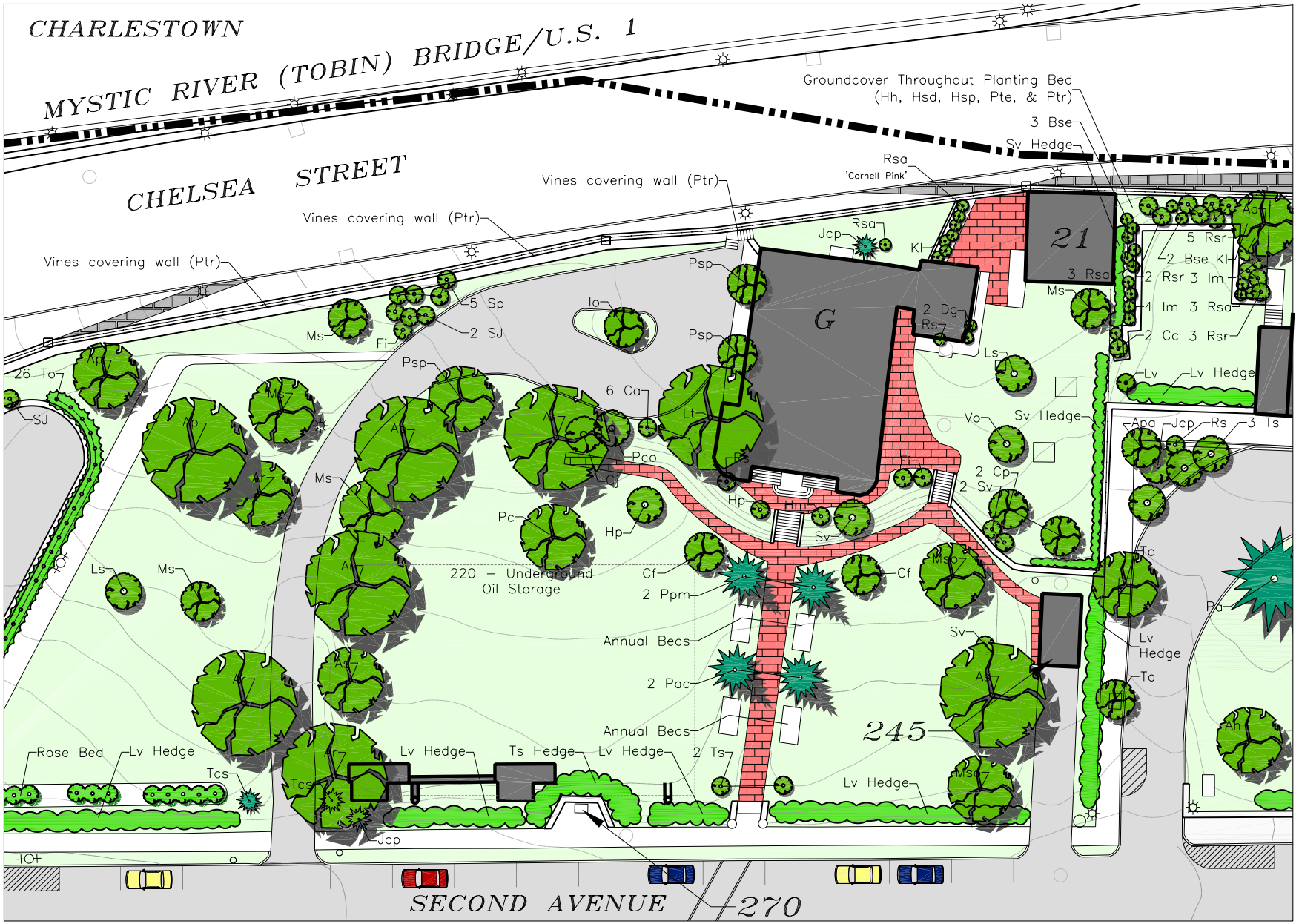
Ryan Reedy & Chris Stevens with AutoCAD 2002. OCLP, June 2005.

Legend

Sym.	Feature
	Brick Paving
	Granite Paving
	Bit. Concrete Paving
	Concrete Paving
	Wood Paving
	Gravel Surface
	Supply Piles
	Chain Link Fence
	Iron Fence
	Fence on Wall
	Wall
	Railway
	Bollard
	Bollard & Chain
	Lamp Post
	Fire Hydrant
	Bench
	Capstan
	Permanent Wayside
	Existing Contours
	Deciduous Tree
	Evergreen Tree
	Shrub
	Hedge

Note: Please Refer To Legend Page for Features, Building/Structure Names, and Plant List.

SCALE: 1"=80'
0 40' 80'


CHARLESTOWN
MYSTIC RIVER (TOBIN) BRIDGE/U.S. 1
CHELSEA STREET
SECOND AVENUE
270
Groundcover Throughout Planting Bed
(Hh, Hsd, Hsp, Pte, & Ptr)
Vines covering wall (Ptr)
Vines covering wall (Ptr)
Vines covering wall (Ptr)
3 Bse
Sv Hedge
Rsa
'Cornell Pink'
Rsa
Jcp
Kl
21
G
3 Rsa
Ms
2 Dg
Rs
5 Rsr
2 Bse Kl
2 Rsr 3 Im
4 Im 3 Rsa
2 Cc 3 Rsr
Lv
Lv Hedge
Ls
Vo
Sv Hedge
Apa
Jcp
Rs
3 Ts
2 Cp
2 Sv
Tc
Pa
Lv
Hedge
Ta
Ah
Ms
Ms
Ms

Legend

Sym.	Feature
	Brick Paving
	Granite Paving
	Bit. Concrete Paving
	Concrete Paving
	Wood Paving
	Gravel Surface
	Supply Piles
	Chain Link Fence
	Iron Fence
	Fence on Wall
	Wall
	Railway
O	Bollard

Sym.	Feature
	Bollard & Chain
	Lamp Post
	Fire Hydrant
	Bench
	Capstan
	Permanent Wayside
	Existing Contours
	Deciduous Tree
	Evergreen Tree
	Shrub
	Hedge

Sym.	Building/Structure Name
B–F	Officers Quarters (Building 265)
G	Commandant's House
I	Marine Barracks
1	Garage & Chauffer's Quarters
4	Storehouse
5	Navy Storehouse
10	Food Concessions (Pitch House)
19	Scale House
21	Stable
22	USS Constitution Museum
24	Carpenter Shop (USS Constitution Maintainence & Repair)
28	USS Constitution Museum

Sym.	Building/Structure Name
32	Boston Marine Society
58	Ropewalk
60	Tar House
105	Chain Forge
107	Public Works Shop
109	Waterfront Office
110	Lead Shop
124	Latrine
125	Paint Shop
236	Playing Courts
242	Flagpole (First Avenue)
245	Garage (NPS Garden Shed)
259	Grit Hopper

Sym.	Building/Structure Name
260	Reviewing Stand (Bandstand,First Ave.)
261	Saluting Battery
267	Gatehouse (Gate 1)
269	Officers Quarters Five Bay Garage
270	Yard Commandants Plaque
272	Explosives Bunker
273	Sand Hopper
279	War Memorial (First Avenue)
282	Marine Barracks Torri Gate
283	MBTA Bus Shelter
284	Outside Seating Structure
286–87	Guard Booth and Visitor Screening
288	NPS Guard Booth

Plant List

Sym.	Botanical Name	Common Name
Aa	Ailanthus altissima	Tree of Heaven
Ah	Aesculus hippocastanum	Common Horsechestnut
Ap	Acer platanoides	Norway Maple
Apa	Acer palmatum	Japanese Maple
Ar	Acer rubrum	Red Maple
As	Acer saccharum	Sugar Maple
Bs	Buxus sempervirens	Common Box
Ca	Cornus alba	Tatarian Dogwood
Cc	Cotinus coggygria	Common Smokebush
Cf	Cornus florida	Flowering Dogwood
Cj	Chaenomeles japonica	Japanese Floweringquince
Co	Celastrus orbiculatus	Chinese Bittersweet
Cp	Crataegus phaenopyrum	Washington Hawthorn
Dg	Deutzia gracilis	Slender Deutzia
Fi	Forsythia x intermedia	Border Forsythia
Gt	Gleditsia triacanthos	Common Honeylocust
Hh	Hedera helix	English Ivy
Hm	Hydrangea macrophylla	Bigleaf Hydrangea
Hp	Hydrangea paniculata	Panicle Hydrangea
Hsd	Hemmerocalis spp.	Daylily
Hsp	Hosta spp.	Plantainlily
Im	Ilex x meserveae	Blue Holly
Io	Ilex opaca	American Holly
Is	Iris spp.	Flag
Jcp	Juniperus chinensis 'Pfitzeriana'	Pfitzer Juniper
Jn	Juglans nigra	Black Walnut
Kl	Kalmia latifolia	Mountain Laurel
Lf	Lonicera fragrantissima	Winter Honeysuckle
Ls	Lonicera spp.	Honeysuckle
Lt	Liriodendron tulipifera	Tuliptree

Sym.	Botanical Name	Common Name
Lv	Ligustrum vulgare	European Privet
Ms	Malus spp.	Crabapple
Mso	Magnolia x soulangeana	Saucer Magnolia
Pa	Picea abies	Norway Spruce
Pac	Picea abies 'Compact'	Compact Norway Spruce
Pc	Pyrus communis	Common Pear
Pco	Philadelphus coronarius	Sweet Mockorange
Pcoc	Pyracantha coccinea	Firethorn
Ppm	Picea pungens 'Moerheimii'	Compact Colorado Spruce
Psp	Prunus subhirtella 'Pendula'	Higan Cherry
Pt	Prunus tomentosa	Manchu Cherry
Pte	Pachysandra terminalis	Japanese Pachysandra
Ptr	Parthenocissus tricuspidata	Boston Ivy
Qp	Quercus palustris	Pin Oak
Qpr	Quercus rubra	Red Oak
Rs	Rosa spp.	Rose
Rsa	Rhododendron spp.	Rhododendron [azalea cultivar]
Rsr	Rhododendron spp.	Rhododendron [rhododendron cultivar]
Sj	Spiraea japonica	Japanese Spiraea
Sp	Spiraea prunifolia	Bridalwreath Spirea
Sv	Syringa vulgaris	Common Lilac
Sva	Spiraea x vanhouttei	Vanhoutte Spirea
Ta	Tilia americana	American Linden
Tc	Tilia cordata	Littleleaf Linden
Tcs	Tsuga canadensis 'Sargentii'	Sargentii Canadian Hemlock
To	Thuja occidentalis	Eastern Arborvitae
Ts	Taxus spp.	Yew
Up	Ulmus pumilia	Siberian Elm
Vo	Viburnum opulus	European Cranberrybush Viburnum

Cultural Landscape Report for Charlestown Navy Yard

Figure 9.55

Existing Conditions 2004 Legend

National Park Service
Olmsted Center for Landscape Preservation
99 Warren Street
Brookline, MA 02445
617-566-1689

SOURCES
1. Survey by Carol R. Johnson Associates Inc., Boston, MA 1995.
2. BRA Orthophoto 2003
3. Site Visits, 2002-2004.

PREPARED BY
Ryan Reedy & Chris Stevens with AutoCAD 2002.
OCLP, June 2005.



Charlestown Navy Yard, Boston National Historical Park. Clockwise from top left: 1874 View of Gate 1, First Avenue, and Building 5 from exterior of yard (BOSTS-8940); current view of Gate 1 from exterior of yard (OCLP, 2003;. current view of Commandant's House (Quarters G)(OCLP, 2003); and Commandant's House in 1901 (BOSTS 9182).

ANALYSIS OF SIGNIFICANCE AND INTEGRITY

ANALYSIS SUMMARY

SIGNIFICANCE

EVALUATION OF INTEGRITY

EVALUATION OF LANDSCAPE CHARACTERISTICS AND FEATURES

ANALYSIS OF SIGNIFICANCE AND INTEGRITY

This chapter provides an analysis of the historical significance of the Charlestown Navy Yard and an evaluation of integrity of the physical character of the landscape. The analysis is based on criteria developed by the National Register of Historic Places, which lists properties significant to our country's history and prehistory. The analysis reviews the current National Register status, identifies inconsistencies and potential new areas of significance, and reviews areas of significance in accordance with National Register criteria and related historical contexts.[1] The evaluation portion of the chapter examines the physical integrity of extant landscape characteristics and features, such as vegetation, views, and circulation, with respect to the site's historical appearance and identifies which contribute or do not contribute to the site's historical significance.

ANALYSIS SUMMARY

The analysis of the areas of significance is based upon the concurrent Historic Resource Study, in draft in 2004 and nearly complete. This document recommends that the park be considered significant under National Register criteria A, B, C and D for the period of 1800-1974 in the areas of naval and military history and associated social movements, technological innovations, distinctive architecture, and remarkable engineered features. Several notable naval officers, architects and engineers are included as well as the physical evidence of their work. In addition, the property contains many archeological resources. The integrity of individual resources in the Navy Yard varies. Yet as a whole, the yard retains integrity of location, association, setting, design, materials, workmanship, and feeling, especially with respect to the National Historic Landmark criteria regarding its association with "events that have made a significant contribution to, and are identified with, or that outstandingly represent, the broad national patterns of United States history from which an understanding and appreciation of those patterns may be gained."[2] The evaluation section calls out the multitude of characteristics and features that contribute to the historic character of the property. The buildings and structures, already documented through the List of Classified Structures, are described here in the context of the landscape setting. Thus the spatial organization of the yard, the circulation throughout the yard and between individual structures, the vegetation, views, and small scale features are evaluated to provide a holistic description and a comprehensive list of characteristics and features that contribute to the historic property. Those features that do not contribute to the significance are also listed, but for the most part, these do not detract from the historic setting.

[1] The National Register of Historic Places Program determines a historic property's significance in American history through a process of identification and evaluation. Historic significance may be present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling or association and which meet at least one of the following National Register criteria:
A. That are associated with events that have made a significant contribution to the broad patterns of history; or
B. That are associated with the lives of persons significant in our past; or
C. That embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity who's components may lack individual distinction; or
D. That has yielded or may be likely to yield information in prehistory or history.

[2] National Register Bulletin 16, Guidelines for Completing National Register of Historic Places Forms - Part A. How to Complete the National Register Form (Washington: National Register Branch, Interagency Resources Division, National Park Service, US Dept. of the Interior, 1991), Appendix V:I.

SIGNIFICANCE

NATIONAL REGISTER STATUS[3]

In November 1966, the U.S. Secretary of the Interior designated the Boston Naval Shipyard as a National Historic Landmark. This designation also automatically placed the yard on the National Register of Historic Places, a program established under the authority of the National Historic Preservation Act of 1966 (NHPA). The National Landmark nomination noted that "…the Boston Naval Shipyard…has been found to possess exceptional value in commemorating or illustrating the history of the United States…"[4] In 1978, the National Park Service prepared a National Register Nomination Form to document the property. The form was submitted to the National Register Office but never formally accepted. This draft document found the Charlestown Navy Yard to be eligible under National Register Criteria A, C and D. The park's 2004 draft Historic Resource Study recommends that revised National Register forms be prepared and that all four criteria (A,B,C,D) are applicable to the yard. The Charlestown Navy Yard has never been evaluated within the context of a military/industrial complex nor examined in the context of contemporary navy yards.

Since the 1978 nomination form, most of the park's alterations have not diminished the yard's integrity, while a few actions have. The park's General Management Plan states that "…the Navy Yard's appearance will be managed to reflect the final period of Navy occupancy dating to 1974."[5] The yard has been substantially altered since the Historic American Engineering Record (HAER) photographs were taken in 1977. The demolition of certain buildings and additions, the neglect of structures such as the Marine Railway, the reconfiguration of some streets, and the reintroduction of some street trees illustrate a few of the changes. Yet the design intent—guided by the yard's overall plan and building scale and largely influenced by Loammi Baldwin, Alexander Parris and other early yard architects and engineers—is still strongly expressed.

A Historic Resource Study was completed by Edwin C. Bearss and Frederick R. Black in 1984 and 1988, which is presented in three parts and contained in five volumes. These volumes focus on the history of the site and focus on naval operations and ships built in the yard. They do not address surviving resources, significance, or treatment. A revised Historic Resource Study (HRS) is currently in draft, which seeks to document and assess the cultural resources and determine primary and secondary periods of significance for the yard. The revised HRS also addresses the period of 1974 to 2000, when many changes were made in the yard. This analysis will draw from the both the 1980s and most recent studies as they pertain to significance of the landscape characteristics and features.

PERIOD OF SIGNIFICANCE[6]

The period of significance of the Charlestown Navy Yard extends from the yard's establishment in 1800 to its deactivation in 1974 when the yard became part of Boston National Historical Park.[7] The 2004 draft Historic Resource Study defines the significance of the Navy Yard as follows:

[3] Much of the content of this section was developed from the tables in the 2003 draft of the Historic Resource Study (HRS) Chapter 3 Overview of Landscape History.
[4] National Survey of Historic Sites and Buildings, "Boston Naval Shipyard, Massachusetts," October 10, 1966, enclosed in Howard R. Stagner to Paul H. Nitze, Secretary of the Navy, Nov. 15, 1966, Boston Naval Shipyard NHL Reference File, Division of Cultural Resources, Boston NHP.
[5] Final Revised General Management Plan, Volume II, Boston national Historical Park, Charlestown Navy Yard, Boston, MA, February 1987.
[6] Much of the content of this section was developed from the tables in the 2003 draft of the Historic Resource Study (HRS) Chapter 3 Overview of Landscape History.

> The Charlestown Navy Yard is significant for its role in the construction, repair, and servicing of vessels of the United States Navy for the entire period of its existence from 1800 to 1974. It is also significant as the site of one of the first two naval dry docks in the United States, the location of the Navy's only ropewalk, and for technical innovations such as die-lock chain. The yard evolved throughout its history to meet changing needs and naval technologies, and the current site contains resources from all periods of its existence. The yard also contains two of the landing sites for British forces involved in the Battle of Bunker Hill. Although much of the current acreage of the yard is filled land, there is a potential that portions of the yard may contain archeological resources related to Native American and colonial use of the area prior to its purchase by the federal government as well as those related to its use by the Navy. The yard is also associated with several historically significant naval officers, as well as with a number of individuals who are significant in the fields of architecture and civil engineering.[8]

Both the 2004 draft Historic Resource Study and 1978 draft nomination cite four primary themes to evaluate all extant buildings and features of the yard:

1. History of the American Navy

2. History of Technology

3. History of Social and Worker Movements

4. History of American Architectural Design and Planning

These four themes are evident in National Register Criteria A, B, C, and D. Both documents ascribe national significance to the Charlestown Navy Yard—one of the six original United States Navy Yards—under Criterion A for its association with 174 years of the U.S. Navy's war and peacetime efforts.[9] Additionally, the property is significant under Criterion B for its association to significant figures including naval officers and other individuals involved with the yard's architecture, engineering, and technology. The property is also significant under Criterion C for its distinctive historic residences, manufacturing facilities, piers, and dry docks as well as associated open space critical to the yard's operation. Much of the yard's grid, open space, and buildings can be attributed to the planning and design of Loammi Baldwin, Alexander Parris, and Joseph Billings among others while engineers such as Baldwin created structural feats such as Dry Dock 1. Additional significance is ascribed under Criterion D for the potential of the property's buildings and structures to yield important historical information. The archeological resources associated with the yard are significant, but beyond the scope of this study.

AREAS OF SIGNIFICANCE

As part of the cultural landscape analysis, the primary themes and areas of significance listed above for the property are highlighted in the nine subperiods below.[10] With a 174-year long period of significance divided into these nine subperiods, today's Navy Yard represents an amalgam of building styles, technological innovations, and landscape features and spaces, all which reflect evolving ideals and functional needs.

[7] The Charlestown Navy Yard also includes the site of the British landing during their 17 June 1775 attack on the colonial fortifications built on Breeds Hill, later known as the Battle of Bunker Hill. This event falls outside of the yard's 1800-1974 period of significance and is more associated with the program of the Bunker Hill Monument unit of Boston National Historical Park.
[8] Statement of significance from Chapter 1, draft Historic Resource Study (Carlson, 2005).
[9] National Register of Historic Places Nomination Form, The Historic Resources of the Boston Naval Shipyard, Charlestown Navy Yard. Partial Inventory: Historic and Architectural Resources by Edwin C. Bearrs, Historian, Peter J. Snell, Historical Architect, NPS, Denver Service Center, May 1978, page one, Significance Section.
[10] The nine subperiods of the 1800-1974 period of significance above are slight variations of those identified by the draft Historic Resource Study (Carlson, 2004).

1. 1800-1828 Establishment of the Navy Yard

This subperiod reflects the 1800 founding of the Charlestown Navy Yard that followed the establishment of the U.S. Navy in 1798. Following the initial development, the early yard increased production during the War of 1812 and witnessed the start of shipbuilding. By 1828, the Navy removed both the Army and Marine Hospital reservations for yard expansion. The Navy constructed the Commandant's House (Quarters G), portions of the Marine Barracks (Building I), and the Navy Storehouse (Building 5) during this time. These buildings and the spatial relationships created by their placement with respect to each other are still evident.

2. 1828-1853 Early Nineteenth-century Growth

Loammi Baldwin's 1828 master plan guided the yard's growth during the second quarter of the nineteenth century and beyond with its tree-shaded east-west avenues and north-south streets and large rectangular buildings. The Navy built many granite buildings designed by Alexander Parris and Samuel Pook. Major shipbuilding and technological advances included the first covered ways or year-round shiphouses in the country. Parris's Ropewalk (Building 58) and Baldwin's Dry Dock 1 are two examples of state of the art engineering and industrial masterworks. In 1852, the Navy appointed Joseph Billings as the yard's first permanent civil engineer. The circulation system, building massing, several distinctive buildings, and Dry Dock 1 are still evident.

3. 1853-1869 Development in the Age of Steam

During this subperiod the yard adapted as the Navy evolved from wind and wood to steam and iron with new facilities that serviced the modernizing fleet. The yard's civil engineer, Joseph Billings, continued to design within the classical vocabulary of his predecessor, Alexander Parris, as the yard began to handle steam-powered vessels. The Civil War brought ironclad vessels and railroad tracks into the yard. The optimistic 1869 master plan marked the end of this period of growth, which followed with a time of relative inactivity. While core structures and ceremonial spaces were retained, a new layer of infrastructure was introduced to the yard including rail lines and a water distribution system. Larger vessels necessitated the extension of Dry Dock 1. The Muster House, designed by Joseph Billings, ushered in a new design style in the yard.

4. 1869-1898 Post Civil War

The end of the Civil War brought inactivity and efforts to close the yard during the 1880s. The 1890 Navy Appropriations Act led to partial modernization of the yard to build, repair, and outfit steel ships. With the beginning of the Spanish American War in 1898, the Navy authorized the construction of Dry Dock 2. This massive engineering project contrasted with the relatively calm ceremonial core of the yard, which was graced with an abundance of mature elms and other shade trees. Some of these trees are still evident, others have been replaced in kind, but most elms were subsequently lost to Dutch Elm Disease.

5. 1898-1920 Yard Resurrected

The Spanish American War and World War I further encouraged the Navy to continue the major modernization campaign begun with the 1890 Navy Appropriations Act. This subperiod reflects the start of steel shipbuilding and the yard's primary role in supplying and outfitting vessels. The Navy Yard began to expand to South Boston at this time. The completion of Dry Dock 2, the addition of crane and train rails, added asphalt road surfaces and parking areas, the presence of cranes enhanced the industrial appearance of the yard's waterfront as is still evident. The introduction of tennis courts to the ceremonial core altered the use of the central ceremonial area, as is still evident.

6. 1920-1934 The Stagnant 1920s

This subperiod reflects an inactive time in the yard and the beginning of the Great Depression. In 1926, yard workers invented dielock chain which all Navy ships soon began to use. The Navy only produced the chain here at the Chain Forge (Building 105). This production reinforced the value of the yard as a manufacturing and supply center for the Navy. The stock piles of rope and chain are not currently evident.

7. 1934-1939 The Yard Revitalized

This subperiod began with the first government orders for destroyer construction and the Works Progress Administration (WPA) modernization of the yard and closes with the outbreak of World War II. The WPA renovated many of the yard's buildings during this time and many street trees were removed to allow for road widening and paving. The Garage and Chauffeur's Quarters (Building 1), the sunporch on the Commandant's House, as well as the added kitchen and butler's pantry date to this period.

8. 1939-1945 World War II

With World War II on the horizon and a declaration of national emergency in 1939, the Navy revived shipbuilding with the yard building many of the escort vessels and tank-landing ships used in the war. The Navy constructed numerous new facilities, increased its numbers of workers (especially female and minority), and established large stockpiles for building and supply distribution. The Navy developed the South Boston Annex during the war and redesignated the yard as the Boston Naval Shipyard. The Navy constructed many new buildings and additions during this time. However, one of the largest structures built within the park area, the Temporary Storehouse (Building 198), was subsequently removed as were the enormous stockpiles of supplies and the many temporary structures.

9. 1945-1974 Cold War Era

Following World War II, through the Korean and Vietnam Wars, until its closing in 1974, the yard played a major role during the Cold War in developing missiles, radar, and sonar systems. The yard outfitted many ships during this time, and the 1950s was particularly a time of modernization. Features still evident from this period include additional asphalt paving, the light towers, grit hoppers, explosives bunker, and saluting battery.

EVALUATION OF LANDSCAPE INTEGRITY

Integrity is the ability of a property to convey its historic identity or the extent to which a property evokes its appearance during a particular historic period, usually the period of significance. While evaluation of integrity is often a subjective judgment, it must be grounded in an understanding of a property's physical features and how they relate to its significance. The National Register identifies seven aspects of integrity.[ii] Retention of these qualities is essential for a property to convey its significance, though all seven qualities need not be present to convey a sense of past time and place.

[ii] Location is the place where the historic property was constructed or the historic event occurred. Design is the combination of elements that create the form, plan, space, structure and style of a property. Setting is the physical environment of a historic property. Materials are the physical elements of a particular period, which include plant materials, paving and other landscape features. Workmanship includes the physical evidence of the crafts of a particular period. Feeling is a property's expression of the aesthetic or historic sense of a particular period. Association is the direct link between an important historic event or person and a historic property.

Boston National Historical Park's Charlestown Navy Yard includes the administrative and ceremonial center of the yard with many nineteenth-century buildings. The landscape presents a long history, 1800-1974, and reflects many different periods of the Navy's and park's presence. Table 10.1 summarizes the yard's landscape integrity. It is impossible to restore the yard's landscape to a specific subperiod without destroying earlier or subsequent layers.

Using the seven aspects of integrity, the site does not retain integrity of the nineteenth-century Navy Yard landscape but does retain integrity of much of the twentieth century landscapes (Table 1.5). For the nineteenth-century subperiods of significance, the integrity of the location, design, and association of the Navy Yard landscape remains, but evidence of the setting, materials, workmanship, and feeling have been lost to subsequent development of the site and surrounding area. The yard's landscape reflects the early to mid-nineteenth century planning (design) of Loammi Baldwin, Alexander Parris, and Joseph Billings with its grid of avenues and streets and massing of buildings. Most of the yard's street trees have been lost however, while much of the yard has been paved with asphalt. Meanwhile the bulkhead has shifted further and further south into the harbor as the yard expanded. With naval modernization, ship and yard materials and workmanship have changed. The upper yard, a subzone within the park, retains integrity of materials and feeling associated with the nineteenth-century landscape at the Officers Quarters, Commandant's House, and Marine Barracks (Building 265, Quarters G, and Building I). Here trees, shrubs, and lawn evoke the historic scene. The Shipyard Mall, however, was historically covered with shot and guns, but is now open for recreation. The integrity of archeological resources should be considered, but is beyond the scope of this report.

