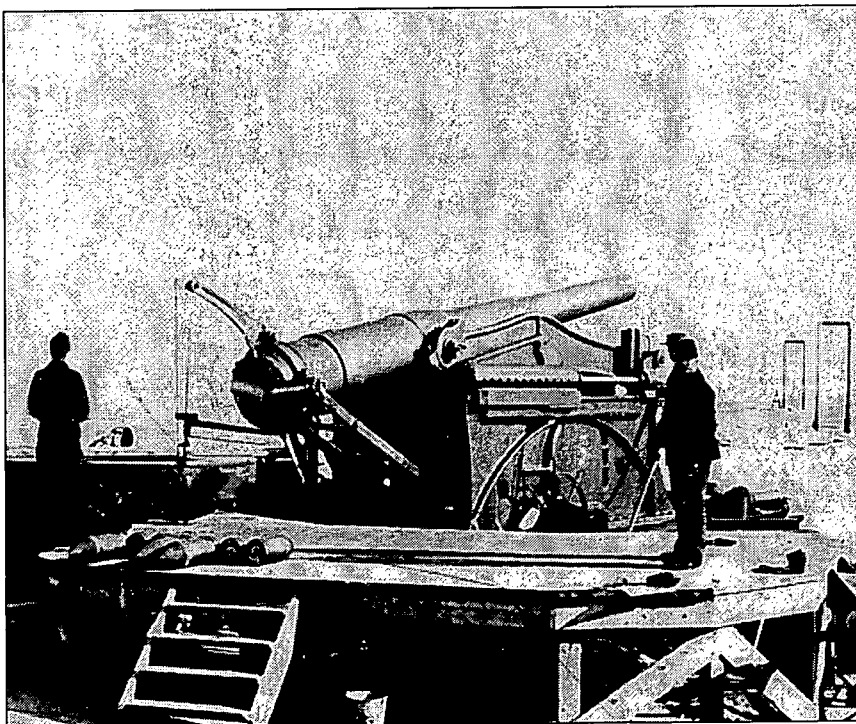


CULTURAL LANDSCAPE REPORT  
FOR  
PROVING GROUND  
AND  
WARTIME EXPANSION AREAS

Sandy Hook Unit  
Gateway National Recreation Area



Olmsted Center for  
Landscape Preservation



National Park Service



CULTURAL LANDSCAPE REPORT

FOR

PROVING GROUND

AND

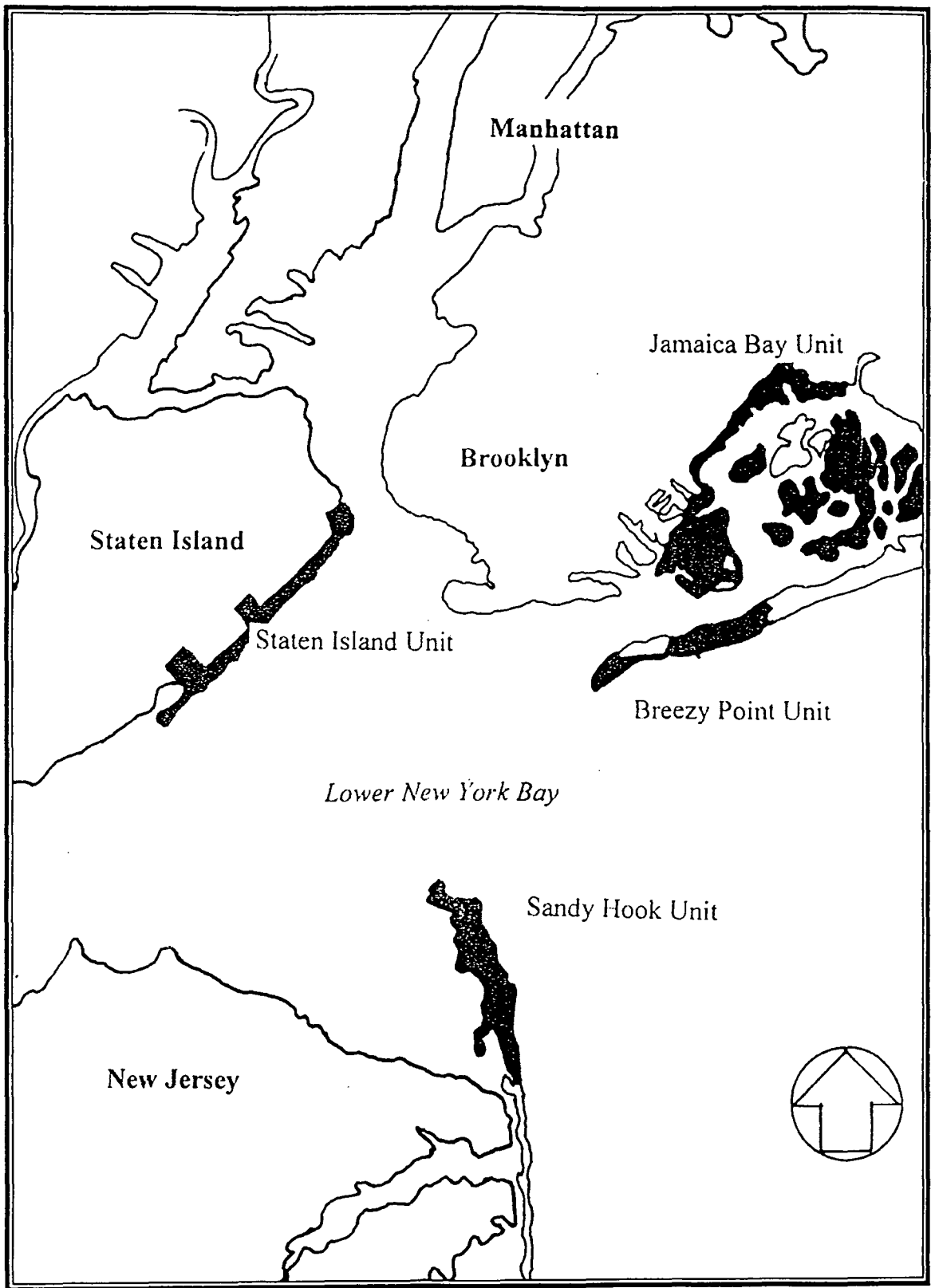
WARTIME EXPANSION AREAS

Sandy Hook Unit

Gateway National Recreation Area

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Prepared by  
Norma E. Williams  
July 1999



Map of New York Harbor and Gateway National Recreation Area

*Frontispiece*

## TABLE OF CONTENTS

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### FRONTISPIECE

### LIST OF ILLUSTRATIONS

### ACKNOWLEDGEMENTS

<b>I.</b>	<b>INTRODUCTION</b>		1	
	A.	Project Background	1	
	B.	Previous Work by Others	1	
	C.	Scope and Purpose	1	
<b>II.</b>	<b>OVERVIEW OF LANDSCAPE HISTORY</b>		6	
	A.	Introduction	6	
	B.	The U.S. Army comes to Sandy Hook	1806 – 1874	8
	C.	The Proving Ground at Sandy Hook		9
		1. The Proving Ground Establishes its Mission	1874 – 1900	9
		The Ordnance Department Builds an Officers' Quarters		
		The Early Landscape at the Proving Ground		
		Transportation at the Proving Ground		
		Establishment of Fort Hancock		
		The Proof Battery Moves Down the Range		
		2. The Proving Ground Achieves Permanent Status	1900 – 1917	18
		Site Organization and the Landscape		
		Life at the Officers' Quarters		
		3. World War I Expansion, Proving Ground	1917 - 1919	29
		Outgrows Site		
	D.	Fort Hancock Assumes Control of Proving Ground Site.		30
		1. Fort Hancock & New Role of the Proving Ground	1919 – 1945	30
		Repairs and Changes to the Officers' Club		
		Ceremonial & Social Role of the Officers' Club		
		The Officers' Club as "Country Club"		
		Officers' Club Landscape		
		Landscape of the Former Proving Ground		
		2. World War II Expansion	1940 – 1945	37
		3. Post World War II/ Cold War	1945 – 1974	45
	E.	National Park Service Stewardship	1974 – 1999	47
<b>III.</b>	<b>OVERVIEW OF EXISTING CONDITIONS</b>		55	
	A.	Sandy Hook Peninsula		55

B.	Proving Ground District Residential Area Officers' Quarters & Grounds Proof Battery and Range Maintenance Area	55
C.	World War II Expansion Areas	71
<b>IV.</b>	<b>ANALYSIS OF SIGNIFICANCE AND INTEGRITY</b>	<b>74</b>
A.	Current National Register Status & Areas of Significance	74
B.	Periods of Landscape Significance	75
1.	Development of Military Technology at the Proving Ground	75
2.	Harbor Defense and the New Role for the Former Proving Ground Area	1874 - 1919 76
3.	Wartime Expansion at Fort Hancock World War I World War II	1919 - 1945 76 1917 - 1919 1940 - 1945
4.	Post World War II/Cold War at Fort Hancock	1945 - 1974 77
C.	Landscape Integrity	77
1.	Proving Ground	79
2.	Wartime Expansion Areas	80
<b>V.</b>	<b>CHARACTER DEFINING FEATURES</b>	<b>83</b>
A.	Proving Ground	83
1.	Spatial Organization, Topography and Views	83
2.	Circulation	85
3.	Vegetation	86
4.	Site Furnishings and Structures	88
B.	Wartime Expansion Areas	89
1.	Spatial Organization, Topography and Views	89
2.	Circulation	90
3.	Vegetation	90
4.	Site Furnishings and Structures	90
<b>VI.</b>	<b>TREATMENT RECOMMENDATIONS</b>	<b>92</b>
A.	Goals of the General Management Plan	92
B.	Treatment Alternatives	93
C.	Treatment Strategies Considered but not Recommended	93
D.	Treatment Strategy Recommended: Rehabilitation	94
E.	Rehabilitation Guidelines	94

F. Treatment Issues & Recommendations	94
Issue 1: Deteriorating Landscape Features and Characteristics	95
Issue 2: Guidance for Reuse by the Private Sector	96
Issue 3: Visitor Safety	99
Issue 4: Consideration of Maintenance Requirements	100
Issue 5: Accommodation of Universal Accessibility	101
Issue 6: Improved Interpretive Opportunities	102

#### APPENDICES

- A. Chronology
- B. Letter from NPS, New England Support Office to New Jersey SHPO,  
November 1996, with attached LCS.
- C. List of Existing Structures in study area
- D. Vegetation within the former Proving Ground area

#### BIBLIOGRAPHY

## LIST OF ILLUSTRATIONS

---

Cover photograph	Proof Battery c. 1900-10. From files at Sandy Hook Unit, Gateway NRA.	
Frontispiece	Map of New York Harbor and Gateway National Recreation Area	
<b>I. Introduction</b>		
Figure 1	Study Area	2
Figure 2	Management Zones (from The General Management Plan)	4
<b>II. Overview of Landscape History</b>		
Figure 3	View looking east of Proof Battery	6
Figure 4	Proof Battery c.1902. From files at Sandy Hook Unit, Gateway NRA.	6
Figure 5	Proving Ground Gun Park c.1902 From files (#8164) at Sandy Hook Unit, Gateway NRA.	7
Figure 6	View looking north of parking lot 'J' , former site of gun park	7
Figure 7	"Proof Sites at Sandy Hook", dated August 3, 1874. From files at Sandy Hook Unit, Gateway NRA.	10
Figure 8	Sand-filled revetment or traverse, that has contained the explosion of a large caliber gun during test firings, c. 1876-1886. From files at Sandy Hook Unit, Gateway NRA.	11
Figure 9	Detail from map, no title, dated March 28, 1892. From files at Sandy Hook Unit, Gateway NRA.	12
Figure 10	Photographic Panorama - Original Proving Grounds, c. 1880-1885. From files at Sandy Hook Unit, Gateway NRA.	15
Figure 11	The Sandy Hook Proving Ground Railroad included these passenger coaches & engine named the "General Rodman". Photo c. 1901-1909, from files at Sandy Hook, Gateway NRA.	16
Figure 12	Ordnance Department dock or wharf, c. 1900-1910. From files at Sandy Hook Unit, Gateway NRA.	17
Figure 13	"Map Showing Armament on December 3, 1898." From files at Sandy Hook Unit, Gateway NRA.	19
Figure 14	West Point cadets visit Sandy Hook Proof Battery, c.1901-1909. From files (#7735) at Sandy Hook Unit, Gateway NRA.	20
Figure 15	"Map of Sandy Hook Proving Ground showing vicinity of Office", 1908, updated 1918. From files at Sandy Hook Unit, Gateway National Recreation Area.	22
Figure 16	Aerial Photo, "Confidential #40, 2/24/24 14 <sup>th</sup> Photo Section, Fort Hancock, Sandy Hook, NJ. Declassified, National Archives, RG77.	23
Figure 17	Map of Sandy Hook, dated 1908/18, with overlay of function zones.	24
Figure 18	Enlargement of 1924 aerial photograph (Figure 16) showing area surrounding Officers' Quarters.	26
Figure 19	Greenhouse south of Officers' Club, looking northwest, c. 1938-41. From files at Sandy Hook Unit, Gateway NRA (#7382).	27
Figure 20	Fire in the Brick House April 1938; view from southeast. From files at Sandy Hook Unit, Gateway NRA (#2036).	28
Figure 21	New Year's Eve Party in Officers' Club, c. 1942. From files at Sandy Hook Unit, Gateway NRA (#1942-0312).	31

Figure 22	Fire in the Brick House April 1938, view looking north. From files at Sandy Hook Unit, Gateway NRA (#2037).	33
Figure 23	Brick House, looking northwest, c. 1937-40. From files at Sandy Hook Unit, Gateway NRA (#7050).	33
Figure 24	Officers' Club looking west, c. 1937-40, showing lighting fixture and artillery shell along walk. From files at Sandy Hook Unit, Gateway NRA (#7317).	34
Figure 25	Enlargement of aerial photograph (Figure 27) showing area surrounding Officers' Club.	35
Figure 26	Maintenance area, Building #132, c.1945. From Lent Collection, Sandy Hook Unit, Gateway NRA (#1945-111).	36
Figure 27	Aerial Photograph 1943, Fort Hancock, Sandy Hook, NJ. From the files at Sandy Hook Unit, Gateway NRA.	38
Figure 28	Enlargement of 1943 aerial photo (Figure 27) showing expansion area west of Fort Hancock.	39
Figure 29	Enlargement of 1943 aerial photo (Figure 27) showing "tent-city" and Gunnison Road.	40
Figure 30	Enlisted men posing between tents, c. 1940-1941. From files at Sandy Hook Unit, Gateway NRA.	41
Figure 31	WWII expansion area east of the Fort Hancock service areas looking northeast. From the files at Sandy Hook Unit, Gateway NRA (#7936).	42
Figure 32	Fences and plantings in WWII expansion area east of Fort Hancock service area. From files at Sandy Hook Unit, Gateway NRA.	42
Figure 33	Bill Tilden giving a tennis demonstration at Officers' Club tennis court, c. 1943-1945. From files at Sandy Hook Unit, Gateway NRA.	43
Figure 34	Army personnel and their families enjoying the beach, c. 1966-70. Photo from files at Sandy Hook Unit, Gateway NRA.	43
Figure 35	1 <sup>st</sup> U.S. Army Recreation Area, west of Nine-Gun Battery, looking south. Photograph by Thomas J. Hoffman, August 1974.	46
Figure 36	Historical Base Map	48

### III. Overview of Existing Conditions

Figure 37	View to the east of the front door of the Education Center (building 102), formerly the enlisted men's barracks for the Proving Ground.	56
Figure 38	View looking west of steps to Education Center	56
Figure 39	Angled end of walkway north of Education Center	57
Figure 40	Bus Stop along Kearney Road.	57
Figure 41	Building 104 with clothesline on north side.	58
Figure 42	Building 108 looking north.	59
Figure 43	Break in bluestone curbing at former driveway location, looking south.	60
Figure 44	Officers' Club looking south	60
Figure 45	Officers' Club lawn looking south	61
Figure 46	Looking north to Officers' Club, walk overgrown with holly trees	61
Figure 47	View looking west of front of Officers' Club	62
Figure 48	Close-up of overgrown vegetation at northeast corner of Officers' Club	62
Figure 49	Ornamental Shed for storage of garbage.	63
Figure 50	Caddy House with terrace and barbecue looking south.	64

Figure 51	Looking north from terrace at Caddy House, with electrical vault and garbage shed.	64
Figure 52	Officers' Club south façade with concrete paving.	65
Figure 53	Historic light fixture, southwest corner of Officers' Club.	66
Figure 54	Ramp south of Officers' Club to location of destroyed greenhouse, looking north.	67
Figure 55	View south from tennis court to Battery Potter.	67
Figure 56	Proof Battery with traverses, looking west.	68
Figure 57	Proof Battery and interpretive sign, looking west.	69
Figure 58	Park Service maintenance area, looking east.	70
Figure 59	Looking west along Canfield Road, collapsed roof on building 125.	70
Figure 60	Paved road going into overgrown WWII expansion area.	71
Figure 61	Trailer park area looking west, with trailer pad in foreground. Photo by author 1999.	73

## V. Character Defining Features

Figure 62	Diagram of views within the study area	84
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## Appendix D

Figure 63	Composite of "Detailed Landscape Plan" Drawings 207 & 210, Wolcott Erskine Andrews, 1941. Showing residential areas of the former Proving Ground with potential existing trees highlighted. Originals from files at Sandy Hook, Gateway NRA.
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Note: all photographs by author in 1998, unless otherwise specified.

## ACKNOWLEDGEMENTS

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Many individuals have cooperated and given generously of their time to aid in the completion of this report. The staff at the Sandy Hook Unit of Gateway National Recreation Area was always responsive to my questions and requests. In particular Park Historian Tom Hoffman's depth of knowledge and constructive suggestions were greatly appreciated. Museum Technician Cary Wisener's assistance with locating and obtaining copies of historical maps and photographs was also key to my understanding the landscape and communicating its history to others.

Eliot Foulds of the Olmsted Center for Landscape Preservation was always ready with helpful advice which contributed greatly to the success of this report.

I thank them all.

Norma Williams  
July 15, 1999

## I. INTRODUCTION

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### A. Project Background

The following Cultural Landscape Report has been prepared for Gateway National Recreation Area (NRA) in cooperation with the Olmsted Center for Landscape Preservation (OCLP) responding to requests for assistance regarding the landscape areas comprising the Sandy Hook Proving Ground and the wartime expansion areas of Fort Hancock at Gateway's Sandy Hook Unit (see Frontispiece for a map of New York Harbor and Gateway National Recreation Area). This report is intended to provide a general overview of the landscape history of the study area, describe the character-defining landscape features, identify preservation issues, and make preliminary treatment recommendations.

### B. Previous Work by Others

Both primary and secondary sources as well as field observation were used in the preparation of this report. The archival collection of drawings and photographs at Sandy Hook was an invaluable source of information. Secondary sources such as the historic resource studies prepared in the early 1980's by Edwin Bearss and the *Historic Structure Report* of the Proving Ground prepared in 1979 by Barry Sulam were also consulted and were especially helpful.

The following Cultural Landscape Report for the Proving Grounds has also relied upon information in the *Historic Landscape Assessment for Fort Hancock* prepared by the OCLP in 1994, with revisions in October 1997.