For much of the twentieth-century subperiods, the site retains integrity with respect to location, design, setting, materials, workmanship, and association. World Wars I & II necessitated intense additions that compromised the yard's park-like character. By the end of World War II, few street trees remained much like today. Aspects of integrity that are slightly compromised include design, setting, materials, and feeling. After World War II, the Navy removed many of the stockpiles needed for the war effort. The park and BRA later removed some of the World War II era buildings and structures. These actions removed some evidence of this subperiod's design, materials, and feeling. The setting surrounding the park changed during the twentieth century and continued to change once the Navy left and the park formed. The setting reflects these changes made during the last half of the twentieth century.

Table 10.1: Summary of Landscape Integrity for Charlestown Navy Yard.

Sub-Periods of Significance	Overall	Location	Design	Setting	Materials	Workmanship	Feeling	Association
1800-1828 Establishment of the Navy Yard	No	Yes	No	No	No	No	No	Yes
1828-1853 Early Nineteenth- Century Growth	No	Yes	Yes (Baldwin,Parris, and Billings)	No	No	No	No	Yes
1853-1869 Development in the Age of Steam	No	Yes	Yes (Bllings)	No	No	No	No	Yes
1869-1898 Post Civil War	No	Yes	Yes	No	No	No	No	Yes
1898-1920 Yard Resurrected	No	Yes	Yes	No	No	No	No	Yes
1920-1934 The Stagnant 1920s	Yes	Yes	Yes	No	Yes	Yes	No	Yes
1934-1939 The Yard Revitalized	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
1939-1945 World War II	Yes	Yes	No (layer removed)	Yes	No (layer removed)	Yes	No	Yes
1945-1974 Cold War Era	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
1800-1974 The Navy Yard	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**



Figure 10.1: The southeast corner of the Commandant's House grounds during the 1930s (top) and currently (bottom). This landscape, virtually unchanged for the past seventy years, and other landscapes of the upper yard possess integrity with respect to the nineteenth-century appearance of the yard.

EVALUATION OF LANDSCAPE CHARACTERISTICS AND FEATURES[12]

This section explores the landscape characteristics and features of the Navy Yard. Cultural landscape characteristics include tangible and intangible evidence of the activities and habits of the people who occupied, developed, used and shaped the landscape and provide a basic analytical framework of themes within the broader categories of processes and physical forms. Landscape characteristics addressed include natural systems and features/topography, spatial organization/land use, circulation, buildings and structures, small-scale features, vegetation, and views and vistas. While archeological sites are considered important components of the landscape, it is assumed that these resources are addressed in other studies. The evaluation includes a brief description of the characteristics historic and existing condition, as well as a determination regarding the contribution of each existing characteristic or feature to the significance of the landscape as a whole. Characteristics or features defined as "contributing" are those that were present in the historic landscape that survive or are those which are replacements of historic features. The narrative description is followed by a table of landscape characteristics and individual features (Table 10.2) noting whether they contribute or do not contribute to the physical character of the historic Navy Yard. Contributing characteristics and features should be retained in order to preserve the character of the yard. Guidelines for treatment are described in the next chapter.

NATURAL SYSTEMS & FEATURES/TOPOGRAPHY

Historic Condition: Members of the Massachusetts Bay Company established the Charlestown settlement in 1629 on the peninsula bounded by the confluence of the Mystic and Charles Rivers with Boston Harbor. The town was surrounded by extensive tidal flats, and a small inlet from the Charles River fed a five-acre marsh. Ebenezer Breed's dam created pastureland to the north of the bounded wetland. Charlestown's location offered a protected marine setting with a deep shipping channel in the Boston Harbor.

Early in the nineteenth century with the establishment of the Charlestown Navy Yard here, the land in front of the Marine Barracks (Building I) was graded to create a parade ground, the Salem Turnpike was graded in front of the Commandant's House (Quarters G), and a hill was leveled in the lower yard. A natural creek flowed through the marshland of the former Breed's dam pasture. The fate of the dam is uncertain. Cobb wharf was constructed in the tidal flats below the dam, creating a timber dock. A canal led through the Charles River tidal flats to this dock, and a causeway and dike were constructed along the creek at the northern edge of the dock. The causeway connected the new blacksmith shop and Shiphouse No.2.

The surrounding tidal flats limited boat access at low tide. Throughout the nineteenth century, the Navy filled the wetlands, channelized the creek, built a drainage system, and extended the shoreline with pilings, quays, and fill. These actions tripled the size of the Navy Yard. A culvert was designed to drain water from under the stone boundary wall in "low areas" of the yard. Filled marshland in the lower yard extended the shoreline behind the causeway. The Navy also dredged the harbor to increase the depth of the boat slips to the dry docks. During the late-nineteenth century, pipes were laid for water distribution system first from the Cochituate Waterworks and later from the Mystic Waterworks. By the turn of the twentieth century, the water mains were replaced, and hydrants and fixtures were installed with connection to the metropolitan sewage system. The Navy Yard had become decidedly industrial. The Navy filled in some shipways with waste to create parking lots after World War II and continued to extend the piers further into the harbor until the Navy Yard closed in 1974.

[12] Much of the content of this section was developed from the tables in the 2003 draft of the Historic Resource Study (HRS) Chapter 3 Overview of Landscape History.

Existing Condition: The Charlestown Navy Yard is located on the southeast tip of the Charlestown Peninsula located at the confluence of two rivers, the Charles and the Mystic, at the innermost part of Boston Harbor. The waterfront is bounded by piers and granite seawalls over extensive fill. The topography of the yard is nearly level with a rise in the land near the Commandant's House (Quarters G) and the Marine Barracks (Building I). The Marine Barracks Parade Ground is held level with retaining walls on three sides. Beyond the boundary wall of the yard, the land ascends more steeply to Breed's Hill. The Navy Yard is largely industrial and covered with structures and paving. With the exception of the rivers and harbor, there are no visible natural features.

Evaluation: Once a tidal marsh, the Navy filled in the wetlands, channelized and culverted the drainage, and bound the waterfront with piers and granite seawalls over extensive fill. The Navy graded portions of the upper yard for gardens, recreation, and the parade ground. The yard's physiography remains as it was during much of the Navy's operations and at its closure in 1974. Without its natural features (the Charles and Mystic Rivers and the Boston Harbor), the Navy Yard would have been sited elsewhere. Thus, the location of the yard at the confluence of the rivers, the pilings, quays, and fill, and the multiple terraces within the yard stepping down to the waterfront all continue to contribute to the yard's character.



1923 (BOSTS 9216)


2002 (OCLP)


2002 (OCLP)

Figure 10.2: The Marine Barracks terraces. West side terrace and Parade Ground in 1923 (top) and west side terrace garden in 2002 (bottom).

SPATIAL ORGANIZATION/LAND USE

Historic Condition: The Navy Yard was sited east of the town of Charlestown on open land. During the seventeenth and eighteenth centuries, the Charlestown settlement consisted of pasturage surrounded by residential and some rope-manufacturing parcels. When the Navy Yard was established in 1800, some of the purchased land remained residential and pastoral, but the developed land became institutional, used for manufacturing, military housing, and defense. The early Navy Yard contained an institutional complex at the eastern end (lower yard) that included a Marine hospital, Army storehouse, powder magazine, barracks and quarters. The western end of the yard contained two clusters, a residential grouping of buildings and structures along the yard's northern boundary (upper yard) and a manufacturing cluster in the region below the fence and stretching to the shoreline (waterfront). A timber dock predominated over the central portion of the yard, which remained as relatively open pasturage for public oxen with the exception of a brick-making complex and the army's earthen half-moon battery at the flood tide mark near the basin canal. By 1822, the Charlestown Navy Yard included eighty-four acres of land and forty-six acres of water and was bounded on the east and south by the confluence of the Mystic and Charles Rivers with the Boston Harbor and on the west and north by a granite wall along Water and Chelsea Streets.

In 1827, a master plan was designed by architect Loammi Baldwin patterned after classical city grids and the royal navy yards of Europe. The plan only called for one road, what is now Second Avenue, and called for internal canals that were never built. From this plan, the yard has evolved into five broad east to west avenues and seven north to south streets. The master plan further bolstered the yard's compartmentalization with the upper yard (northwest) being residential, ceremonial, and park like, the lower yard (northeast) hosting production and manufacturing, and the waterfront (south of First Avenue) servicing ships directly. The lower yard and waterfront areas contained predominantly large rectangular buildings arranged parallel to the grid.

By 1830, a gun and shot park occupied the area between Third and Fifth Streets and First and Second Avenues in the upper yard. Here the Navy stored the equipment and supplies in a beautifully ordered fashion. Later the area became part of the Shipyard Mall, an open space recreation area shaded with trees. This space visually adjoined the Marine Barracks Parade Ground and provided the yard a park core used for recreation, drilling, ceremonies, and storage. The areas various tennis courts have even been frozen over in the winters for ice-skating.

Throughout the nineteenth century, as the Navy Yard expanded, the residential and pastoral lands were developed with increased manufacturing operations that produced rope, chain, anchors and sails. In addition to manufacturing, the Navy Yard's other emphasis was on ship repairs. Shipbuilding facilities were developed in the lower yard. The Army and Marine hospital reservations were surrendered to the Navy, and the lower yard was developed primarily for manufacturing (shiphouses, mast shop, and timber sheds), although a small residential enclave (officers' quarters) fronted Salem Turnpike near the Chelsea Bridge. The Navy Yard continued to expand with added manufacturing and ship repair buildings and structures until the late-nineteenth century, when these facilities were reduced.

The twentieth century brought an increased number of workshops and ongoing use of manufacturing and ship repair facilities. With World Wars I and II during the first half of the century, the emphasis on ship repairs was expanded to include destroyer construction; overhaul, conversion, and outfitting for military use; and embarkation. Supply manufacturing, particularly chain and rope, remained important as did continued officer residential use. During this period, tourism increased with USS *Constitution* docked at the yard since 1897.

For World War I efforts, the Navy increased the number of temporary structures associated with supplies and increased the size of structures associated with the movement of steel ships and parts. During World War II, the Navy Yard was "built out" to capacity with additional buildings and structures, resulting in lost open spaces and

infringing upon the grid and the domestic area of officers housing. Many of these buildings and structures were removed after the war.

After World War II, the Navy Yard's mission included construction, docking, overhaul, and alteration of ships for defense as well as continued officers' residential use. The Navy Yard also served as a repair center for electronic equipment, a sonar laboratory, and a manufacturing site for large anchor chain. In the decades after the war, the Navy Yard's layout was determined to be inefficient and plans were made to consolidate and relocate operations at a modernized South Boston plant. These plans were never implemented, and the yard closed in 1974. The Navy Yard was designated a National Historic Landmark and placed on the National Register of Historic Places in 1966.

Boston National Historical Park has made few changes to the spatial organization of the park portion of the yard since assuming control on January 1, 1976. The biggest impact resulted from the Chelsea-Water Street connector and Fifth Street extension projects of 1980-1981. The northwestern portion of the boundary wall was shifted south reducing the size of Commandant's House grounds, and the large World War II era Temporary Storehouse (Building 198) was razed returning open space to the Shipyard Mall.

Existing Condition: The entire Charlestown Navy Yard consists of 129.5 acres, while the Boston National Historical Park portion consists of about 30 acres. The park portion includes the upper yard and the western part of the waterfront. The Boston Redevelopment Authority (BRA) controls the lower yard which contains the Historic Monument Area and the eastern part of the waterfront that includes the Shipyard Park and the New Development Area. A grid of streets defines the spatial organization of the yard. First Avenue separates commercial and residential use within the park. Open spaces fronts the Officer's Quarters, Commandant's House and Marine Barracks (Building 265, Quarters G, and Building I), and support both active and passive recreational uses. Below First Avenue are predominantly large rectangular buildings, including Buildings 4, 5, 10, 22, 24, 28, 109 and 125, which are used for industrial and institutional purposes. Expansive paved open areas support marine-related activities and visitor circulation. Pier 1, the largest pier in the park's portion of the yard, provides the largest open space. It is here that most visitors gather to board either USS *Constitution* or USS *Cassin Young*, or to visit the Constitution Museum.

Evaluation: While the Navy Yard has grown substantially since its 1800 inception, the spatial organization remains and contributes to the yard's historic character. Loammi Baldwin's grid has guided the yard's development for almost two centuries. The yard has maintained its characteristic zones (upper yard, lower yard, and waterfront) with the open Shipyard Mall at the core. The circulation and building grid pattern, building scale and massing, compartmentalization and zoning of the yard, and key spatial characteristics such as the Shipyard Mall contribute to the character of the historic property.

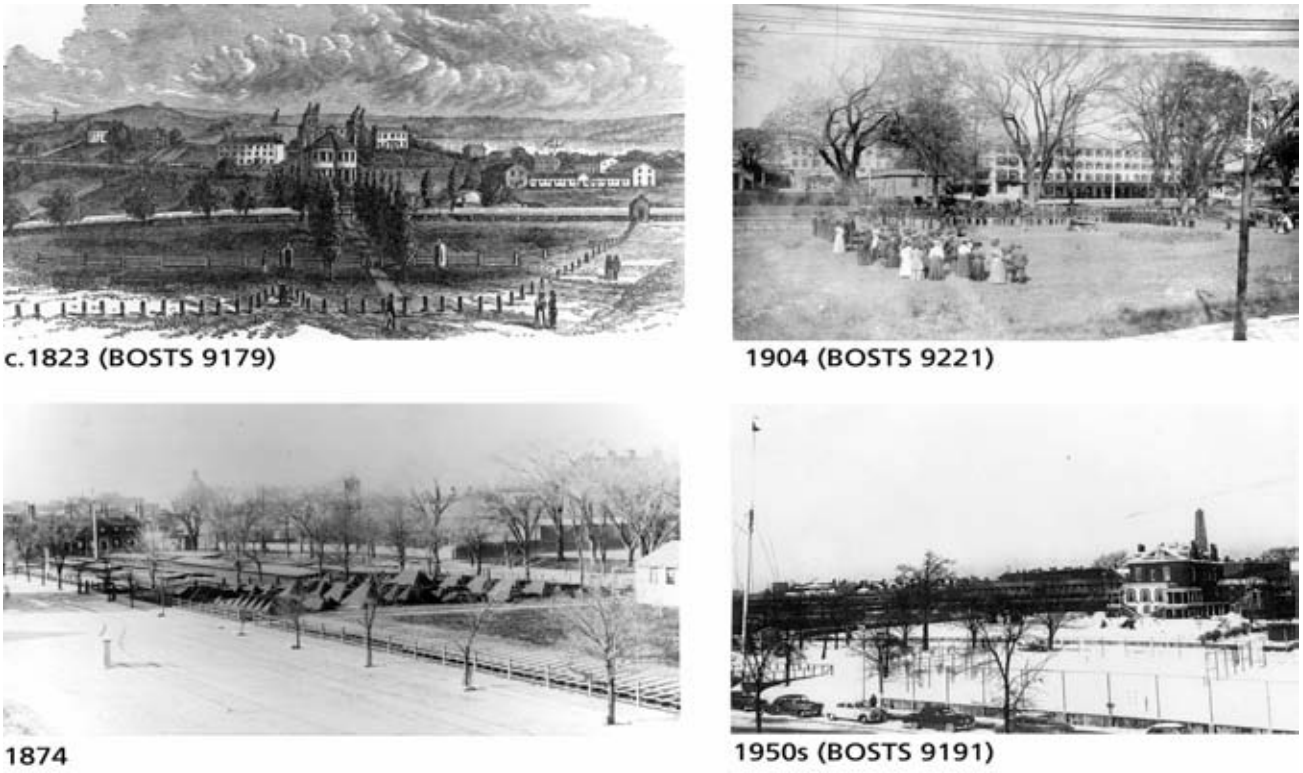


Figure 10.3: The Shipyard Mall's open space at the core of the Charlestown Navy Yard serving as a military park, ceremonial space, and recreation yard.



Figure 10.4: The open and flat Marine Barracks Parade Ground used for drilling exercises has changed little over time, while the building has changed greatly.



1921-29 (BOSTS 9324)



2003 (OCLP)

Figure 10.5: The tennis courts west of the Shell House (Building 32) in 1921-29 (top) with the building's addition and plaza in the same space today (bottom). This was the location of the World War II era Temporary Storehouse (Building 198) demolished by the park in 1979.

CIRCULATION

Historic Condition: During the time of Charlestown's seventeenth and eighteenth-century settlement, four of the town's roads traversed the future Navy Yard property. When the Navy Yard was established, a forty-foot-wide alternative road was constructed, rerouting Charlestown's "lane to brickyards," later Chelsea Street, along the northern boundary of the yard. Central Avenue passed along the southern boundary of the Commandant's complex. A road followed the causeway along the northern edge of timber dock. A road led from Chelsea Street to the magazine. During this period, portions of the Navy Yard remained unfenced, open to foot traffic and animal intrusions.

In 1827, architect Loammi Baldwin developed the yard's master plan patterned after classical city grids and the royal navy yards of Europe. The plan included broad east to west and north to south routes. Alexander Parris designed the granite block boundary wall that separated the yard from the surrounding community. As the Navy Yard developed during the first half of the nineteenth century, the main gate (with a guard house and a porter's quarters) stood at Water Street. The Navy built a new eastward road that connected the two building clusters and Central Avenue and Water Street. This road extended to a new wharf in the lower yard, and a small spur cut along a sand and clay embankment to the new blacksmith shop. During the last half of the nineteenth century, regional railroad lines linked to the Navy Yard for deliveries. The Navy paved Main (Second) Avenue with granite blocks to improve transport within Navy Yard, but most roads remained unpaved.

At the turn of the twentieth century, new crane tracks were placed around Dry Docks 1 and 2. Some small marine railroad tracks were removed. The twenty-five roads within the yard were named in 1902 with east-west routes as "avenues" and north-south routes as "streets." World War I efforts brought new railroad system tracks. Increasing

use of automobiles also necessitated parking areas and improved road surfaces on First Avenue and Ninth Street. During the Great Depression, the WPA completed paving projects around the yard, and a portion of the granite wall surrounding the Navy Yard was removed to improve traffic flow. World War II brought circulation patterns altered by tightened security. Most roads were paved with bituminous concrete and asphalt at this time.

During the next few decades, construction of the Mystic River (Tobin) Bridge increased the Navy Yard's separation from Charlestown. The existing crane track system was expanded to service newly rebuilt Piers 4, 6, 7, and 11. The Marine Railway closed in 1971, because of its poor physical condition and inability to handle modern naval vessels. The numbers of automobile-commuting workers increased, so Shipways #1 and #2 were filled with waste and converted to parking lots.

The Chelsea-Water Street connector and Fifth Street extension projects of 1980-81 altered the circulation pattern. Construction of the connector between the Mystic River (Tobin) Bridge and the Central Artery (Fitzgerald Expressway) in the 1950s had made Chelsea Street dead end, but by 1981, the street was reconnected with Water Street. Fifth Street was extended to intersect with Chelsea Street at this time, and a new vehicular gate was created at Gate 4. For the first time, Gate 1 and First Avenue ceased to be the primary vehicular entrance to the yard.

Existing Condition: First Avenue serves as the primary artery of the yard, bisecting the 130-acre site as it runs east-west. Second Avenue is north of and parallels First Avenue. Both are open to vehicles within the park, but only First Avenue permits access from outside the park boundary. Most of the numbered streets preserve the grid first proposed in 1828, and are secondary circulation routes that connect the major avenues. Below First Avenue, they meld into the piers. Sidewalks along most streets and avenues permit pedestrian use, though there is no sidewalk on the south side of First Avenue between the Constitution Museum (Building 28) and the proposed Visitor Center (Building 5). A smaller network of paths connects units in Officer's Row (Building 265) with the street and one another. Paths around the Commandant's House function similarly.

The streets and sidewalks consist of a variety of materials, including bituminous paving, brick, concrete, granite and wood. Of these, bituminous material is by far the most widely used for paving streets and piers. Most of the sidewalks throughout the high traffic areas of the park are concrete.

Granite is cut to varying dimensions are used throughout the park. Blocks provide paving material for both vehicular and pedestrian surfaces such as the western edge and southern central portion of Pier 1 and along the western edge of Building 24. As a design element, they serve as a grade-level base for the display of large anchors at the head of Dry Dock 2. Much of the yard's curbing is granite, but concrete curbing borders First Avenue. Brick is widely used throughout the park for utilitarian and decorative purposes, paving Third and a portion of Fourth Streets. A significant amount is used at the head of Dry Dock, around the Constitution Museum (Buildings 22 and 28), and the Commandant's House. The range of styles includes standard pavers, roman (narrower, longer profile) pavers and yellow pavers. Wood is used for the boardwalks along Dry Dock 2, decking near concessions and on some piers, and for the construction of utility covers at some junctions of rail lines.

Evaluation: The circulation pattern at the Navy Yard has changed little since the development of Baldwin's grid during the nineteenth century and contributes greatly to the yard's character. Specifically, First Avenue, Second Avenue, Third Street, Fourth Street, a portion of Fifth Street, Sixth Street, and Baxter Road contribute to the historic character of the property. Chelsea Street also contributes to the historic setting of the property, although it is now substantially wider than it was during the historic period. Sidewalks and walkways continue to traverse the open areas of the upper yard including the Shipyard Mall and Commandant's House grounds and contribute to the character of the property. The historic driveways and associated gates still lead from Second Avenue to the Commandant's House (Quarters G) and to the Marine Barracks (Building I). The grid of avenues and streets are mostly paved with asphalt now as they were when the yard closed in 1974. The paving work done in 1999-2000 and

in 2003-2004 exposed many of the extant underlying granite and brick surfaces. With minor exceptions, historic railroad tracks and crane tracks remain and contribute to the historic character of the property, but the flangeways have been paved for pedestrian safety. Most of the Marine Railway tracks have been removed from the waterfront, but the crane tracks remain.

One of the greatest changes to the yard's circulation has been the expansion of the Gate 4 pedestrian gate into the main vehicular access and the reduction of the former main gate, Gate 1, into just a pedestrian gate. Another change near Gates 1 and 2 is the redesign of Constitution Road area, which does not contribute to the historic character of the site. Despite these changes in use, the location, setting, association, materials, and feeling remain intact for three of the gates. Gates 1, 2, and 4, and the Marine Barracks gates contribute to the character of the property. Another gate, which led to the Commandant's House from Chelsea Street, was closed in the 1920s and sealed with a wall in the 1980s, and thus no longer contributes to the historic character of the property.

BUILDINGS AND STRUCTURES

Historic Condition: Before the Navy Yard was established, several residences and Breed's and Gorham's ropewalk complexes were located north of the future boundary and the road to the brickyards, and several small buildings covered John Harris' ¾-acre triangular plot near the waterfront, between Henley and Water Streets. Early Navy Yard buildings included the brick Commandant's House, Powder Magazine, and Gunhouse. Wooden buildings included the Marine Barracks, offices, storehouses, and artisan's shops, as well as the Shiphouse, Timber Shed, Blacksmith Shop, and Marine Hospital. Structures included the Pile Wharf (below the Blacksmith Shop) and the army's earthen half-moon battery (near Timber Basin). The Guard's Fort Breastworks were constructed for the War of 1812 near the Chelsea Bridge in the lower yard.

By the mid-nineteenth century, the Navy Yard contained approximately sixty buildings including the Officers Quarters, the Drydock Engine House, the Ropewalk, workshops, and timber sheds. New structures included a boundary wall, a dry dock, shiphouses, launching ways, and a wharf (the extended and rebuilt army arsenal wharf). Alexander Parris designed the yard's granite boundary wall built between 1824 and 1826. It originally extended from the Chelsea Street Bridge to the Main Gate on Water Street. Dry Dock 1, built 1827-34, was one of the earliest structures of its kind in the United States and was designated as a National Historic Civil Engineering Landmark by the American Society of Civil Engineers in 1977.[13] The Ropewalk, designed by Alexander Parris and built 1834-38, is this country's only surviving ropewalk not significantly altered or moved from its original site. The 1,360 feet long building produced the U.S. Navy's rope for 132 years.

During the last half of the nineteenth century, new buildings included the octagonal civilian workers' Muster House, a machine shop complex, a shiphouse, as well as several temporary buildings constructed for the Civil War. New structures included a dry dock extension, a new saluting battery, and an ordnance quay. A tennis court was added in place of the shot park, and the decommissioned USS *Constitution* was permanently berthed at the Navy Yard. Over twenty dilapidated or outdated buildings were removed, including Shiphouse No. 92, seven storage sheds, the Commandant's Office (No. 29), the Steam Chest (No. 86), and nine others mostly including decayed wood sheds. Some existing buildings were upgraded or converted including a new four-boiler pumping facility in Building No. 22.

Forty new buildings including a large construction and repair complex (Buildings Nos. 104-106), workshops, a paint shop, an electric power station, and a coaling plant were built at the turn-of-the-century. Other buildings were relocated or demolished. New structures included the 750-foot Dry Dock #2, piers, and extensions to existing

[13] American Society of Civil Engineers web page, History & Heritage of Civil Engineering: Landmarks and HistoricWorks:DomesticLandmarks:Massachusetts [http://www.asce.org/history/landmarks/massachusetts.html], accessed Aug. 9, 2001.

piers. The wood caisson for Dry Dock #1 was replaced with one built of steel. USS *Constitution* was restored in 1907.

World War I preparations brought approximately thirty-six new buildings, most for temporary storage space, including the General Storehouse, as well as Buildings Nos. 149, 153, 165, and 187. New structures included an oil storage tank, a battery charging station, an acetylene plant, a locomotive shed, and a crane shed. At this time, the Navy Yard's rail system consisted of four locomotive cranes, two locomotives, thirteen coal cars, six flat cars, seven ash cars, four dump cars, and two gondola cars.

Many temporary buildings from WWI were demolished in the 1920s. During the era of the New Deal and World War II, many new buildings were constructed including a seven-story machinist and electrical shop, a pipe and shipfitters shop, and an addition to the Ropewalk for administrative use. Piers were extended, and new shipways and facilities associated with the construction of destroyers and other types of warships were constructed. The tennis court was replaced with a three-story, wood frame temporary structure. Immediately after the war, surplus structures were removed including cranes, passenger cars, and stockpiled materials.

During the Cold War, new buildings included industrial service buildings and garages. New structures were added to accommodate larger ships and new technologies including longer and stronger steel and concrete piers, light towers, fire pump houses, electrical substations, a sand hopper, an extension of Dry Dock #1, and other small structures. The Ropewalk closed in 1971.

As part of the Fifth Street extension project of 1980-81, the park demolished the World War II era Temporary Storehouse (Building 198) and the Marine Corps Administration Building (Building 136). Within the Boston Development Authority's areas of the yard, most twentieth-century buildings were razed, while most of the nineteenth and early-twentieth century buildings were retained and adapted for reuse with all later additions removed.