### C. Scope and Purpose

The study area of this report includes the portion of Sandy Hook historically known as the Proving Ground and the portions of Fort Hancock where expansion occurred during World War I and World War II (Figure 1). These areas were delineated by park management based on the historic use of the landscape and on interpretive themes. As a result, there is some geographic overlap between the two areas.

The following priorities were established by park management to guide in the preparation of this report:

1. The Ordnance Officers' Quarters, later known as the Officers' Club (Building 114), and the railroad maintenance yard and warehouse area (including Buildings 124, 125, 130, 131, 132, 133, 134, 156)
2. The Proof Battery (Buildings 173, 174, 174A) and remaining areas within the area historically known as the Proving Ground
3. The wartime expansion areas

This project also briefly addresses the dock and Chemical Laboratory (Building 109) even though they currently are located within the property holdings of the United States Coast Guard.

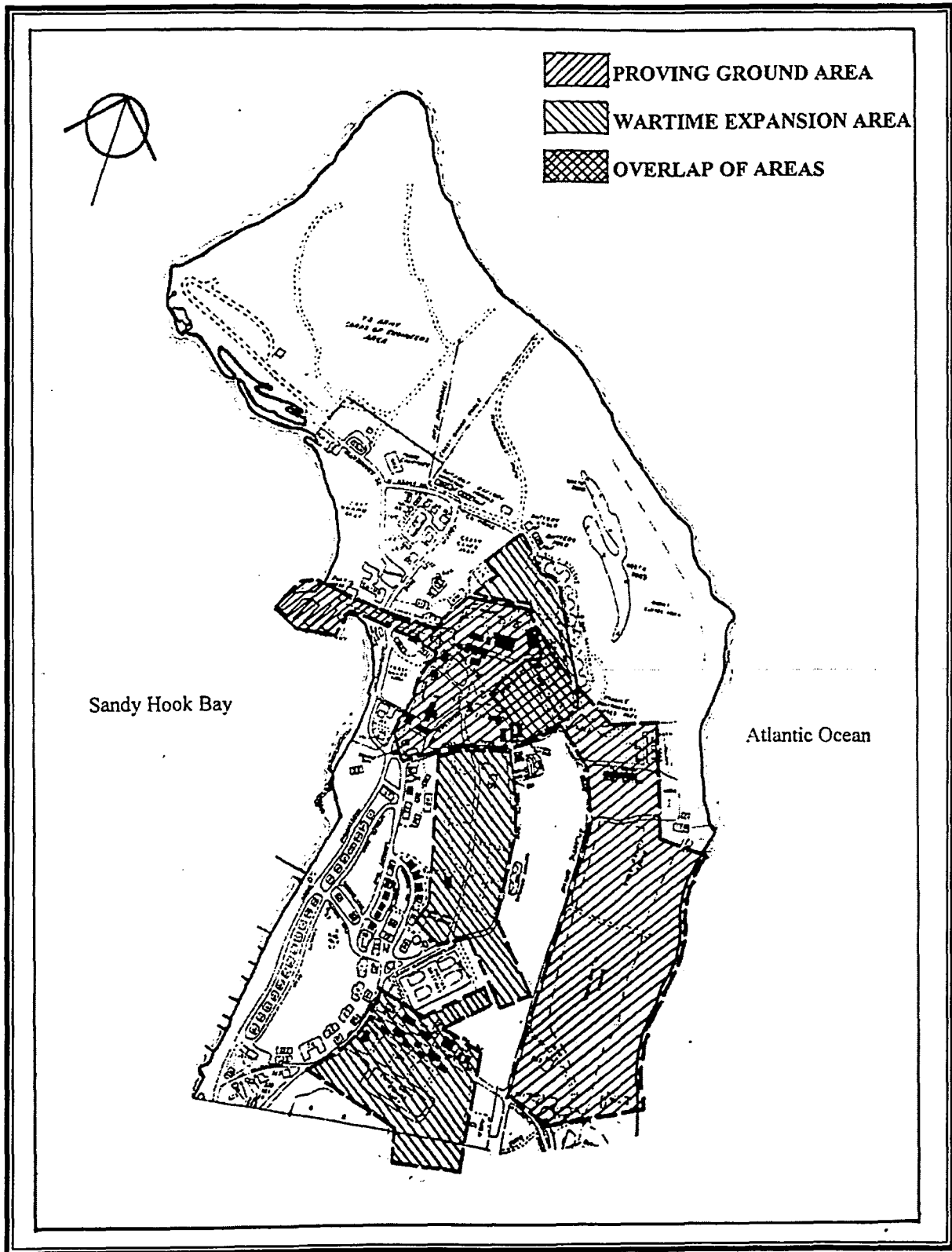


Figure 1: Study Area

Two management zones, Rehabilitation and Coastal Fortification, proposed by the General Management Plan for the Sandy Hook Unit fall within the proposed study area (Figure 2). The Rehabilitation Zone includes the greater part of the study area, including the Officers' Quarters, residential and maintenance areas of the Proving Ground, as well as much of the wartime expansion areas for Fort Hancock. This zone has been designated for rehabilitation and adaptive use in accordance with the Secretary of the Interior's Standards for Rehabilitation. The goal within this zone is to "retain the integrity of the historic scene and to provide for adaptive use through rehabilitation of historic structures."<sup>1</sup> The plan envisions that the funding for rehabilitation will be supplied by the private sector, in exchange for long-term leasing and occupancy. The rehabilitation process will proceed with the private sector cooperating with the National Park Service to maintain the historic character of the site. The Officers' Club area is considered the highest management priority within the study area since the brick Officers' Club and adjacent grounds are particularly appropriate for preservation through leasing to a private entity. This report is intended to help guide the public sector leasing process with respect to this area and the others in the historic landscape.

The Coastal Fortification Zone within the study area includes the Proof Battery, target range and gun park, as well as some portions of the wartime expansion areas. The goal within this zone is "to instill a sense of Sandy Hook's significance in harbor defense and as a proving ground for military arms development."<sup>2</sup> The plan states that the National Park Service "will selectively stabilize portions of four fortifications according to the Secretary of the Interior's Standards for rehabilitation and will make them safe for public access."<sup>3</sup> Interpretation will stress their important role in the development of weaponry and fortifications. The Proof Battery is one of the four structures chosen for this treatment and, in discussing the Proof Battery ruins, the GMP states, "the remnants are not impressive, but the battery played a major role in the development of weapons during the years when the United States emerged as a world power."<sup>4</sup>

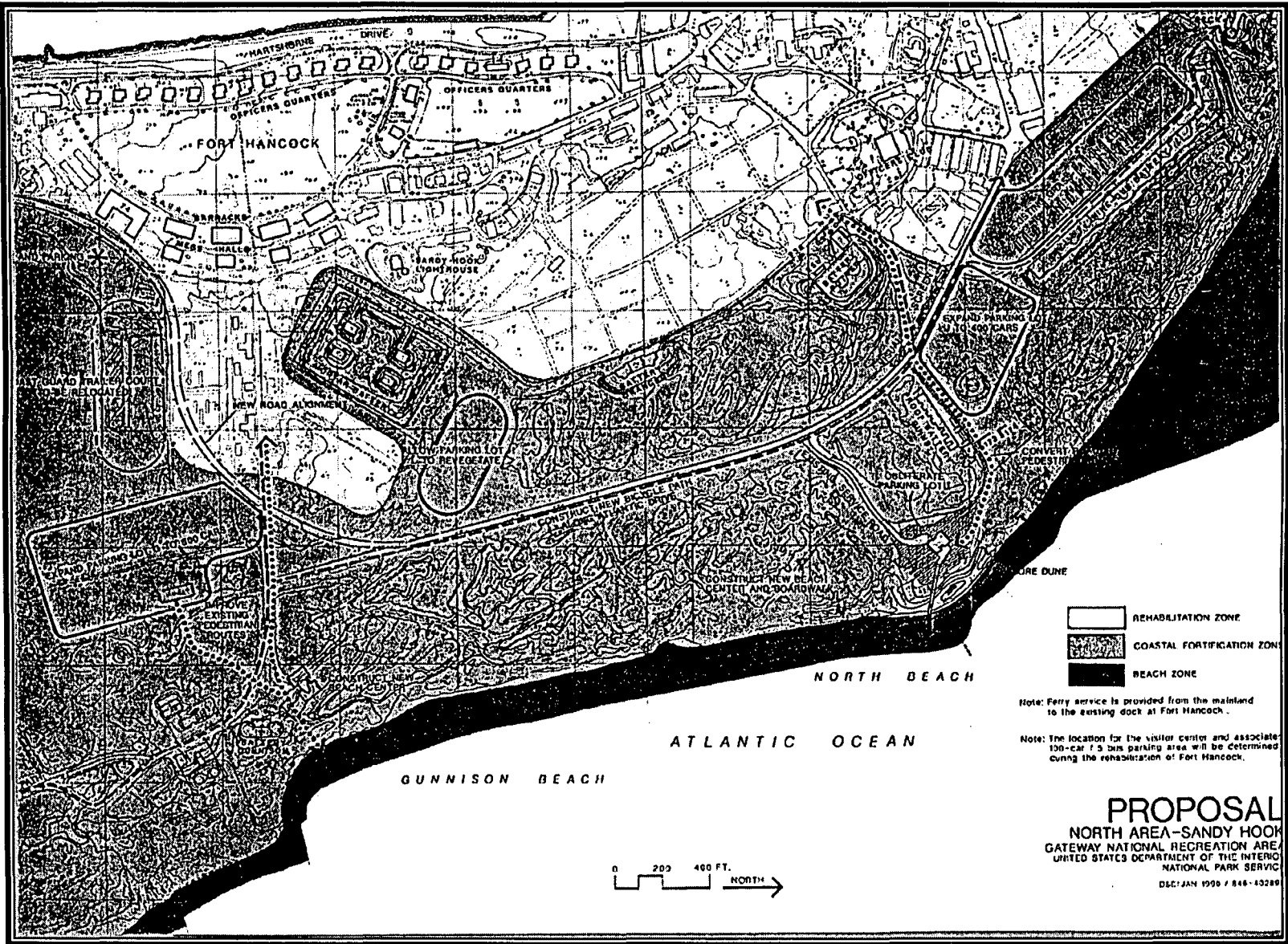


Figure 2: Management Zones from the General Management Plan

## Endnotes Section I

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1. U.S. Department of the Interior, *General Management Plan Amendment: Development Concept Plan and Interpretive Prospectus, Sandy Hook Unit, Gateway National Recreation Area - New York/New Jersey*. (Washington, D.C., National Park Service, 1990) 9.
2. Ibid., 13.
3. Ibid., 13.
4. Ibid., 13.

## II. OVERVIEW OF LANDSCAPE HISTORY

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### A. Introduction

A week-end visitor to Sandy Hook's North Beach passes concrete ruins in the sand - tall freestanding walls inset with alcoves, another long wall topped by large sloped blocks with rusting bits of iron and weeds growing from small cracks (Figure 3). What are these ruins? What happened here? With the quiet of the dunes and the murmur of the surf in the background, it is difficult to imagine that a hundred years ago this place trembled with explosions from rifled artillery as large as 14 inches that sent projectiles whistling down the dune range (Figure 4).

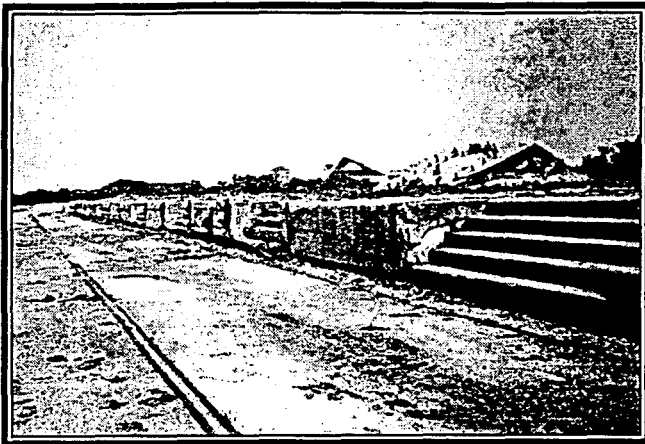


Figure 3: View to the east of the Proof Battery. Photo by author, 1998.

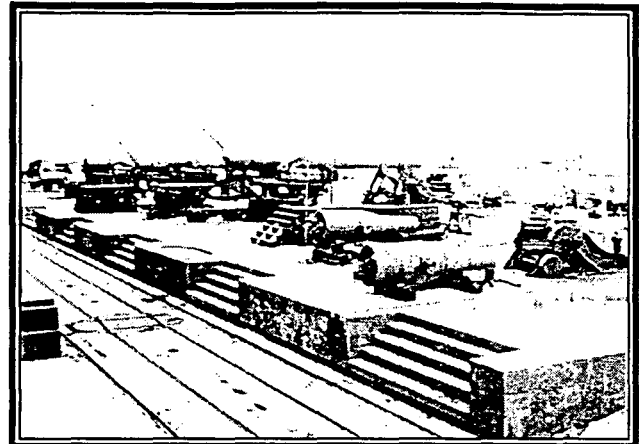


Figure 4: Proof Battery c. 1902. Photo from files at Sandy Hook, Gateway NRA.

The Proving Ground's gun park is now parking lot "J", where visitors headed for the beach leave their cars in rows almost as neat as the hundreds of guns and live projectiles that formerly were stacked in neat rows ready to be tested (Figures 5 & 6).

This landscape was the stage where the United States became a major player in the world-wide arms race, and the ruins are what remains of the United States Army's first official Proving Ground: a testing battery and range where weapons and ordnance were developed and tested for 45 years, and where the technological abilities of the United States were proved to be among the best in the world.

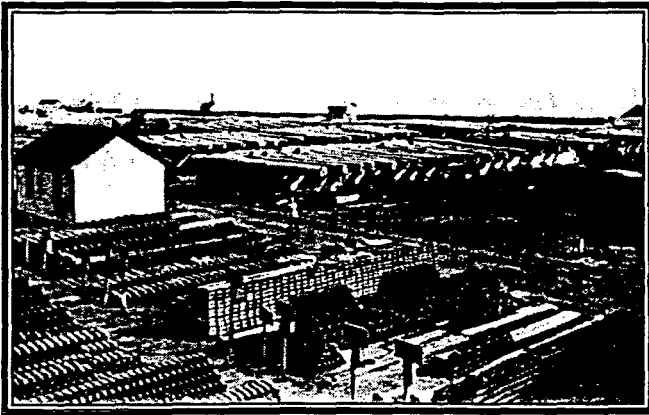


Figure 5: Proof Battery Gun Park, c. 1902. Photo from files, Sandy Hook, Gateway NRA.

Figure 6: View looking north of parking lot 'J', former site of Gun Park. Photo by author, 1998.

Spurred on by national pride and advances in technology brought about by the industrial revolution, European nations in the mid-1800s were making rapid advances in weaponry. At first the United States lagged behind in the early arms race, despite its growing industrial power and wealth derived from natural resources. However, the United States soon sought to catch up with Europe as it recognized the vulnerability of its coasts and harbors to powerful foreign navies.

In the late-1800s the U.S. Congress made major appropriations to develop modern weapons, and this activity was focused at Sandy Hook. New developments in explosive powders, fuses, guns and carriages allowed for larger and more powerful projectiles to be fired for longer distances with greater force and accuracy. From 1874 to 1919, this new technology was tested and refined at the Sandy Hook Proving Ground. These crumbling ruins are a silent reminder of the important role that the Proving Ground at Sandy Hook played in the explosive entrance of the United States into the race for supremacy among world powers.

Eventually, however, technology would outpace the ability of the Proving Ground at Sandy Hook to accommodate its advances, for the testing range available here simply was not long enough for the distances that could now be reached by the newer, more powerful weapons. In addition, the growing population of civilians and Army personnel associated with Fort Hancock made testing weapons at Sandy Hook a very hazardous endeavor. The testing necessary for World War I hastened the justification for a newer, larger proving ground, and Aberdeen, Maryland was chosen as its site. Operations began here in March 1918, and after the war in 1919, the Army phased out the Sandy Hook Proving Ground.

Now the Proving Ground at Sandy Hook is being taken over by natural forces such as plant succession and erosion, and the beaches and dunes are filled with bathers and songbirds. Yet, important phases in American military history have left their mark on this landscape.

## B. The U.S. Army comes to Sandy Hook

1806 to 1874

The importance of the Sandy Hook peninsula for navigation and defense has long been recognized. Reaching out into the New York Harbor, it dominates and controls the access to this important port (Frontispiece). In 1764 at the urging of New York merchants, a lighthouse to guide ships into the harbor was built at what was then the tip of the peninsula.<sup>1</sup> Later, in 1806 the U.S. government purchased all the land north of the lighthouse, where it later built wooden fortifications. These battlements may have prevented the British from entering New York Harbor during the War of 1812, although the harbor was actually blockaded by the British.<sup>2</sup>

The presence of the U.S. Army increased in 1859 when the Corps of Engineers started construction of a granite fort with five bastions on the peninsula's northern tip. A dock had been built in 1857 on the northwestern bay side of the peninsula, which served as access to the huge construction site. Great blocks of unfinished granite and other supplies needed by masons, engineers, and other workmen were brought in through this dock. Construction on the fort proceeded until 1869, when, based on fiscal restraints and obsolete design, Congress determined that it was outdated and no longer provided the necessary defensive capability.<sup>3</sup>

The location of Sandy Hook at the entrance to New York harbor also made it desirable for non-military uses. The New York and Sandy Hook Telegraph Company was granted permission in 1853 to construct a building and erect poles to join service from New York to the mainland on New Jersey. The successors of this company were taken over by Western Union in 1866. In the late 1870s, the Atlantic and Pacific Telegraph Company and the U.S. Signal Service also constructed buildings on the eastern side of the old granite fortifications.

Other non-military uses on Sandy Hook included the Long Branch and Sea-Shore Railroad Company, which built a rail line and wharf on the bay side of the southern portion of Sandy Hook and started operation in 1865. This location had sufficient water depth for a steamboat and was used mainly for the excursionists who visited the popular New Jersey shore from New York City.

An 1878 article in Harper's Monthly Magazine described the site at this early period:

There is no settlement to speak of at Sandy Hook. A capricious Congress has appropriated money one year for some military fortifications, which have been neglected for several years following, and which are now seen in a condition neither useful nor ornamental - unmounted guns, stray blocks of granite, and other material being strewn about in that wasteful insufficiency which characterizes many branches of our military service.<sup>4</sup>

Despite the familiar criticism of government waste, this contemporary description of the early landscape at Sandy Hook paints a bleak picture. Supplies had to be brought in by ship, there were few people living on the lonely peninsula, and the weather could be harsh, with storms periodically damaging the facilities that had been constructed with great difficulty and expense.

## C. The Proving Ground at Sandy Hook

### 1. The Proving Ground Establishes its Mission

1874-1919

In 1874, the War Department authorized the installation of an ordnance proving ground, allocating a small budget for this purpose.<sup>5</sup> Sandy Hook was chosen as the temporary site for this facility because the need to start testing was pressing and the land was available and convenient. Three locations at the north end of the peninsula were considered as shown on the drawing, "Proof Sites at Sandy Hook", prepared in 1874 (Figure 7). Alternative "C" was chosen because it allowed a clear range of up to 3,000 yards down the dunes on the eastern side of the peninsula.<sup>6</sup>

This drawing also indicates the conditions at the site before the arrival of the Ordnance Department. Barracks and offices for the Corps of Engineers are shown south of the wharf, as well as the proposed footprint of the granite fort and work buildings within the fort. The small star-shaped symbols mark three navigational lights, and the series of long parallel lines coming from the wharf represent plank roads laid on the sand. Not shown were the non-military structures for the telegraph and signaling companies located east of the fort. There is no scale shown for this drawing, and later drawings more accurately locate the fort and outline of the peninsula. While the depiction of the guns and target butts with flags waving is very charming, a sense of the site's primitiveness is also conveyed by this drawing.