Existing Condition: In 1994, as part of the List of Classified Structures (LCS) inventory, the research team made a first effort to itemize contributing resources for the former shipyard. Contributing resources identified included 25 buildings, 2 objects (plaques), and 18 structures. The structures identified included crane and railroad tracks, grit hoppers, flood light towers, gates, the granite wall, piers, an underground oil tank, water storage reservoir, Dry Dock #1, three portal cranes, and USS *Constitution*. In a memorandum dated January 30, 1995, the State Historic Preservation Officer concurred with the list of contributing resources identified by the LCS team, however, they also noted that the streets that are part of the Parris [Baldwin] plan should contribute as a single structural system.

Brick, granite, and wood are the primary construction materials for the buildings and structures in the yard. Building density reflects original use and is greatest in the industrial areas south of First Avenue and east of Pier 1. Density is lighter in the residential areas of the yard north of First Avenue (the upper yard). Most of these buildings are located toward the perimeter of the yard, constructed of brick, and have large amounts of vegetated open space nearby. Here concrete retaining walls provide level areas including the Marine Barracks Parade Ground.

Granite and wood members hold back the sea and raise the piers above reclaimed marshland. There are wooden utility sheds constructed on some piers, as well as temporary shelters constructed of metal and synthetic fabric. A network of rail and crane tracks weave throughout the yard, connecting dry docks, piers and inland manufacturing and storage buildings. Three cranes and two grit hoppers are located on the piers. Five flagpoles erected in 1990 by the USS Constitution Museum stand in a row at the head of Dry Dock 1. These were installed to attract visitors to the museum.

Evaluation: The yard's buildings within Boston National Historical Park reflect the historical development of the yard and reflect the Federal, Classical, and Georgian styles of the nineteenth century and contribute to the yard's

historic character. Within the National Park Service property, most of the prominent buildings remain with the exception of the Main Gate (Building 97), the Temporary Storehouse (Building 198), and the Marine Corps Administration (Building 136). The five flag poles added near the Constitution Museum and recent temporary structures added for yard security do not contribute to the historic character of the yard.[14]

SMALL SCALE FEATURES

Historic Condition: Before the Navy Yard was established, post-and-rail fences bounded many of the town's plots. Fenced plots included one at the western end of the future Navy Yard, between Henley Street and the lane to the brickyards, and two at the eastern end, Ebenezer Breed's marsh and "point pasture" near Moulton's Point. Fences also enclosed three pastures south of "proprietor's way" belonging to Catherine Henley, Richard Boyeston, and William Calder. Post-and-rail and board fences surrounded the Commandant's House and gardens and the Marine Barracks complex in the early Navy Yard. The Marine Barracks grounds also contained two wells. Picket fence lined the Salem Turnpike at the Navy Yard's northern boundary, and wood fences enclosed the yards of the Officer's Quarters in the lower yard. Wells were located in the vicinity of the Officer's Quarters. As the Navy Yard developed into the mid-nineteenth century, Alexander Parris's granite wall surrounded the outer boundary. Iron gates marked many of the openings including at the semicircular-walled entrance and the stable of the Commandant's House. The completion of Dry Dock 1 in 1833 was noted with a dedication inscription on the granite blocks inside its head, "Commenced on 10 July 1827, John Q. Adams President of the United States, Samuel L. Southard Secretary of the Navy, Authorized by the nineteenth Congress. Opened 24 June 1833, Andrew Jackson President of the United States, Levi Woodbury Secretary of the Navy, Loammi Baldwin Engineer." Many piles of wooden ship building and repair materials were scattered around the Navy Yard especially along the piers, and masting shears were located at the head of the Pile Wharf. Bollards, capstans, and keel blocks surrounded the piers and dry docks. Stores of shot, guns, and anchors were stockpiled in beautifully ordered rows and piles in parks in the upper yard between the residential areas and the waterfront.

During the last half of the nineteenth century, the installation of natural gas lights at the shiphouses extended work hours. By the close of the century, electric lights powered by a lighting plant in Building 28 replaced the gas lights. Some of these lights were ornate, but most were simple crookneck fixtures manufactured in the yard. At this time, a wooden picket fence surrounded the Commandant's House grounds. An elaborate arbor and octagonal guardhouse marked the gate on Second Avenue. An ornate, two-story birdhouse rose above the south lawn on a pole. A low, iron pipe fence protected areas of lawn and street trees from foot traffic in the area of the Muster House.

In 1929, an iron picket fence replaced the eastern portion of the granite boundary wall to the ropewalk to allow more light into the facility. World War II brought enormous amounts of materials to the Navy Yard, but the surplus was removed after the war. A pedestrian ramp, turnstiles, and time clocks were constructed at Gate 4 to handle the massive increase of employees. When the Central Power Plant (Building 108) from a coal to an oil burning facility, pipes were installed from the storage tank beneath the Commandant's House grounds, along Pier 1, to the plant.

During the last few decades that the Navy Yard operated, new light towers were constructed, and floodlights were installed on roofs and towers to illuminate Dry Dock 2. The square yellow trash receptacles were installed around

[14] The five flag poles at the head of the Dry Dock were installed in 1990 under a Section 106 action as a one-year temporary experiment to attract visitors to the museum. Section 106 files show that in 1992, although there was no evidence that the flags increased visitation, the park considered allowing the poles to remain "on an indefinite basis pending the preparation and implementation of a Cultural Landscape Treatment Plan for the yard.

the yard with the message "Keep Your Shipyard Clean." A Shinto Torii Gate was installed in front of the Marine Barracks (Building I) to face the Parade Ground. Various plaques honoring the yard's history were mounted around the site over the years.

Existing Condition: Small-scale features relate to visitor amenities, circulation, signs, and marine, military, and security functions. The few amenities, benches and picnic tables, are confined to the USS Constitution Museum, the Shipyard Mall (recreation area), Dry Dock 2, the west side of Building 32, and the east side of Building 10. Examples of historic anchors, guns, and chain are also displayed at some of these locations. Bronze plaques located around the yard denote historical events or people associated with the facility. Signs include directional, identification, traffic, and workplace safety information. Marine and industrial related features include capstans, bollards, cleats, hydrants, lifesaving stations, masts, chain, rope, and utilities and are found on the piers. Pier 1 still contains many piles of shipbuilding materials such as live oak timber. The above-ground steam pipes still line the center of the pier. The dedication inscription still marks the inside of Dry Dock 1's head, although it is deteriorating. Many features relate to public safety needs in the wake of the events that occurred on 11 September 2001. Currently, a series of concrete Jersey barriers and bicycle fencing cordon off USS *Constitution* and Buildings 4 and 5. Jersey barriers and pop-up vehicular barriers are used at the vehicular entrance on Fifth Street to control traffic into the park. Keel blocks, which are found throughout the site, are utilized as barriers at Gate 1 and near the Scale House (Building 19). In 2004, the park replaced jersey barriers and keel blocks in many locations with new movable steel bollards and chains.

Evaluation: The Charlestown Navy Yard Unit of Boston National Historical Park retains many small-scale features that contribute to its historic character as a U.S. Navy facility (1800-1974) including capstans, bollards, keel blocks, steam pipes, and shipbuilding supply pipes. Notable small scale features that contribute to the historic character of the property include the safety sign on the Grit Hopper, the Shinto Torii Gate, and several plaques. The gun, shot, and anchor parks stored numerous supplies during the nineteenth century, but were removed by the turn of the twentieth century. A few samples of these supplies still delight visitors in tourism areas, while many more are in storage at the yard. These cannons, shot piles, anchors, and the historic ship mast contribute to the character of the historic landscape. The yellow trashcans with the slogan, "Keep Your Shipyard Clean" also contribute to the historic character of the property. Some small-scale amenities have been added since the site became a park to facilitate tourism and for security and do not contribute to the historic character, including benches and interpretive signs.



1921 (BOSTS 9318)



2003 (OCLP)

Figure 10.6: Low pipe-fencing protected the turf in front of the Muster House (Building 31) during the 1920s (top), but no fence exists today and the turf is showing wear.

VEGETATION

Historic Condition: When the Navy Yard was established, eelgrass and other marsh grasses covered the tidal flats and wetlands, and grasses covered the pastures. Ornamental trees like the Lombardy poplars grew on Putnam's property that fronted the lane just north of the Navy Yard's boundary.

The Navy planted 200-300 elm trees and an unspecified number of fruit trees during the first half of the nineteenth century. After the Baldwin plan of 1828, the Navy lined new avenues with elms, maples, and ornamental trees. The Commandant's House grounds were well manicured with shade and fruit trees, ornamental shrubs, and flowers. The Commandant also kept a vegetable garden southwest of the house. The Marine Barracks level, turf Parade Ground provided green and open space for the drilling of soldiers, while a vegetable garden to the southeast provided food. Large trees shaded and hedges lined the front lawn of the Officers Quarters (Building 265), while the back yards provided garden space. During the last half of the nineteenth century, the Navy maintained the yard's street trees, replaced them as needed, and planted an alleé of trees along Flirtation Walk, the boardwalk just south of the Ropewalk. The yard was very much a park, and residents and visitors delighted in its beauty.

Unabated building construction during World Wars I and II led to the loss of open, planted spaces. Dutch Elm Disease and hurricanes of the 1950s decimated the few remaining trees along the avenues and Flirtation Walk. The Navy maintained the park character surrounding the Commandant's House, Officers Quarters, and Marine Barracks (Quarters G and Buildings 265 and I). With the removal of the shot and guns from the Shipyard Mall at the turn of the twentieth century, this turf-covered and tree-shaded area provided recreation space to the yard's residents. Ornamental plantings enhanced the development of parking near tourist amenities near Gate 1 by the 1960s. Historically, the piers had no vegetation except for the grass covered Explosives Bunker at the end of Pier 1.

Existing Condition: Ornamental plantings and turf are located outside the wall at Gate 1 which serves as a drop off/pick up site for visitors. A few medium-sized pin oaks are located at the opposite entrance at Fifth Street. There are several ornamental trees in the residential areas north of First Avenue. The grounds around the Commandant's House contain ornamental trees and shrubs, perimeter hedges, and beds of herbaceous plants along the main walk. The yards in front of the Officer's Quarters are turf with mature trees and forsythia as a foundation planting in front of each house. Small individual courtyard gardens are located behind the Officer's Quarters. Other turf areas surround the war memorial plaza to fallen yard workers and cover the parade ground in front of the Marine Barracks (Building I). Trees shade the western end of the Shipyard Mall, while the eastern end is covered with turf. There are few street trees along First and Second Avenues in the park. The Boston Redevelopment Authority (BRA) planted an alleé of trees along the Second Avenue Pedestrian Mall. Very little vegetation grows south of First Avenue. At the end of Pier 1 is a grass-covered Explosives Bunker. Ornamental plantings are located near USS *Constitution* and finger pier, and along the perimeter of the parking area between the Hoosac Stores and Building 4. All other vegetation below First Avenue is weedy material.

Evaluation: Much of the upper yard's vegetation contributes to the yard's historic character. The lawns, trees, shrubs, and hedges of the Officers Quarters, Commandant's House, Marine Barracks, and Shipyard Mall in the upper yard evoke a sense of this area's historic park character. First and Second Avenues lack the grand street trees that once arched over them. The historic core of the yard, the upper yard's open, turf-covered space continues to provide recreational space to residents and visitors alike. The waterfront historically did not support much vegetation south of First Avenue.

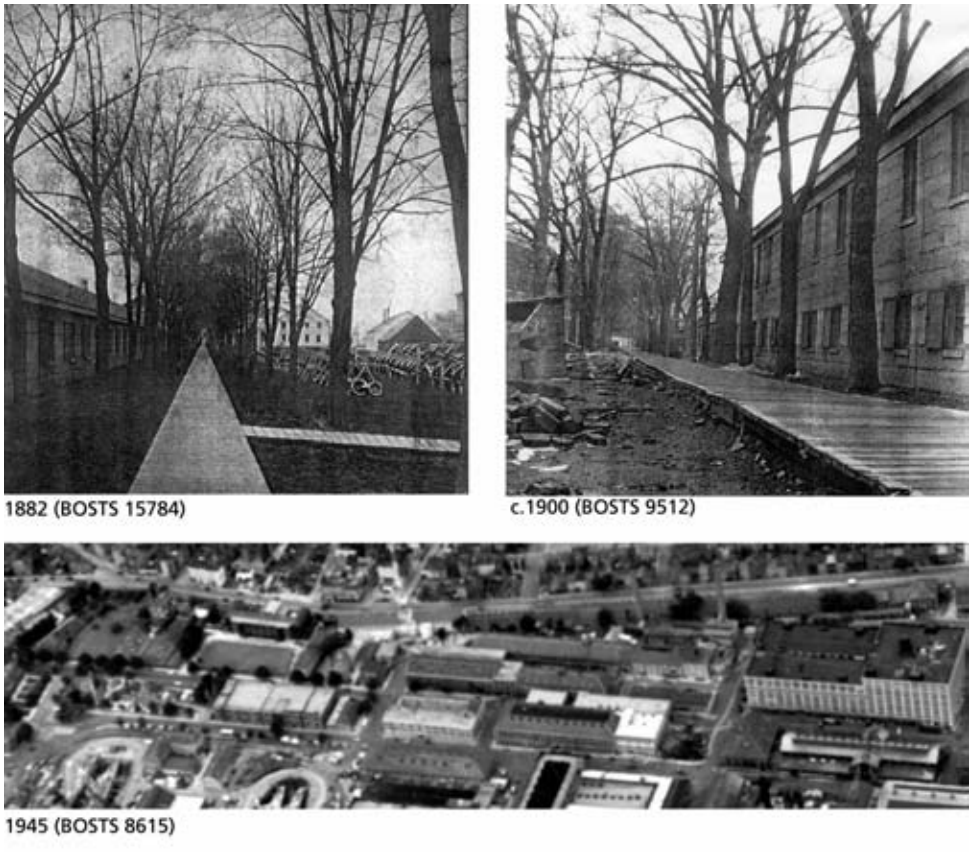


Figure 10.7: The elm trees lining Flirtation Walk (top) are still visible in the 1945 aerial photograph (bottom). Many street trees still shaded First and Second Avenues in 1945 too.



Figure 10.8: Young street trees growing along Second Avenue during the 1920s.

VIEWS AND VISTAS

Historic Condition: Prior to the Navy Yard, the waterfront views were relatively unobstructed with few built features between the yard's northern boundary and the shoreline. With the establishment of the yard, the views remained relatively unobstructed with only a few intrusions by single-story structures and the three-story Navy Store. As the yard developed during the first half of the nineteenth century, residents and workers enjoyed significant views northwest of the new Bunker Hill Monument and south of the harbor. Shade trees and buildings partially obscured southeast views. During the last half of the century, these views became blocked with the construction of increasingly large buildings such as the machine shop with its large stack. Once USS *Constitution* was berthed at the Navy Yard, it became a significant part of many views. Views remained relatively unaltered until World War II when building density and height increased to up to seven stories high. Construction of the Mystic River (Tobin) Bridge after the war further restricted views.

Existing Condition: From the yard, there are views south and west to the inner harbor, downtown Boston and the Leonard P. Zakim Bunker Hill Bridge. To the north, the Bunker Hill Monument is visible from Piers 1 and 2. To the east are long broad views down the straight First and Second Avenues. Looking into the yard from the waterfront, USS *Constitution* and cranes are the dominant visual elements. The view east from Gate 1 includes a long expanse of asphalt extending across the yard, and a partial view of the façade of the Constitution Museum (Building 22) with the BRA-owned portion of the yard in the distance. The view from Gate 2, down Second Avenue, includes lawn areas bounded by hedges and street trees. The view from Gate 4, down Fifth Street, includes cranes, Dry Dock 2, and the inner harbor beyond. The view from the Scale House entrance into the yard, down First Avenue, includes Building 5 and a distant view of Gate 1.

Evaluation: Historic views and vistas of and from the Navy Yard remain and contribute to its historic character. Waterfront views remain the most significant given the site's role in American history. There are more open views of the water now than during much of the twentieth century due to the removal of the large World War II era building 198, many temporary structures, most of the street trees, and the lack of large numbers of berthed ships. The Mystic River (Tobin) Bridge looms over the northern vistas, but it was constructed during the yard's period of significance. The upper yard, with its park character and historic buildings, still creates and frames many historic vistas including the views from the Commandant's House and from the Marine Barracks to Boston Harbor, to the USS Constitution, and industrial waterfront area. Other notable views within the yard include the view of the Commandants House, Marine Barracks, Officers Quarters, Views down First and Second Avenues, views from Gates 1, 2, and 4. Significant views from the waterfront include views to Downtown Boston, Bunker Hill Monument, the Mystic River Expressway, and views to the upper yard. A detailed list of contributing characteristics and features is provided on the following pages.

Table 10.2: Summary of Landscape Characteristics and Features for the Charlestown Navy Yard. [15]

CHARACTERISTIC/FEATURE	STATUS	COMMENTS
Natural Systems & Features/Topography		
Sited at point between the Charles and Mystic Rivers facing Boston Harbor	Contributing	Unchanged since yard's founding in 1800
Pilings, Quays, and Fill (Over marsh and tidal areas)	Contributing	Yard triples from its original size during the nineteenth century
Upper Yard Hill (Commandant's House & Marine Barracks)	Contributing	Most prominent location since the yard's inception
Commandant's House Terrace	Contributing	Emphasizes the house and separates garden rooms
Marine Barracks Parade Ground	Contributing	Graded level in early nineteenth century
Marine Barracks Side Garden Terraces	Contributing	1945-1974
Spatial Organization		
Grid Circulation Pattern	Contributing	1828 Baldwin Plan (broad east to west avenues and north to south streets)
Compartmentalization of the Yard	Contributing	Upper Yard (residential, ceremonial, recreation, park), Lower Yard (manufacturing, commercial, BRA Historic Monument Area), Waterfront (ship/marine servicing, tourism, BRA New Development Area and Shipyard Park)
Building Massing	Contributing	Predominantly large, rectangular buildings parallel with the grid (lower yard and waterfront)
Shipyard Mall	Contributing	Open space between the upper yard and waterfront
Circulation		
Grid Circulation Pattern	Contributing	1828 Baldwin Plan (broad east to west avenues and north to south streets)
First Avenue	Contributing	Major twentieth-century axis of supply and production
Second Avenue	Contributing	Major nineteenth-century east to west axis
Third Street	Contributing	Brick and wood block historically, now brick
Fourth Street	Contributing	Brick and wood block historically, now brick and asphalt
Fifth Street	Contributing	Extended to Chelsea Street 1980-81. The street did not extend to Chelsea Street from 1800-1974; it was a pedestrian route. Converted to a brick courtyard between Buildings 22 and 28
Sixth Street	Contributing	
Baxter Road	Contributing	
Constitution Road	Non-Contributing	Post 1974
Chelsea Street	Contributing	Reconnected to Water Street 1980-81 (former Salem Turnpike)
Pier 1	Contributing	Open, access to USS *Constitution* and USS *Cassin* Young
Pier 2	Contributing	Much closed now for safety and/or security
Pier 3	Contributing	Much closed now for safety and/or security
Gate 1	Contributing	early 1800s
Gate 2	Contributing	early 1940-41
Gate 4	Contributing	1853, Pedestrian gate until 1980-81, now also vehicular
Commandant's House Gate	Non-Contributing	Historic boundary wall had curved to an iron gate until the semicircular walls were lowered and the wall built in place of the fence along Chelsea Street in front of the house in 1940-41
Marine Barracks Gates	Contributing	Locked, front Chelsea Street
Pedestrian Gate, Second Avenue	Non-Contributing	Installed during 1980-81 extension of Fifth Street
Marine Barracks Circular Drive	Contributing	Twentieth century-present
Commandant's House Drive	Contributing	Twentieth century-present
Rail Tracks	Contributing	Nineteenth century-present
Crane Tracks	Contributing	Twentieth century-present
Officers Quarters Walkways	Contributing	Nineteenth century-present
Commandant's House Walkways	Contributing	Nineteenth century-present
Freedom Trail	Non-Contributing	1950s-present
Buildings and Structures		
Predominantly rectangular buildings	Contributing	1827-Present

[15] National Register of Historic Places Inventory Nomination Form, The Historic Resources of the Charlestown Navy Yard. Partial Inventory; Historic and Architectural Resources.

arranged parallel to grid		
Navy Yard Boundary Wall	Contributing	1824-26, Alexander Parris, sections replaced with iron fence – 1830s, 1929
Gatehouse (Gate 1) (267)	Contributing	1959
Navy Storehouse (5)	Contributing	1815-16
Storehouse (4)	Contributing	1827
Finger Pier	Contributing	
Pier 1	Contributing	1813, former site of Shiphouse G (1813-1848), enlarged to become Sheer Wharf, former site of Shiphouse 72 (1875-94), current bulkhead (1901-05)
USS *Constitution*	Contributing	1797, contributing as example of ship associated with the yard and NHL for reasons unrelated to the yard
USS *Cassin Young*	Contributing	1943, contributing as example of ship associated with the yard and NHL for reasons unrelated to the yard
USS Cassin Young Workshop (M-40)	Non-Contributing	1992, built for 1992-1995 drydocking of USS *Constitution*
Substation (M-1)	Contributing	c.1944, west of Building 109.
Storage Shed (M-41)	Non-Contributing	1992, west of Building 109.
Pitch House and Oakum Loft (10)	Contributing	1853, moved 1900, 1948 north addition
Pilot House (Waterfront Office) (109)	Contributing	1930, expanded until 1944
Saluting Battery (261)	Contributing	1940s
Explosives Bunker (272)	Contributing	1947
Grit Hoppers (259 & 273)	Contributing	1952 and 1962
Scale House (19)	Contributing	1918
Dry Dock 1	Contributing	1827-33, Loammi Baldwin
Portable Steel Shed (M-37)	Contributing	c.1923, currently sitting in the bottom of Dry Dock 1; located south of Building 125 prior to that.
Pier 2	Contributing	1905 replaced Wharf 3; the 'Pile Wharf' in 1827, enlarged 1854
Marine Railway	Contributing	1918, James L. Crandall
Cranes	Contributing	WWII
Crane Tracks	Contributing	1905
Pier 3	Contributing	1903-05
Dry Dock Engine House (USS Constitution Museum) (22)	Contributing	1832, Alexander Parris
Carpenter's Shop (24)	Contributing	1847, Samuel Pook
Steam Shed (M-42)	Contributing	South of Building 24
Tinners Shop (USS Constitution Museum)(28)	Contributing	1849-50
Lead Shop (110)	Contributing	1907
Paint Shop (125)	Contributing	1905
Light Towers (238-240)	Contributing	1951, banks of incandescent and mercury vapor lights later replaced in 1960s
Dry Dock 2 (BRA)	Contributing	1898-1905, O'Brien and Sheehan, former site of Timber Dock 91
Muster House (BRA) (31)	Contributing	1852-54, Joseph Billings
Shell House (Boston Marine Society) (32)	Contributing	1857, Joseph Billings
Ropewalk (BRA)(58)	Contributing	1834-38, Alexander Parris
Tar House (BRA) (60)	Contributing	1836-37, Alexander Parris
Chain Forge (BRA) (105)	Contributing	1904-05
Public Works Maintenance Shop (NPS Maintenance Shop) (107)	Contributing	1903-04
Gate 4 gate (244)	Contributing	1929, shifted to east 1980-81
Marine Barracks (Building I)	Contributing	1810, altered 1862, 1900, 1940s
Marine Barracks Parade Ground Retaining Walls	Contributing	WWII
Commandant's House (Quarters G)	Contributing	1805-09, Style of Bullfinch
Stable (21)	Contributing	1823, Alexander Parris
Garage (Garden Shed) (245)	Contributing	Former location of Barn (Building 20)
Garage and Chauffeur's Quarters (1)	Contributing	1936, 1941, site of Tank Shed
Five Bay Garage (269)	Contributing	1936, 1941
Officers Quarters (265)	Contributing	1833
Storage Tanks (220 & 221)	Contributing	220 first water, later converted to oil beneath Commandant's House grounds; 221 water beneath Marine Barracks Parade Ground
Reviewing Stand (260)	Contributing	1959, expansion of WWII structure
Flagpole (242)	Contributing	WWII, flagpole here since the 1830s
Playing Courts (236)	Contributing	1946
Utility Conduit (280)	Contributing	1905, Beneath First Avenue Sidewalk
Main Gate (97)	N.A.	1909, razed 1958, contributed
Temporary Storehouse (198)	N.A.	WWII, razed 1980-81, contributed

Temporary Storehouse Foundation	Contributing	WWII
Marine Corps Administration (136)	N.A.	1909, expanded 1936, razed 1980-81, contributed
Five Flag poles by Constitution Museum	Non-Contributing	Added in association with Constitution Museum
Security Structures	Non-Contributing	Added for security after September 2001
Small Scale Features		
Capstans	Contributing	1800-1974, Piers and Dry Docks
Bollards	Contributing	1800-1974, Piers and Dry Docks
Keel Blocks	Contributing	1800-1974, Piers and Dry Docks, security
Aboveground Steam Pipes	Contributing	1958
Shipbuilding Supply Piles	Contributing	Pier 1
Safety Sign on Grit Hopper	Contributing	Pier 1, relocated from Building 36 by NPS
USS Boston Memorial	Contributing	Pier 1
Dry Dock 1 Dedication Inscription	Contributing	1833, inside head of Dry Dock 1
Dry Dock 1 Concrete Lamppost	Contributing	
Dry Dock 1 Flagpoles	Non-Contributing	1990, five at head of Dry Dock 1
Shinto Torii Gate (282)	Contributing	1950s, Marine Barracks Parade Ground
War Memorial Plaque (279)	Contributing	1959, moved from traffic island to adjacent Reviewing Stand
Commandant's House Concrete Planters	Contributing	South stairs
Commandant's House Iron Railing	Contributing	North stairs
Yard Commandants Plaque (270)	Contributing	1950s, along Second Avenue south of Commandant's House
British Landing Site Plaque	Contributing	
Ship Mast	Contributing	First Avenue by Dry Dock 1
Cannons	Contributing	
Shot	Contributing	
Anchors	Contributing	
Chain	Contributing	
Benches	Non-Contributing	
Trash Cans	Contributing	Square yellow cans; part of "Keep Your Shipyard Clean" major post-WWII yard campaign
Interpretive / Park Signs	Non-Contributing	
Vegetation		
Curtain Gate Parking Trees and Shrubs	Contributing	
Finger Pier Shrubs	Contributing	
Gate 1 Vegetation	Contributing	
Pier One Explosives Bunker Grass	Contributing	
USS Constitution Museum Vegetation	Non-Contributing	Planting postdates the period of significance
Shell House (32) Street Trees	Contributing	
Shell House (32) Rose Bushes	Non-Contributing	Site of Tennis Courts and Temporary Storehouse (198)
Shell House (32) Flower Beds	Non-Contributing	Site of Tennis Courts and Temporary Storehouse (198)
Fifth Avenue Extended Pin Oaks	Contributing	
Marine Barracks Eastern Garden (yews, lawn)	Contributing	
Marine Barracks Parade Ground Lawn	Contributing	
Marine Barracks Parade Ground Hedge	Contributing	
Marine Barracks Western Garden (Ornamental trees and shrubs and lawn)	Contributing	
Commandant's House Trees	Contributing	
Commandant's House Shrubs	Contributing	
Commandant's House Lawn	Contributing	
Commandant's House Hedge	Contributing	
Commandant's House Flowers (bulbs, annuals, and perennials)	Contributing	
Officers Quarters (265) Trees	Contributing	
Officers Quarters (265) Shrubs	Contributing	
Officers Quarters (265) Lawn	Contributing	
Shipyard Mall Trees	Contributing	
Shipyard Mall Shrubs	Contributing	
Shipyard Mall Lawn	Contributing	
Views and Vistas		
View from Commandant's House to Boston Harbor	Contributing	
View from Commandant's House to USS Constitution	Contributing	

View from Marine Barracks to Boston Harbor	Contributing	
View from Marine Barracks to USS Constitution	Contributing	
View of Commandant's House from yard	Contributing	
View of Marine Barracks from yard	Contributing	
View down First Avenue	Contributing	
View down Second Avenue	Contributing	
View From Gate 1	Contributing	
View From Gate 4	Contributing	
View from Waterfront to Downtown Boston	Contributing	
View from Waterfront to Bunker Hill Monument	Contributing	
View of Mystic River (Tobin) Bridge	Contributing	
View of Yard from Waterfront	Contributing	



National Park Service boundary, Marine Barracks, and Commandant's House of the Charlestown Navy Yard as seen from the Boston Redevelopment Authority's (BRA) Second Avenue Pedestrian Mall (OCLP, 2003).