In August 1874, \$5,000 was allocated for Proving Ground construction, which proceeded with great speed. By the end of October a wood-framed office, an instrument house, and a shelter for the

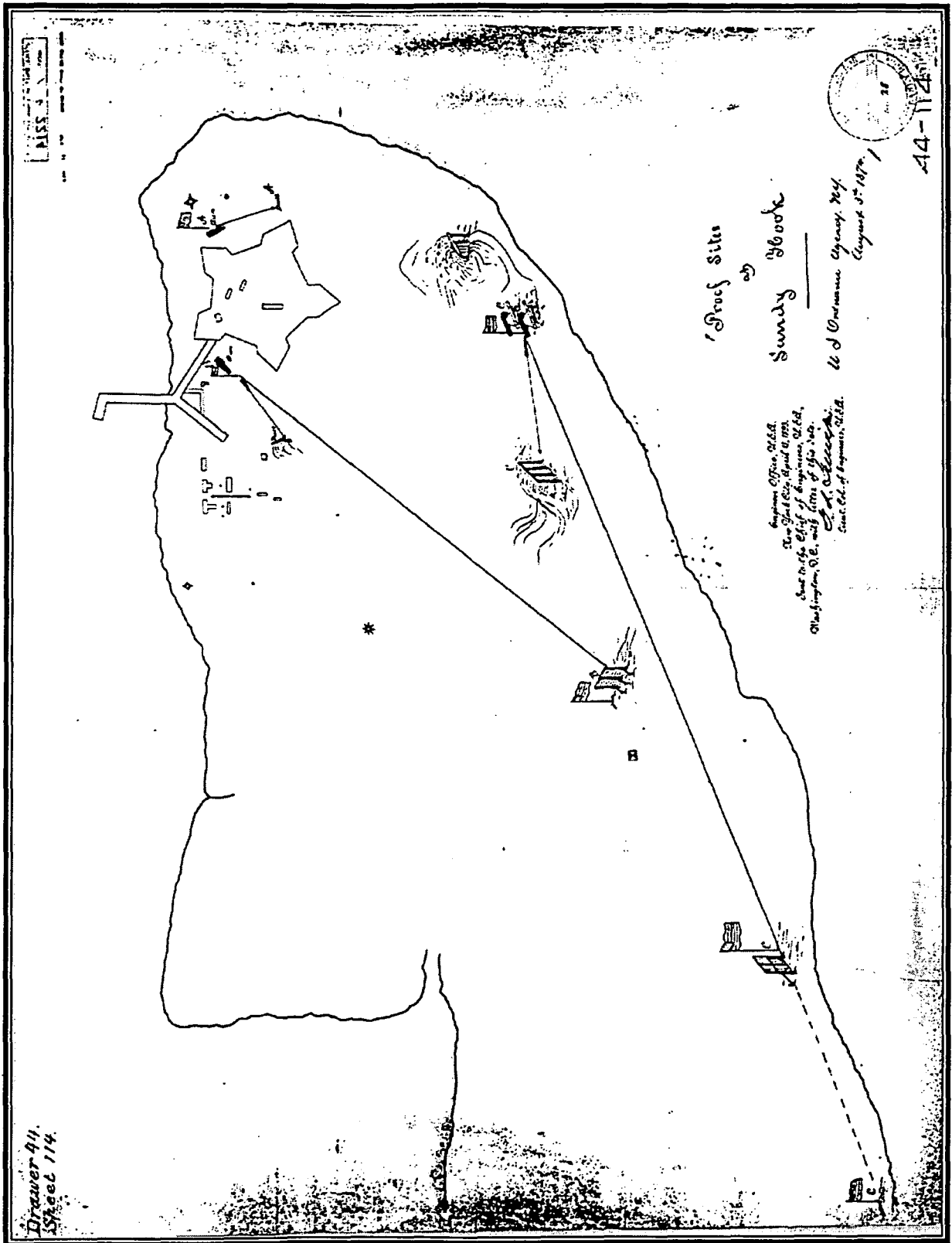


Figure 7: "Proof Sites at Sandy Hook", August 3, 1874 (north is top of page). From files at SHU, GNRA.

chronoscope had been built east of the walls of the old granite fort.<sup>7</sup> Four wooden gun platforms were located about 100 yards south of the office with the bombproof, or shelter, nearby. The range was laid out down the dunes to the south, with a proof butt, or target, constructed down range (Figure 8).

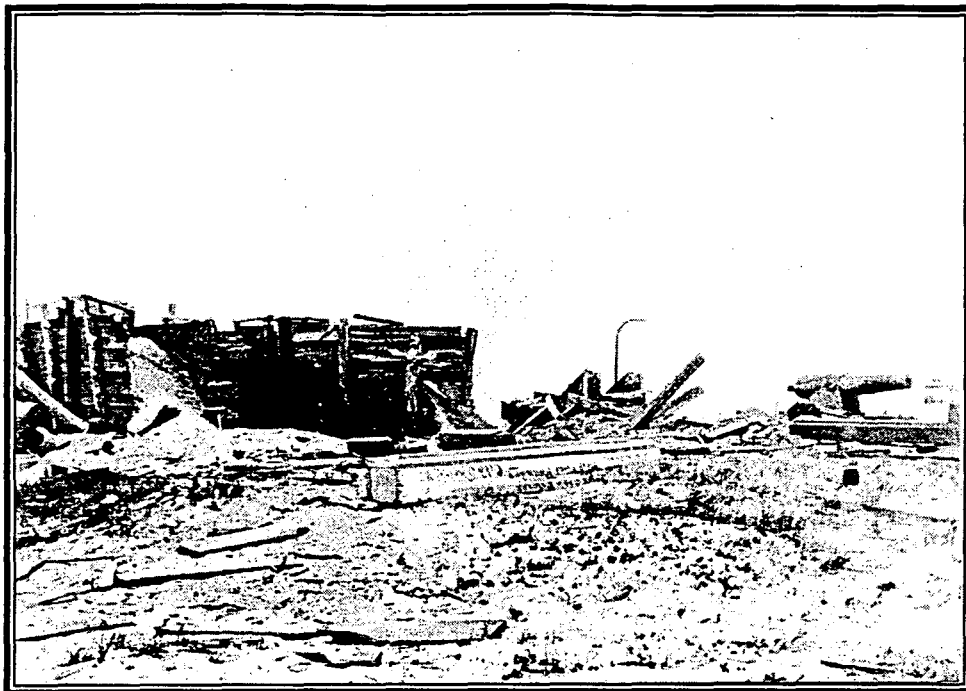


Figure 8: Sand-filled revetment, or traverse, that has contained the explosion of a large caliber gun that blew up during testing c. 1876-1886. Photo from files at Sandy Hook, Gateway NRA.

Boardwalks were laid out between these structures and down the length of the testing range to make it easier to walk and transport materials on the sandy ground. A later map drawn in 1892 shows the simple layout of these features at tip of Sandy Hook around the redesigned granite fort, which was abandoned before completion (Figure 9).<sup>8</sup>

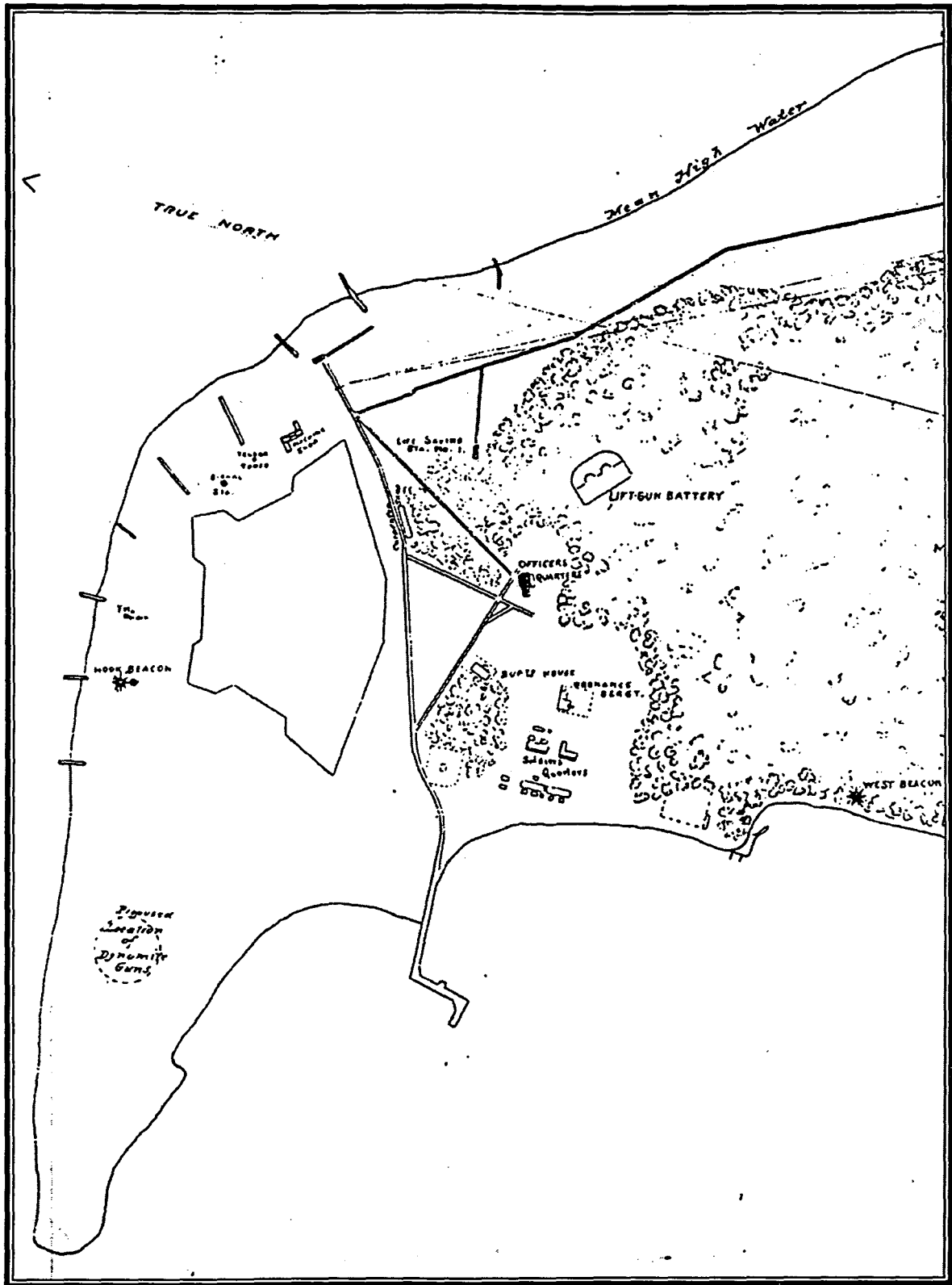


Figure 9: Detail from map, no title, dated March 28, 1892, showing early layout at tip of Sandy Hook. From files at Sandy Hook, Gateway, NRA.

One of the key objectives of the new Proving Ground was to refit the smoothbore Rodman gun - used during the Civil War - with wrought-iron coiled sleeves, to increase accuracy and power. If successful, this technological advance would not only give the United States a great advantage in the arms race, but it would save considerable funds as well.

On October 24, 1874, the U.S. Army Ordnance Department at Sandy Hook successfully fired a 10-inch Rodman smoothbore gun that had been converted to an 8-inch rifle by the insertion of a wrought-iron coiled sleeve. This was a major accomplishment and marked the beginning of successful testing at Sandy Hook. By Christmas of the same year over 700 rounds had been test fired.<sup>9</sup> This development demonstrated the practicality of converting smoothbore guns into more acceptable rifled guns. This was particularly advantageous because it would allow the reuse of the hundreds of smoothbore Rodman cannon produced during the Civil War.<sup>10</sup> The worth of the Proving Ground was now clear to the Army, and the test results also "awakened an interest among military men abroad . . . to a surprising degree."<sup>11</sup> More guns would be brought to Sandy Hook, and testing was to proceed in earnest. However, it was estimated that each round fired cost \$100 and, as each gun might need at least 500 firings, this promised to be an expensive program.<sup>12</sup> A request for \$250,000 was made, but Congress appropriated only \$75,000. The shortage of funds was to be an ongoing problem, but nevertheless, testing was underway at Sandy Hook.

#### The Ordnance Department Builds an Officers' Quarters<sup>13</sup>

Colonel Crispin, who had responsibility for the project at the Proving Ground, requested additional and improved accommodations for his men in 1876. Originally an arrangement had been made with the Army Corps of Engineers to house men from the Ordnance Department in the Engineers' barracks south of the wharf. These structures, which can be seen on the map dating from 1874 (Figure 7), had been built in 1859 to house the men working on the granite fort's construction. The Engineers were in need of these barracks once again to house men who were working on a project to stabilize the shoreline.

A brick building for the Ordnance Officers was proposed for the high ground south of the unfinished, obsolete fort. Money was allocated by the Ordnance Department, and the War Department approved the plans, but the Engineers on site objected to the proposal. Citing regulations that restricted construction within a half-mile radius of an existing fort, the Engineers claimed authority to prevent any proposed construction.

The Engineer's main objections to the Officers' Quarters were that it was located:

in the dead angle of the fort's salient and thus outside the direct line of fire from the masked wall. Even the fire that might be borne upon it from the pan coupe of the south front would be obstructed by a projected caponniere. Consequently, a direct approach on this salient by the foe would be masked by the proposed quarters, which were to be located on the highest ground in the area. Its cellar walls of stone (which was to be granite from the old fort) would form a breast-height wall for a counter-battery directed against the weakest park of the fort.<sup>14</sup>

In addition, a brick building would be more difficult to level if required by an attack from a beachhead

south of the fort. The Engineer's objections are illustrative of the outmoded way of thinking about warfare that persisted at the time.<sup>15</sup> They proposed an alternate site, slightly west and north of that proposed by the Ordnance Department. These objections caused some friction between the Engineers and Proving Ground personnel, but eventually the Engineers were overruled and construction was begun in 1878 on the original site desired by the Ordnance Department. Because the Engineers needed granite for reinforcing sea walls, brick was substituted for the cellar; otherwise the Ordnance Department was able to construct the Officers' Quarters as they had wished.<sup>16</sup>

The siting, materials used, and sophisticated design of the Ordnance Officers' Quarters set it apart from the modest, functional wooden structures already on the site. Located on a small knoll, somewhat higher than the surrounding ground, this building was perceived as important, for even a small rise in such a flat landscape is strongly felt. The Officers' Quarters was the Army's first brick building on Sandy Hook and for many years was referred to as the "Brick House". It was designed with three stories and a mansard roof, as well as an ornate interior that further underscored the elevated status of the Ordnance Officers of the Army's Proving Ground.

Colonel Crispen also proposed a wooden frame house for the Master Mechanic, and construction of this residence was started in 1879. It was sited to the west of the Officers' Quarters, on a slightly elevated graded area, centrally located between the wharf and Proof Battery.

#### The Early Landscape at the Proving Ground

A panoramic series of photographs dating from circa 1880-1885 shows the Proving Ground site soon after the first buildings were constructed (Figure 10).<sup>17</sup> Granite blocks still litter the grounds around the unfinished fort, and there are many simple wooden structures located haphazardly both inside and outside the fort. The porch has not yet been built on the Officers' Quarters, and very little work has been done on the grounds surrounding the house. Eastern redcedar trees are scattered at random throughout the site, probably planted by wind or birds. Existing wooden towers for the telegraph and signaling stations, as well as boardwalks and the Proving Ground machine shop and instrument house, are in the foreground. To the left (southeast) can be seen the early structures of the Proof Battery. These photos show an unembellished, working landscape and, despite the signs of human activity, convey a sense of isolation.

#### Transportation at the Proving Ground

The need for efficient transportation on the sandy site greatly affected the landscape. In 1885 a review of the year's activity included "hauling stores from and to wharf...laying plank roads...grading and clearing grounds and shoveling snow."<sup>18</sup> In 1889 a narrow gauge railroad was constructed from the wharf to the Proof Battery and targets, which was a great improvement over the mule-drawn wagons used to move the heavy guns, carriages, and other supplies over plank roads on the sand.<sup>19</sup> In 1893 the government purchased the tracks and fixtures belonging to the New Jersey Southern Railroad, located on the southern end of the military reservation. These lines were then linked to the existing tracks between the Proof Battery and dock, providing direct access to the mainland.<sup>20</sup> This link also provided daily transportation with passenger cars for the many civilians who worked at Sandy Hook and lived on the mainland (Figure 11). Great savings of effort resulted from this change, since the Proving Ground was constantly receiving

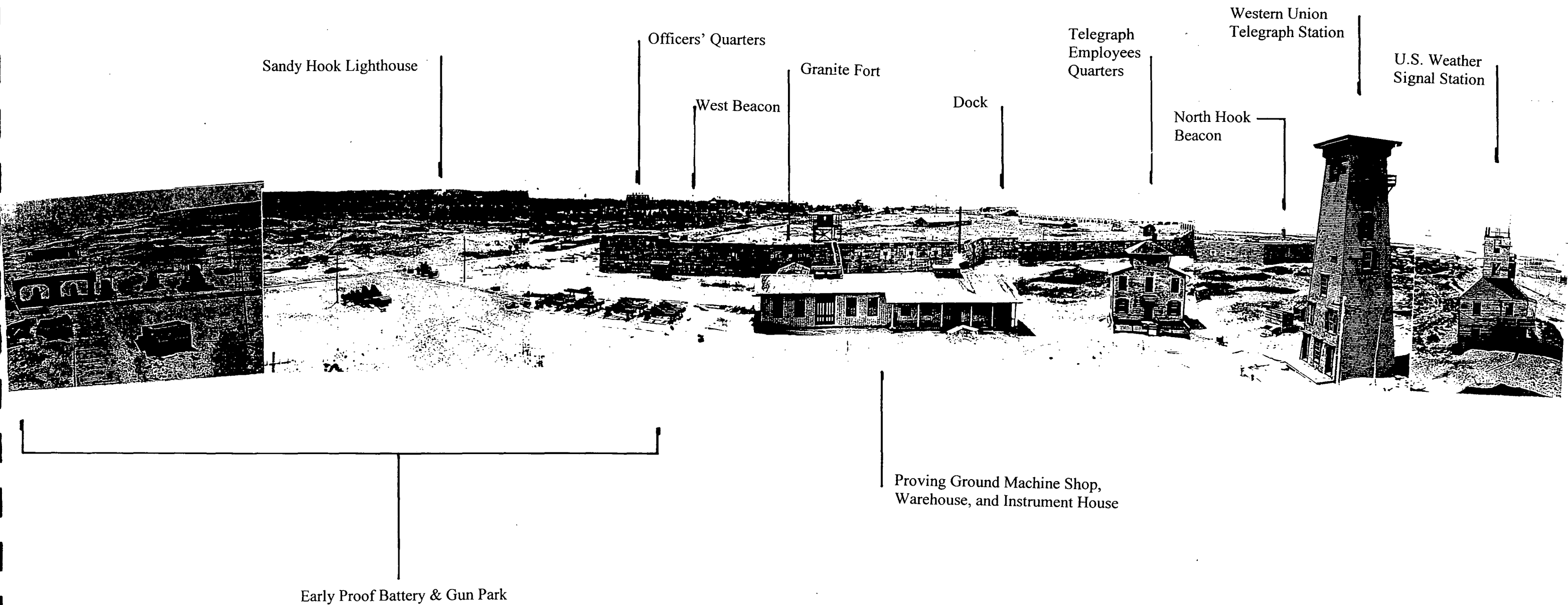


Figure 10: Photographic Panorama – Original Proving Grounds, c 1880-85, From files at Sandy Hook Unit, Gateway NRA.