TREATMENT

HISTORY OF LANDSCAPE TREATMENT APPROACHES

TREATMENT ALTERNATIVES AND IMPLICATIONS

PREFERRED TREATMENT ALTERNATIVE - REHABILITATION

SITE PRINCIPLES FOR LANDSCAPE TREATMENT

GUIDELINES FOR AREAS WITHIN THE LANDSCAPE

TREATMENT GUIDELINES AND RECOMMENDATIONS

FUTUTRE ALTERNATIVES TO BE DECIDED

CONCLUSIONS AND RECOMMENDATIONS FOR FURTHER WORK

TREATMENT

According to National Park Service policy, the Cultural Landscape Report (CLR) serves as the primary supporting document guiding the treatment of a cultural landscape, and is required before a major intervention. The treatment goal for the Charlestown Navy Yard is to ensure that the site's complex historic character is retained with the park-like Upper Yard and the industrial waterfront, while allowing for tight security and visitor access. With a period of significance spanning 174 years, proper treatment is critical to enhancing interpretation for visitors. Improving visitor access and amenities is also important. This chapter describes treatment alternatives and implications, the history of treatment approaches, and provides guidelines and recommendations for site rehabilitation, which as described further below is the site's preferred alternative. The overall goal is to reinforce the National Park Service's tradition and philosophical basis for the sound stewardship of cultural landscapes as outlined in *National Park Service Director's Order 28: Cultural Resource Management Guideline* (1997) and the *Secretary of the Interior's Standards for the Treatment of Historic Properties* (Rev. 1992).

HISTORY OF LANDSCAPE TREATMENT APPROACHES

The draft 1978 National Register documentation defines the significance of the Navy Yard as follows:

> Boston Naval Shipyard is nationally significant in illustrating the naval and industrial history of the United States. The shipyard's 174-year history and its buildings exemplify the industrial/technological revolution that established the United States as an industrial society and political world leader and the US Navy as the world's greatest naval power. In addition, the Boston yard has retained more of its architectural components-and hence its continuity-than other major naval facilities, and it therefore documents the full scope of this 174-year history.[1]

As expanded upon in the Historic Resource Study (draft 2004), the yard:

> ….is also significant as the site of one of the first two naval dry docks in the United States, the location of the Navy's only ropewalk, and for technical innovations such as die-lock chain….The yard also contains two of the landing sites for British forces involved in the Battle of Bunker Hill…"

Despite the yard's long and multi-faceted period of significance, the park's General Management Plan (GMP) (revised 1987) states that "…the Navy Yard's appearance will be managed to reflect the final period of Navy occupancy dating to 1974."[2] The plan defines a "Preservation Subzone" for the majority of the NPS property, which calls for the "preservation and maintenance of the twentieth-century industrial character of the yard as it existed in 1973 prior to transfer to the National Park Service." While this approach has been accepted for over a decade, it has become increasingly untenable for several reasons. First, there is the need to look at the integrity and significance of the yard within its broader historical and material culture contexts. A Historic Resource Study (draft 2004) is near completion and provides a broader perspective on the significance of the yard. With this study, the park will be able highlight a broader range of significant aspects of the Yard's history. Second, as new issues arise and changes are necessary, the preservation to 1973-74 becomes less feasible. The yard has already been substantially altered since the park was established, as reflected by the comparison of 1970s photographs with those of today. The demolition of buildings, the decay of structures such as the Marine Railway, and the reconfiguration of Fifth Street illustrate a few of the changes. These major physical alterations, paired with a philosophical reexamination of the yard's significance, require a new treatment approach for the yard. A third reason to reconsider the treatment approach for the yard is the redefinition of appropriate treatments. The Secretary of the Interior's Standards for the Treatment of Historic Properties (rev 1992) provide clearer distinctions between a preservation and rehabilitation

treatment as will be examined in the next section. Likewise, the GMP guidelines were prepared at a time when the concept of the cultural landscape was barely considered. The present conditions, with a loss of historic small-scale features, historic vegetation, and lack of visitor amenities are partially due to the lack of a guiding document for the landscape and associated treatment recommendations. This document will provide treatment recommendations that embrace the historic significance of the yard across its entire history.

TREATMENT ALTERNATIVES AND IMPLICATIONS

The Secretary of the Interior has specified standards for four distinct, but interrelated, approaches to the treatment of historic properties. These alternative treatment approaches and their implications at Charlestown Navy Yard are described below.

Preservation focuses on the maintenance and repair of existing historic materials and retention of a property's form as it has evolved over time. This approach would prescribe the maintenance and repair of the site as it currently exists, and would allow existing features to be replaced in kind, yet would not permit the addition of new features. A preservation strategy would no longer reflect the historic landscape since there have been many changes since the park was established. The park's General Management Plan (revised 1987) specifies preservation to the 1973-74 appearance. However, as pointed out in the park's Historic Resource Study (draft, 2004) the park is "no longer preserving the industrial character present in 1973, but a cleaned up version of what the yard once was." Entire buildings and structures have been removed and roadways altered. Due to the urban nature of the site, multiple users, security needs, and other issues that will be discussed in the next section, a preservation approach is too restrictive and does not allow for the alterations and additions necessary for compatible uses.

Restoration is undertaken to depict a property at a particular time in its history, while removing evidence of other periods. This approach would require depiction of the site at a certain date or period of time. The period of significance of 1800-1974 would imply restoration of the site to its circa 1973-74 appearance. A restoration strategy would require the rebuilding of Building 198, the removal of the post-1974 alterations to 5th Street and Gate 4, the rebuilding of the Marine Railway and numerous other projects. Clearly, restoration is not a feasible alternative.

Reconstruction recreates vanished or non-surviving portions of a property for historic purposes. This approach would only be appropriate if the site had been destroyed or if the earlier landscapes of the Charlestown Navy Yard were determined so significant that their re-creation was critical to the park's interpretive mission. Rarely selected, reconstruction is not considered a feasible option for this site.

Rehabilitation acknowledges the need to meet continuing or changing uses through alterations or new additions while retaining the property's historic character. It allows for repairs or alterations of the cultural landscape, and for improving the utility and/or function of landscape features. It is used to make an efficient, compatible use while preserving those portions or features of the site that contribute to defining its historical significance. These changes would best serve management goals for continued visitor use. Therefore, the most sound treatment approach for the Charlestown Navy Yard site is rehabilitation.

Table 11.1: Existing Charlestown Navy Yard treatment related documents:

1985	*Charlestown Navy Yard: Historic Grounds Management Report*, Lucinda A. Brockway and Patrice A. Todisco
1987	*Final Revised General Management Plan/Volume II, Boston National Historical Park*, National Park Service
1995	*Charlestown Navy Yard Historic Pavement Study*, Archetype Architecture, Inc.
1995	*The Freedom Trail Foundation for a Renewed Vision*, Dixon, David and Goody, Clancy & Associates
1996	*The Freedom Trail A Framework for the Future*, Dixon, David and Goody, Clancy & Associates
1997	*Master Lighting Plan & Guidelines*, Charlestown Navy Yard, Archetype Architecture, Peter Coxe, and Carol R. Johnson, Inc.
2002	*Long-Range Interpretive Plan, Boston National Historical Park*, Harpers Ferry Center, National Park Service
2004 draft	*Historic Resource Study Charlestown Navy Yard*, Stephen P. Carlson with contributions by Jane Carolan, National Park Service.

PREFERRED TREATMENT ALTERNATIVE - REHABILITATION

The CLR recommends rehabilitation as the treatment approach for the Charlestown Navy Yard unit of Boston National Historical Park as it allows for the preservation of historic characteristics and features while accommodating necessary change in the yard. The Secretary of the Interior defines rehabilitation as the act or process of making possible a compatible use for a property through repair, alterations, and additions while preserving those portions or features which convey its historical, cultural, or architectural values. Treatment guidelines and recommendations set forth seek to embrace the yard's 174-year period of significance as well as multiple historical themes. These treatment recommendations often support recommendations made through other studies of the yard such as the 1885 *Historic Grounds Management Report* or 1995 *Historic Pavement Study* (see Table 11.1). A treatment plan illustrates the rehabilitation measures recommended in this chapter (Figures 11.1-4). However, before providing treatment recommendations, several important issues currently facing the yard are described.

LANDSCAPE TREATMENT ISSUES

It is essential to understand the unique challenges facing the park before defining treatment guidelines. Currently, several issues challenge the park's management and interpretation of the cultural landscape. The Charlestown Navy Yard must solve complex problems with respect to security, visitor experience, facilities maintenance, and accessibility.

1. SECURITY AND THE LANDSCAPE SETTING

Security is a very important issue at the Navy Yard. The events of September 11, 2001 necessitate a higher level of security for USS *Constitution*, a national icon, resident active Navy personnel, naval housing, as well as other park resources and staff. The closure of the yard after September 11th for several days precipitated a number of concerns related to the viability of park concessions, the park leasing program, parking, pedestrian circulation and the location of Navy operations. As reflected in the park's enabling legislation, the Navy serves a vital role in the preservation and maintenance of USS *Constitution*.[3] The park's General Management Plan, prepared in 1980 and revised in 1987 addresses the role of the US Navy and the importance of security. Issues that relate directly to the landscape are described in further detail.

a. Unforeseen closure of the park for security reasons, need for isolated security zones, and need to separate NPS visitor services and Navy operations.

Immediate closure of the site for an undetermined amount of time has a detrimental effect on visitation and commerce. When the site is at highest alert (completely off limits to visitors), park cooperators and concessioners lose revenue. Even the possibility of a site-wide shutdown causes problems and should be eliminated (e.g. attendees to events scheduled at the Commandant's House must be guaranteed admission).

USS *Constitution* is a national icon that requires a high level of protection against potential terrorism. Similarly the active-duty U. S. Navy personnel residential areas and USS *Cassin Young* need to be secured against potential terrorist acts. While this protection is needed from land, air, and water approaches, this study focuses on measures that can be implemented to improve land security.

Alternatives: Develop Security Zones – Increase security in some areas while still permitting visitor use. Site functions and structures requiring the highest level of security should be aggregated in one corner of the yard, such as at the ends of Piers 1 and 2. This may be accomplished by moving USS *Constitution* to the eastern end of Pier 1 where USS *Cassin Young* is currently berthed (moving USS *Cassin Young* to the other side of Pier 1). By moving USS *Constitution* to the outer end of Pier 1, a high level of security can be implemented. A barrier can be constructed across the lower ends of Pier 1 and 2 with a designated entry. This entry can be guarded and visitors can be screened before boarding USS *Constitution*.

The current location of US Navy residences in Buildings 4 and 5 is difficult to secure due to the close proximity of Constitution Road and the highway going over the Tobin Bridge. The future use of the building as a visitor center, with over one million people passing through a year, will be difficult to secure. The shared use of Navy residences and public facilities also presents an undesired safety risk to park staff and visitors.

The US Navy residences should be moved a secure setting outside of the Charlestown Navy Yard or relocated to the end of Pier 1, near the proposed new location of USS *Constitution*. Navy offices or personnel could also be placed in Building 109, which is currently used by NPS staff, but could be vacated when Building 125 becomes the park's central headquarters. A new addition or building could also be constructed on Pier 1 in the former location of the Central Power Plant (Building 108).

A temporary alternative may be to designate Second Avenue as a primary pedestrian thoroughfare rather than First Avenue. This street is further removed from security-sensitive resources than First Avenue and requires minor alteration to established circulation routes.

An integrated security plan should be developed with adjacent areas including the BRA parcel, Massport pier, and Charlestown community. Similarly an "Eyes and Ears Program" is needed to encourage park staff, concession staff, and community members to be more aware of potential security concerns and to notify security staff. Related to this effort, landscape functions should be carefully designed to enhance normal activities, such as appropriate locations for photography, circulation between facilities, clearly defined restricted access areas, seating areas, security screening areas, etc.

b. Need for security barriers

To direct vehicles and pedestrians and conduct effective security screening, walls, fences, gates, and barriers are needed. In many areas of the Navy Yard, the security barriers need to be movable to allow for reconfiguration around a designated security area and should not require ground disturbance for installation. Following the terrorist attacks of September 11, 2001, concrete jersey barriers and keel blocks were utilized to secure the park gates and USS *Constitution*. Gradually the park has been replacing these unattractive barriers with a more aesthetically-

pleasing choice. Many portable steel barriers that resemble large ship bollards were installed in 2004 enhancing the historic setting while protecting the yard. These barriers can be connected with steel chain to create an impervious fence. The new portable barriers do not disturb the ground and may be reconfigured based on the park's security needs. Like these new "bollards", any future barriers should be selected or designed with historic precedents in mind to protect the yard's historic character.

c. Need for two tour bus-drop and loading locations, one inside and one outside the yard for security reasons.

Prior to the events of September 11, 2001 tour buses entered the yard and parked on the asphalt area of Pier 1. While convenient, this arrangement created an undefined and potentially unsafe mix of bus and pedestrian traffic. Buses are now prohibited from the NPS portion of the Navy Yard for security reasons. While this situation may change, the long-range configuration of the yard needs to accommodate two bus drop locations, one within the park and one outside, either on Constitution Road or on First Avenue near the Scale House.

d. Need to have security clearance for visiting ships

During the summer, Pier 1 serves as a docking facility for visiting ships. While this program is likely to be reduced due to security concerns after events of September 11, 2001, it is still a viable part of the site's programs. Switching the location of USS *Cassin Young* and USS *Constitution* will reduce the length of wharf space available. The docking area should be within the zone of the highest level of security. Completion of Pier 2 rehabilitation (reconstruction) would provide additional berthing space for visiting ships within the secure area.

e. Need for adequate lighting for safety and security

An important component of improved security for the Navy Yard is an improved lighting and surveillance system. A lighting study was completed in 1997. With the events of September 11, 2001, this study should be reexamined and updated.

2. VISITOR EXPERIENCE, INFORMATION AND FLOW

When the Navy Yard was first designated a National Park, a small visitor contact station and theater area was opened in the east end of Building 5. In 1997, the visitor center was relocated from Building 5 to the Bunker Hill Pavilion, owned by Massport. Contact with park visitors dropped dramatically with this location outside of the core of the park, from 350,000 to 200,000 visitors. NPS Line Item Construction funding has been requested in the FY 2006 NPS budget to convert the ground floor of Building 5 to a visitor center. This would provide a central location for park visitor orientation and park visitor facilities. This LIC project as well as the concurrent development of a Long Range Interpretive Plan and the CLR will serve as an opportunity to address many related site issues.

a. Upon arrival, need for visitors to receive orientation both to the Navy Yard and Charlestown, as well as historical information.

Most visitors arrive at the Navy Yard by tour bus, by commuter boat from another Boston wharf, or by walking along the Freedom Trail. Upon arrival, visitors need orientation to the yard so that they can make the most of their visit. They also need orientation to Charlestown in order to decide where to go next, either Bunker Hill Monument, downtown Boston, or elsewhere. While in the yard, visitors need information about the significance of the place and its people, including its long history as an active naval shipyard. While orientation and historical

information will be concentrated at the visitor center, delivery of this information can begin in the landscape as visitors enter the park.

b. Need to provide a menu of options for visitors and tour groups upon arrival, including boarding tickets. Explain multiple periods of Navy Yard history, and use signs and different media for conveying information.

Closely associated with the need for orientation and information, is the need to provide visitors with a sequence of activities and multiple levels of information within the yard. A menu of options is necessary for visitors that have one hour or several hours to spend in the yard. Similarly, a range of audiences needs to be addressed including children of different ages, multiple languages, and visitors with a high-level interest in naval history. Ideally, visitors would gain an understanding of history, size and contents of the entire 130-acre, how it evolved over many periods of change, and its context with respect to other Navy Yards.

With the heightened security screening measures necessary before boarding USS *Constitution*, a time ticketing system will be instituted during the busy spring and summer months. Visitors can receive a ticket for boarding USS *Constitution* or can be informed that the day's tours are full. This will require a ticket distribution location and a menu of activities available to visitors while they are waiting for their boarding time. In addition to visiting the Constitution Museum and USS *Cassin Young*, visitors should be encouraged to tour the yard with multilingual options such as signs, waysides, brochures, or electronic "wands".

Teachers that want to tie the Navy Yard history into their curriculum might want to focus on a particular period or on a particular technology, such as the War of 1812 or the dry dock or ropemaking operations. In this respect they could seek objects, structures, and places within the yard that reflect a particular period or technology.

c. Need to interpret the adaptive reuse of yard

The yard is not simply a former shipyard, but has been adaptively reused to become a vital part of the Charlestown district of Boston. When the Navy Yard closed in 1974, three scenarios were possible, abandonment, demolition, or reuse. The present activity of the yard reflects the successful reuse of many of its buildings, piers and spaces for residential, institutional, and commemorative purposes. This is an important chapter in the history of the yard that should be incorporated into park interpretation and the visitor experience.

d. Need to look at the environmental impacts to the site and incorporate remediation, conservation, and sustainability practices into the Navy Yard structures and landscape.

Associated with the issue of adaptive reuse is the need to examine environmental impacts to the site and the potential for remediation. All of the original wetlands have been filled and the water flowing through the site is contained in underground pipes. During earlier periods of the yards history there were many more trees and surfaces with vegetation. Most surfaces are now paved, contributing to global warming and creating and inhospitable environment. Some structures were hastily built to meet wartime needs and are inefficient in both winter heating and summer cooling. There are limited buffers and shade around the buildings. In short, there are many opportunities for environmental remediation, conservation, and sustainability. Alternatives need to consider the suitability for historic structures within a historic landscape.

e. Need to accommodate chaos of school groups in spring

In the spring, many schools in the region visit the Charlestown Navy Yard. The Constitution Museum requires group reservations, but no reservation system is necessary elsewhere in the park, and several buses are likely to appear in the late morning and depart in the early afternoon. When several large groups appear, all of the park's facilities are quickly filled, requiring groups to wait in line to board USS *Constitution*. Other groups assemble

around the yard to eat their lunches. Because the current visitor center is not centrally located, a smaller percentage of the groups enter the pavilion.

Alternatives: Ideally, the groups would be dispersed so that each group completed a sequence of activities without overwhelming one location. A centrally located visitor center and timed tickets to board the USS *Constitution* should help alleviate this situation. A series of options should be provided to direct groups through a sequence of activities in a staggered time frame. While the ships, museum, and visitor center are the most desired destinations, a series of areas within the landscape should be identified to highlight other aspects of naval history.

There is a need for several outdoor gathering spaces and outdoor waiting areas near the visitor center, museum, tour boat landing, and ships that include shade and comfortable places for people to sit and rest. When visitors arrive at the Navy Yard, they are typically seeking a place to rest, eat, drink, use the facilities, and opportunities for taking pictures, shopping, and learning about the ships and the yard. Similarly, when school groups arrive, their leaders must accomplish three tasks: keep the group together; ensure their comfort; and present opportunities for learning. While most of these needs are met by the NPS operated Pavilion, USS Constitution Museum, the food concession in Building 10, and the ships; there is a greater need for outdoor spaces for resting and gathering. On a hot summer day or a cold windy winter day, visitors need shade and comfortable places to sit and rest, both indoors and outdoors. In the BRA portions of the yard, several seating areas have been installed. However, within the park, options are very limited. During the summer, shaded seating is available near Building 10, where the food concession is located. Space is limited however, and visually appears to be available only for those purchasing food. During the winter there are no seats in alcoves that face south and are protected from the wind.

f. The visitor center needs an entrance and an exit

To enhance security and maximize the available space on the ground floor of Building 5, the visitor center has been designed as part of a NPS Line Item Construction project with one entrance and an exit. The existing main entrance on the east facade will be retained, but because this is the narrow end of the building with an internal stairway, the space is not large enough to serve as both an entrance and an exit. This east facade faces the entrance to USS Constitution Museum and is centrally located in the yard. The façade will require a sign and other symbols that indicate it is the visitor center entrance. The area also currently lacks an outdoor seating area and shade to accommodate large groups.

3. ACCESSIBILITY

The park seeks to provide maximum accessibility to park resources. Several major building rehabilitation projects are in progress to improve accessibility of buildings in accordance with the Americans with Disabilities Act (ADA) Guidelines. While much of the landscape, particularly the pier area, is accessible there are several areas where curbs, steps, or narrow paths present barriers. The treatment recommendations identify these barriers and recommend solutions.

4. UNDERUTILIZED PARK AREAS

There are several areas within the park that are not used to their full potential. This will become more of an issue as the Charlestown Navy Yard visitation grows, building use increases, and the surrounding community increases in density. Many areas in the park could be enriched with the addition of historic features such as cannon, anchors, rope, die-lock chain, and other materials associated with significant periods in the yard's history. Many underutilized areas offer tremendous potential, as evidenced by the success of the Harbor Walk along the waterfront. Examples of areas with potential for rehabilitation include Pier 2, which could provide additional space

for ship berths, programs and displays, and the former site of Building 198, which could provide additional space for visitor seating and shade as well as programs and displays.

5. MAINTENANCE CONSIDERATIONS

The industrial and urban character of the Charlestown Navy Yard present formidable maintenance challenges. Maintenance of the site must address everything from storm wave damage along the piers, vandalism of cannonballs and site furnishings, to deadheading roses at the Commandants House gardens. Visitors include the daily pedestrians that commute through the park to the crowds that arrive to view the tall ships. Landscape rehabilitation recommendations must take into account the many demands on the maintenance staff and the durability to withstand urban use.

6. SUSTAINABILITY AND LEED CRITERIA

A key component of building projects and when applicable, landscape projects in the Charlestown Navy Yard is sustainability. The US Green Building Council's Leadership in Energy and Environmental Design (LEED) Building Rating System serves as a framework to discuss methods for improving each project's sustainability in terms of environmental impact, energy efficiency, occupant comfort, and associated criteria. The National Park Service now mandates that buildings meet the LEED Rating certification program by achieving at least 26 points of the 64-point rating system. Of the 64 points possible, at least 16 points can be earned by sustainable site design, such as storm water management and reduced heat islands, and water efficient landscaping. Ideally, actions taken will both preserve the yard's historic landscape and gain LEED points for sustainability (see Appendix 2 for greater detail).

SITE PRINCIPLES FOR LANDSCAPE TREATMENT

Site principles provide a cohesive rehabilitation approach for recognizing the yard's historic landscape character. These overarching principles are followed by more specific *Treatment Guidelines and Recommendations* which address design and functional issues, then specific needs and considerations or appropriate courses of actions for features.[4]

The Charlestown Navy Yard landscape has changed dramatically since its establishment in 1800. Yet the intent of the yard's overall plan and building scale, largely influenced by the 1828 Master Plan, Joseph Billings, and Alexander Parris, is still strongly expressed. The principles summarized below reflect the most important landscape characteristics or essence of the Charlestown Navy Yard historic landscape and help ensure careful evaluation of proposed modifications and impacts prior to making any physical change. These principles are based on the Secretary of the Interior's Standards for the Treatment of Historic Properties, and apply to a rehabilitation strategy.

1) Much of the yard's cultural landscape continues to be used as it was historically as a shipyard (supporting USS *Constitution,* USS *Cassin Young,* and visiting ships), and it has been given a new or adaptive use as a park that maximizes the retention of historic materials, features, spaces, and spatial relationships.

2) Each cultural landscape is recognized as a physical record of its time, place and use. Changes that create a false sense of historical development, such as adding conjectural features from other landscapes, are not undertaken. Work needed to stabilize, consolidate, and conserve historic materials use physically and visually compatible materials, identifiable upon close inspection, and properly documented for future research.

3) Deteriorated historic features are repaired rather than replaced. Where the severity of deterioration requires repair or replacement of a historic feature, the new feature matches the old in design, color, texture, and where possible materials. Repair or replacement of missing features is substantiated by archeological, documentary, or physical evidence.

4) Additions, alterations, or related construction do not destroy historic materials, features, and spatial relationships that characterize the cultural landscape. New work is differentiated from the old and is compatible with the historic materials, features, size, scale and proportion, and massing of the landscape.

GUIDELINES FOR AREAS WITHIN THE LANDSCAPE

To facilitate application of the rehabilitation guidelines and to represent different subperiods of the site's 174-year period of significance, the landscape can be divided into three different zones (Figure 11.1). The concept of character areas and management zoning can be used to support the objectives of the 2002 Long-Range Interpretive Plan (LRIP). Historical objects can be used as devices to associate zones with history and to maintain links across the different zones. With rehabilitation, the historic and unique characteristics and features of each zone will be preserved, while select and compatible changes may be made to enhance the modern use of each zone.

1) Historic-Residential Zone, Modern-NPS Functions

The upper yard, which contains the Commandant's House, Marine Barracks, and Officers Quarters historically supported some of the administrative and residential uses in the yard and continues to serve these purposes today. This zone also contains the Marine Barracks Parade Ground, which adds a distinctive military overlay. Topographically above and physically divided by First Avenue, the change in elevation, diversity of trees and ornamental vegetation, and well-tended hedges and lawns create a domestic setting which differs in character from the industrial pier area. Located in the core of this area and frequently used for special functions, the Commandant's House offers an exceptional opportunity to experience the historic domestic setting of the yard's Commandant.

2) Historic-Ceremonial, Modern-Visitor Use and Interpretation

The Shipyard Mall, formerly the gun and shot parks, Building 5, which will serve as the new Charlestown Navy Yard Visitor's Center, and USS Constitution Museum are all located along First Avenue which is the primary pedestrian corridor through the park. Historically, displays of military armament, dedication ceremonies, bandstand performances, and even the closing ceremony for the yard have all taken place along this corridor. These activities continue to take place, but much of the physical fabric associated with these uses has disappeared. Located in the center of the park, this area is ideal for congregational spaces and visitor orientation and interpretation.

3) Historic-Industrial, Modern-Visitor Use & Navy

The Waterfront area has historically been the industrial heart of the Navy Yard. Here ships were built, repaired, and berthed. The area includes Piers 1 and 2 and Dry Dock I. The waterfront buildings and other landscape features such as rails, cranes, and supply piles serviced the industrial activity. Today USS *Constitution* and USS *Cassin Young* are berthed here with the former operated by active-duty US Navy personnel, so the security is high. The ships and the waterfront draw the most visitors within the yard. Concessions are offered in Building 10. The open space here also hosts various public events.