material from foundries and factories throughout the United States:

Cost of transporting a 12-inch gun from the Watervliet Gun Factory was reduced from \$1,600 to \$275, of a 10-inch gun from \$450 to \$150, and that of other shipments in a similar ratio.<sup>21</sup>

It was estimated that \$25,000 would be saved in the first year by this new rail line, which demonstrates the volume of materials coming to the site.<sup>22</sup>

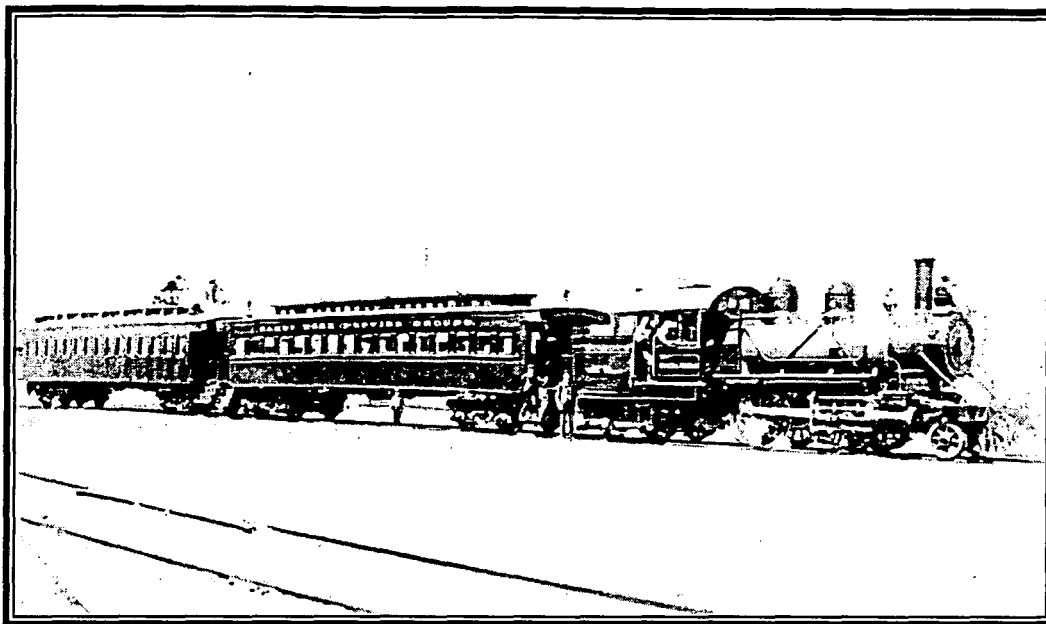


Figure 11: The Sandy Hook Proving Ground Railroad included these passenger coaches and engine named the "General Rodman" Photograph c. 1901-1909, from the files at Sandy Hook, Gateway NRA.

The dock facilities also played an important role in the functioning and design of the Proving Ground site. When the Ordnance Department arrived in the 1870s, virtually all equipment, supplies and personnel arrived and left by ship. Repairs were made to the dock several times because of damage from storms and heavy use. By the mid-1890s the Army Engineers complained that their dock was overcrowded with the supplies and materials directed to the Ordnance Department, and another dock for this department was constructed inside the existing Engineers' dock. Yet, in order to bring extremely heavy equipment on shore, it was necessary to beach loaded barges at low tide and haul the equipment ashore.<sup>23</sup> In 1896 the new dock was strengthened to withstand such weight, which eliminated the need for this cumbersome practice. The cargo handled at the improved wharf in 1901 included 2,193,000 pounds of equipment and materials unloaded for the Ordnance Department and 1,732,000 pounds of equipment loaded for shipment out of Sandy Hook by water.<sup>24</sup>

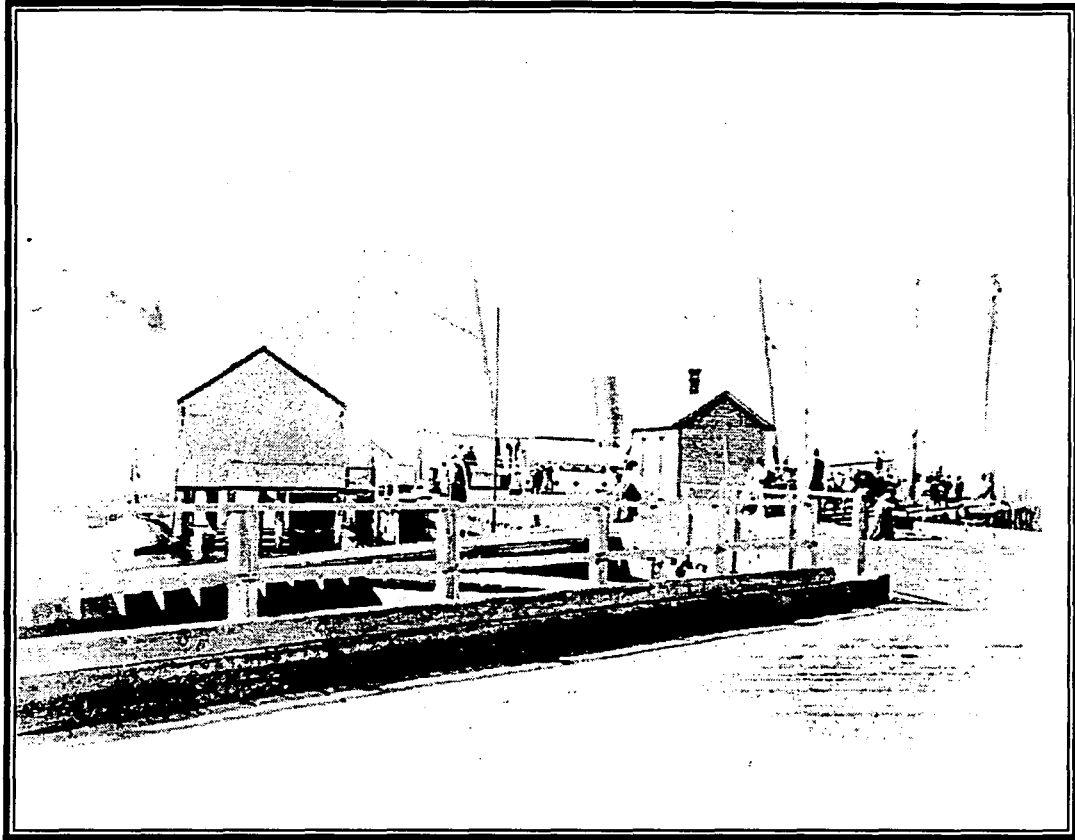


Figure 12: The Ordnance Department dock or wharf at Sandy Hook, c. 1900-1910. From the files at Sandy Hook, Gateway NRA.

In 1897 an electric plant for illumination of the grounds, Officers' Quarters, Ordnance office and for use when performing test firings was installed at the Proving Ground. There were two exterior lights, one in front of the Officers' Quarters, the other in front of the office, as well as lights inside these structures.<sup>25</sup>

#### Establishment of Fort Hancock

The Endicott Board, established to review the status of coastal defenses in the United States, recommended in 1886 that Sandy Hook be updated with new weaponry and fortifications.<sup>26</sup> As a result, Sandy Hook was to be expanded and manned by a permanent garrison of well-trained artillery soldiers. This garrison, which became known as Fort Hancock, would be a self-sufficient community where the soldiers would live and train. Captain Arthur Murray drew up a preliminary master plan for the new garrison after initially seeking advice from the New York architectural firm of Carrere and Hastings. The design featured consistency of style, materials, and colors among all buildings, and featured buff-colored exterior brickwork. The basic buildings were completed in 1899 and are shown on the map drawn in 1898 (Figure 13).<sup>27</sup>

The resulting site plan contained a centralized space, the Parade Ground, framed by the curved line of Fort Hancock Officers' Quarters on the west and the Enlisted Mens Barracks on the east. North of the Parade Ground lay the smaller athletic grounds, enclosed by service oriented structures. The design process and development of the Fort Hancock garrison at Sandy Hook was in sharp contrast to that of the Proving Ground. Fort Hancock was considered permanent, and the Army took the time to develop a master plan that gave clear form to the military hierarchy. In contrast, the Proving Ground at Sandy Hook was considered a temporary installation and, in the haste to make these structures functional and to justify their existence, very little site planning or attempts at ornamentation of the landscape was undertaken. In contrast to the Fort Hancock garrison, which had many precedents, the Army had never built a proving ground and therefore could not rely upon experience in its decisions about siting and materials appropriate for this type of installation.

### The Proof Battery Moves Down the Range

In response to the Endicott Board's recommendations to update coastal defenses, the Army Corps of Engineers started the construction of new gun emplacements along the eastern wall of the old granite fort at Sandy Hook. The "Map Showing Armament in 1898" shows the extent of the new construction (Figure 13). Since the Proof Battery would then be directly in front of the new batteries, the Engineers requested that it be moved.<sup>28</sup> In addition, several accidental explosions and fires at the Proof Battery, as well as an increase in manpower in the Proving Ground from 35 to 62 men, indicated that the operations and facilities needed improvement and expansion.<sup>29</sup>

As a result, the Ordnance Department undertook to build a new proof battery 900 feet to the southeast from the original, temporary battery that had been in use for 26 years. The contract included:

One gantry runway with concrete steps, walks, crossing, a gantry crossing, turntables,...two sand butt frames...four switching tracks,...seven armor-plate backings for 12-inch shot, 12-inch shell,...five concrete traverses.<sup>30</sup>

Existing buildings were moved and new facilities built. A gun park totaling 18,000 square yards with rail access was established (Figure 5). Electricity, water, fire hydrants, telephones and wooden board roads were all installed. The sand between the gun platforms was to be covered with heavy clay soil to help stabilize it, while the railroad yard and gun park were to be covered with clay or cinders. Finally, several million pounds of equipment were moved by rail and gantry to the new location, and by June of 1901 the move was effectively completed.<sup>31</sup> The physical layout was practical and well thought out, based on the 26 years of experience that the Ordnance Department had gained at Sandy Hook.

## **2. The Proving Ground Achieves Permanent Status**

In 1901 the Proving Ground achieved a new status:

after more than a quarter of a century, [the Ordnance Department] had decided to consider the Proving Ground a permanent installation. Hereinafter, all buildings and improvements would be designed with this in view.<sup>32</sup>

The increases in importance and activity of both the Ordnance Department and the Fort Hancock

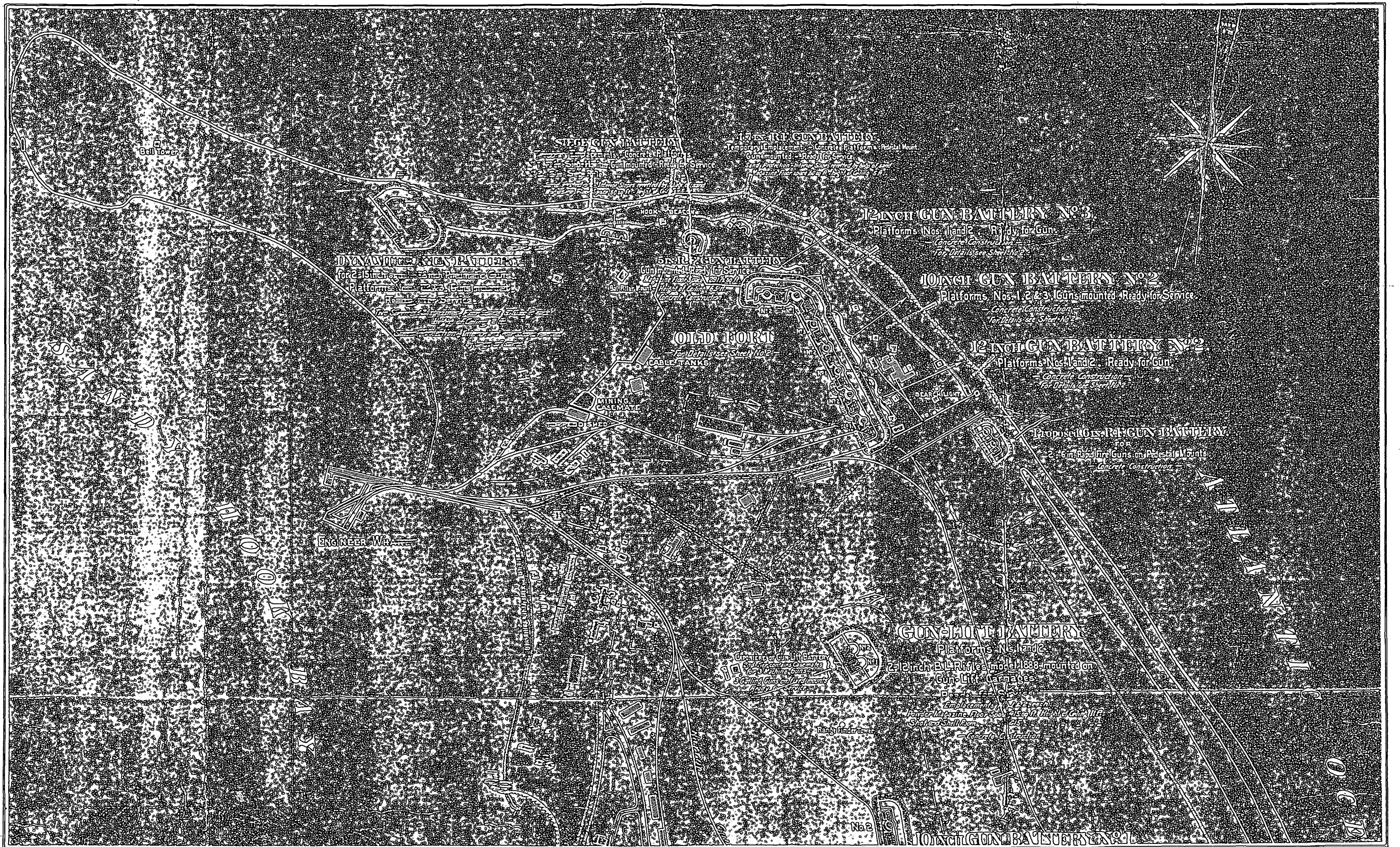


Figure 13: "Map showing Armament on December 3, 1898." From files at Sandy Hook Unit, Gateway NRA.

garrison, with the resulting growth in staff required a clear understanding of the boundaries at Sandy Hook. The Chief of Ordnance asked Captain Babbitt to draw up a master plan proposing lines of demarcation for joint jurisdiction of the site. Babbitt was also asked to make proposals for further development, including a school of ordnance.<sup>33</sup> The improvements proposed included an addition to the brick Officers' Quarters (Building 114), more railroad tracks, and a Chemical Laboratory (Building 109).<sup>34</sup> At this time operation of the enlarged Proving Ground required a force of nine officers and 89 enlisted men, as well as a civilian force of 150 to 250 men.<sup>35</sup>

The Chemical Laboratory, completed in 1904 of the buff-colored brick used at Fort Hancock, was located on the west side of the peninsula, away from the Proof Battery.<sup>36</sup> This location was chosen "...so the delicate instruments would not be injured by the firing".<sup>37</sup> It housed the Ordnance School of Application from 1903 to 1917, providing an important educational function. Students already prepared with college courses in chemistry and engineering increased their theoretical skills and added practical experience by working at the Proof Battery and, with a master-mechanic assistant, in the machine shop.<sup>38</sup> Cadets from the U.S. Military Academy regularly visited the Proving Ground to view the operation, considered state of the art (Figure 14). By 1910, the course of study was extended to two years and included work in ordnance engineering and differential equations, which would help the young men to successfully design guns, carriages, projectiles and fuses.

From 1904 to 1907, a complex of red brick buildings comprising the machine shop, storehouse, and carpentry shop was built north of the Master Mechanic's Residence. Included in the Babbitt master plan, these structures served to upgrade or replace earlier wooden buildings that had been outgrown or destroyed by fire. The new brick buildings were equipped with the latest machinery necessary to repair and alter the weaponry installed or being tested on the site. Railroad tracks ran between the buildings, expediting the tasks of loading and unloading heavy materials. The work performed here required skilled workmen, and the volume of work made it necessary to hire civilians to fill all the jobs.

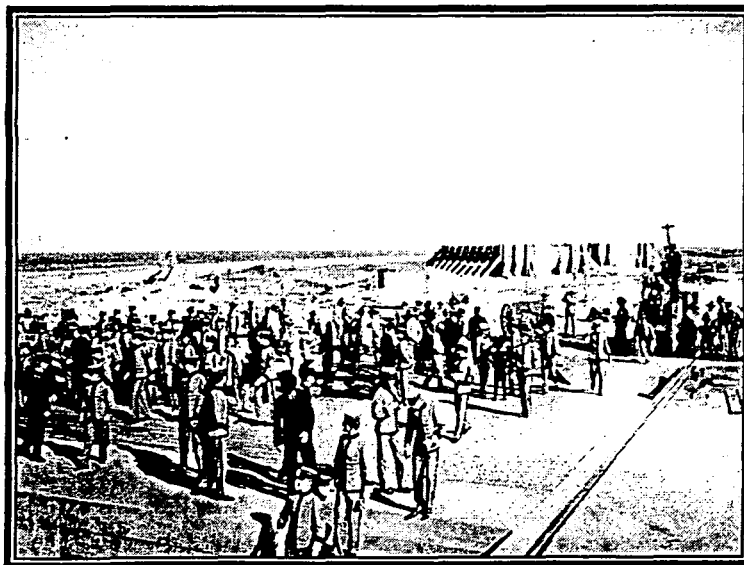


Figure 14: West Point Cadets visiting Sandy Hook Proof Battery, c. 1901-1909. From files (#7735) at Sandy Hook, Gateway NRA.

In 1909, after many delays, a two-story brick Barracks and Mess (Building 102) for the enlisted men of the Proving Ground was built south of the Master Mechanic's Residence. The new quarters were fireproof and spacious, a big improvement over the wooden barracks dating from the mid-1800s where men had previously been housed. After construction the grounds were landscaped which completed the handsome new barracks for the Ordnance Department.

Ironically, because of the Proving Ground's success and expansion, the need for a new facility became more acute after 1917. Increased testing for re-armament for World War I, the expansion of Fort Hancock facilities into the test range, and growing concerns for safety brought about by the additional personnel underscored the deficiencies of the Sandy Hook Proving Ground.<sup>39</sup> A new site at Aberdeen, Maryland was selected, and in 1919 the Sandy Hook Proving Ground was phased out of operation.