TREATMENT GUIDELINES AND RECOMMENDATIONS

This section is organized by key issues, landscape characteristics and features. Relevant conditions and issues are described, and then rehabilitative guidelines serving as design parameters are provided to ensure future actions are sensitive to the historic character. Problems unique to each feature are described and followed with general treatment recommendations. These solutions or actions improve feature conditions and respond to adaptive use needs. Possible future actions are presented and discussed at the end of this section. The guidelines and recommendations presented below are keyed to the Treatment Plans (Figures 11.2 and 11.3). The issues and conditions are described with some historical background.

VISITOR SERVICES

Add or enhance outdoor congregational space

Visiting school groups, bus tours, and individual visitors require space to congregate in the shade for relaxation or to receive orientation. Currently the yard has no areas specifically designated for this purpose and lacks adequate space for large or multiple groups. Historically the ceremonial Shipyard Mall, the area bounded by First and Second Avenues and Third and Fifth Streets, has contained the shot and gun parks, reviewing platforms, playing fields/courts, bandstands, and parklets. Currently, school groups tend to gather on the lawn between the Playing Courts and Third Street. The parklet southeast of the Playing Courts that includes a large shade tree, two anchors, a wayside, and a bench provides a small area of respite, but it is inadequate for large groups. Other spaces may be designed for the Shipyard Mall or elsewhere in the yard such as Pier 1 that will meet the needs of larger groups with shade and seating.

Design visitor amenities (seating, vegetation, canopies, drinking fountains)

With the development of Building 5 into the new Navy Yard Visitor Center, visitor amenities may be added to the surrounding areas including beside the new entrance on the east façade along Third Street, the new exit on the south façade along Lincoln Avenue, and in the existing parking lot between Building 4 and the Hoosac Stores. The Harbor Walk gate is located near the latter area. The development will increase foot traffic at all of these areas, and a sensitive design will orient visitors while providing them respite. Currently these spaces are paved with asphalt with no amenities. Historically these spaces were bustling with yard automobile and rail traffic as well as parking.

Enhance & increase transportation connections to Boston & Charlestown

The park is planning to replace the leaking ferry barge located at the southern tip of Pier 1 to handle planned increased ferry traffic from Boston. Depending on the ultimate location of USS *Constitution*, the new landing barge may be located at the southern tip of Pier 1 again or at Finger Pier near the new visitor center. Currently the main ferry access to the yard is via the MBTA ferry that operates between Pier 4 and Long Wharf in Boston. Improved signage here would help to direct visitors from Pier 4 to the park. Improved signage at the yard's gates and bus drop-off sites would also help direct visitors to and from the park. In addition, new parking lots may be proposed to alleviate projected increased parking needs. The redevelopment of buildings within the park for the historic leasing program and planned construction within the BRA portion of the yard will both increase traffic as well as remove some existing parking spaces.

Establish new CNY Visitor Center & Reevaluate location of naval housing in Building 5

The planned development of the ground level of Building 5 into the new Charlestown Navy Yard Visitor Center poses some challenges. The resulting juxtaposition of increased public visitation on the ground floor with existing naval housing and offices on the upper floors creates security risks. Visitors to the center should be screened before entering, the naval presence should be moved to a more secure location in the yard, or the security of the upper floors should be enhanced. The proposed visitor center entrance is located on the east façade, and since most visitors enter the yard through Gate 1 to the west, orientation may be required to guide them here. The proposed exit on the south façade will lead visitors to the current location of USS *Constitution*. Building 5, a former storehouse and one of the original yard buildings, offers excellent views of USS *Constitution*, Pier 1, and the Boston skyline.

Establish tents, potted plants, flag poles, & banners for visitor shelter or orientation

Highly visited areas of the yard such as Pier 1 lack shade, shelter, and visitor orientation. Historically, the Waterfront lacked such amenities with its highly industrial character, but their careful introduction would contribute greatly to the visitor experience. A tent platform has already been established north of Building 10, but other tent platforms may be established. The new tour boat landing project for Pier 1 also includes a waiting shelter for passengers. Potted plants, such as upright juniper (*Juniperus* spp.) or arborvitae (*Thuja* spp.), may be used as a portable windscreen and to provide some shade. Flag poles and banners may be installed to provide visitor orientation or to represent the nautical history of the yard.

Improve & increase yard's signage & interpretive waysides

Currently the yard lacks signage and effective waysides. The GMP suggests keeping wayside signing discreet and to use publications more. Yard signage could be derived from the historical signing scheme employed by the Navy while attempting to minimize the visual intrusion and reduce the potential adverse effect on this national historic district. Including historic photographs taken from a similar vantage point will greatly enhance the waysides. The signage should be designed as a system with the other local NPS sites in mind as suggested by the park's Long Range Interpretive Plan. The sites of Boston National Historical Park and Boston African American National Historic Site are dispersed throughout downtown Boston and in Boston's densely populated urban neighborhoods. It is often difficult for visitors to find the various sites and there is much conflicting information offered by many different agencies and private organizations. A unified signage and information system would help to establish a National Park Service identity with the public and would provide clear, concise, and consistent communication to visitors in order to improve the quality of the park experience. New signage should comply with new sign guidelines being developed by NPS through Harpers Ferry Center. New signs may integrate with existing Freedom Trail and Black Heritage Trail signs to avoid sign proliferation.

Interpretive waysides should not be confined to the NPS area; there should be a consistent system of interpretive waysides through the entire yard. While the bulk of visitors will never venture much further out of the main park area than the Pier 4 water shuttle dock, there will be visitors who want to experience the entire yard, especially if Harbor Walk is completed through the yard. The BRA and the NPS have previously discussed such a common signage system, and the BRA retains some obligations to accomplish interpretive work.

Increase public access in Upper Yard

The NPS increased the security of the yard following the September 11 terrorist attacks of 2001. Much of this security is intended to protect USS *Constitution* and her associated US Navy personnel, but the changes have

restricted public access in the Upper Yard as well. At night and under a high threat level, pedestrian access is prohibited. Before the NPS acquired the yard in 1974, visitors could visit USS *Constitution* more freely, while access to the rest of the yard was greatly restricted. If USS *Constitution*, her associated US Navy personnel, or both are relocated to a more secure location further from the Upper Yard, public access to the upper yard could be eased. Gates 1 and 2 could be reopened to control automobile/emergency vehicle traffic, and the Harbor Walk gate could be reopened for pedestrian access. Increased public visitation may result. The park safety committee has recommended that Gate 2 be configured so that it will function as the alternative emergency vehicle access/exit in case the First Ave./Fifth St. gate is blocked.

Interpret British Landing Site

Two bronze plaques dating to at least the 1930s, one in the yard and the other on Building 105, denote the site of the British landing during their 17 June 1775 attack on the colonial fortifications built on Breeds Hill, later known as the Battle of Bunker Hill. This event falls outside of the yard's 1800-1974 period of significance and is more associated with the program of the Bunker Hill Monument unit of Boston National Historical Park. It may be interpreted in order to link the yard site with this and the other units of the park. The interpretation of the landing should reflect that the landings occurred along the entire original shoreline of the yard. A wayside with a map or one of the contemporary engravings showing the landing may be appropriate.

Interpret Commandant's & their roles at Commandant's House & Grounds

Currently the Yard Commandants Plaque (Structure 270) memorializes all of the yard's commandants and should be preserved. The historical roles of the Commandants are not interpreted, however. The Commandant's House and Grounds are excellent tools to use for this interpretation. Commandants not only lived in the house, but also entertained many dignitaries there including President John Quincy Adams. The house and grounds represent the influence of many different Commandants and may tell a story of the yard's evolution.

Interpret Marine Guard at Barracks & Parade Ground

The historic role of the Marine Guard is currently not interpreted at the yard. Here the US Marines had coexisted with the US Navy almost since the yard's establishment, and the Marine Barracks and Parade Ground are two of the oldest features (although years of additions obscure the oldest portions of the building). The Marines provided security to the yard while living, drilling, and training here. A wayside could interpret the remaining exercise equipment, the Barracks and the Parade Ground using nineteenth and twentieth-century historic engravings and photographs.

Interpret Paul Revere Landing Site

On 18 April 1775, Paul Revere landed along the Charlestown shore, at a point now at the western end of the yard, and began his ride to Lexington to bring news of British General Gage's dispatch of troops to destroy the rebel stores in Concord. The landing is currently interpreted with a wayside; however, due to security concerns, this area between the Harbor Walk and USS *Constitution* is currently inaccessible to visitors. This event falls outside of the yard's 1800-1974 period of significance and is more associated with the program of the Bunker Hill Monument unit of Boston National Historical Park. It may be interpreted in order to link the yard site with this and the other units of the park.

Maintain appropriate ship in Dry Dock 1 for interpretation

Dry Dock 1 is difficult to interpret without a ship docked; however, an occupied dock may pose difficulties. The SS *Nobska*, a 1925 steamer, has been in the dock for repair since 1996. Funding from its owner the New England Steamship Foundation (NESF) has dwindled and repairs to the ship no longer continue. In 2004, the park and US Navy ordered that the steamer be removed from the dry dock or scrapped. Having a ship in the dock limits the ability to respond to an emergency situation with USS *Constitution*, since, even if the ship in the dock was floatable, it would take a week to undock a vessel, reset the dock for another ship, and then bring it into the dock. Furthermore, USS *Constitution* has to enter Dry Dock 1 every fifteen years for routine servicing.

It may be wise to only dock US Navy or NPS vessels, such as USS *Constitution*, USS *Cassin Young*, and Salem Maritime National Historic Site's *Friendship,* here during routine or emergency maintenance so that the park may have more control and avoid the problems associated with the privately-owned SS *Nobska*. Indeed, the loan agreement for USS *Cassin Young* specifies that it is for display in the dock other than when USS *Constitution* needs the dock. While the presence of a ship in Dry Dock 1 greatly enhances the interpretation of the yard as an industrial facility, it is not good preservation practice for a ship to be supported on keel blocks and various forms of bracing for an extended period unless there is absolutely no intention of removing and refloating the vessel.

Maintain use of Pier 1's open space for public events

Pier 1 has been used for numerous public events since the NPS acquired the yard in 1974. For example, the Boston Opera Company staged the musical "South Pacific" here for a series of free performances during the summer of 2003. Pier 1's open space, historic structures, and ships along with the Boston Harbor and skyline in the background make this an ideal location. High security is required on Pier 1 for both USS *Constitution* and its naval detachment. Historically Pier 1 bustled with industrial activity, and supply piles and lay down space cluttered its surface.

Maintain USS Constitution Museum

USS Constitution Museum, established in 1976, plays a critical role at the park, and should be maintained within the park. It brings to life the stories of the individuals who authorized, built, served on and preserved USS *Constitution*. Through hands-on exhibits, displays of historic artifacts, computer simulated re-enactments, and public programming, the Museum strives to make a personal connection to the American past and the heritage of USS *Constitution*. This non-profit institution currently charges no admission fee. It is housed in the former Dry Dock Engine House (Building 22) and the former Tin Shop (Building 28). During times of higher terrorist threat levels, increased security is detrimental to the museum operation since their income is dependent on visitor donations, gift shop sales, and special events.

Relate USS *Constitution* and USS *Cassin Young* to the Navy yard through interpretation

These two ships are currently berthed along Pier 1, but their association with the yard could be better interpreted. Supply piles and lay down space near the ships may be set up as interpretive vignettes to teach about the ships' active operations and the role of the yard in servicing the fleet. For example, one of the cranes may be parked near USS *Cassin Young* with one gun removed from the ship and placed on the pier to demonstrate servicing. Another vignette may have piles of what the sailors would use onboard either ship such as personal effects, food stores, etc. located in piles near the appropriate ship as if it was about to set out to sea. These comparative vignettes would help visitors better understand the evolution of the Navy and the yard. This treatment approach is consistent with the recommendations of the draft *USS Cassin Young Historic Furnishings Report*, which recommends interpreting the ship during its 1958 overhaul period, when the 40 mm guns that the NPS reinstalled in 1980 were removed. The

Navy has concerns with having anything including supply piles or interpretive displays located too close to USS Constitution, because of its need to regularly service the ship with a crane.

Relocate the "Serving the Fleet" exhibit to a more visited yard location

The yard's old Paint Shop (Building 125) houses the "Serving the Fleet" exhibit which is open during the summer for special tours. Through a far-ranging collection of artifacts, original documents, and images, the exhibit tells the yard's story - from the 25-acre storage facility of 1800 to the sprawling repair, maintenance, and conversion yard of post-World War II period. Visitation to this exhibit is low with its current location. The exhibit will be redesigned and relocated to Building 5 as part of the line item construction project currently requested in the FY 2006 NPS budget.

CIRCULATION

Preserve the city grid pattern of broad avenues & streets

The yards grid of broad east to west avenues and north to south streets are one of the yard's most important character-defining features and should be preserved. The grid can be attributed to the mid-nineteenth century planning and design of Loammi Baldwin among others. It was inspired by the classical city grids and the royal navy yards of Europe.

Encourage off-site bus parking

There is no bus parking within the park, and the existing drop off locations (on Constitution Road outside of Gate 1 and on First Avenue near the Scale House) only allow for temporary parking or idling. There is some designated parking along Chelsea Street just north of the yard, but due to the complaints of local residents regarding the noise and smell of idling buses, much of it has been removed. Chelsea Street, however, is still signed for tour bus parking and there is little enforcement. Many buses continue to park there for free rather than in the off-site parking lot at the Moran Terminal that charges money. There may be potential for developing an additional parking lot elsewhere in or near the yard. Perhaps a shuttle bus could also be established to transport people from the lot to various points within the yard and back again. Prior to the events of September 11, 2001, tour buses entered the yard and parked on the asphalt area of Pier 1. While convenient, this arrangement created an undefined and potentially unsafe mix of bus and pedestrian traffic. Public buses are now prohibited from the NPS portion of the Navy Yard for security reasons.

Improve ADA accessibility across the yard

Much of the yard's pedestrian walkways are not ADA accessible. Many walkways have stairs and lack curb-cuts onto the streets and avenues. Sensitively designed ramps or switchbacks may be added at key locations to improve the accessibility.

Reopen Harbor Walk

The gate from the Harbor Walk to the Charlestown Navy Yard was closed following the terrorist attacks of September 11, 2001. If USS *Constitution* and crew were relocated to a more secure location, the gate may be reopened. The pedestrian HarborWalk was created by the BRA and winds through the city's waterfront neighborhoods and downtown district, stretching from Chelsea Creek to the Neponset River, through East Boston, Charlestown, North End, Downtown, South Boston and Dorchester. The HarborWalk was designed to connect the public to a clean and restored Boston Harbor and to link the water's edge to the city's open space system. If USS

Constitution and crew were relocated to the end of Pier 1, the scenic Harbor Walk route around the edge of the pier would have to be re-routed northward.

Replace ferry landing barge & locate at southern tip of Pier 1 or at Finger Pier depending on final location for USS *Constitution*

A new ferry landing is planned for the end of Pier 1 to replace the leaking barge that is there now. It will have an accessible ramp like Pier 4's and will be moveable, not permanently affixed. It will accommodate ten-foot tides and encourage increased water transportation. There will be a small covered waiting shelter on the pier near the top of the ramp. If USS *Constitution* is relocated to the southern end of Pier 1, the ferry landing may be installed at Finger Pier to avoid increased security. There ferries could deliver visitors directly to the Visitor Center.

Reconstruct Flirtation Walk incorporating & preserving existing rail tracks

The historic Flirtation Walk ran along the south side of the Ropewalk (Building 58). This boardwalk, replaced by a granolithic walkway by early 1900s, was lined with an alleé of elm trees. Twentieth-century rails and World War II building expansions obliterated much of the walkway, and there are no remnants today. The area has become critical laydown space for the park storage. The building additions have since been removed, but many of the rails remain. These rails are the only historic rails that remain in the lower yard. Any reconstruction of Flirtation Walk will need to preserve and incorporate the historic rail tracks and laydown space, and thus will differ from the original. A sensitive design may be consistent with the recommended rehabilitation treatment for the yard.

Reconstruct traffic island to direct visitors c. 1945

The broad, asphalt-paved area where Pier 1 meets First Avenue is unappealing and potentially unsafe for visitors negotiating traffic. Historically there had been a traffic island here, but it was removed in 1959 to better facilitate truck transportation. The island contained a large anchor and was surrounded by a metal post and chain fence. The island also housed the War Memorial (Structure 279), before it was moved to the base of the Reviewing Stand (Structure 260) in 1959. Enough historic photographs exist to reconstruct the island according to the Secretary's Standards, but since the War Memorial was relocated within the period of significance, it will not be returned to its original location. As part of rehabilitative treatment, a new island that differs from the original may be constructed to help visitors negotiate the traffic, while orienting them from Gate 1 to the east entrance of the proposed new Visitor Center in Building 5.

Enhance mast display area

The park has installed a walkway along the mast display area at the head of Dry Dock 1, but the circulation may be improved for visitor safety. The mast display area acts as a traffic island keeping people from walking on the street. The displayed historic masts provide visual interest, but their wayside may be improved.

Proposed ADA entrance & elevator, Commandant's House

The park is currently planning to improve access to the Commandant's House by making the west entrance ADA compliant and by adding an elevator tower to the west façade. The updated entrance will be accessible via the driveway turnabout. The rehabilitative design will be sensitive to the building's historic character.

Connect & widen Commandant's House walkway to driveway for ADA accessibility while maintaining character

The western branch of the brick walkway to the Commandant's House may be widened and extended with an ADA compliant switchback to lead to the driveway turnabout and the new ADA compliant entrance. Currently this branch dead ends in the lawn. The running bond pattern should be preserved and continued with the additions.

Shift crosswalk, reconstruct walkway connection with ADA accessible ramps & flush curbs c. 1898 and Remove walkway and replace with sod

Align the Commandant's House brick walkway, the Second Avenue Crosswalk, and the walkway to the reviewing platform for a strong visual connection. Replace the concrete step at the southern end of the Commandant's brick walkway with an ADA compliant ramp while preserving the surrounding bricks and concrete surrounds with cannon balls. Create a curb cut here at Second Avenue and realign the crosswalk with the reviewing platform. Remove the nonlinear portions of the concrete walkway in the Shipyard Mall and its steps and replace them with a straight walkway and ramp. The route from the Commandant's House across Second Avenue and the Shipyard Mall to First Avenue was historically aligned in a straight continuous path from the nineteenth century until the mid-twentieth century. In 1917 an octagonal Bandstand (Structure 163) was constructed in the middle of this route. The Navy removed the bandstand during World War II.

Preserve driveways

The Commandant's House grounds include two asphalt driveways that should be preserved. The oldest driveway leads from Second Avenue to the 1929 Garden Shed (Building 245). Its appearance has changed little since its construction. The newer driveway was constructed to the west during the early 1940s and leads from Second Avenue to the western entrance to the house were it ends in a turnabout.

Preserve Marine Barracks driveway loop & Parade Ground

The Marine Barracks Parade Ground and surrounding driveway loop should be preserved. The grass-covered Parade Ground dates to 1810. The general configuration of the driveway dates to the late-nineteenth century. The current configuration represents its appearance at the closure of the yard in 1974 with some additional changes made in 1999-2000 with increased curvature to facilitate emergency vehicle access. Two historic concrete pads in the southwest and southeast corners of the Parade Ground that once held cannon should be rehabilitated and appropriate cannon reinstalled.

Reconstruct Marine Barracks Parade Ground walkway & restore stairs c. 1898 & Establish crosswalk

If the park has a need as part of rehabilitation, a sidewalk may be reconstructed from the front door of the Marine Barracks, south across the Parade Ground, and along the east side of Fourth Street to welcome visitors. A walkway crossed the Parade Ground here during the late-nineteenth century until the construction of the Underground Water Storage Tank (Structure 521) during World War II. The walkway will have to circle the Shinto Torii Gate (Structure 282), so the surrounding yews and benches may have to be removed. Stairs may be replaced through the retaining wall along the south side of the parade ground if the position of the Underground Water Storage Tank allows.

Preserve Officers Quarters orderly walkways & front lawns

The orthogonal walkways that lead to the front doors of the Officers Quarters (Building 265) date to the nineteenth century and should be preserved. Currently they are paved with concrete. These walkways frame the rectangular front lawns of the quarters.

PAVEMENTS

Maintain asphalt paving c. 1974

Asphalt surfaces are extensive within the yard and should be maintained within their 1974 levels unless the use of an earlier paving material is warranted. By 1974, most of the yard's surfaces were covered with bituminous concrete and asphalt. Care should be taken to match the consistency and color when replacing; although no new asphalt will exactly match the surrounding area until the black has faded with weathering. The use of reddish colored aggregate should be avoided in new asphalt.

Maintain concrete paving c. 1974

Maintain concrete sidewalks throughout the yard within their 1974 levels replacing only when conditions pose safety hazards. Any new sidewalks should be identical to existing ones in material and scoring pattern.

Preserve granite curbing through out yard

Preserve granite curbing throughout the yard and set all newly installed granite curb in line with existing curb.

Preserve granite paving

Preserve and maintain exposed historic granite paving throughout the yard. Much of the yard was paved with granite by the turn of the twentieth century. For example, Pier 1 was paved with granite blocks in 1901, following its 1901 reconstruction, and its shape today reflects this period. Beginning in the 1950s much of the yard was paved with asphalt, but some areas remained exposed or have since been exposed.

Preserve historic brick paving on Third & Fourth St. and elsewhere

Preserve and maintain exposed brick paving throughout the yard. Much of the yard was paved with brick early in the twentieth century. Third Street and part of Fourth are paved with yellow bricks. The park attempted to replace wood block paving on Fourth Street, but used a concrete underlay that trapped water causing the wood blocks to float. The NPS the removed the blocks and paved the street with asphalt, but yellow bricks would be more appropriate. While the 1995 historic pavement study suggested repaving First Avenue from Gate 1 to Fifth Street in brick, the loss of integrity of what brick survived under the asphalt and cost considerations led to the suggestion being rejected

Repair & preserve brick terrace

The brick terrace south of the Commandant's House near the arcade is in poor condition. Bricks are loose, and the edges are eroding. It should be repaired and preserved.

LIGHTING

Uplight cranes, light towers, ships, buildings for security & aesthetics

Currently much of the Navy Yard is dark at night. Uplighting vertical features, as recommended in the 1997 lighting master plan, would increase security and provide visual interest for visitors, neighbors, and passing motorists. Cranes, light towers, ships, and building facades may be lit from below nightly.

FENCING, WALLS, AND GATES

Preserve semicircular retaining walls north of the Commandant's House

The remaining portions of the semicircular retaining wall north of the Commandant's House front entrance should be preserved. The original curved walls were reduced to their current height when the gate was blocked up in 1940-41. Portions of the west wall were removed in 1980-81 to allow for both the shifting of the boundary wall for the Chelsea-Water Street connector project and for access to the area north of the house. Alexander Parris designed the original granite block boundary wall that defined the boundary of the upper yard from the Navy Store (Building 5) to and along the Salem Turnpike (now Chelsea Street) in 1824. The wall, constructed in 1826, curved into the corners of the Commandant's House as an exedra, allowing visitors access to the outside without having to pass through the yard. The remnants of this wall should be preserved.

Preserve granite boundary wall

The 1826 granite boundary wall that encloses the west and north sides of the yard is a very significant landscape feature and should be preserved. A portion of the west wall is attached to the remains of one of Building 204's concrete walls. Some northern portions of the wall were relocated south to make room for the Chelsea-Water Street connector project of 1981. Although many sections of the wall are no longer in their original location, they contribute greatly to the historic character of the yard. Alexander Parris designed the original granite block boundary wall that defined the boundary of the upper yard from the Navy Store (Building 5) to and along the Salem Turnpike (now Chelsea Street) in 1824.

Redesign Gates 1, 2, and 4 and the First Ave./Fifth St. and Harbor Walk Gates; Enhance Gate 1 for better visitor orientation, Reopen Gate 2 to pedestrians, & Enhance Gate 4 and the First Ave./Fifth St. Gate for better visitor orientation

The gates to the yard either block out access completely or do not provide clear orientation to visitors. Open gates with better orientation such as signage, kiosks, or rangers would improve pedestrian circulation within the yard and would make the yard more welcoming to visitors. Gates 1 and 2 are now closed, locked, and blocked by keel blocks; however, Gate 1 is open to pedestrians. The keel block barrier protects the yard from terrorists but also prevents emergency and delivery vehicles from entering the yard from the west side. The park safety committee has recommended that the barriers at Gate 2 be reconfigured to allow it to function as the emergency access/exit. Gates 1 and 2 were only used sparingly for vehicle access before the terrorist attacks of September 11, 2001 when they were generally left in the open position. The Harbor Walk gate (formerly the railroad gate or Lincoln Avenue gate) has also been closed and locked since 2001. Existing chain link gates and fences are deteriorated and are inadequate to provide security for the Navy Yard and USS *Constitution*, which is berthed near Gate 1 and the Harbor Walk gate. Carol R. Johnson Associates, Inc. has prepared designs for the park to replace Gates 1 and 2 and the Harbor Walk Gate with steel picket gates and fence but currently no funding is available to implement the project. If USS *Constitution* is relocated to a more secure location within the yard, the locked gates could be reopened at least on a

limited basis. Gate 4 and the First Ave./Fifth Street Gate are the only vehicular gates that remain open to traffic, but they offer little orientation to visitors.

Reopen curtain gates

The two 1955 curtain gates adjacent to Gate 1 in the Charlestown Navy Yard do not operate properly due to general deterioration over time and accidental damage to one of the gates. These gates have been opened in the past for special events to allow large numbers of visitors unimpeded access to USS *Constitution* and Pier 1 and for emergency access to the site if necessary. The park plans to install two new gates and upgrade their operation to electrical controls instead of the present hand mechanical operation. Replacement of these curtain gates will improve access and egress for the Yard thereby protecting the safety of visitors and employees.

BUILDINGS AND STRUCTURES

Maintain tennis/basketball courts in serviceable condition

Maintain the tennis courts (Structure 236) in serviceable condition as suggested by the GMP. These courts were constructed in 1946 to replace the nineteenth-century courts lost in the construction of the Temporary Storehouse (Building 198) during World War II. One of the existing courts has been converted into a basketball court. The Shipyard Mall has had playing courts since the late-nineteenth century, and they contribute to its historic character.

Preserve & maintain concrete utility tunnel along north side of First Ave.

The Navy constructed the Conduit (Structure 280), an underground utility tunnel topped by a concrete sidewalk, along the north side of First Avenue in 1902. This tunnel still carries utilities and should be preserved and maintained.

Preserve cranes

The remaining three cranes and their tracks are an important landscape characteristic and should be preserved. The cranes are a strong visual ink to the yards industrial past and are important keys to interpreting the Dry Docks. The Navy first installed the 20-foot gauge tracks and 40-ton traveling portal cranes along both sides of the Dry Docks 1 and 2 between 1904 and 1905.

Preserve Dry Dock 1, caisson, & dedication inscription and replace non-historic safety fence with a less obtrusive design

Dry Dock 1 has been designated a National Historic Civil Engineering Landmark by the American Society of Civil Engineers and should be preserved. Dry Dock 1 is poorly maintained. The dock leaks, and generally looks to be in a state of disrepair. There is a line item construction project in the five year plan to rehabilitate Dry Dock 1. The dock is 398 feet long and 30 feet deep. Dry Dock 1 was completed in 1833 under the supervision of Loammi Baldwin, with Alexander Parris as assistant engineer. The dedication inscription at the head is also poorly maintained and should be preserved. The inscription states: "Commenced on 10 July 1827, John Q. Adams President of the United States, Samuel L. Southard Secretary of the Navy, Authorized by the nineteenth Congress. Opened 24 June 1833, Andrew Jackson President of the United States, Levi Woodbury Secretary of the Navy, Loammi Baldwin Engineer."