#### Site Organization and the Landscape

The map of the Proving Ground, prepared in 1908 and updated in 1918, combined with an aerial photograph taken in 1924, document conditions at the time the Ordnance Department left Sandy Hook (Figures 15 & 16). They are very helpful in understanding this landscape at the end of the Proving Ground Period. Although there is no evidence of a designed site plan for the Proving Ground as there had been for Fort Hancock, the site evolved with clearly defined zones. Arranged according to their purpose, these zones are shown imposed on the 1908/1918 map (Figure 17). The work areas follow the existing road as well as the railroad line crossing the peninsula from the dock on the western bay side (A) directly across the peninsula to the Proof Battery (B). The residential area (D) was located in the middle of the site, with the Ordnance Officers' Quarters (C) located on the high ground south of the road and the other residences and barracks to the west of it. The Officers' Quarters was the center, literally and figuratively, of the activity at the Proving Grounds. It was centrally located, although set apart somewhat from the hustle and bustle of the main work areas, and paths to the Proof Battery, the office, the enlisted men's barracks and the dock radiated from this building. North of the road were the mechanics shop and maintenance complex (E), convenient to the dock and railroad lines. The Chemistry Lab (F) was located near the mechanics shop, between the residential area and the dock, and away from the Proof Battery. The Proving Ground layout was a very practical design which responded to the conditions on the site, the separate functions within the facility, and the off-duty needs of the men who were stationed there.

The aerial photo (Figure 16) adds to our understanding by giving more information about the character of the landscape. The Barracks (Building #102) can be clearly seen in the middle of the photo, facing the bay. To the south of it is the vegetable garden to "enable the men to supplement their rations".<sup>40</sup> The PX had shared its profits in order to purchase topsoil for this endeavor. Closely planted street trees can be seen in front of the Barracks along Hartshorne Road. Behind the Barracks railroad tracks curve from the dock towards the Fort Hancock service area. Various evergreen trees and shrubs can be seen on the grounds of the residences west of the Officers' Quarters, although there does not seem to be a strong intentional design.

One striking feature is the street trees lining Canfield Drive from the intersection with Hartshorne east to the Officers' Quarters. They are closely spaced and help to delineate this road. The area around the Officers' Quarters is quite open in every direction, and walks lead from it to common destinations, such





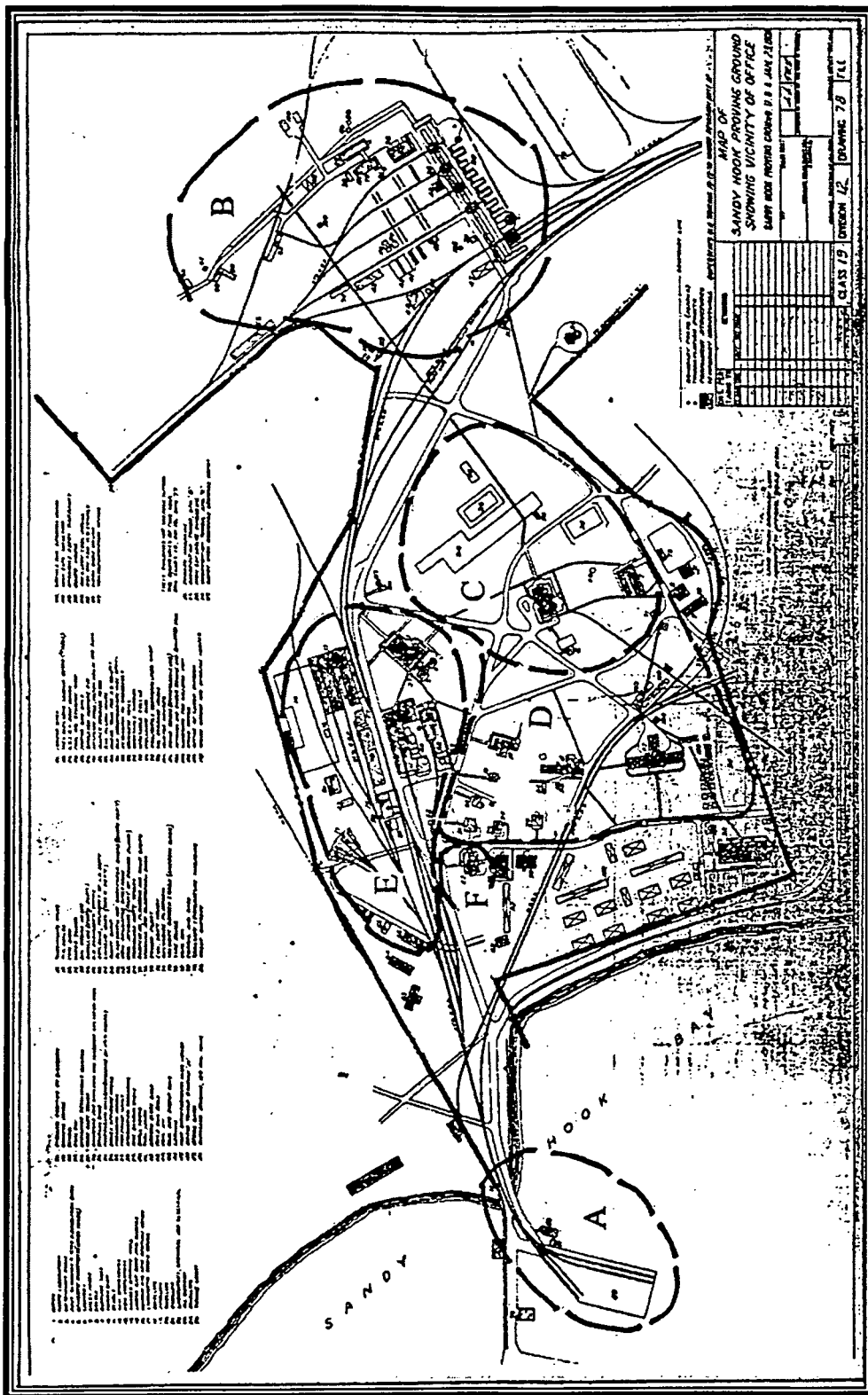


Figure 17: Map of Sandy Hook, dated 1908/18, with overlay of function zones and highlighted boundary line

as the Proof Battery, barracks, and Ordnance Office. The loop-shaped driveway, shown in the map, is entered from the northwest, and offers no parking area – which suggests a desire for a residential setting as opposed to an institutional one.

A photographic enlargement of the area around the Officers' Quarters gives us further information about the plantings at the Proving Ground (Figure 18). Evergreen trees, probably Eastern redcedars and holly trees, dot the landscape, many with seeming little order or reason for their placement. However, a row of small evergreens can be seen in front of the Officers' Quarters next to the path going to the office. A walk extends the length of the southern façade of the building, joining walks that parallel the east and west facades. A hedge was planted along this walk across from the porch.<sup>41</sup>

The laundry building constructed to the west of the Officers' Quarters in 1905 (Building 113), is evident in both the map and aerial (Figures 15 & 18). It had a paved terrace on its eastern side, facing the rear of the Officers' Quarters. From the aerial enlargement the terrace appears to be surrounded by a hedge or fence, which would suggest its possible use as a drying area, or the desire to screen this utilitarian structure from the Officers' Quarters. Another hedge parallels the laundry, between it and the Officers' Quarters. It is not clear what the function is of this hedge, or why it is located here. The map also shows a small structure off the paving west of the Officers' Quarters, which may be the existing garbage shed.

Both tennis courts can be clearly seen, one south of the Officers' Quarters and the other in the lower area east of the quarters. They both would have been very convenient for the officers' use. Produce gardens were also developed in the open space east of the Officers' Quarters by 1908 and can clearly be seen on the map and aerial. They were large - approximately 50 by 300 feet - with a smaller 20 by 150-foot section. The aerial enlargement shows short rows of what looks like small evergreens, which may have been raised there for future use. Vegetables and flowers were grown in these plots during the warm seasons for the use of the officers.

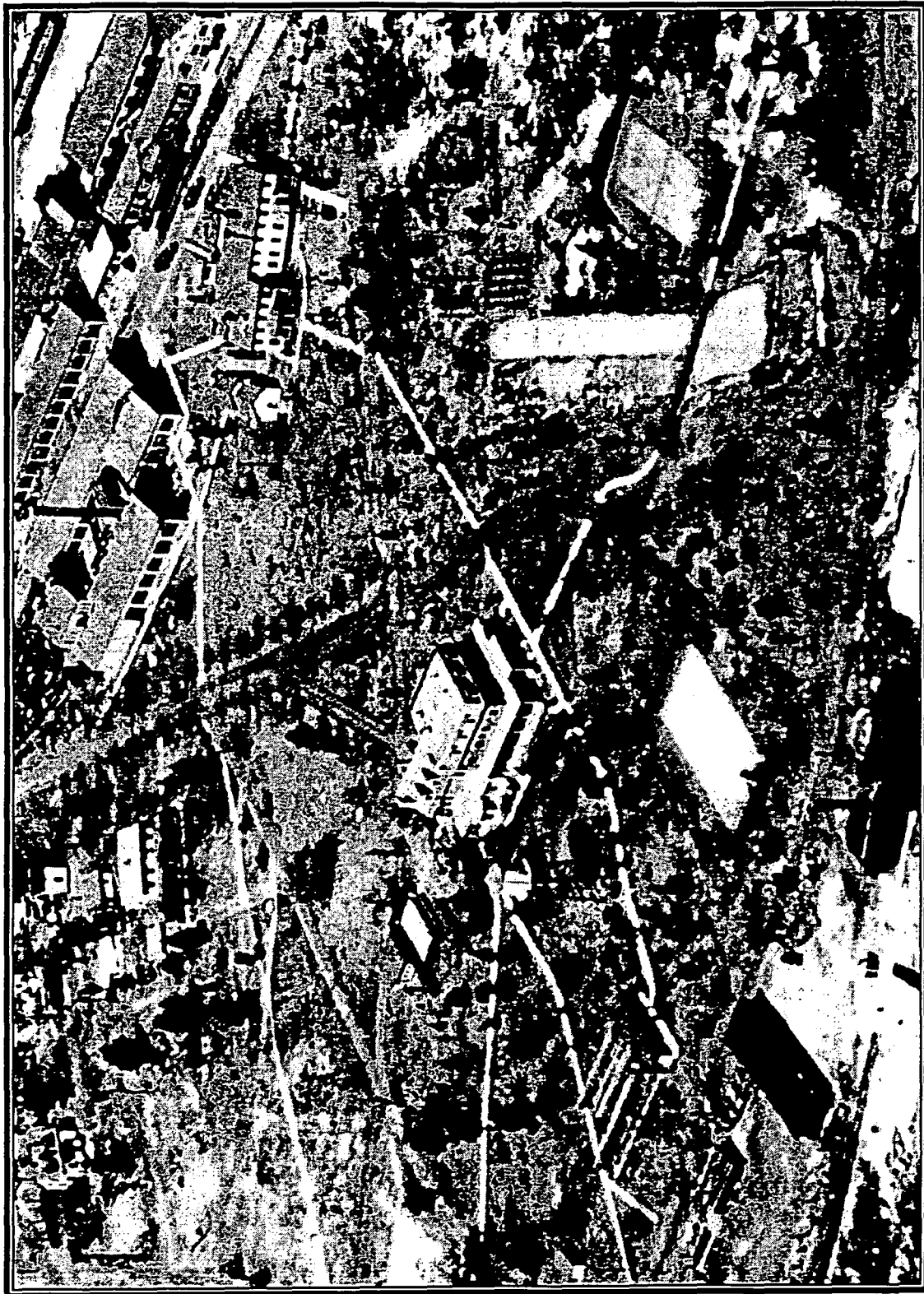


Figure 18: Enlargement of area surrounding Officers' Quarters from 1924 aerial photograph (Figure 16). This shows the brick Officers' Quarters in the center (north is top of page).

Two structures near the Officers' Quarters are part of the site's history and can be seen in the map and aerial enlargement (Figures 15 & 18). A water tank was constructed in 1898 one hundred feet south of the Officers' Quarters to improve and expand the water system. A greenhouse was also built south of the Officers' Quarters in 1904, which can also be seen in a later photograph taken c. 1938-1941 (Figure 19). It provided the officers' dining room with cut flowers and fresh vegetables, true luxuries in this remote location. Located in a leveled area approximately six feet lower than the house, this large structure consisted of two glass houses extending west from a wooden shed. The proximity of this functional building to the Officers' Quarters underscores the utilitarian nature of this landscape. As can be seen in the photograph of the greenhouse, there is a metal garbage can and fire hydrant near the road, and the only ornamental plantings are a small evergreen tree and a large deciduous shrub east of the shed's entrance.

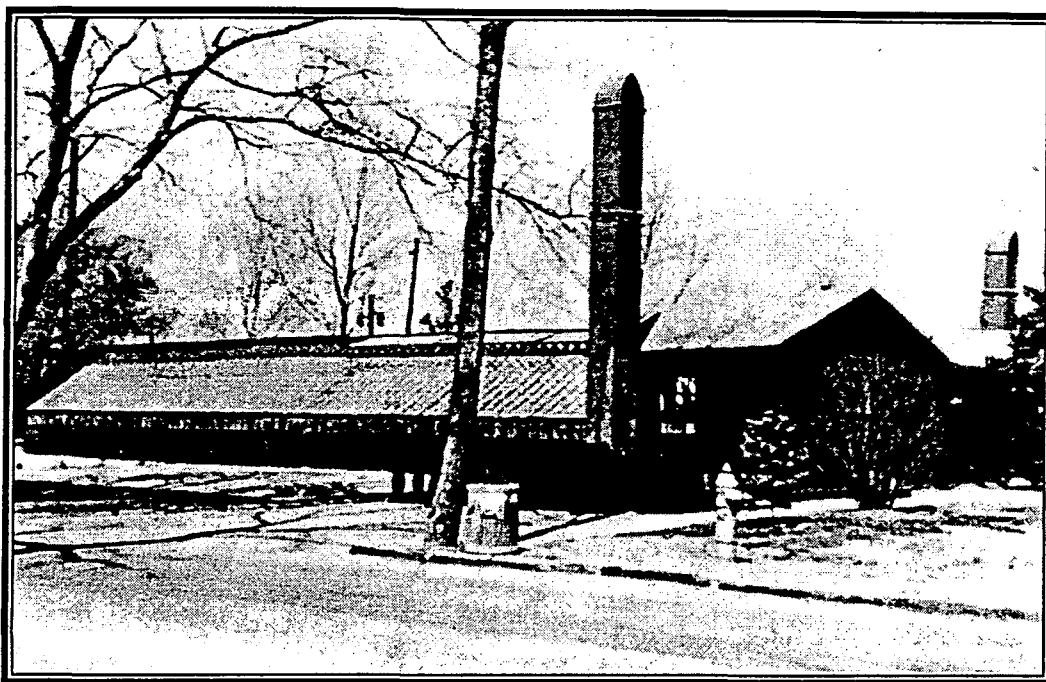


Figure 19: Greenhouse south of Officers' Quarters, looking northwest, c. 1938-41. Photo from files (#7382) at Sandy Hook, Gateway NRA.

In 1905 the officers' elegant dining room was expanded, and an additional dining room was added to the south along with additions to increase the space in this building. A bay window, perhaps the original, was located in the same relative position as had been in the original dining room, as shown in the aerial photograph enlargement (Figure 18). This additional dining space indicates the expanded role the Officers' Quarters played for the Proving Grounds personnel. No photographs from the Proving Ground period are available, but photos of the south facade taken at the time of a fire in 1938 shows a rounded bay, with classically detailed windows and columns (Figures 20 & 22). The top of the bay follows that of the porch and the wooden columns and window trim is painted the same color as the trim on the porch. The bay window would have provided a view of the lighthouse and a pleasant extension into the landscape from the dining room when it was not possible to be outdoors. The wooden porches on the

south and east of the Officers' Quarters linked the indoors to the outdoors. They were the only place where the Officers could enjoy quiet leisure time outdoors, with expansive views in a sheltered setting.



Figure 20: Officers' Quarters (Brick House) at the time of the fire in April 1938, view from the southeast. Photo from files (#2036) at Sandy Hook, Gateway NRA.

#### Life at the Officers' Quarters

The Officers' Quarters provided a haven from the difficult and often harsh conditions at Sandy Hook. Not only was the facility in a remote location, but work there was very arduous. The men experienced long exposure to the elements, along with noise and shock waves from the guns, and sand and smoke that would have filled the air during testing. The quiet and cleanliness of the large cool rooms of the Officers' Quarters, complete with fresh flowers and clean linens, must have seemed a civilized retreat.

The Ordnance Officers were a great source of information to the artillery officers of Fort Hancock, providing up-to-date practical and theoretical information on the materials that the Fort Hancock Officers were or would be using. An invitation to the Officers' Quarters would have been especially prized since it meant an informative discussion in the most elegant quarters on the site.<sup>42</sup>

As mentioned earlier, the existence of tennis courts indicates that recreation was also important for the officers. The closeness of the courts to their quarters would have given the landscape a country club quality. The map shows a small structure called a "pheasant cage" located near the tennis court and garden. Its function is not clear, however, John Mulhern, the son of a civilian worker who lived at Sandy Hook from 1908 to 1927, said that he remembered peacocks on the site and that he would "just to look at them and feed them for amusement".<sup>43</sup> In 1936 the New Jersey Game Commission released 70 pheasants and 60 quail on the reservation for hunting.<sup>44</sup> This cage may have housed these birds. This sport also would have contributed to the leisurely, luxurious atmosphere of the Officers' Quarters, besides being an ironically appropriate sport at the site of an artillery base.

### 3. World War I Expansion, Proving Ground Outgrows Site

1917-1919

In 1915 the United States tried to maintain its neutrality while much of Europe was consumed with war. However, the possibility of the nation being pulled into the "Old World's War" was increasing, and military preparedness was becoming more important. Field Day exercises and a busy training schedule kept the men at Fort Hancock busy. Soon after war was declared in April 1917, plans were made to handle the additional men who would be stationed here. Seven cantonment sites were selected, one of which was located within the study area to the west of Nine-Gun Battery. By December 1917, most of the construction work for this area was completed and consisted of two typical two-company cantonments including in each four enlisted mens barracks, four officers' quarters, one latrine, and one mess hall. A macadam road separated the two cantonments, water connections were made and fire hydrants installed.<sup>45</sup> These were temporary structures constructed of batten and tar paper, but better able to withstand the harsh winters at Sandy Hook than the tents originally proposed (some of these structures are visible in the aerial photograph, Figure 16).<sup>46</sup>

These cantonments were built in the area designated in 1908 as within the jurisdiction of Fort Hancock (Figure 15). Fort Hancock provided the support facilities for these men, including the YMCA and officers' club. The construction in the area west of Nine-Gun Battery altered the views from the Officers' Quarters but, of more concern, increased the possibility of injury due to stray projectiles or other accidents at the Proof Battery.

The cantonments had only a temporary effect on the landscape and, by May 1932, there were only eight of the twenty cantonment buildings still standing in the area west of Nine-Gun Battery. These remaining structures were used for housing noncommissioned officers and civilians, as well as for storage.<sup>47</sup>

Ironically, because of the Proving Ground's success and expansion, the need for a new facility became more acute after 1917. Increased testing for re-armament for World War I, the expansion of Fort Hancock facilities into the test range, and growing concerns for safety brought about by the additional personnel underscored the deficiencies of the Sandy Hook Proving Ground.<sup>48</sup> A new site at Aberdeen, Maryland was selected, and in 1919 the Sandy Hook Proving Ground was phased out of operation.

## D. Fort Hancock Assumes Control of Proving Ground Site

### 1. Fort Hancock & the New Role of the Proving Ground 1919-1945

The role of the Ordnance Officers' Quarters changed after the Proving Ground was relocated to Aberdeen, Maryland and Fort Hancock took control of the former Proving Ground site. Although no longer the center of activity for the officers at the Proving Ground, the brick Officers' Quarters continued to play an active and important role in the life of Fort Hancock. The building continued to be called either the "Brick House" or the "Officers' Quarters" for some time, since the Fort Hancock Officers' Club was located on the first floor of Bachelor Officers' Quarters (Building 27) at least through 1927. However, the eventual move of the Fort Hancock Officers' Club function and the name change from Officers' Quarters to Officers' Club reflected the new recreational role of the building and grounds.<sup>49</sup>

#### Repairs and Changes to Officers' Club

The Post Commander of Fort Hancock, Colonel Ordway, recognized in 1926 that repairs were needed at the Brick House. As he reminded headquarters, the structure "at one time had been considered the beauty spot of the reservation, but the lack of sufficient funds and proper care had caused it to deteriorate, and it had become unsightly."<sup>50</sup> This request resulted in a series of repairs to the Officers' Club.

Later, in 1937, changes to the grounds of the Officers' Club altered the arrival experience of visitors. A new porte-cochere was added, allowing visitors to get out of their vehicles and enter the porch while remaining under cover. The driveway was enlarged and extended to Canfield Road. A parking area was also added on the building's north side, and the entire area was resurfaced and provided with new curbing.<sup>51</sup> These changes indicate increased visitation to the Officers' Club, as well as increased use of automobiles at Sandy Hook. They also made the arrival experience more formal and diminished the formerly residential nature of the landscape.

#### Ceremonial and Social Role of the Officers' Club

Throughout the Fort Hancock tenure from 1919 to 1945 the former Officers' Quarters continued to play an important, although continually changing role in the life of the officers stationed at Sandy Hook. As the Officers' Club it assumed a ceremonial role in the life of the base for, after the parade ground and flagpole area, this was the most important location on the site to mark social events on the base.

Visiting dignitaries were often entertained in the elegantly finished dining room. Typical is this account from 1932:

Soon after their arrival, the three senior officers and their staffs took position on the parade ground, and the garrison passed in review. Following an inspection of the barracks, a luncheon was given for the visiting officers in the Brick House. "Judging by the amount of victuals consumed and the conversational noise the affair was a huge success."<sup>52</sup>

The Officers' Club was also the focal point of social life on the base for officers and their families. It was where New Year's Eve was celebrated with dancing and party hats (Figure 21), where the post bridge club met on alternate weeks, and where refreshments were served after bowling on Monday nights.<sup>53</sup>



Figure 21: New Year's Eve party in the Officers' Club, c. 1942. Photo from files (#1942-0302) at Sandy Hook, Gateway NRA.

#### The Officers' Club as "Country Club"

The Fort Hancock Officers proposed a nine hole golf course for the site, and a survey of the area was completed in 1936.<sup>54</sup> According to Park Historian Tom Hoffman the first hole was to be located east of the Officers' Club, the ninth hole on the lawn just south of the "Caddy House" or Laundry (Building 113). The course extended south of the Proof Battery through the dunes of the former Proof Battery range, then from Mortar Battery turned north back to the Officers' Club. The CCC workers at Sandy Hook started work on this project in 1937 or 1938, but because of concern about another European war it was not a priority, and the CCC left Sandy Hook in 1938 ending the possibility of continuing the construction.<sup>55</sup>

In 1939, two duplexes for officers and their families (Buildings 144 & 145) were built opposite each other at the corner of Canfield Road and South Bragg Drive. Another two-story Officers' Quarters (Building 21) was constructed at the same time to fill in a gap in Officers' Row on Hartshorne Drive. The three buildings had a similar design and were all faced with the buff-colored brick common at Fort

Hancock. Building 144 on the northwest corner was built over the tennis court that had been next to the Officers' Club.

In the 1940s the former Laundry (Building 113) behind the Officers' Club became known as the "Caddy House" and the interior was remodeled to include a bar.<sup>56</sup> The built-in barbecue in the concrete patio east of the Caddy House may also date to this time. These changes in the use of the grounds at the Officers' Club correspond with similar shifts in the larger society, which was also spending more time outside entertaining informally.

The porch on the south side of the Officers' Club was enclosed in 1943 to make a bar room.<sup>57</sup> This added considerable interior space but also signaled a subtle change in attitudes. Whereas the original porch drew people outside while offering the civilized comfort of a roof and chairs, now only a small portion of the porch remained at the front entrance door. The new addition had very few windows, and architectural detailing and materials used on the exterior were inferior to those of the old porch. The Officers' Club was now focused inward, leaving outdoor gatherings to carry on at the Caddy House, where the atmosphere was decidedly less formal.

#### Officers' Club Landscape

Very little documentation has been found concerning the grounds of the Officers' Club during this period. In 1937, foundation plantings and other landscaping were accomplished with CCC labor and funds. Unfortunately, however, there is no known surviving plan or list of materials used in this work.<sup>58</sup> In April 1938, a fire at the Officers' Club damaged the roof and third floor. Photographs documenting this fire are a rare source of information about the exterior and grounds of the Officers' Club (Figures 20 & 22).

Another photograph from this period shows low evergreen foundation plantings along the front and south side of the Officers' Club, as well as a small deciduous tree located in the southeast corner in front of the walkway (Figure 23).



Figure 22: The Officers' Club (Brick House) at the time of the fire, April 1938, view looking north. The bay window and columns of the new dining room can be seen on the left. Photo from files (#2037) at Sandy Hook, Gateway NRA.

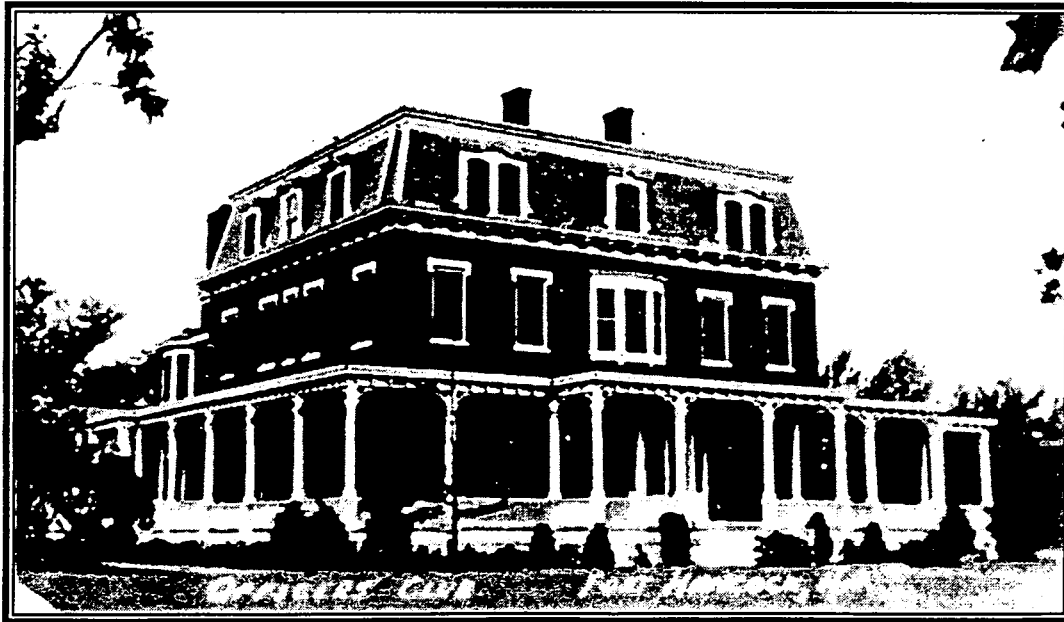


Figure 23: Officers' Club (Brick House) view looking northwest c. 1937-40. Photo from files (#7050) at Sandy Hook, Gateway NRA.

A photograph taken slightly later shows low evergreen foundation plantings which might include yews, along the front of the house (Figure 24). A deciduous shrub, possibly a lilac, is to the north of the building, and clumps of evergreens, possibly junipers, appear along the concrete walk to the front door. In the lower right-hand corner of the photograph the tip of an artillery shell can be seen, indicating that military objects were used ornamentally at the Officers' Club, as at Fort Hancock.



Figure 24: Officers' Club view looking west at front door, c. 1937-40. Lighting fixture and ornamental artillery shell shown along the walk to front door. Photo from files (#7317) at Sandy Hook, Gateway NRA.

The arrangement of these plantings and walkways are also shown clearly in an enlargement of an aerial photograph taken in 1943 (Figure 25). Small shrubs line the walkway to the front door, and two hedges parallel the south side of the building. The hedge or fence that immediately surrounded the Laundry at the time of the 1924 aerial photograph (Figure 18), no longer exists, although the hedge between the two buildings appears to still be there. The barbecue is not apparent at this time. There are many shrubs directly to the west of the Officers' Club, but otherwise trees or shrubs are scattered about the grounds.

The walkways are in the same location as the earlier documentation, now they lead to the greenhouse, barracks, and beach past the former Proof Battery.

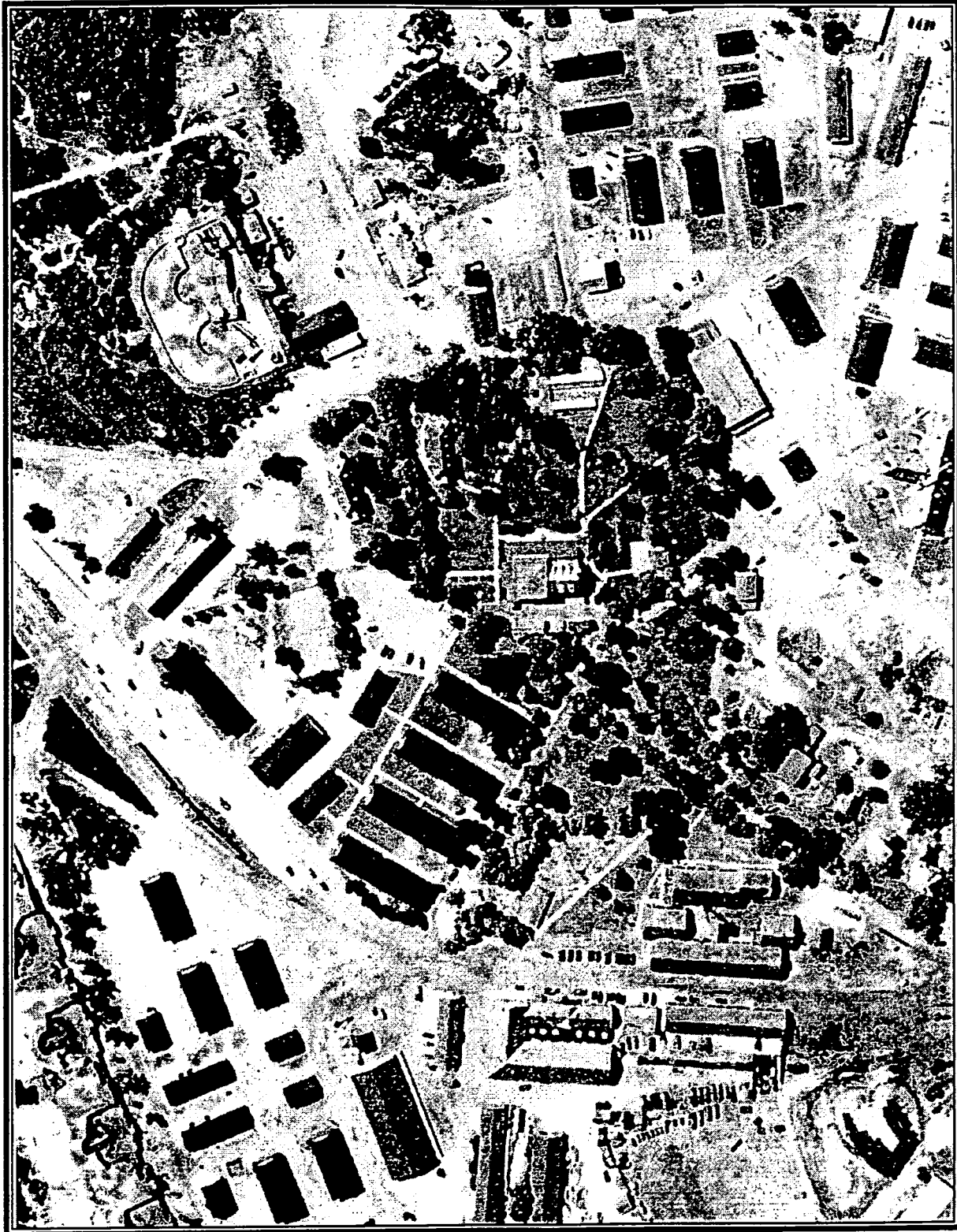


Figure 25: Enlargement of aerial photograph from 1943 (Figure 27) showing area surrounding Officers' Club.  
(North is bottom of page)

Landscape of the Former Proving Ground

During the years 1919 to 1940 the landscape of the former Proving Ground changed dramatically. This is not surprising since its purpose and function had changed. The equipment and artillery used for testing were moved to Aberdeen, many of the concrete structures of the Proof Battery were partially demolished, and the remains allowed to deteriorate. The loss of activity in the area, including noise, shockwaves, and smoke would have been a great, perhaps welcome, change. After housing the office of the Artillery Engineer, the Chemical Lab became the Post School in 1935. The Master Mechanic's residence was used for housing army and Coast Guard families until 1976, and eventually burned down in 1991. The brick machine shop, storage, and other service buildings were used for similar service purposes during this time (Figure 26).



Figure 26: Maintenance area, Paint Shop, Building 132, c. 1945. Photo from Lent Collection (1945-111) at Sandy Hook, Gateway NRA.

## 2. World War II Expansion

1940-1945

The conflict in Europe escalated after 1939, and the United States quietly prepared for war in response to President Roosevelt's declaration of a limited national emergency. In addition to its continuing role of defending New York Harbor and the coast, Fort Hancock was to become one of the East Coast's major staging areas for departing troops and a reception center for those returning.

Construction for this military build-up generally took place on unused land on the edge of the existing facilities, leaving largely unchanged the open spaces of the Parade Ground and athletic field within the buff-colored buildings of Fort Hancock, as well as the grounds directly adjacent to the Officers' Club. An aerial photograph from 1943 shows the dramatic change to the landscape in this brief period (Figure 27).

There were several major areas of expansion within the study area although much of the entire site at Sandy Hook was effected. One expansion area was located between Batteries Potter and Granger, and the older support buildings of Fort Hancock. This area experienced the most new construction as can be seen in the enlargement of the aerial (Figure 28). The open space to the west of Nine-Gun Battery was also called into service again to support this war as was the open space directly east of the Officers' Club. This area was filled with various buildings, although the Officers' tennis court was saved (Figure 25). The Gunnison Road area became a "tent-city" with permanent support buildings located along the road (Figure 29). The area surrounding the Barracks (Building 102) also experienced construction for the war build-up. Wooden barracks and support buildings were constructed south and east of this building, two of which still exist (Buildings 119 & 120). However, the most notable building in this area was a theater, designated "Theater No. 2", located at the corner of what is now Knox Road and South Bragg Drive (Figure 25 shows walk from the southwest corner of the Officers' Club leading to this building).

To support troop requirements, well over one hundred buildings were constructed between 1940 and 1941. These hurriedly built, temporary buildings were not constructed with the same care and materials as the earlier permanent quarters and service buildings at Fort Hancock. They were mostly simple, wood-framed buildings and, in some cases, merely winterized tent platforms (Figure 30). Together they reflected all phases of a soldier's life, such as barracks, mess halls, laundries, and latrines. A photograph taken at a later period within the expansion area east of the Fort Hancock service buildings gives a sense of the enclosed spatial quality of these areas (Figure 31). However, as can be seen in photographs of the period, plantings and fencing were used to personalize these areas (Figure 32). All attempts were made to integrate these new troops into the existing community of Fort Hancock.

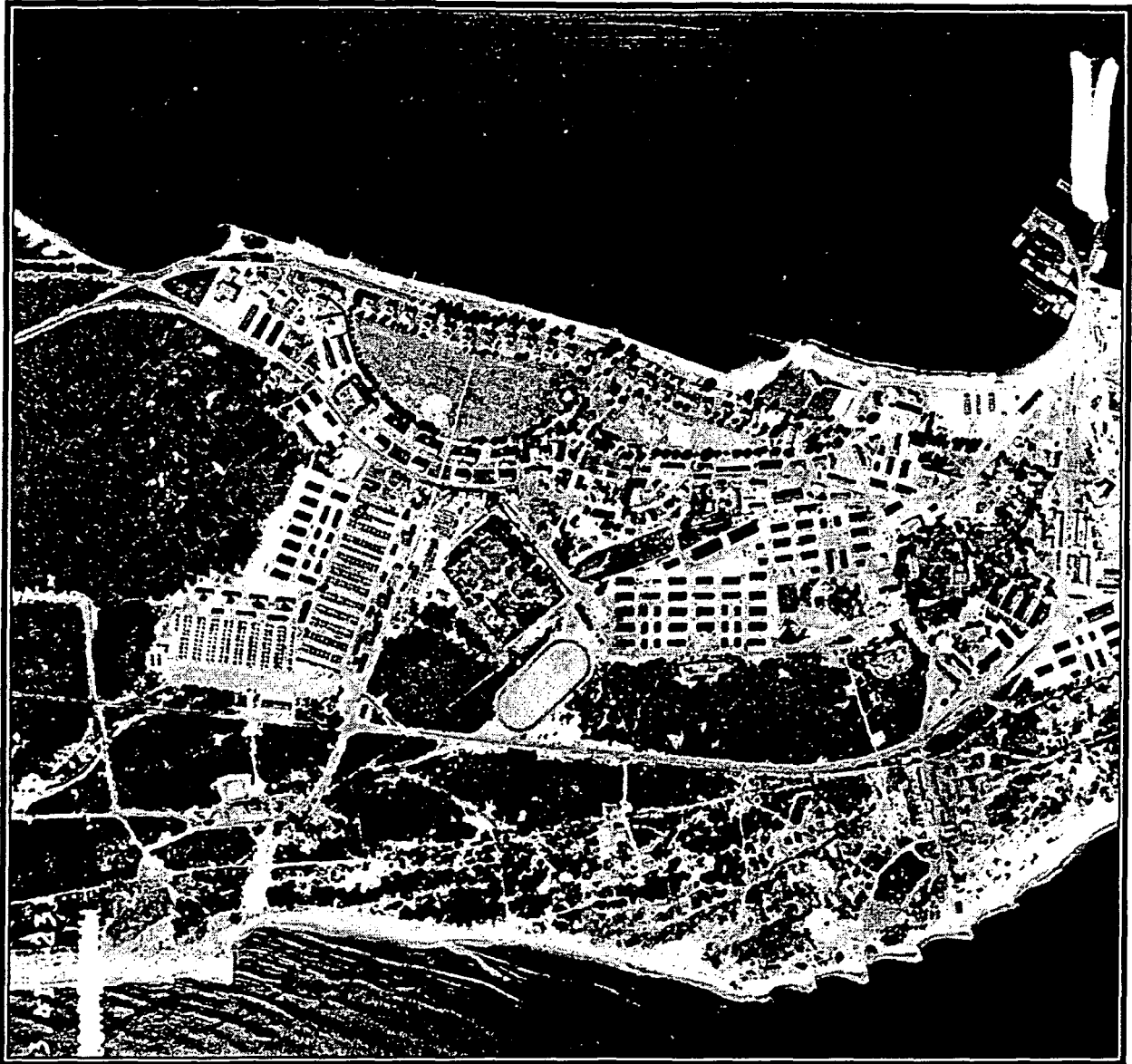


Figure 27: Aerial photograph taken in 1943, north to the right. The extent of the WWII buildup can clearly be seen in this photograph. The area west of Nine-Gun Battery to the right of the photo, the area between the support buildings of Fort Hancock and Batteries Potter and Granger in the middle of the photo, and the area surrounding Gunnison Road to the left of the photo are all full of new construction to accommodate the WWII buildup. From files at Sandy Hook, Gateway NRA.