During the 1970s, the NPS added a wooden post and rail safety fence around Dry Dock 1. This fence was replaced during the 1990s with a synthetic lumber fence with the materials donated by the manufacturer. This fence is obtrusive to the views of Dry Dock and 1 and obscures the historic pipe and chain fence that still stands to the inside

of this newer barrier along the edge of the dock. The safety fence may be replaced with tension cable railing or fencing (see Appendix 3). The slender and unobtrusive horizontal cables and hardware profiles do not impair views and are yet strong, durable and low maintenance. This industrial character and horizontal lines of this fence will complement the historic post and chain fence, and its modern style will prevent it from being mistaken for a historic feature.

Preserve piers & bulkheads (Pier 1 c. 1901)

The piers and bulkheads represent their configuration at the close of the yard in 1974 and should be preserved. The Navy reconstructed Pier 1 in 1901, and its shape today reflects this period. The southern end of Pier 2 is in poor condition and is crumbling. The park plans to reconstruct Pier 2.

Preserve remnants of Marine Railway for interpretation with waysides

The remnants of the 1919 Marine Railway should be preserved and interpreted with waysides. The railway's timber cradle was unlike the typical steel construction at other navy yards. The Marine Railway had fallen into such disrepair by the time the NPS acquired the yard that it was dismantled. In 1986, a Memorandum of Agreement (MOA) cleared the way for demolition of the nearly collapsed Marine Railway superstructure on Pier 2, although some portions were retained for later interpretation of the site. The 1987 GMP estimated that it would cost four to six million dollars to reconstruct. The GMP also suggested reconstructing just a part of the structure or interpreting it with a model and waysides. The Navy completed the Marine Railway in 1919 to more easily service smaller ships of up to 2,000 tons. Work began in early 1918, when the Navy awarded a contract to the Boston firm, Crandall Engineering Co., to build the railway, which was located immediately east of Pier 2, with its machinery housed in the Carpenter's Shop (Building 24).

Preserve sand & grit hoppers

The Navy constructed the large Grit Hopper (Building 259) on Pier 1 in 1952-1953 and the smaller Grit Hopper (Building 273) in 1962-1963. Trucks supplied the abrasive grit to the yard's hoppers. The grit was in turn pumped by hose to Dry Dock 1 to sandblast steel ships. These two structures should be preserved.

Preserve steam lines

The above ground steam lines located on Pier 1 distributed steam from the yard's Central Power Plant (Building 108) and represent the utilities present at the close of the yard in 1974. These landscape features should be preserved.

Preserve underground water & fuel tanks & related structures

During World War II, a large water tank was buried beneath the Commandant's House front lawn southwest of the house (Structure 220), and another water tank was installed beneath the Marine Barracks Parade Ground (Structure 221). Both ensured pure drinking water during emergency conditions. In 1956, the Navy converted Structure 220 into a fuel oil tank. Pipelines connected the tank to the Power Plant (Building 108) as the Navy converted if from a coal to an oil-burning facility. The Army Corps cleaned and filled the oil tank in the mid-1990s. Both structures and their associated above-ground components should be preserved.

Preserve USS *Cassin Young* to interpret WWII & 1950s role of the Navy Yard, location subject to change

USS *Cassin Young*, a 1943 destroyer typical of those built and serviced at the yard during and after World War II, was permanently berthed at Pier 2 in 1978. USS *Cassin Young* is a National Historic Landmark that the park uses to interpret the role played by the Charlestown Navy Yard in World War II. In accordance with the recommendations

of the recent historic furnishings report, the park should preserve this vessel and enhance the interpretation of the yards 1950s role in servicing ships with new vignettes, waysides, and appropriate lay down space and supply piles. A crane may be utilized with the vignette. The ship may be relocated if USS *Constitution* is ever relocated for security reasons.

Preserve USS *Constitution*, location subject to change

USS *Constitution* is nationally significant, is considered a national icon, and must be preserved. The founding legislation that established Boston National Historical Park (Public Law 93-432) states that "the Charlestown Navy Yard shall include the United States Ship *Constitution*" and that the park will "permit the continued use of any such buildings and facilities as the Secretary of the Interior determines to be necessary for the preservation and maintenance" of the ship. USS *Constitution*, built in 797 and the US Navy's oldest commissioned warship, has been berthed at the Charlestown Navy Yard since 1897. Active-duty and civilian US Navy personnel stationed within the NPS portion of the yard provide public programs and maintain USS *Constitution*. The location of this ship is subject to change given security and environmental concerns (see Future Alternatives section below).

Preserve movable shed near USS *Cassin Young*

The USS Cassin Young Workshop (M-40) on Pier 1 was constructed in 1992 but is representative the sheds that were common at the yard during the mid-twentieth century and should be preserved. It is built on top of a wooden palate and can be moved by forklift or crane. This shed is used for USS *Cassin Young* maintenance operations.

Rehabilitate Building 125 for park functions or historic leasing

The park is planning to rehabilitate the Paint Shop (Building 125) with a line item construction project that will involve stabilization of the exterior, finishes and utility work, and installation of an elevator. In this way it will be stabilized for future use and may be leased privately as part of the historic leasing program. The building, constructed 1905-1907, currently houses the "Serving the Fleet" exhibit at the park. The exhibit is to be relocated to the new visitor center in Building 5.

Rehabilitate Hoosac Stores for park functions or historic leasing

The United States Navy listed the Boston Naval Shipyard as a National Historic Landmark under the 1935 National Historic Sites Act. With the enactment of the National Historic Preservation Act in 1966, all National Historic Landmarks were placed on the National Register of Historic Places. Hoosac Stores is located within the current park boundary, but it is not part of the historic landmark, as it was never owned by the Navy. It is separately listed on the National Register as possessing state and local significance and should be preserved. The park will lease the building for private development through the historic leasing program.

Stabilize & reconstruct Pier 2 visiting ships

The southern end of Pier 2 is in poor condition and is crumbling. The park plans to stabilize and reconstruct Pier 2 with a line item construction project. The pier will be used to berth visiting ships, and its reconstruction may drive future development of that area of the yard.

SMALL SCALE FEATURES

Preserve bollards, capstans, lamp posts, & hydrants

Steel bollards have been historically placed within the yard to fasten mooring or to protect buildings or other features such as hydrants from industrial traffic. Often bollards were created from upended railroad rail or cannon. Bollards contribute greatly to the yard's historic character. Capstans, too, have been historically been placed within the yard and should be preserved. Not as plentiful as bollards, capstans contain a rotating shaft that can wind or unwind mooring guiding ships into dock. Missing shelters for capstans such as Capstan 1 and Capstan 3 by Dry Dock 1 should be replaced. Other small scale features such as lamp posts, hydrants, cleats, bits, and various utility lines that run along the edge of Pier 1 should be preserved. These small scale features, when appropriate, should be painted in historic colors in compliance with Navy standards or yard practices in effect at the time of the yard's closure (NAVFAC P-309, Color for Naval Shore Facilities, Jan. 1971 ed.).

Maintain practice of solid green, white-edged crosswalks

It is Navy Yard practice to paint crosswalks solid green with white edging. This practice should be maintained within the park portion and encouraged within the BRA portion of the yard in place of the Boston Transportation Department's standard ladder design.

Maintain orderly laydown spaces on Pier 1

The park has spent some effort to more closely define and manage laydown spaces. Orderly piles of material relating to the ships should be maintained and preferably interpreted while and random piles of excess material should be discouraged. Traditionally much of Pier 1 has been used for lay down space for ship supplies and building materials. These ever-changing piles are not only critical to the ships docked there but also contribute greatly to their interpretation. This treatment approach is consistent with the recommendations of the draft *USS Cassin Young Historic Furnishings Report*, which recommends interpreting the ship during its 1958 overhaul period. The Navy, however, has concerns with having anything including supply piles or interpretive displays located too close to USS Constitution, because of its need to regularly service the ship with a crane. Historically hoses carried grit and sand from the hoppers to Dry Dock 1 for sandblasting, so the park should keep an area of Pier 1 clear between the structures. Keeping as much of Pier 1 as open as possible provides the flexibility for use of the area for special events, etc. The area north of Building 10 is most suited for laydown space rather than creating islands of materials around the yard.

Preserve & reproduce "Keep Your Shipyard Clean" trash cans around the yard

Since the early 1950s, the Navy used yellow, rectangular metal trash cans stenciled with the slogan "Keep Your Shipyard Clean." Many of these cans remain in the yard today and should be preserved. Missing cans could be reproduced and replaced in both the park and BRA sections of the yard as a common character-defining feature.

Preserve anchor parklet

Two anchors have been displayed in the parklet located at the southeast corner of the tennis courts since the mid-twentieth century. Kids enjoy climbing on the anchors while adults rest on the nearby bench. This space should be preserved. In total, the park has four large US Navy anchors, all painted US Navy gray. The other two anchors should be displayed elsewhere in the yard, perhaps in a traffic island as was done historically, near USS *Cassin Young*, or in a new gathering space.

Preserve historic yard signs

The yard's historic signage, such as building numbers, street signs, the yellow and black utility location signs stenciled on buildings, specific signs (e.g., "Parking for Quarters Occupants"), and safety signs should be conserved and preserved. The signs give visitors a better understanding of the industrial working character of the yard. The park has several original safety signs from the Charlestown Navy Yard. Safety signage was a prominent feature of the working Navy Yard, an industrial facility with many safety hazards for workers. These signs, painted on plywood, still hang in outdoor locations and thus are subject to the detrimental impact of the marine environment. The largest sign also has mechanized parts which have stopped working.

Preserve keel blocks & supply piles in & around Dry Dock 1

Historically, concrete keel blocks and supply piles would have been located in and around the working Dry Dock 1. Some keel blocks and supply piles remain near Dry Dock 1 today and should be preserved or maintained. Many keel blocks are now used at the yard's gates for security. As these blocks are replaced with portable new barriers that resemble ship bollards or new gates, the historic keel blocks should be returned to the Dry Dock 1 area.

Preserve light towers

The Navy constructed light towers by 1951 to illuminate Dry Dock 2 to allow twenty-four hour ship building or repair operations. The tall banks of incandescent and mercury vapor lights that remain today are probably 1960s' replacements and should be preserved.

Preserve physical training bar & rope

The Marine Barracks Parade Ground has historically been used for the drilling and training of Marines. By the 1960s or early 1970s, the Marines had installed some physical training equipment. A climbing rope on a metal support in the northwest corner of the Parade Ground is all that remains and should be preserved. According to tradition, Marines had to climb that rope to the top each day if they wanted to earn breakfast.

Preserve rail & crane tracks

The Navy began installing rail lines as early as 1865. The Navy updated the rail system and added crane tracks early in the twentieth century. The network of tracks is an integral part of the yard's landscape and should be preserved. The tracks may pose a tripping hazard for visitors, but the park has minimized the hazard in key locations using asphalt paving or rubber pads without concealing the tracks or eliminating their function. The BRA has also used boardwalks effectively in this same way.

Preserve Reviewing Stand, memorial, & flagpole & interpret yard ceremonies

In 1959, the Navy constructed the current Reviewing Stand (Structure 260), the concrete terrace with an aluminum post and chain railing that exists today. At this time, a granite slab with the bronze War Memorial (Structure 279) was moved from a traffic island in the middle of First Avenue and relocated on the sidewalk in front of the new reviewing stand. The concrete platform replaced an earlier wooden reviewing stand around the base of Flagpole (Structure 242). There had been a flagpole in the same location since the early-nineteenth century marking the site of many yard ceremonies. The Commandant often addressed yard workers from the platform, and it, along with the memorial and flagpole, should be preserved. This is an ideal location to interpret yard ceremonies.

Preserve Torii Gate, Remove benches, & Taxus shrubs for historic walkway c. 1898

The Marines installed the Shinto Torii Gate (Structure 282) in front of the Marine Barracks during the 1950s. The gate with its brass bell should be preserved. If the sidewalk from the front door of the Marine Barracks, south across the Parade Ground, to Second Avenue, is ever reconstructed, the non-historic yews and benches surrounding the gate may be removed. Currently the yews mask a non-historic gas meter.

Rehabilitate Gun Park & design wayside signs at historic viewpoints & Remove Building 198 foundation & re-grade

Historically much of the Shipyard Mall contained the shot park and the gun park. Rehabilitating elements of these parks would contribute greatly to the interpretation of the yard. Waysides showing photos of the parks could be installed at historic viewpoints. The foundation of former Building 198 could be removed and the lawn regraded to house the new installation. Currently the Building 198 foundation walls and the lawn's grade pose a safety risk to visitors. The remaining foundation is on the List of Classified Structures (LCS), which adds a compliance step to its removal. The foundation continued into the grass lawn across Fifth Street west of Building 32. This area is also part of the Shipyard Mall, and should be treated consistently with lawn and waysides or displays. The continuation of the gun park would connect and draw visitors to the Boston Marine Society's exhibits in Building 32. The five annual flower beds here do not contribute to the historic character and may be removed.

The park has seven large nineteenth-century naval cannon. Several more cannon are still mounted muzzle-down in the yard as bollards. Those cannon bollards outside of park boundaries are the property of the Naval Historical Center (NHC) and must be returned to them if they are ever removed. The NHC has traditionally placed such items on loan to the NPS. All cannon will require considerable conservation (rust removal and repainting) prior to installing them in the yard. The park only has a few cannonballs that are stacked and welded (to prevent theft and vandalism). This pyramid is located near the Reviewing Stand in the Shipyard Mall. The park will have to obtain shot elsewhere in order to rehabilitate any part Shot Park.

In order to protect the relics and to simplify grass cutting, the shot and guns could be mounted similarly to the way they were historically. The Navy had installed stone runners, rectangular slabs of granite, in neat rows in the gun park during the 1830s to hold the guns. Confronted with the shifting of the planks and the subsequent damage of the cannonballs, each shot pyramid was set on a stone foundation of sufficient depth to "be beyond the reach of frost." Above ground, the foundation was brick bordered with "a plate of cast iron four inches wide and one and a half inch thick" with the face sloped to shed rain. Tracks served as wheel runners. In the mid-nineteenth century, shot was stacked in forty pyramids of one thousand balls each, or twenty beds of two thousand balls for a cost savings. At any given time, the yard stockpiled nearly 40,000 cannonballs.

Replace awning c. 1974

From the 1960s through c. 1985, the main entrance to the Officers' Club (Building 5, former Navy Store) was sheltered by a pale green canvas awning with a white end. This entrance on the building's east façade will be the entrance to the proposed new visitor's center. The awning may be replaced if shelter is needed; however, replacement may not be feasible with the proposed alterations to the entrance under the visitor center project.

Maintain Dry Dock 1 flagpoles

Five non-historic flagpoles erected in 1990 by the USS Constitution Museum stand in a row at the head of Dry Dock 1. These were installed under a Section 106 action as a one-year temporary experiment to attract visitors to the

museum. Although there is no evidence that the flags increased visitation, the flagpoles do not detract from the historical character of the yard and may remain indefinitely.

VIEWS

Preserve views of harbor, Boston skyline, Bunker Hill Monument, & across Shipyard Mall & Piers

Historic views and vistas of and from the Navy Yard remain and contribute to its historic character and should be preserved. Waterfront views remain the most significant given the site's role in American history. The Mystic River (Tobin) Bridge looms over the northern vistas, but it was constructed during the yard's period of significance. The upper yard, with its park character and historic buildings, still creates and frames many historic vistas.

There are more open views of the water now than during much of the twentieth century. Many of the larger World War II era buildings have been removed, and most of the street trees and berthed ships are gone. Reintroduction of the street trees will again affect many of the views. Currently a large Norway maple in the Shipyard Mall blocks the view to USS *Constitution* and the harbor from the terrace of the Commandant's House, though views are clear from the upper floors and roof deck. Trees historically were a significant part of the views and should be preserved or replanted.

VEGETATION (see Appendix 4 for planting recommendations)

Design permanent small bollards & tree planting for security

The area immediately surrounding the Scale House (Building 19) gate on First Avenue requires extra security to prevent vehicles from driving around the gate via the sidewalks and railway. Moveable or mounted bollards as well as tree plantings would eliminate this security risk. The bollards would provide security until the trees mature, at which time, the bollards could be removed. Historically an alleé of trees such American elms lined First Avenue. See Figure 5.22.

Preserve & replace in-kind all plantings dating to 1974 & before

The plantings that existed in 1974 provided a snapshot of the yard's vegetation at the close of the 174-year period of significance and represent an amalgam of the yard's history. The GMP calls for this collection of plants to be preserved or replaced in-kind.

Preserve east & west Marine Barracks garden plantings c. 1974

The plantings of the twentieth-century gardens to the east and west of the Marine Barracks should be preserved to c. 1974, the close of the yard's 174-year period of significance. The east garden's upright yew shrubs may be replaced with Hick's yew (*Taxus x media* 'Hicksii') specimens as needed.

Preserve Officers Quarters backyards with flexibility to meet contemporary needs of residents

The Officers Quarters (Building 265) backyards have historically been private spaces for the residents of the individual Quarters, Quarters B-F. These yards once contained many trees and shrubs, but modern maintenance has led to the removal of most. Each residence has a small fenced backyard that is primarily brick paving with small planting beds. West of the individual yards, a lawn covers the remnants of Second Street, abandoned following the

demolition of Quarters A in the mid-1950s. Many shrubs grow within this common backyard. These private spaces should be preserved while still meeting the contemporary needs of the quarters' tenants.

Preserve privet hedges throughout

By the early-twentieth century, privet hedges were common around the yard including the Commandant's House grounds and the Parade Ground where they still border Second Avenue today. These and other historic hedges should be preserved and maintained here and elsewhere.

Reestablish canopy trees along wall c. 1974

By the late-nineteenth century, a few canopy trees grew along the inside of the yard's boundary wall along Chelsea Street. Some of these trees were tree of heaven (*Ailanthus altissima*), a popular ornamental at the time but now considered an invasive plant. As these trees reached maturity, their canopies screened the Mystic River (Tobin) Bridge from view, but their roots threatened the structural integrity of the wall. Green ash (*Fraxinus pennsylvania*) cultivars such as 'Summit', 'Paltmore' or 'Marshalls Seedless' could be substituted to reestablish these plantings. Appropriately-sized tree wells would help protect the wall from the roots. If the trees ever become too large, they could be removed and replaced at that time. See Figures 6.9-10, 7.4, & 8.6.

Reestablish street trees along Upper Yard roads where appropriate

Street trees have been an important part of the yard since the early nineteenth century and should be replanted where appropriate. In the 1820s, an alleé of trees flanked Main Avenue (now Second Avenue) and an alleé of lombardy poplars (*Populus nigra* 'Italica') lined the walkway from the Commandants house to the outer edge of the gun park. Later in the nineteenth century, America elms (*Ulmus americana*) lined First and Second Avenues and Fourth Street. As these trees reached life expectancy or were lost to Dutch elm disease during the mid-twentieth century, the Navy replaced many of them with oak trees. These replacement trees did not last long due to hurricane damage or maintenance issues.

Replacement trees should be two to four inches in caliper at time of planting and should be spaced twenty feet apart. Recommended salt and wind tolerant replacements for the elm trees include a Dutch elm disease resistant cultivar (*Ulmus americana* 'new harmony'), hackberry (*Celtis occidentalis*), pin oak (*Quercus palustris* 'Crownright'), red oak (*Quercus rubra*), and American mountain ash (*Sorbus americana*). Hackberry trees provide an interesting alternative given their traditional use in US military yards. See Figures 3.1-2, 3.14-16, 4.1-2, 4.6, 4.10-11, 5.1-2, & 5.5-7.

Preserve planting density at commandant's grounds and tree lined driveway c. 1974

The GMP recommended that planting density of the Commandant's House grounds be preserved to c. 1974, the close of the yard's 174-year period of significance. Many individual plants have come and gone within the grounds, but the planting density changed little throughout the twentieth century. Historic photographs from the 1920s and 1930s reflect a scene that is very similar to that of today.

Plant new ornamental tree & shrubs at Commandant's House

Historically, ornamental shrubs marked the north and south terraces of the Commandant's House. Many of these shrubs have died or been removed and may be replaced. Recommended replacement shrubs include bigleaf hydrangea (*Hydrangea macrophylla*), panicle hydrangea (*Hydrangea paniculata*), forsythia (*Forsythia x intermedia*), lilac (*Syringa vularis*), rhododendron (*Rhododendron* spp.), yew (*Taxus* spp.), Juniperus chinensis 'Pfitzeriana,' and roses (*Rosa* spp.). Ornamental trees also grew on the north terrace within the exedra walls but have been lost. This terrace was reduced in size with the relocation of the northern boundary wall during the early 1980s. There is still

room for one small replacement ornamental tree northeast of the north entrance. See Figures 4.4, 5.25, 5.46-47, 6.6, and 6.10.

Preserve annual plant beds

Flower beds of annuals and bulbs lined the walkway from the Commandant's House to Second Avenue for most of the twentieth century. The four beds that remain today should be preserved.

Preserve or replace in kind arborvitae hedge

The Navy planted the arborvitae (*Thuja occidentalis*) hedge shortly following World War II to screen the Garage and Chauffeur's Quarters and Five Bay Garage (Buildings 1 and 269) from the Commandant's House grounds. By the turn of the twenty-first century, this hedge had reached maturity and had suffered winter damage. The park cut off the top half of each plant. With proper pruning, the park may preserve the existing hedge or replace it in-kind with new arborvitae plantings.

Restore climbing roses to the trellis

The trellis attached to the stairs of the Commandant's House addition built by the CCC has supported climbing roses since the last Commandant lived there at least. The roses there now are in poor condition and may be rejuvenated with proper pruning and training or may be replaced. One appropriate replacement is the climbing polyantha rose, 'Cecile Brunner,' nicknamed 'The Sweetheart Rose.' One of the healthiest and long-lived roses, it climbs fifteen to twenty feet. This Old Garden Rose is almost thornless and repeatedly produces large clusters of very small, perfectly shaped pink blooms.

Replace *Tilia americana* c. 1974

The GMP calls for plants present in 1974 to be preserved or replaced in-kind. An American linden (*Tilia americana*) grew along Fourth Street east of the tennis courts in 1974 and has since been removed. It may be replaced with a two to four inch caliper specimen. See Figure 7.16 & 1985 Historic Grounds Management Report - Area 4 July 14, 1978 plan.

Replace two *Aesculus hippocastanum* c. 1974

The GMP calls for plants present in 1974 to be preserved or replaced in-kind. Two horse chestnut trees (*Aesculus hippocastanum*) have been removed from the Officers Quarters (Building 265) front lawn, specifically one in front of Quarters D and one in front of Quarters E. These may be replaced with a two to four inch caliper specimens. If a smaller species is desired, red horse chestnut trees (*Aesculus x carnea* 'Britotii') may be substituted. This smaller size cultivar matures at thirty feet in height. See Historic Grounds Management Report - Area 5 July 14, 1978 plan.

Replant *Aesculus hippocastanum* & expand shrub planting c. 1898, 1945, & 1974

Historically two horse chestnut trees (*Aesculus hippocastanum*) flanked the eastern entrance of Building 5. These may be replaced with a two to four inch caliper specimens. If a smaller species is desired, red horse chestnut trees (*Aesculus x carnea* 'Britotii') may be substituted. This smaller size cultivar matures at thirty feet in height. The shrub bed here may also be expanded for the trees. Arrowwood viburnum (*Viburnum dentatum*) would be an ideal replacement shrub.

Replace *Ulmus americana* c. 1945

A large American elm (*Ulmus americana*) grew southeast of the Officer Quarters (Building 265) as late as 1945. This remnant of an early alleé arched across First Avenue. It may be replaced with a two to four inch caliper specimen.

Replacements for the elm tree include a Dutch elm disease resistant cultivar (*Ulmus americana* 'new harmony') or hackberry (*Celtis occidentalis*). Hackberry trees provide an interesting alternative given their traditional use in US military yards. See Figures 5.11-12 & 6.1.

Replace *Ulmus americana* c. 1974

The GMP calls for plants present in 1974 to be preserved or replaced in-kind. An American elm (*Ulmus americana*) grew along Fourth Street east of the anchor parklet in 1974 and has since been removed. It may be replaced with a two to four inch caliper specimen. Replacements for the elm tree include a Dutch elm disease resistant cultivar (*Ulmus americana* 'new harmony') or hackberry (*Celtis occidentalis*). Hackberry trees provide an interesting alternative given their traditional use in US military yards. See Historic Grounds Management Report - Area 4 July 14, 1978 plan.

FUTURE ALTERNATIVES TO BE DECIDED

This section explores the complexities of key decisions to be made at the Charlestown Navy Yard in conjunction with the US Navy and Boston National Historical Park. The most important decision hinges on the permanent location of USS *Constitution*. The security of this national icon is of heightened importance since the September 11, 2001 terrorist attacks. Environmental considerations such as tidal action are also a factor in determining the ship's location. USS *Cassin Young* is not considered an icon, and thus its permanent location is more flexible. The ultimate permanent location of USS *Constitution* will affect all aspects of the Charlestown Navy Yard from circulation to public access. At the most recent Charlestown Navy Yard design charette on November 30, 2004, seven possible permanent locations were identified and discussed in terms of the 300-foot stand-off distance recommended by the Department of Homeland Security (Figure 11.4). There are advantages and disadvantages to each location which are briefly discussed here.

A. Maintain present location the northern end of Pier 1 on the west side directly south of Building 5

The current location has been evaluated to be the best from an environmental standpoint according to a report mentioned during the 2004 charette by Richard Whelan of the Naval Historical Center, Detachment Boston. Reportedly, here at the closest location to the Charles River, the tidal action is most reduced. The calmer conditions pose reduced wear and tear on the ship's hull. Here, too, the ship is most protected from water-borne terrorism. However, the ship is close to the Massport Pier and Constitution Road and thus does not meet the minimum 300-feet "stand-off" distance.

B. Shift to the southern end of Pier 1 on the west side

Here she would be somewhat easier to secure by land. The ship would be located safely away from Constitution Road but would still be within 300 feet of Massport Pier. The Navy could screen visitors at some boundary across Pier 1. This boundary could march north with increased security levels or retreat south during safer times.

C. Relocate to the site of USS *Cassin Young*

Here she would be easier to secure by land. The Navy could screen visitors at some boundary across Pier 1. This boundary could march north with increased security levels or retreat south during safer times. During the 2004 charette, Richard Whelan raised concerns about the environmental effects of this location as well as the vulnerability to waterborne attacks.

D. Relocate to Dry Dock 1

This option is definitely not a permanent option, since USS *Constitution*'s hull must remain submerged to protect her structural integrity. In addition, Dry Dock 1 should not be permanently flooded to protect the integrity of the yard's structures. If the dry dock was flooded, the tidal action would wreak havoc on the ship. However, USS *Constitution* must go into the dry dock every fifteen years for maintenance and repairs. Dry Dock 1 must also be periodically available to service USS *Cassin Young* and other vessels.

E. Relocate to the west side of a stabilized/reconstructed Pier 2

Here she would be easier to secure by land, and USS Constitution Museum would have a more direct connection to the ship than at its current location. During the 2004 charette, Richard Whelan raised concerns about the environmental effects of this location as well as the vulnerability to waterborne attacks. In addition, as long as Building 24 functions as a maintenance shop, there will be safety concerns about visitors walking down the east side of Dry Dock 1.