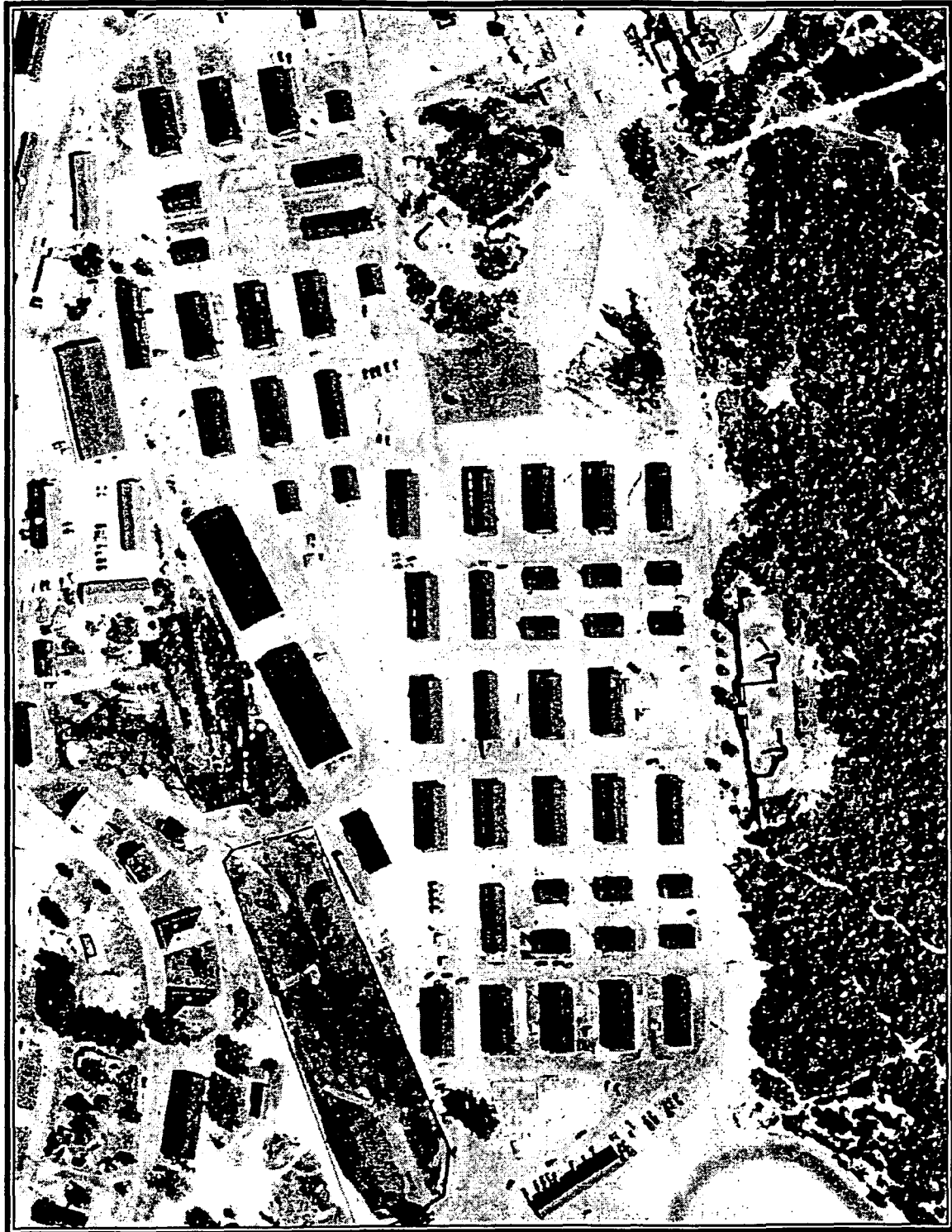


Figure 28: WWII expansion areas. Hudson Drive and Battery Granger can be seen on the right. The older support buildings of Fort Hancock are along the left. The landscape surrounding the WWII structures appears devoid of plant materials, either for functional or ornamental purposes. (north is located at the top of page) Enlargement from 1943 aerial photograph, Figure 27.

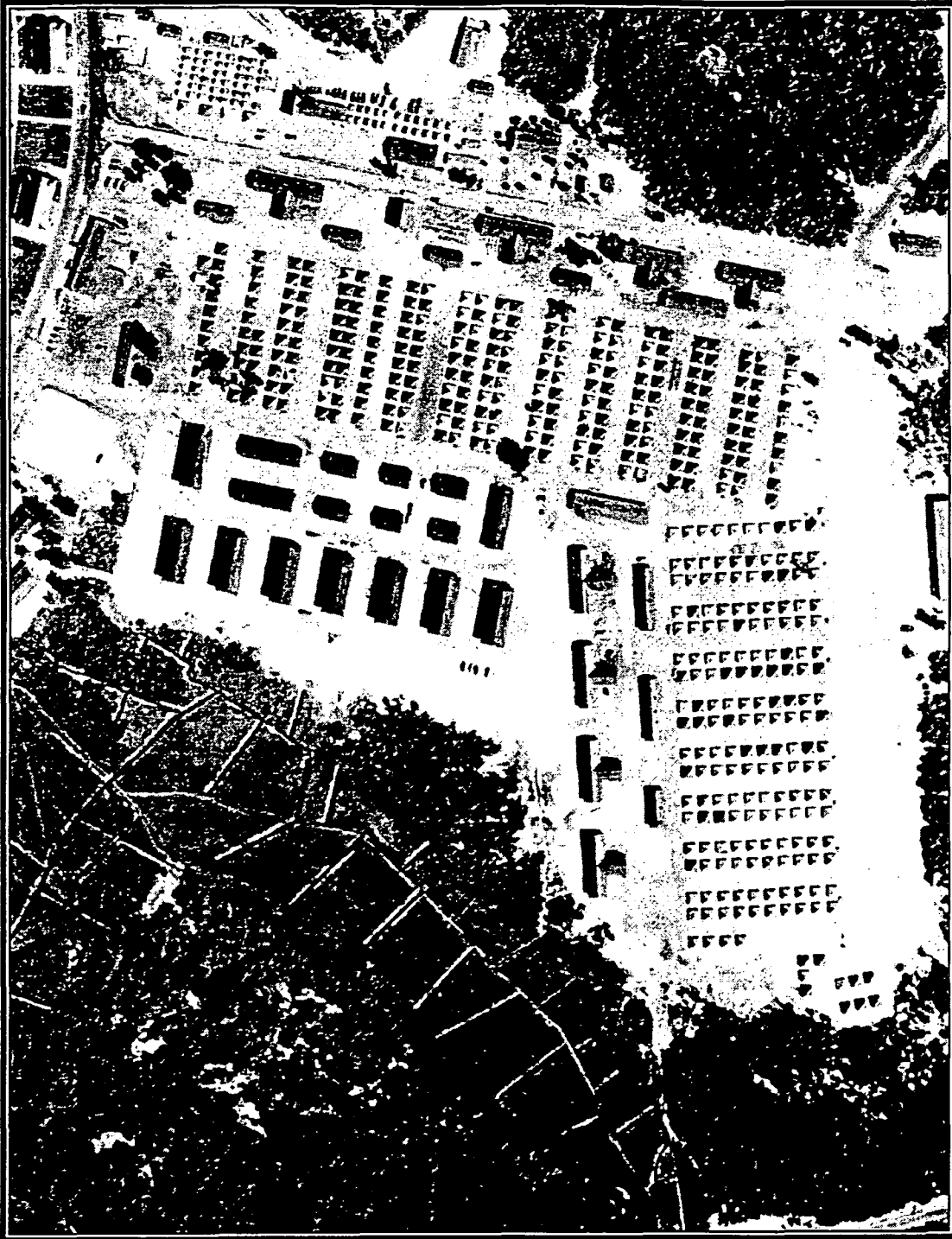


Figure 29: Enlargement of “tent-city” located along Gunnison Road, from 1943 aerial photograph, Figure 27. Gunnison Road runs across the photo at the top of the page. The officers were located north of Gunnison Road and the enlisted men south of the road. The small square structures are tents. Here also there does not appear to be any plant material in the WWII areas. (north is top of page).



Figure 30: "Army buddies" Fred Schneider, on left, and William Tuting, on right, Battery F, 245 Coast Artillery Regiment in front of tents in the "tent-city" surrounding Gunnison Road, c. 1940-1941. Photo from files at Sandy Hook, Gateway NRA.

To relieve the boredom or stress of duty, the male and female residents pursued athletic recreation. Tennis was popular and the courts located across from the Officers' Club and at Fort Hancock outside the study area were kept busy (Figure 33). An athletic field with a large track was constructed between Atlantic and Hudson Drives near Mortar Battery (Figure 27). A baseball diamond and opportunities for other sports activities were provided on the main parade field and other areas of Fort Hancock not in the study area. Separate wooden beach houses, or changing rooms, for officers, enlisted men, and WAC's were located at North Beach, and after WWII at South Beach for Fort Monmouth personnel, a use that has continued for the public today (Figure 34).

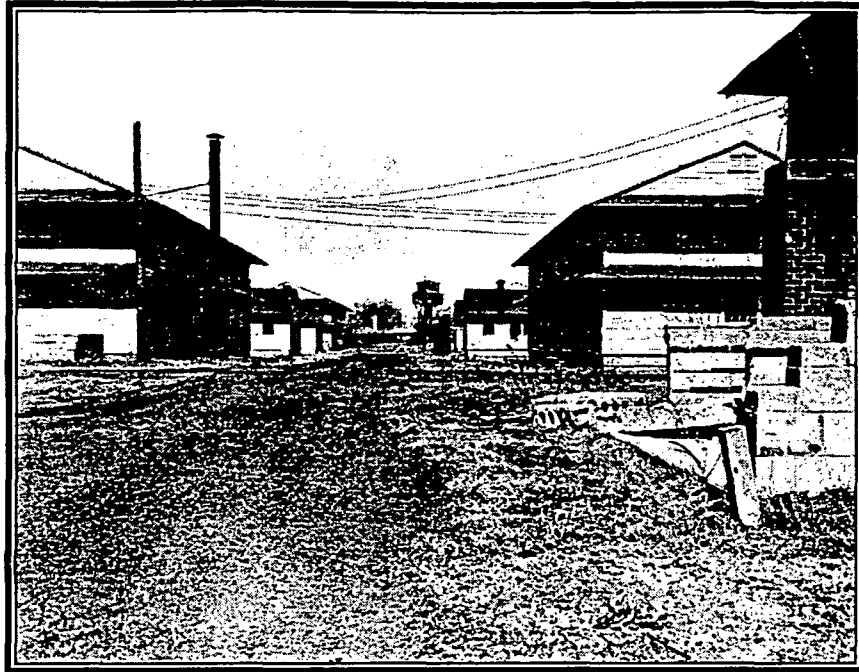


Figure 31: WWII expansion area east of the Fort Hancock service areas looking northeast. From files at Sandy Hook Unit, Gateway NRA.



Figure 32: Fencing and plantings (Eastern redcedar) in front of barracks in area southwest of Battery Potter, c.1941. Photograph from files at Sandy Hook, Gateway NRA.

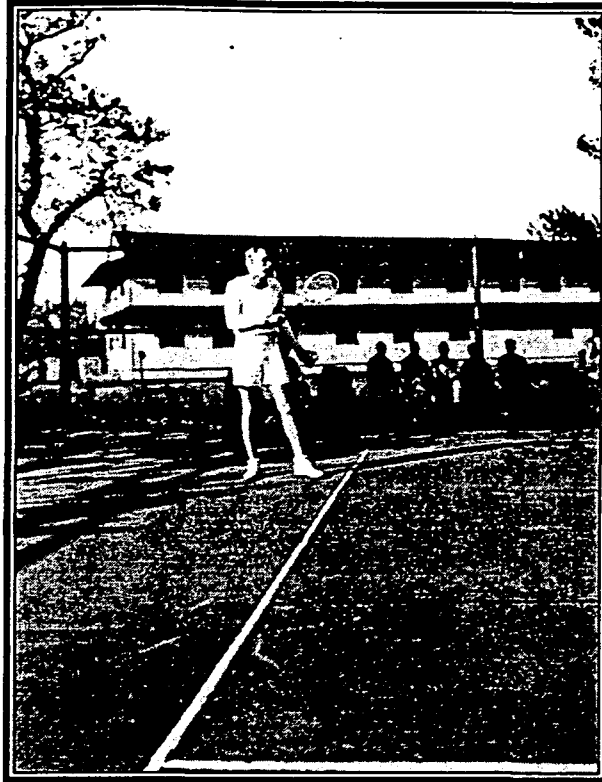


Figure 33: Tennis figure Bill Tilden giving a demonstration at the tennis court across from the Officers' Club, 1943-45. Photo from files at Sandy Hook, Gateway NRA.

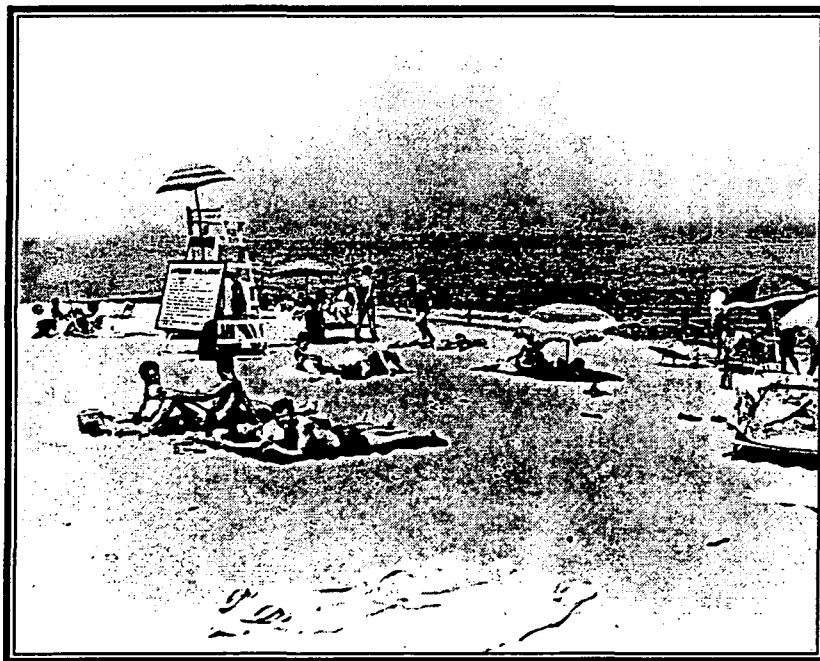


Figure 34: Army personnel and their families at North Beach enjoying the ocean, 1966-1970. Photo from files at Sandy Hook, Gateway NRA.

With these changes, the landscape at the former Proving Grounds became less open, and views were dramatically changed. The space east of the Officers' Club, where the garden and pheasant cage had once been, now was filled with ten white wood-framed buildings surrounding the tennis court (Figure 25). The area directly west of Nine-Gun Battery, which had been a World War I cantonment, was used again for World War II and was filled with buildings. The view from the dining room of the Officers' Club south to the area between the service buildings of Fort Hancock and Hudson Drive was changed from an open space to an area filled with temporary structures, changing the view and sense of this space.

Although the nearness of everyday Army life brought the reality of the war to the Officers' Club, and the atmosphere became less like a country club and more like an army base, the role of the Officers' Club in the social and ceremonial life of Fort Hancock did not change during this period. The elite life of the officers probably remained very much the same, and the Club provided them with a welcome opportunity to get away, even for a short time, from wartime stresses.

### 3. Post World War II / Cold War

1945 – 1974

The technology of defense systems radically changed after World War II with the rapid development of warplanes. Defensive tactics responded by making conventional artillery obsolete and bringing about the development of several generations of anti-aircraft missiles. In the 1950s Nike defense missiles were installed at Fort Hancock and manned by a small force, but finally these weapons joined the ranks of others which had for their moment been the pride of our defense system and were now no longer viable. A final layer was added to the history of coastal defenses of Sandy Hook and, in 1974, Fort Hancock was deactivated.

There are few records describing the landscape during this time. However, considerable numbers of ornamental bulbs, annuals, and perennials were planted at the officers' and non-commissioned officers' residences within Fort Hancock, perhaps as part of Lady Bird Johnson's beautification program of the 1960s. Competitions were held for the best plantings at the quarters, and the Commanding Officer gave awards and plaques to the winners.<sup>59</sup> We do not know if this program was extended to the Officers' Club grounds at this time. Joe Boyle remembers that the holly was cut every Holiday season and used for decorating the Officers' Club, Service Club and Headquarters. It was also handed out to Army personnel from Fort Monmouth who came to pick it up.<sup>60</sup> A large crew continued to maintain the lawn, trees, and shrubs on the grounds.<sup>61</sup> In addition, since there were no fences to keep visitors away from the ruined gun batteries, these areas were also kept mowed by the Army personnel.

Curiously, it was probably in this period that the naturally red brick Officers' Club was painted buff, matching the Fort Hancock buff-colored brick buildings. Joe Boyle is quite sure that it was red brick when he arrived in 1953, although he is not sure when or why it was painted. Further research by Tom Hoffman, the Park Historian, has established that the building had not been painted by June 1964. This would place the change in color to between 1964 and 1969 when the building was known to have been buff-colored.<sup>62</sup>

During the 1950s the Army established a trailer park south of Gunnison Road and the concrete buildings used for the WWII tent city area. This area was used for additional housing in trailers by the Coast Guard, and later by the National Park Service.

Another area developed for a new use in this period was west of Nine-Gun Battery. This location has undergone many different uses, including cantonments in World War I, and additional housing and service areas in World War II. Starting in 1966, it had a non-defensive use as the 1<sup>st</sup> U.S. Army Recreational Area for vacationing retired or active members of the military (Figure 35). Four remaining WWII barracks, two mess halls, twenty permanently installed trailers, and a recreation building were available to vacationing Army personnel for a nominal fee. In addition, space and services were available to those who had their own trailers. A "Camper Support" building (#157) was added in 1971, offering laundry and restroom facilities. The docks, still part of the Army reservation, were used for fishing, and vacationing Army personnel could dock their own boats or use small boats supplied by the Army for fishing or excursions into the bay or ocean.<sup>63</sup> This recreational use of the site presaged the next phase of use of the landscape at Sandy Hook.



Figure 35: 1<sup>st</sup> U.S. Army Recreation Area, west of Nine-Gun Battery, looking south. Photo by Thomas J. Hoffman, August 1974.

The State of New Jersey transferred Sandy Hook State Park at the southern part of the peninsula to the National Park Service in December 1973, and the U.S. Army's real estate holdings at Sandy Hook were transferred to the National Park Service in 1975. The site was then incorporated into Gateway National Recreation Area, which had been established in 1972. Of the 477 acres in the Fort Hancock and Sandy Hook Historic District, 380 are now administered by the National Park Service, the rest by the United States Coast Guard.