F. Relocate to the east side of a stabilized/reconstructed Pier 2

Here she would be easier to secure by land, and here USS Constitution Museum would have a more direct connection to the ship than at its current location. During the 2004 charette, Richard Whelan raised concerns about the environmental effects of this location as well as the vulnerability to waterborne attacks. In addition, as long as Building 24 functions as a maintenance shop, there will be safety concerns about visitors walking down the east side of Dry Dock 1.

G. Relocate to the west side of a stabilized/reconstructed Pier 3 (if ever acquired from the BRA by the NPS)

Here USS Constitution Museum could be linked with connections via its east doors and Baxter Road, but the ship would be more susceptible to land-based threats from Pier 4 or the Shipyard Park. This option is unrealistic given that the BRA is unlikely to obtain the funding to rebuild the pier, and it is unlikely that the BRA would ever transfer the Pier to the NPS. USS *Constitution* will never be berthed on a non-federally owned pier.

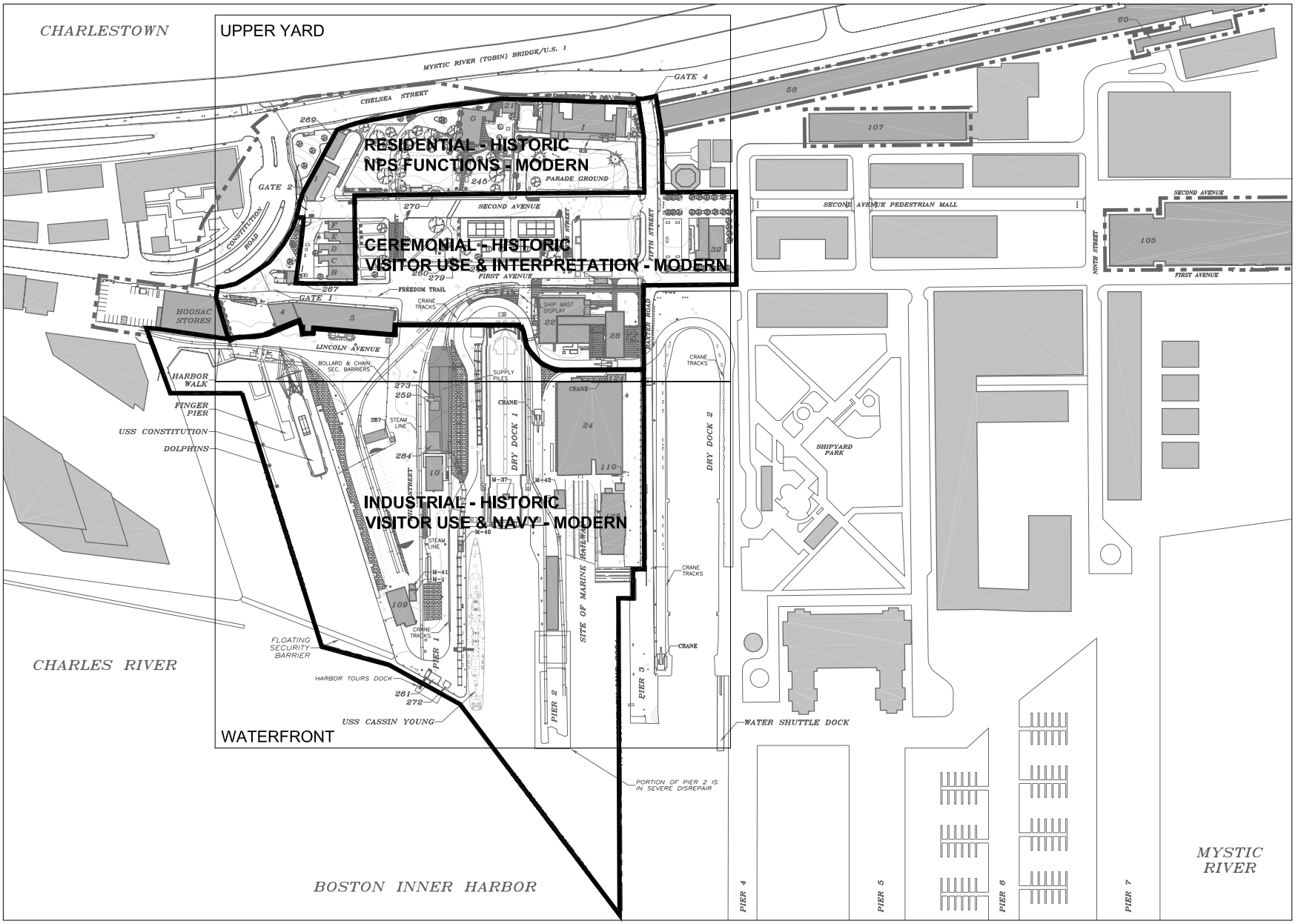
CONCLUSIONS AND RECOMMENDATIONS FOR FURTHER WORK

Through each of the yard's historic subperiods, the Navy enforced the land use patterns and overall landscape organization of the previous era, providing a cultural landscape with a relatively high level of integrity. Design treatments and cultural landscape management should focus on the integration and interpretation of features remaining from all significant historic periods as a way to enhance visitor understanding of the complexity and continuity of the yard for 174 years of use. The CLR recommends rehabilitation as the treatment approach as it allows for the repair, alterations, and additions necessary to accommodate change in the yard while retaining the property's historic character.

Currently, several issues challenge the park's management and interpretation of the cultural landscape. The Charlestown Navy Yard must solve complex problems with respect to security, visitor experience, facilities maintenance, and accessibility. Treatment guidelines and recommendations described here and depicted in the treatment plans (Figures 11.2-3) seek to embrace the yard's 174-year period of significance as well as multiple historical themes and to best serve management goals for continued visitor use.

When rehabilitation treatment actions are completed, treatment actions should be documented as an update to the Park's Landscape Preservation Maintenance Plan. Thereafter, maintenance activities affecting landscape treatment should continue to be documented as work is performed to maintain an ongoing record of physical changes made to the site. Completion of a CLR for Charlestown Navy Yard's lower yard (PMIS 16796) would contribute to the preservation of this area and to holistic treatment for the entire yard. This area largely held by the BRA also includes buildings within the park's legislative boundary (Buildings 58, 60, and 105 and 107).

[1] National Register of Historic Places Nomination Form, the Historic Resources of the Boston Naval Shipyard, Charlestown Navy Yard. Partial Inventory: Historic and Architectural Resources by Edwin C. Bearrs, Historian, Peter J. Snell, Historical Architect, NPS, Denver Service Center, may 1978, page one, Significance Section.
[2] Final Revised General Management Plan, Volume II, Boston national Historical Park, Charlestown Navy Yard, Boston, MA, February 1987.
[3] "All right, title, and interest in the Federal properties and improvement included herein shall be transferred to the Secretary of the Interior: Provided, that he may, by written agreement with the Secretary of the Navy, permit the continued use of any such buildings and facilities as the Secretary of the Interior determines necessary for the preservation and maintenance of the Constitution, which agreement shall provide that the Department of the Navy shall transfer to the Department of the Interior funds sufficient to cover the costs attributable to the functions and services which are provided by the Department of the Interior." Public Law 93-431, October 1, 1974.
[4] Findings are based on site visits and condition assessments, as well as discussions with park staff. This work was conducted between 2003 and 2004.



Cultural Landscape Report for Charlestown Navy Yard

Figure 11.1

Treatment Plan Zones 2004

National Park Service
Olmsted Center for Landscape Preservation
99 Warren Street
Brookline, MA 02445
617-566-1689

SOURCES

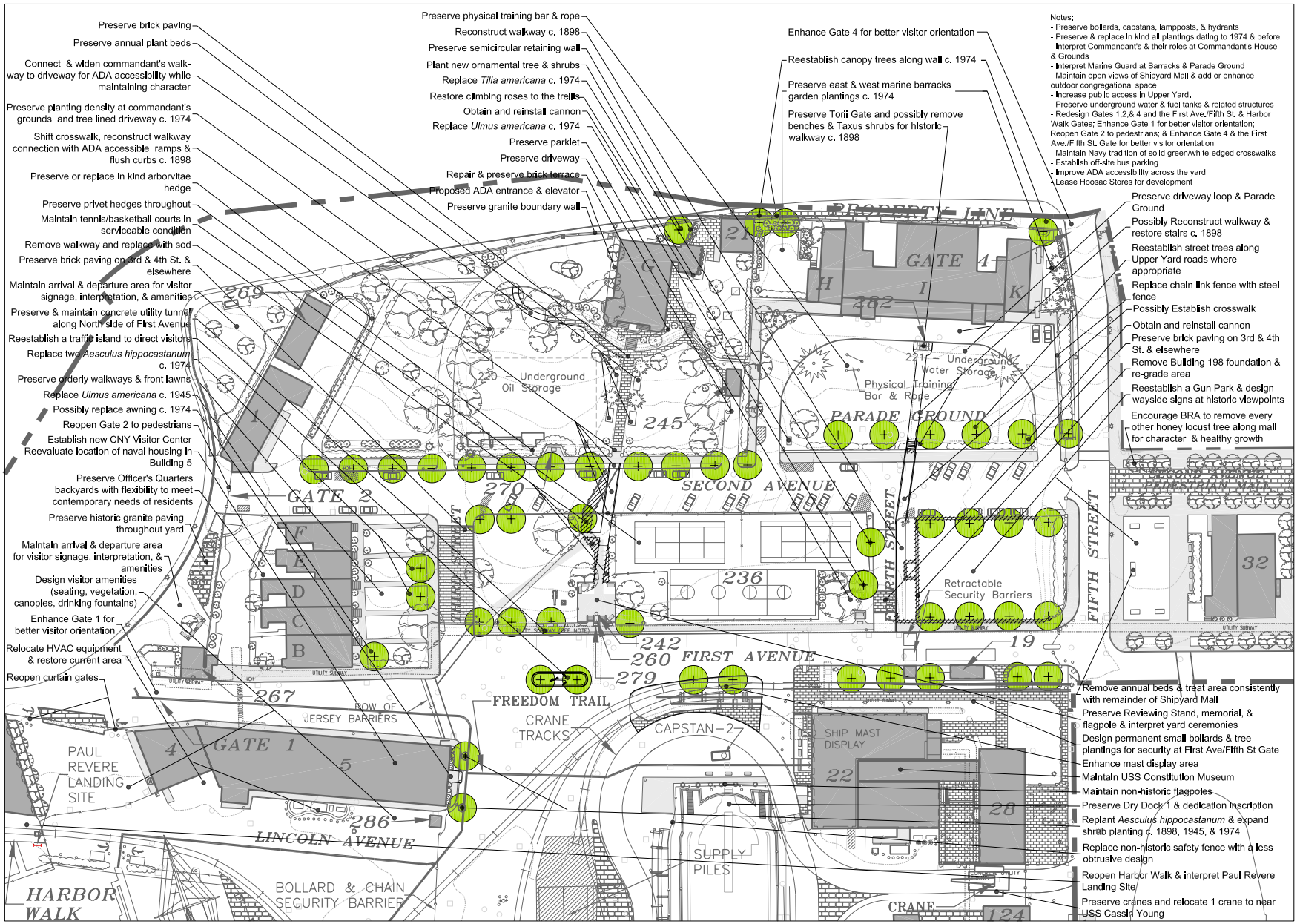
1. Survey by Carol R. Johnson Associates Inc., Boston, MA 1995.
2. BRA Orthophoto 2003
3. Site Visits, 2002-2004.

PREPARED BY

Ryan Reedy & Chris Stevens with AutoCAD 2002. OCLP, June 2005.

SCALE: 1"=200'

0 100' 200'



Cultural Landscape Report for Charlestown Navy Yard

Figure 11.2

Treatment Plan Upper Yard Enlargement 2004

National Park Service
Olmsted Center for Landscape Preservation
99 Warren Street
Brookline, MA 02445
617-566-1689

SOURCES

1. Survey by Carol R. Johnson Associates Inc., Boston, MA 1995.
2. BRA Orthophoto 2003.
3. Site Visits, 2002-2004.

PREPARED BY

Ryan Reedy & Chris Stevens with AutoCAD 2002.
OCLP, June 2005.

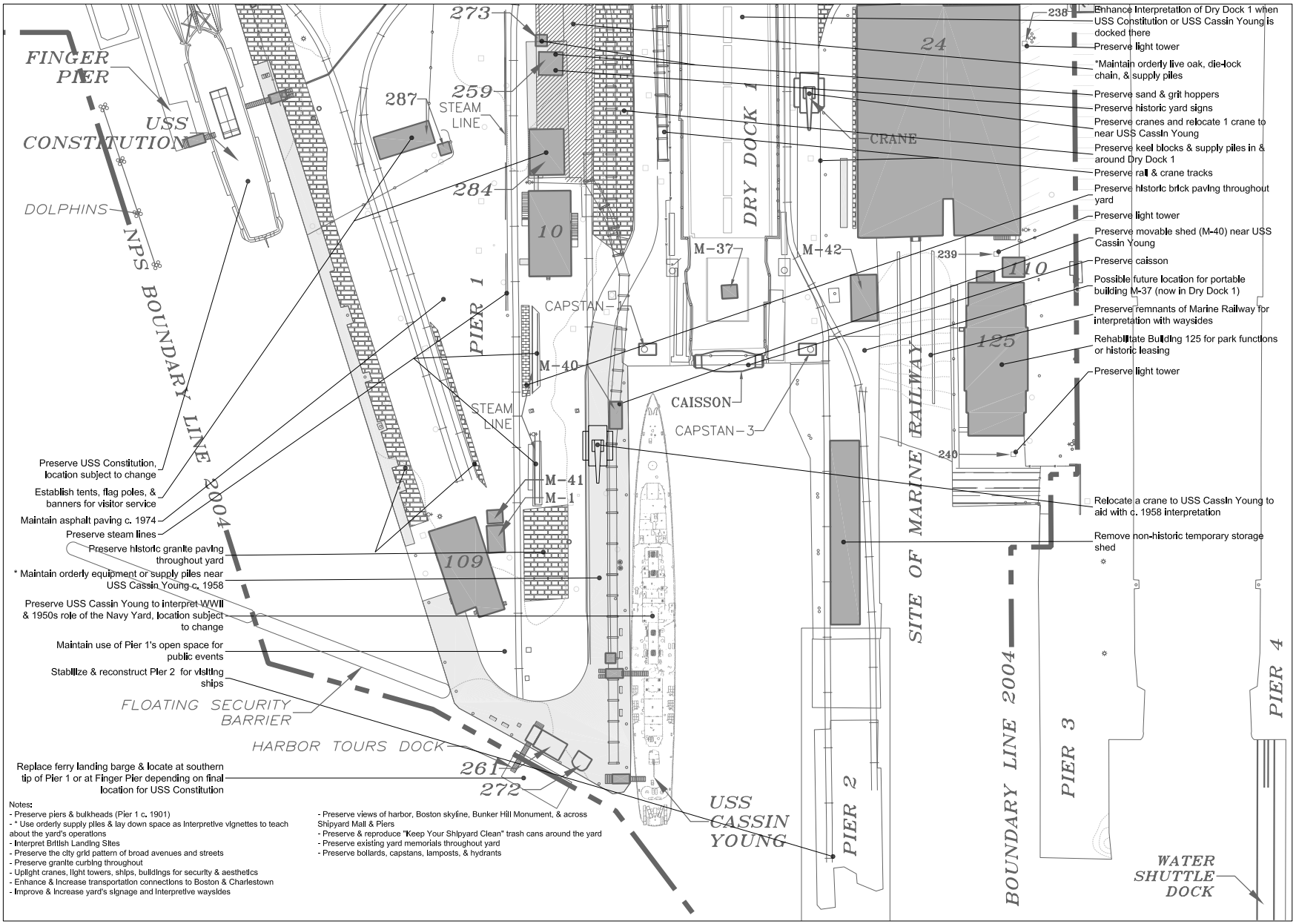
Legend

Sym.	Feature
	Brick Paving
	Granite Paving
	Concrete Paving
	Wood Surface
	Supply Piles
	Chain Link Fence
	Iron Fence
	Fence on Wall
	Wall
	Railway
	Bollard
	Bollard & Chain
	Lamp Post
	Fire Hydrant
	Bench
	Capstan
	Existing Contours
	Deciduous Tree
	Evergreen Tree
	Shrub
	Hedge

Note: Please Refer To Legend Page for Features, Building/Structure Names, and Plant List.

SCALE: 1"=80'

0 40' 80'



Notes:
- Preserve piers & bulkheads (Pier 1 c. 1901)
- * Use orderly supply piles & lay down space as Interpretive vignettes to teach about the yard's operations
- Interpret British Landing Sites
- Preserve the city grid pattern of broad avenues and streets
- Preserve granite curbing throughout
- Uplight cranes, light towers, ships, buildings for security & aesthetics
- Enhance & Increase transportation connections to Boston & Charlestown
- Improve & Increase yard's signage and Interpretive waysides
- Preserve views of harbor, Boston skyline, Bunker Hill Monument, & across Shipyard Mall & Piers
- Preserve & reproduce "Keep Your Shipyard Clean" trash cans around the yard
- Preserve existing yard memorials throughout yard
- Preserve bollards, capstans, lamposts, & hydrants

Cultural Landscape Report for Charlestown Navy Yard

Figure 11.3

Treatment Plan Waterfront Enlargement 2004

National Park Service
Olmsted Center for Landscape Preservation
99 Warren Street
Brookline, MA 02445
617-566-1689

SOURCES
1. Survey by Carol R. Johnson Associates Inc., Boston, MA 1995.
2. BRA Orthophoto 2003.
3. Site Visits, 2002-2004.

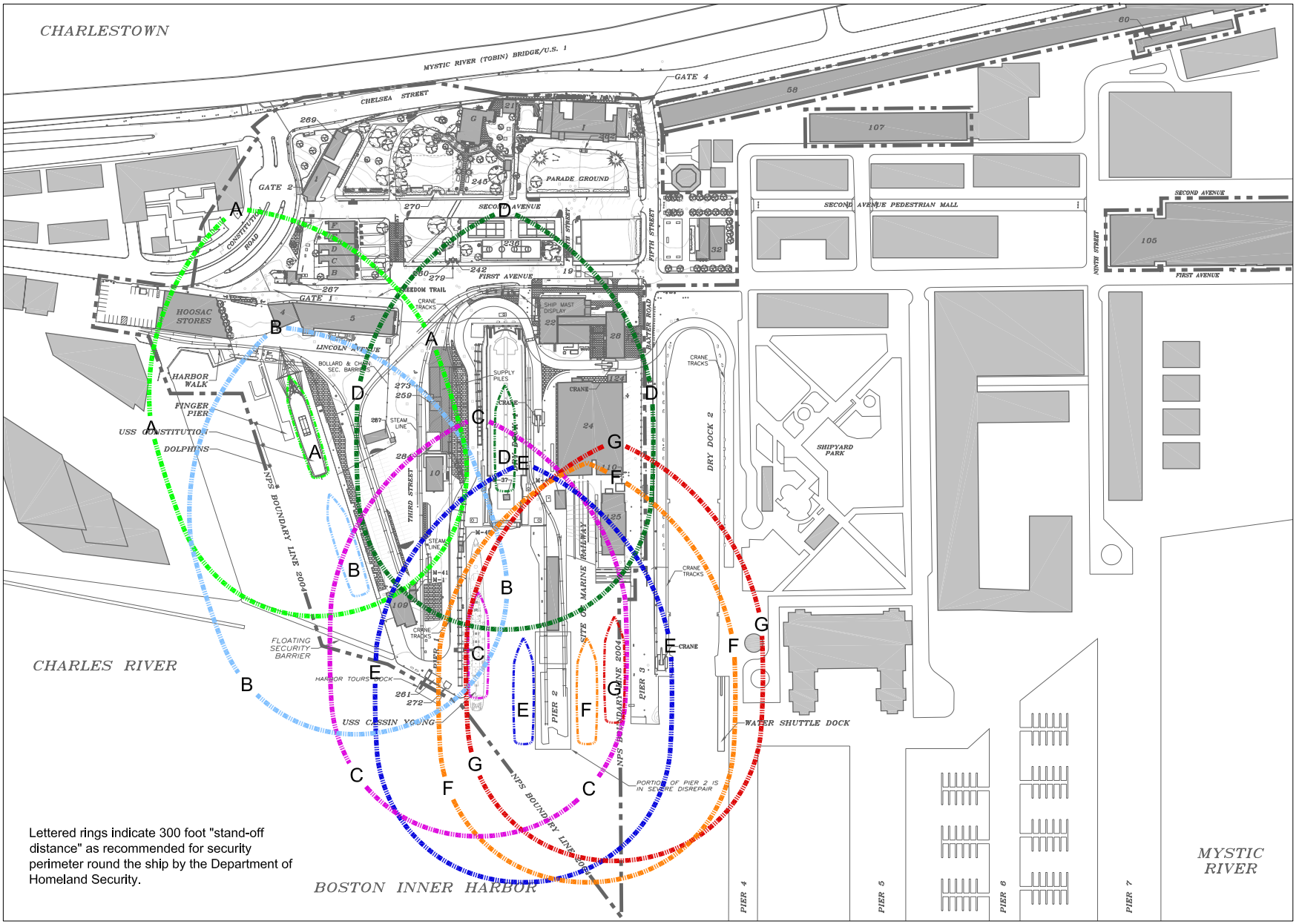
PREPARED BY
Ryan Reedy & Chris Stevens with AutoCAD 2002.
OCLP, June 2005.

Legend

Sym.	Feature
	Brick Paving
	Granite Paving
	Concrete Paving
	Wood Surface
	Supply Piles
	Chain Link Fence
	Iron Fence
	Fence on Wall
	Wall
	Railway
	Bollard
	Bollard & Chain
	Lamp Post
	Fire Hydrant
	Bench
	Capstan
	Existing Contours
	Deciduous Tree
	Evergreen Tree
	Shrub
	Hedge

Note: Please Refer To Legend Page for Features, Building/Structure Names, and Plant List.

SCALE: 1"=80'
0 40' 80'



Lettered rings indicate 300 foot "stand-off distance" as recommended for security perimeter round the ship by the Department of Homeland Security.

Cultural Landscape Report for Charlestown Navy Yard

Figure 11.4

Treatment Plan - USS Constitution Location Alternatives 2004

National Park Service
Olmsted Center for Landscape Preservation
99 Warren Street
Brookline, MA 02445
617-566-1689

SOURCES

1. Survey by Carol R. Johnson Associates Inc., Boston, MA 1995.
2. BRA Orthophoto 2003
3. Site Visits, 2002-2004.
4. Navy Yard Design Charette, 11-30-2004.

PREPARED BY

Ryan Reedy & Chris Stevens with AutoCAD 2002. OCLP, June 2005..

SCALE: 1"=200'

0 100' 200'



USS Constitution at Charlestown Navy Yard, Boston National Historical Park, 2003 (OCLP).

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APPENDIX 1

Proper place names and numbers recorded in the Charlestown Navy Yard CLR - arranged alphabetically.

Anchor Shop	Building 40
Anchorage (former Electric Supply)	Building 103
Bandstand (razed)	Building 163
Boathouse	Building 94
Boston Naval Shipyard	1945-1974 (Encompasses the multiple yards)
Boston Navy Yard	1874-1945
C&R Foundry	Building 16
Carpenter's Shop (Now Naval Historical Center Detachment Boston's Maintenance & Repair Facility)	Building 24
Central Power Plant	Building 108
Chain Forge Shop	Building 105
Chapel	Building 23
Charlestown Navy Yard	1800-present
Coal House	Building 79
Coal Sheds	Building 7
Coal Storage & Handling Plant (razed 1930)	Building 109
Commandant's House	Quarters G
Commandant's Office	Building 29
Cranes	
Dispensary	Building 120
Dry Dock 1	
Dry Dock 2	
Dry Dock Engine House (Now part of USS Constitution Museum	Building 22
Electric Substation	Building 192
Electric Substation	Building 274
Electric Substation	Building 275
Electric Substation	Building 276
Explosives Bunker	Building 272
Finger Pier	
Fire Apparatus House	Building 6
Flagpole (First Ave. at War Memorial and Reviewing Stand)	Structure 242
Pitch House and Oakum Loft (now Food Concessions)	Building 10
Garage and Chauffeur's Quarters	Building 1
Garage(NPS Garden Shed)	Building 245
Gate 1 (Main Gate)	Building 97
Gate 2	
Gate 3	
Gate 4	
Gatehouse (Gate 1)	Building 267
Gatehouse 2	
Grit Hopper	Structure 259
Guardhouse (south of Commandant's House)	
Guard Booth (for USS *Constitution*)	Structure 286
Hemp House	Building 62
Hoosac Stores	
Joiners Shop and Paint Loft	Building 36
Latrine	Building 124
Lead Shop	Building 110
Light Towers	Structures 238-240
Live Oak Shed	Building 2
main yard	1917-1974 (just the Charlestown portion)
Marine Barracks	Building I (Quarters H-I-K before 1920s)
Marine Barracks Torii Gate (Marine Barracks Parade Ground)	Structure 282
Marine Corps Administration Building	Building 136
Marine Railway	
Masthouse	Building 85
MBTA Bus Shelter (Chelsea St.)	Structure 283
Muster House	Building 31
Navy Exchange Service Station (Gas Station)	Building 194

Navy Store	Building 5
NPS Guard Booth (First Ave.)	Structure 288
Officers Quarters (Captains' Row)	Building 265 (Quarters B,C,D,E,F)
Officers Quarters A	Quarters A
Officers Quarters Five Bay Garage	Building 269
Outside Seating Structure (North of Building 10)	Structure 284
Oxygen Tank Facility	Building 277
Paint Shop	Building 125
Pier 1	
Pier 2	
Pier 3	
Pier 4	
Pier 4-A	
Pier 5	
Pier 6	
Pier 7	
Pier 10	
Pipe and Shipfitting Shops	Building 195
Playing Courts (former Tennis Courts)	Structure 236
Portable Steel Shed	M-37
Public Works Shop	Building 107
Pump House	Building 191
Pumphouse	Building 123
Reviewing Stand (First Ave.) (Officially referred to as "Bandstand" by the Navy, but this CLR uses "Reviewing Stand" to reflect its use and to prevent confusion with Bandstand (Building 163).	Structure 260
Ropewalk	Building 58
Saluting Battery	Structure 261
Sand Hopper	Structure 273
Sawmill	Building 67
Scale House	Building 19
Security Barricades (First Ave.)	Structure 285
Shear Wharf	
Shell House (Boston Marine Society, former Commandant's Office)	Building 32
Ship Repair Shop (former Shipfitter's Shop)	Building 104
Shiphouse 39	
Shiphouse 68	
Shiphouse 71	
Shiphouse 73	
Shiphouse G	
Shiphouse H	
Shiphouse I	
Smithery (Now Machine Shop)	Building 42
Stable	Building 21
Steam Line (Third St./Pier 1)	Structure 281
Steam Shed	M-42
Storage Shed (Third St. adjacent to Building M-1)	M-41
Storehouse	Building 34
Storehouse	Building 3
Storehouse	Building 4
Substation	M-1
Tar House	Building 60
Temporary Storehouse (World War II)	Building 198
Timber Shed	Building 75
Tin Shop (Now part of USS Constitution Museum)	Building 28
Tool Storage Barn (razed & replaced by Garden Shed 245)	Building 20
Transportation Garage	Building 204
USMC Officer-of-the-Day's Quarters	Building 30
Underground Storage Tanks	Structures 220 and 221
Underground Utility Tunnel ("Conduit") (First Ave.)	Structure 280
USS *Cassin Young*	
USS Cassin Young Workshop (Pier 1 East)	M-40
USS *Constitution*	
Visitor Screening (for USS *Constitution*, Pier 1)	Structure 287
War Memorial (First Ave. at Reviewing Stand)	Structure 279
Pilot House (Now Waterfront Office)	Building 109

Wharf 1	
Wharf 2	
Wharf 4	
Yard Commandant's Plaque	Structure 270

Numbered buildings and structures recorded in the Charlestown Navy Yard CLR - arranged numerically.

Officers Quarters A	Quarters A
Commandant's House	Quarters G
Marine Barracks	Building I (Quarters H-I-K before 1920s)
Substation	M-1
Portable Steel Shed	M-37
USS Cassin Young Workshop (Pier 1 East)	M-40
Storage Shed (Third St. adjacent to Building M-1)	M-41
Steam Shed	M-42
Garage and Chauffeur's Quarters	Building 1
Live Oak Shed	Building 2
Storehouse	Building 3
Storehouse	Building 4
Navy Store	Building 5
Fire Apparatus House	Building 6
Coal Sheds	Building 7
Pitch House and Oakum Loft (now Food Concessions)	Building 10
C&R Foundry	Building 16
Scale House	Building 19
Tool Storage Barn (razed & replaced by Garage 245)	Building 20
Stable	Building 21
Dry Dock Engine House (Now part of USS Constitution Museum	Building 22
Chapel	Building 23
Carpenter's Shop (Now Naval Historical Center Detachment Boston's Maintenance & Repair Facility	Building 24
Tin Shop (Now part of USS Constitution Museum)	Building 28
Commandant's Office	Building 29
USMC Officer-of-the-Day's Quarters	Building 30
Muster House	Building 31
Shell House (Boston Marine Society, former Commandant's Office)	Building 32
Storehouse	Building 34
Joiners Shop and Paint Loft	Building 36
Smithery (now Machine Shop)	Building 42
Ropewalk	Building 58
Tar House	Building 60
Hemp House	Building 62
Sawmill	Building 67
Timber Shed	Building 75
Coal House	Building 79
Masthouse	Building 85
Boathouse	Building 94
Gate 1 (Main Gate)	Building 97
Ship Repair Shop (former Shipfitter's Shop)	Building 104
Chain Forge Shop	Building 105
Public Works Shop	Building 107
Central Power Plant	Building 108
Coal Storage & Handling Plant (razed 1930)	Building 109
Pilot House (Now Waterfront Office)	Building 109
Lead Shop	Building 110
Dispensary	Building 120
Pumphouse	Building 123
Latrine	Building 124
Paint Shop	Building 125
Marine Corps Administration Building	Building 136
Bandstand (razed)	Building 163
Pump House	Building 191
Electric Substation	Building 192

Navy Exchange Service Station (Gas Station)	Building 194
Pipe and Shipfitting Shops	Building 195
Temporary Storehouse (World War II)	Building 198
Transportation Garage	Building 204
Underground Storage Tanks	Structures 220 and 221
Playing Courts (former Tennis Courts)	Structure 236
Light Towers	Structures 238-240
Flagpole (First Ave. at War Memorial and Reviewing Stand)	Structure 242
Garage(NPS Garden Shed)	Building 245
Grit Hopper	Structure 259
Reviewing Stand (First Ave.) (Officially referred to as "Bandstand" by the Navy, but this CLR uses "Reviewing Stand" to reflect its use and to prevent confusion with Bandstand (Building 163).	Structure 260
Saluting Battery	Structure 261
Officers Quarters	Building 265 (Quarters B,C,D,E,F)
Gatehouse (Gate 1)	Building 267
Officers Quarters Five Bay Garage	Building 269
Yard Commandant's Plaque	Structure 270
Explosives Bunker	Building 272
Sand Hopper	Structure 273
Electric Substation	Building 274
Electric Substation	Building 275
Electric Substation	Building 276
Oxygen Tank Facility	Building 277
War Memorial (First Ave. at Reviewing Stand)	Structure 279
Underground Utility Tunnel ("Conduit") (First Ave.)	Structure 280
Steam Line (Third St./Pier 1)	Structure 281
Marine Barracks Torii Gate (Marine Barracks Parade Ground)	Structure 282
MBTA Bus Shelter (Chelsea St.)	Structure 283
Outside Seating Structure (North of Building 10)	Structure 284
Security Barricades (First Ave.)	Structure 285
Guard Booth (for USS *Constitution*, Lincoln Ave.)	Structure 286
Visitor Screening (for USS *Constitution*, Pier 1)	Structure 287
NPS Guard Booth (First Ave.)	Structure 288

APPENDIX 2

SUSTAINABILITY AND LEED CRITERIA

A key component of building projects and when applicable, landscape projects in the Charlestown Navy Yard is sustainability. The US Green Building Council's Leadership in Energy and Environmental Design (LEED) Building Rating System serves as a framework to discuss methods for improving each project's sustainability in terms of environmental impact, energy efficiency, occupant comfort, and associated criteria. The National Park Service now mandates that buildings meet the LEED Rating certification program by achieving at least 26 points of the 64-point rating system. Of the 64 points possible, at least 16 points can be earned by sustainable site design, such as storm water management and reduced heat islands, and water efficient landscaping. Ideally, actions taken will both preserve the yard's historic landscape and gain LEED points for sustainability.

LEED Ratings that apply to the landscape.

Points	Credit Category	Credit Title
	Sustainable Sites (SS)	
0	SS Prerequisite 1	Erosion and Sedimentation Control
1	SS Credit 1	Site Selection
1	SS Credit 2	Urban Redevelopment
1	SS Credit 3	Brownfield Redevelopment
1	SS Credit 4.1	Alternative Transportation, Locate Near Public Transportation
1	SS Credit 4.2	Alternative Transportation, Bicycle Storage & Changing Rooms
1	SS Credit 4.3	Alternative Transportation, Alternative Fuel Refueling Stations
1	SS Credit 4.4	Alternative Transportation, Minimum or No New Parking
1	SS Credit 5.1	Reduced Site Disturbance, Protect or Restore Open Space
1	SS Credit 5.2	Reduced Site Disturbance, Reduce Footprint & Increase Open Space
1	SS Credit 6.1	Storm water Management, No Net Increase or 25% Decrease
1	SS Credit 6.2	Storm water Management, Treatment Systems
1	SS Credit 7.1	Landscape & Exterior Design to Reduce Heat Islands, Site Surfaces
1	SS Credit 7.2	Landscape & Exterior Design to Reduce Heat Islands, Roof Surfaces
1	SS Credit 8	Light Pollution Reduction
14	Subtotal Points Possible	
	Water Efficiency (WE)	
1	WE Credit 1.1	Water Efficient Landscaping, Reduce by 50%
1	WE Credit 1.2	Water Efficient Landscaping, Reduce Additional 50% or No Irrigation
1	WE Credit 2	Innovative Wastewater Technologies
1	WE Credit 3.1	Water Use Reduction, 20% Reduction
1	WE Credit 3.2	Water Use Reduction, Additional 10% Reduction
5	Subtotal Points Possible	

a. Sustainable Sites Prerequisite 1, Erosion and Sedimentation Control

No credit is available for this condition, but it is a necessary prerequisite that all site work should be contained with erosion and sediment barriers to prevent sedimentation from flowing into storm drains and the harbor. There should also be minimal airborne dust and particulate matter that would contribute to air pollution.

b. Sustainable Sites Credit 1, Site Selection

To achieve this credit the park should adopt a holistic approach to site improvements for optimal results, considering historic preservation in conjunction with sustainability. Development within the floodplain is discouraged under this credit; however, some historic structures were built within the 100-year floodplain. Ideally, site improvements should be implemented recognizing that the potential for flooding exists and thus minimize the potential for damage.

c. Sustainable Sites Credit 2, Urban Redevelopment

A credit is gained for site improvements that create an environment that is comfortable and safe. For example, seating areas should be shaded and open to breezes in the summer, but sheltered from wind in the winter. Safety issues are addressed in detail in the next section.

d. Sustainable Sites Credit 3, Brownfield Redevelopment

For a credit, the park may investigate systems for cleansing any polluted site soils or storm water sediment before it leaves the site either by storm drains or by direct flow into Boston Harbor.

e. Sustainable Sites Credits 4.1, 4.2, 4.3, and 4.4, Alternative Transportation

Four credits are possible if the park promotes use of nearby public transportation, provides bicycle storage and changing rooms, provides alternative fuel refueling stations, and minimizes or retains the number of parking spaces.

By use of signs, brochures, and park staff, visitors can be informed about their options with respect to public transportation by subway, water shuttle, or bus. Bicycle racks will be located within the park in appropriate locations. Alternatives for minimizing or retaining the number of parking spaces within the yard may also be addressed. Options include preferred parking for staff that carpool, park bicycles with baskets, and small fuel-efficient maintenance vehicles for transport within the park.

Tour buses are an efficient means of bringing large groups to the park. With heightened security, the park will need to identify desirable locations for tour buses to load and unload passengers, as well as park.

A separate, but related issue is the use of low-emission, reduced-noise mowing and leaf-blowing equipment or other alternatives that create no or less air and noise pollution.

f. Sustainable Sites Credit 5.1 and 5.2, Reduced Site Disturbance

To gain two credits, the project should 1) protect or restore open space and 2) reduce the building footprint and increase open space. These credits may not be possible for a historic property. Certainly the footprint of a historic building can not be reduced and damage historic fabric. Whether the historic landscape can be altered to reintroduce open space elements, e.g. trees that were present in earlier historic periods needs to be addressed.

g. Sustainable Sites Credit 6.1 and 6.2, Storm water Management

These credits require no net increase or a 25% decrease in storm water flow or enhanced treatment systems. A storm water management plan is needed to ensure there is no net increase in the rate or quantity of storm water runoff from the existing conditions to those after site work.

Forest conditions and meadow grasses absorb storm water better than turf grass; however, these types of plantings are not in keeping with the historical appearance of the yard. If such plantings are possible, such as in former garden areas, they may be considered.

The soil can be aerated to increase porosity. Rainwater can be collected for irrigation. Gray water can be used for irrigation. One alternative is to restore a portion of the site's former wetlands, since wetlands are more porous. However, the site has been filled and modified so extensively that this would be difficult.

h. Sustainable Sites Credits 7.1 and 7.2, Landscape & Exterior Design to Reduce Heat Islands

To gain two credits, the site should reduce the heat reflectance of site and roof surfaces. As with credits for site disturbances, actions need to be considered with respect to their impact on the historical integrity of the yard.

Depending on color and composition, paving surfaces have different ALBEDO reflectance ratings. Once consideration is to reduce the ALBEDO ratings of the site's surfaces, particularly if historic surfaces have lower ratings.

Parking and the associated asphalt surfaces are extensive within the yard. One consideration is to concentrate parking on the pier areas, where vegetation is less likely to survive and restore lawn and tree plantings within the upper yard along First and Second Avenues.

Determine whether any buildings within the park formerly had trees planted on the southeast, south, or southwest sides that provided shade and thus building cooling in the summer, particularly the Commandants House.

i. Sustainable Sites Credit 8, Light Pollution Reduction

For one credit, lighting should provide a safe nighttime environment, without creating excessive light pollution. A safely lit area does not need to be exceptionally bright, but rather minimize contrast between light and dark areas. Contrast ratios should be considered.

j. Water Efficiency Credits 1.1 and 1.2, Water Efficient Landscaping

To gain one credit the park needs to reduce water use by fifty percent. To gain a second credit, the park needs to reduce irrigation by an additional fifty percent or have no irrigation. Considerations include installing moisture sensors, collecting water in the historic cistern, collecting rainwater, or using gray water.

k. Energy and Atmosphere Credits

There are several LEED credits for optimizing energy performance and using renewable energy. Some actions could result in the introduction of new elements to the yard, such as wind or solar power. These elements would need to be evaluated for their impact on the historic scene. As an industrial landscape that was historically cluttered with technological devices, it is likely that such features could be easily mitigated.

APPENDIX 3

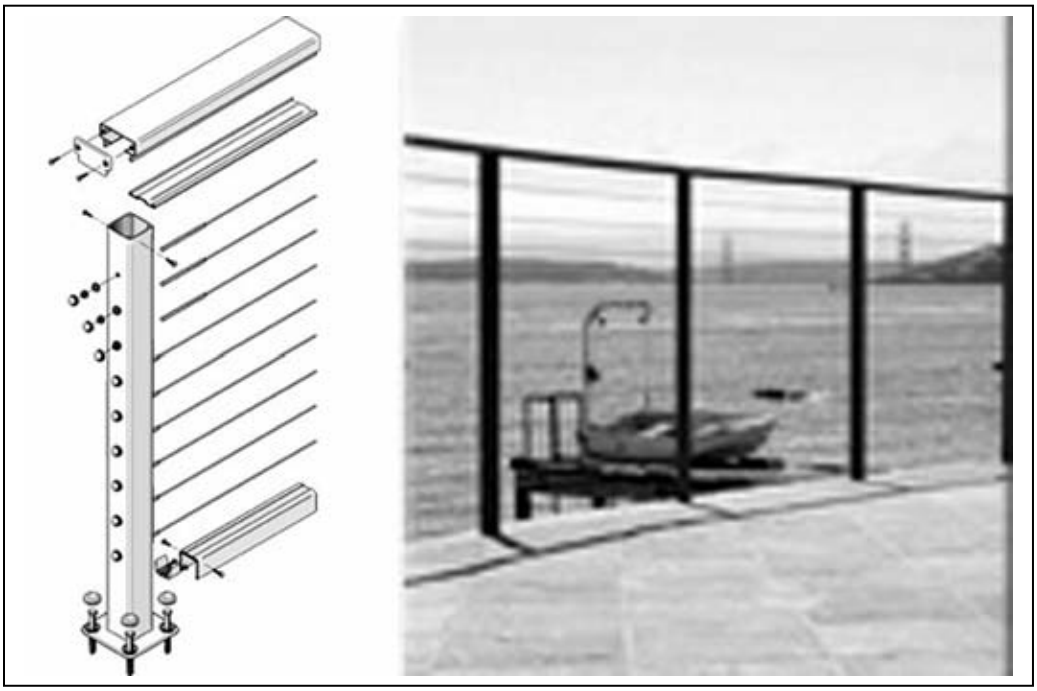
TENSION CABLE RAILING OR FENCING[1]

Tension cable railing or fencing provides security with transparency and would be ideal for Dry Dock 1. The slender and unobtrusive horizontal cables and hardware profiles do not impair views and are yet strong, durable and low maintenance. Cable assemblies include cables, turnbuckles, terminals, and fixed ends. The stainless steel cable assemblies are available in 1/8" or 3/16" or 1/4" thicknesses. Of course, views are less obstructed with thinner cables assemblies.

Post and railing frame systems are available in either steel or aluminum with a wide range of standard and custom powder coat finishes and a variety of cap rail design options. All posts and vertical supports should be spaced a maximum of three to four feet apart. Cables should be spaced a maximum of three inches apart.

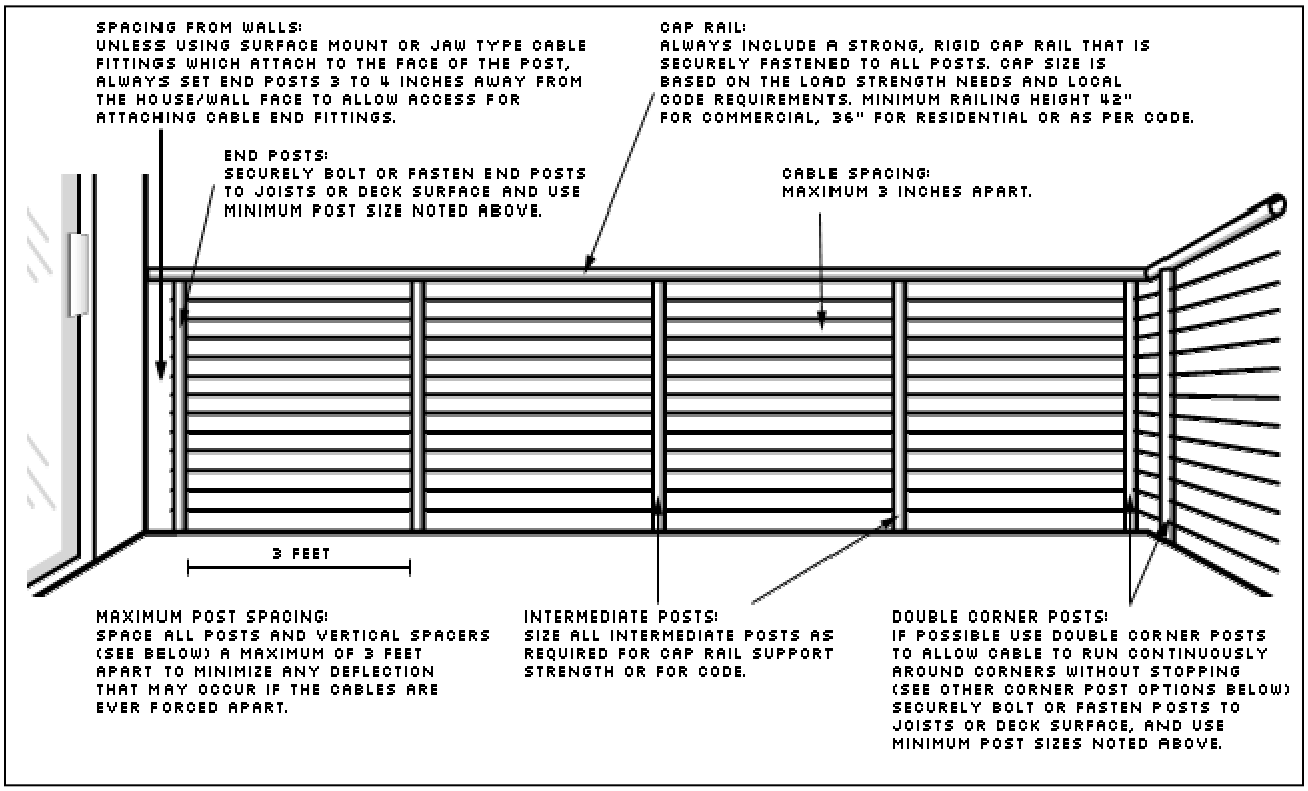
The assemblies are laced horizontally through holes drilled in the intermediate posts of the railing frame and then tensioned at opposite end posts with turnbuckles. To ensure proper tensioning, straight runs of cable should include a tension adjustment fitting about every fifty feet, and runs with bends or corners should have a tension adjustment fitting about every forty feet or after every second corner bend.

Building codes vary by city and county, so before starting the project consult the local building department for requirements on using and installing cable railings. Local codes often guide support spacing, cable spacing, and tension. Cable is movable and code often specifies that a 4" (some have 5 or 6") sphere can not pass through any spot on the railing.

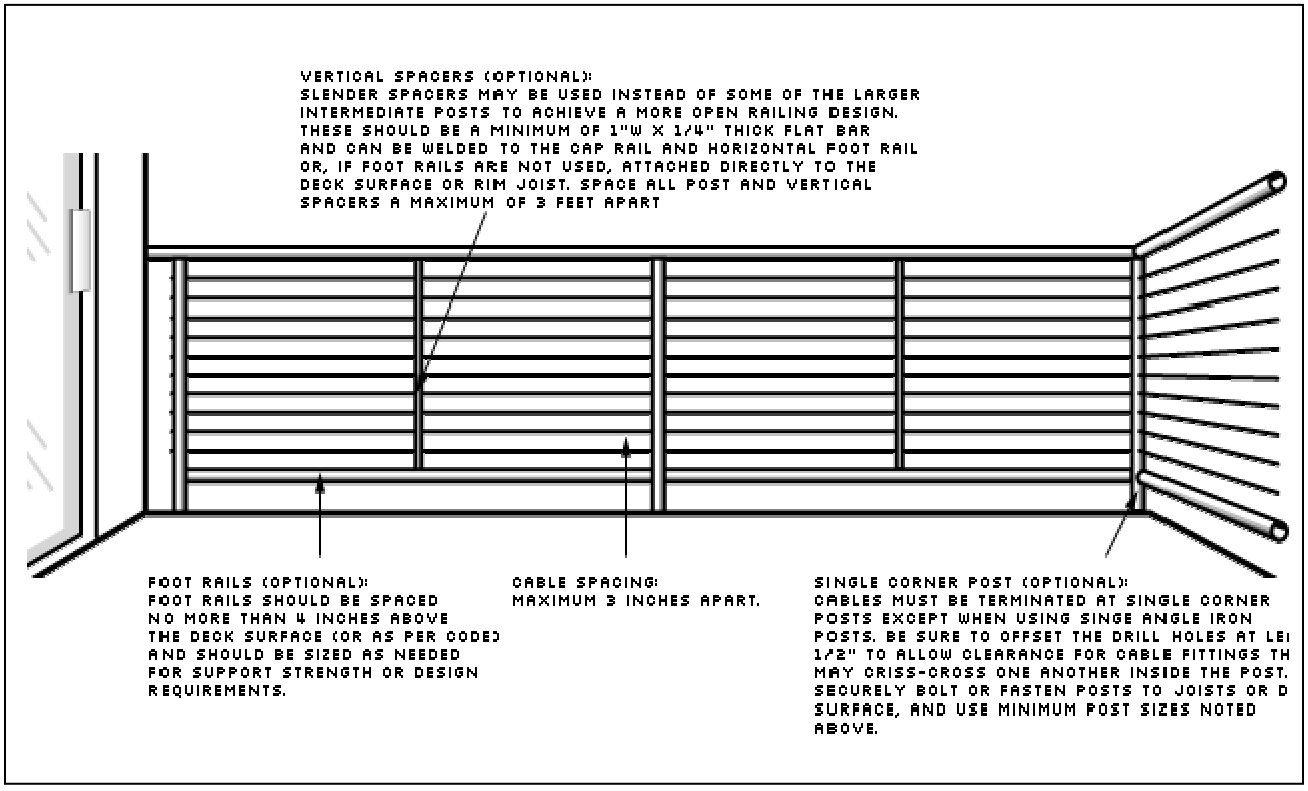


Examples of tension cable fencing. Left: schematic drawing; Right: unobstructed views of a harbor through a fence (Feeney Gateway, http://www.cablerail.com/index_2.html).

[1] Feeney Gateway, Wire Rope & Rigging, 2603 Union Street, Oakland, CA 94607-2423, http://www.cablerail.com/index_2.html



Example of a tension cable fence with double corner posts and no foot rail (Feeney Gateway, http://www.cablerail.com/index_2.html).



Example of a tension cable fence with a single corner post and a foot rail (Feeney Gateway, http://www.cablerail.com/index_2.html).

APPENDIX 4

GENERAL RECOMMENDATIONS FOR TREE PLANTING

1. Whenever possible select planting sites that are 3½ feet back from the face of the curb, 5 feet from underground utility lines, 10 feet from power poles.
2. Expose the trunk flare on each balled and burlapped tree before the planting site is dug so that the depth of the planting site can be properly measured.
3. The proper depth of the planting site is equal to the distance measured from the bottom of the trunk flare to the bottom of the root ball. The trunk flare and top of root ball should be at grade.
4. Dig the space at least three times the diameter of the root ball. Break up compacted soil, Sides of planting space should not be packed. Leave bottom of planting space firm.
5. Tree should always be moved by the root ball, never by the trunk.
6. Position tree in the center if the planting site.
7. All wire baskets shall be cut and removed down to the bottom of the planting site.
8. All strings, burlap or plastic must be removed from the planting site, exposing the root ball.
9. Prune any dead, crushed, or girdling (encircling) roots that are viable. Do not remove soil from the root ball to inspect the roots unless specifically instructed to.
10. Back fill the planting site with soil, watering as you fill to firmly set tree and eliminate air pockets.
11. Removed any tree wrap (tape, string, etc.) that may be on the trunk.
12. Tree that are over 6' tall or have a diameter greater than 1" should be staked.
13. Build a 3 foot tree well encircling the base of the tree (around the root ball). This will help direct water to the roots and not to the loose soil of the planting site.
14. Apply a light coating of mulch (approximately 2") within the tree well, to moderate soil moisture and temperature where the roots are located.
15. Prune only dead and damaged branches at time of planting
16. Deeply water newly planted tree regularly through the first growing season, twice a week. Generally speaking, rainfall will not proved adequate moisture until after several growing seasons.
17. If applicable- Remove stakes and wrapping after 1 year unless site is extremely windy. Do not stake longer than 2 years.
18. Prune tree while young to maintain shape and size beginning in the second growing season.

REPLANTING IN DECAYED STUMP/PROMOTING STUMP DECOMPOSITION

1. Flush cut the tree trunk as close to the ground as possible.
2. Remove as much remaining bark from the stump as possible.
3. Drill a series of holes into the stump (3/4 to 1" in diameter, 6 inches deep, and 2-3 inches apart).
4. Fill holes with a mixture of 1 part screened compost, 1 part screened topsoil, and 1 part slow release organic high-nitrogen fertilizer such as feather-meal or cottonseed-meal.
5. Keep stump moistened during dry periods.
6. Re-fill holes as needed with compost/soil/nitrogen mix.
7. Within 24-36 months, stump should be adequately decayed to remove remaining material with hand tools.
8. When the stump has decayed to the point that it can be broken apart easily with a shovel, it will support new growth.
9. Choose a smaller replacement specimen with a root ball that will fit in the deteriorated stump.

10. Break up what remains of the stump with a spade to make room for the root ball and soil.
11. Plant root ball high in the stump and mound soil around it.

URBAN PLANTING CONSIDERATIONS

Backfilling with soil dug from the planting hole is preferable to mixing the soil with large amounts of amendments but the addition of an organic soil amendment may be called for if the existing soil is of excessively poor quality. Alternatively, quality topsoil similar in texture to existing soil may be used as backfill. Do not pack the soil so firmly as to drive out all the fine air spaces. Water the soil halfway through the backfill process and allow it to drain, when the water has drained away, resume backfilling and water again thoroughly. If watering is difficult, a saucer near the outer edge of the hole can be dug to retain water.

RECOMMENDATIONS FOR CONTAINER GROWN PLANTS

Follow general planting recommendations taking the following modifications into account:
1. To remove the plant from the container, turn the pot on its side and gently tap the container until the root system slides out. Once the plant is removed from the pot plant immediately as allowing it to dry out can easily damage the plant
Free up the root ends and loosen some of the outer container media. This will enable the roots to come in direct contact with the new backfill soil.
2. Most plants will only require a gentle loosening up of the roots in the outer one-half inch of the ball, but if the roots appear more severely matted, it may be necessary to use a knife or small hand rake to open them up.
3. As with a balled and bur lapped plant it is preferable to backfill with soil from the planting hole rather than using heavily amended soils. Because container growing mixes tend to dry out more easily however, we recommend that where the surrounding soil is very sandy or gravelly, reasonable topsoil be mixed with the backfill to aid in water retention and prevent the container mix from drying out.
4. Because of the different soil structures of the root ball, the backfill and the existing soil, water will have a difficult time moving into the root system from the surrounding soil during the first growing season. It is critical therefore that the container grown plant be mulched with a 2-4" layer of shredded pine or organic mulch and watered at least once weekly during the first growing season.

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U.S. Department of the Interior

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