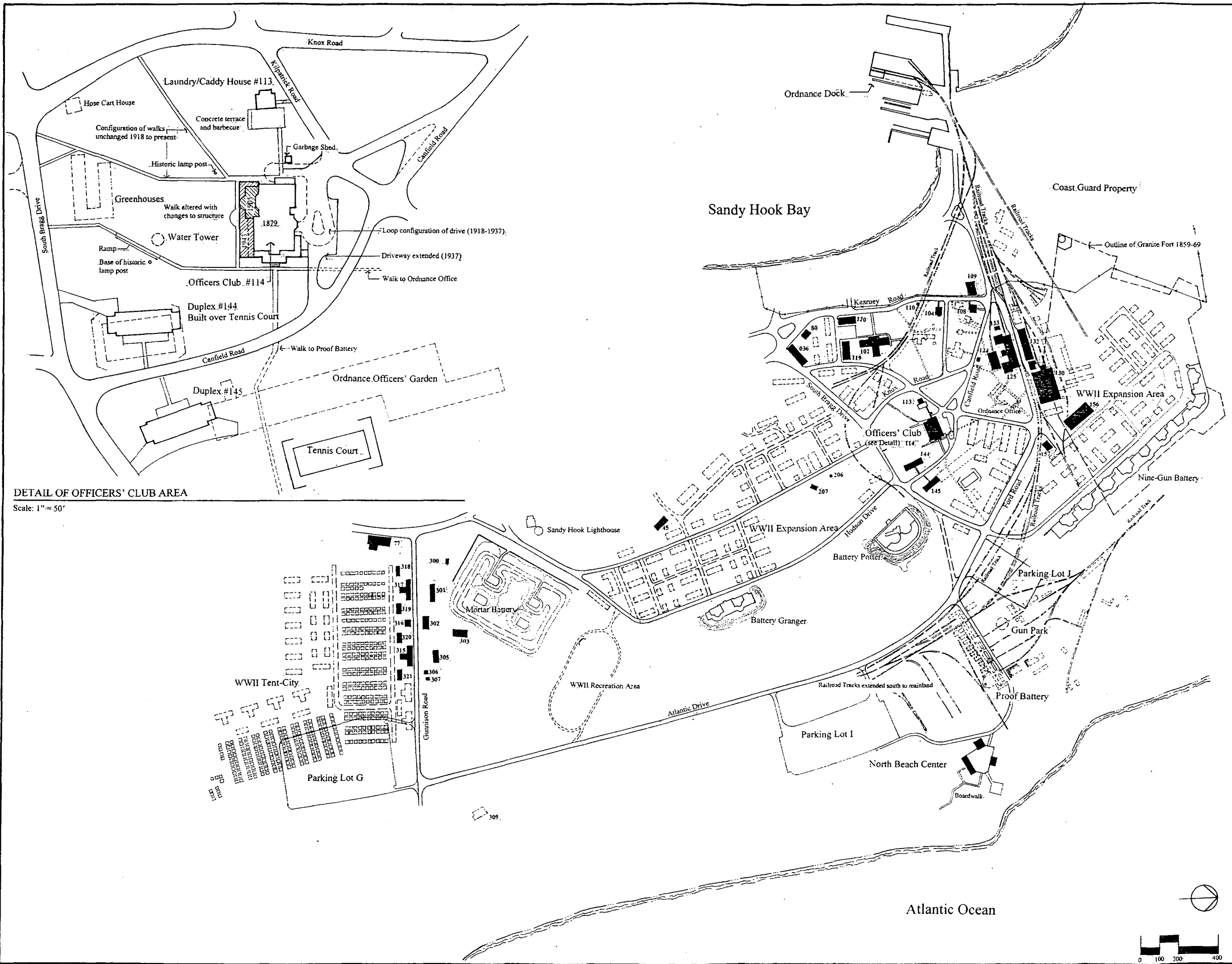
The National Park Service's General Management Plan (GMP) addresses several different interpretive themes for Sandy Hook, including environmental, ecological, commerce and navigation, military presence, and recreational. The site is well known for its recreational beaches and interpretive programs on the natural environment. The Fort Hancock Museum and tours of the History House, formerly Lieutenant's Quarters No. 1, contribute to the visitor's understanding of the site's cultural history, as do other tours, interpretive signage, and brochures.

The GMP calls for a "Gateway Village" concept for the northern part of Sandy Hook. It would become the year-round focal point of the site, providing educational, recreational, and cultural programs. However, the size of the site and number of structures, present many challenges to management. The successful agreement with the National Oceanic and Atmospheric Administration's laboratory and the development of the Marine Academy of Science and Technology High School (MAST) has resulted in the rehabilitation of the remaining WWII support buildings located along Gunnison Road, and indicates a successful solution to some of these issues and the reuse of facilities on the site.

The Historical Base Map summarizes the changes that have occurred to the landscape in the study area since the Proving Ground came to Sandy Hook in 1874 (Figure 36). There are still approximately fifty structures remaining in the study area. Many of the World War II temporary structures have been removed by the National Park Service, and maintenance on the remaining structures varies. The Park Service is using a number of structures for staff housing, offices, and maintenance facilities which ensures at least minimal care of the buildings and grounds. Unfortunately, after being used for some time as housing for NPS staff, the Officers' Club is currently vacant with boarded up windows and doorways, and has seriously deteriorated.

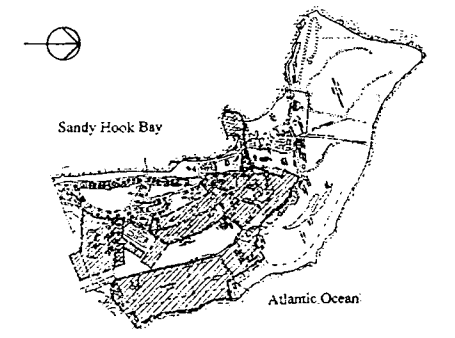
However, the grounds in the residential areas of the former Proving Ground area are being routinely mowed. In addition, the plant materials are routinely cut back to make the Proof Battery accessible to visitors. However, the concrete structures in the former Proof Battery have been allowed to deteriorate. The target area to the south down the dunes has grown up with beach grasses and shrubs, and much of the gun park is now a parking lot. A new concession area and access to the beach, including a parking lot on the former Proof Battery range, was completed in 1998.

Hazardous areas and conditions, especially at the remains of Batteries Potter, Granger, and Nine-Gun, are posted as closed areas to visitors and fenced off for visitor safety. Ironically the fencing has prevented mowing, as had been done when the Army maintained the site, and this has caused weeds, shrubs and vines to cover the remains of many of the structures.<sup>64</sup>



- SOURCES:
1. "Topographic Survey, Gateway National Recreation Area, N.J. Sandy Hook Unit". Lockwood, Kessler and Bartlett, 1976. Park files.
  2. "Site Plan of Fort Hancock", c. 1967. Park files.
  3. "Detailed Landscape Plan", Wolcott Erskine Andrews, Landscape Architect, 1941. Park files.
  4. "Map of Sandy Hook Proving Grounds, Showing Vicinity of Office", Jan. 23, 1908, updated December 31, 1918. Park files.
  5. Aerial Photograph: National Archives RG373 23.414-231 Fort Hancock, May 6, 1943. Park files.
  6. Aerial Photograph: National Archives RG77 14<sup>th</sup> Photo Section, Fort Hancock, New Jersey, frame #40, 4/24/24. Park files.
  7. Sandy Hook Atlas, by M. Thomas, May 27, 1988, updated 1992.
  8. "Beach Centers North-Areas G & J". Sheets C1, C6, C24, C25, Denver Service Center, November 1993. Park files.
  9. Field observation by author, April and July 1998.

- NOTES:
1. The numbers of the existing buildings based on information in the Sandy Hook Atlas, prepared by M. Thomas, May 27, 1988, updated 1992.
  2. Existing structures are shown filled in or with a solid outline, structures no longer existing are shown with a dashed outline.

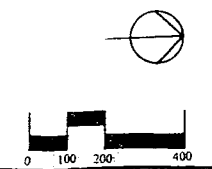


STUDY AREA & CONTEXT MAP

United States Department of the Interior  
 National Park Service, North Atlantic Regional Office  
**CULTURAL LANDSCAPE REPORT:  
 PROVING GROUND  
 and  
 WARTIME EXPANSION AREAS**  
 Sandy Hook Unit  
 Gateway National Recreation Area  
 Sandy Hook, New Jersey

PREPARED BY  
 Norma E. Williams, Landscape Architect  
 Ridgefield, Connecticut  
 July 1999

Figure 36: Historical Base Map



The Proving Ground landscape raises a number of questions for visitors. The remains of the Proof Battery are unfamiliar forms in a recreational setting. The Officers' Club looks important because of its distinctive architecture and prominent siting, but in its current state of disrepair it seems foreboding, rather than evocative of the privileged life of officers and their guests. The paving that disappears into the overgrowth in the former expansion area south of the Officers' Club raises questions about the destination and purpose of these pathways in the landscape.

In the one hundred years since the Proving Grounds was established at Sandy Hook, this landscape has witnessed the nation's entrance into the international technological race to develop and test weapons. This site has also seen the surges in build-up of forces as the United States mobilized for the two global wars. Ultimately, technology outpaced the capacity for the landscape to house it, making the site obsolete for testing and defense and ushering in a new era of recreation and education.

## Endnotes Section II

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1. Thomas J. Hoffman, *Gateway: Fort Hancock*, ill. by Howard Kenngott (Conshohocken, PA: Eastern National Park & Monument Association, 1991), 2.
2. Samuel Stelle Smith, *Sandy Hook and the Land of the Navesink*, (Monmouth, NJ: Philip Freneau Press, 1963), 18-19.
3. Emanuel Raymond Lewis, *Seacoast Fortifications of the United States: An Introductory History*, (Annapolis, MD: Naval Institute Press, 1979), 6.
- U.S. Department of the Interior, *National Register Nomination Form: Fort Hancock and the Sandy Hook Proving Ground Historic District*, by Harry Butowsky. National Park Service Division of History, 1980. Item 8, 2-3.
4. George H. Moss Jr., *Another Look at Nauwoo to the Hook*, (Sea Bright, N.J.:Ploughshare Press, 1990), 49-50.
5. U. S. Department of the Interior, *Historic Structure Report: Architectural and Administrative Data, The Sandy Hook Proving Ground, 1874-1919, Gateway National Recreation Area*, by Barry Sulam, (Washington, D.C., National Park Service, 1979) 292.
6. U.S. Department of the Interior, *Historic Resource Study: Fort Hancock 1895-1948, Gateway National Recreation Area, New York-New Jersey*, by Edwin C. Bearss, (Washington, D.C., National Park Service, 1981) 14.
7. A chronoscope is an instrument that is used to accurately measure very brief intervals of time in determining the velocity of projectiles. See U.S. Department of the Interior, *Historic Resource Study: The Sandy Hook Proving Ground 1874-1919*, by Edwin C. Bearss, (Washington, D.C., National Park Service, 1983) 14.
8. According to Tom Hoffman, the Park Historian at the Sandy Hook Unit, the original plan of the granite fort included five points, or bastions, but during construction the Army Engineers dropped the southern bastion from the design. This can be seen from comparing the 1874 Map (Figure 8) and the 1892 Map (Figure 10).
9. Bearss, *Historic Resource Study: The Sandy Hook Proving Ground 1874-1919*, 18.
10. Lewis, 75-76.
11. Bearss, *Historic Resource Study: The Sandy Hook Proving Ground 1874-1919*, 18.
12. *Ibid.*, 20.
13. This building has had various names. Throughout its life it has been referred to as the "Brick House", undoubtedly because it was the first brick Army structure at Sandy Hook, and one of the most prominent. From the time it was built until shortly after the Ordnance Department left Sandy Hook, it was also referred to as the "Officers' Quarters". Subsequently, while it was under the jurisdiction of Fort Hancock, it was referred to as the "Officers' Club". It continues to be called the "Officers' Club", and in the text I have tried to use the name that was in use at the period being discussed.
14. Colonel Benham to Humphreys, July 18, 1878, NA, RG 77, Ltrs. Recd., Chief Engineer. As cited in Bearss, *Historic Resource Study: The Sandy Hook Proving Ground 1874-1919*, 78.

15. The words "salient", "pan coupe", and "caponniere" are French terms to describe various parts of 17th and 18th century fortifications.

16. Sulam, 78.

17. According to Tom Hoffman, the Sandy Hook Unit's Park Historian, the photographs can be dated from the North Hook Beacon which can be seen to the right of the sequence. This was constructed in 1880, dating the photographs to the period of 1880 to 1885.

18. Bearss, *Historic Resource Study: The Sandy Hook Proving Ground*, 75.

19. Sulam, 191.

20. Bearss, *Historic Resource Study: The Sandy Hook Proving Ground 1874-1919*, 148-149.

21. Ibid., 149.

22. Ibid., 150.

23. Ibid., 151.

24. Ibid., 188.

25. U.S. Department of the Interior, *Historic Structure Report: Sandy Hook Exterior Lighting System 1897-1919: Gateway National Recreation Area, New York/New Jersey*, by Edwin C. Bearss, (Denver, CO, National Park Service, July 1982) 2-5.

One of these lightposts is now located at the southwest corner of the Officers' Club. Joe Boyle remembered painting it dark green when he worked at Sandy Hook from 1953-1985. He also remembered repairing the wiring which ran down the interior of the post, and that it had a simple porcelain fixture with an exposed bulb. Conversation with the author and Tom Hoffman, February 3, 1999. (see Figure 50)

26. Lewis, 77-79.

27. U. S. Department of the Interior, *Historic Landscape Assessment for Fort Hancock*, by H. Eliot Foulds, (Washington, D.C., National Park Service, revised 1997) 5-11.

28. Bearss, *Historic Resource Study: The Sandy Hook Proving Ground 1874-1919*, 176.

29. Sulam, 191.

30. Bearss, *Historic Resource Study: The Sandy Hook Proving Ground 1874-1919*, 176-7.

31. Sulam, 204.

32. Bearss, *Historic Resource Study: The Sandy Hook Proving Ground 1874-1919*, 188-9.

33. Ibid., 189.

34. Sulam, 205-6.

35. Bearss, *Historic Resource Study: The Sandy Hook Proving Ground 1874-1919*, 194.

36. I could find no documentation to explain why buff-colored "Fort Hancock" brick was used rather than the red brick typical of Proving Ground buildings. Perhaps it was more readily available so soon after the construction of Fort Hancock, or it was considered a better choice at the time, or it was felt to match the other buildings along Hartshorne Drive. However, shortly afterwards, the Proving Ground machine shop complex was built of red brick, which does not clarify the choice for the Chemical Laboratory.

Park Historian Tom Hoffman made the following suggestion to this question: "since the Sandy Hook Proving Ground was designated a permanent facility in 1901 where future Proving Ground buildings would be made of brick, and since Fort Hancock post buildings had been built during 1898-99, there may have been a surplus quantity of buff brick left over and available for use, or simply an initial desire to match those of Fort Hancock. Right after construction of the laboratory the Ordnance Department may have realized it would resemble a Fort Hancock, and not a Sandy Hook Proving Ground, building, and reversed itself by building other major buildings of red brick so that anyone could clearly/easily see where Proving Ground buildings were located versus Fort Hancock buildings in a shared and crowded landscape."

37. Bearss, *Historic Resource Study: The Sandy Hook Proving Ground 1874-1919*, 192.

38. Bearss, *Historic Resource Study: The Sandy Hook Proving Ground 1874-1919*, 221-224.

39. Sulam, 211-212.

40. Sulam, 9.

41. The description in Sulam, p. 91 is confusing and has omitted a phase in the changes to the facade of the Brick House. From reviewing the drawings and photographs the following sequence is revealed:

1905 A dining room is added south of the original, effectively making two dining rooms with an arched doorway between. The new dining room had a bow window very nicely detailed on the exterior as can be seen in a photograph at the time of the fire in 1938 (Figures 20 and 21). The 1918 drawing and the 1924 aerial are clearly in agreement with this photograph. Buff colored bricks were not used in the construction of this addition as evident in the 1938 photographs at the time of the fire, nor is the building painted buff at this time as suggested by Sulam.

1943 The porch is enclosed making a bar room. In the 1943 aerial, the bay is missing and there is a walk along this facade which bows out approximately in the middle of this side of the house. Remains of this may still be evident at the site today. (The 1941 Landscape Plans show the porch as a walk and are incomplete and no help to unraveling this problem.)

The 1959 plan of the interior by the Post Engineer reprinted in Sulam (page 95) shows a flat 1905 addition which cannot be true as shown in the documentation cited above, but must show the 1943 work.

In an interview with Joe Boyle on February 3, 1999, he was quite certain that the Officers' Club had not been painted buff in 1953 when he arrived, although he was not certain when it was painted, perhaps in the 1960s.

42. Thomas J. Hoffman, Park Historian, interview with author, tape recording, Sandy Hook, NJ, May 13, 1998. Tom Hoffman also believes that the library was located in the Ordnance Office.

43. Hoffman, interview.

44. Bearss, *Historic Resource Study: Fort Hancock 1895-1948*, 458.

45. *Ibid.*, 361-2.

46. *Ibid.*, 360.

47. *Ibid.*, 468.

48. Sulam, 211-212.

48. According to Tom Hoffman, the Park Historian for the Sandy Hook Unit, it is not known exactly when the name change occurred. The building was commonly referred to as the "Brick House" for many years, perhaps the most descriptive name, but adding to potential confusion. For the purposes of clarity, in this report the name used reflects the ownership of the structure, not necessarily the name commonly used for this structure.

50. *Ibid.*, 504.

51. Sulam, 86. A cinder base was put down with a mixture of tar and crushed stone on top. The curbing material was not specified.

52. *Ibid.*, 451.

53. *Ibid.*, 455.

54. Bearss, 456.

54. Hoffman, interview.

55. Tom Hoffman, the Park Historian, believes that this change occurred post WWII.

56. Sulam, 89.

58. Sulam, 83.

59. Lou Hansen, Chief of Maintenance, SHU-GNRA. Conversation with author, Sandy Hook, NJ, July 9, 1998.

59. Joe Boyle. Conversation with the author and Tom Hoffman, February 3, 1999.

60. Joe Boyle. Conversation with the author and Tom Hoffman, February 3, 1999. Joe Boyle thought that the Army had a crew of 15 men to work on the grounds. Although not fenced, the Army marked the batteries with white painted signs stenciled with black block letters "Off Limits", according to Tom Hoffman, Park Historian (see Figure 35).

61. Joe Boyle. Conversation with the author and Tom Hoffman, February 3, 1999. Tom Hoffman subsequently spoke with Mr. and Mrs. Tom (& Sue) Faley who had their wedding reception in the Brick House on June 6, 1964. They said it was red brick at that time. Lou Hansen, the Chief of Maintenance at the Sandy Hook Unit, remembered that the building was buff-colored when he started work at Sandy Hook in 1969, which narrows down the date that the Brick House changed color.

63. Thomas Hoffman. Conversation with author, Sandy Hook, NJ, July 9, 1998.

63. Joe Boyle. Conversation with the author and Tom Hoffman, February 3, 1999.

### III. OVERVIEW OF EXISTING CONDITIONS

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#### A. Sandy Hook Peninsula

Sandy Hook is a 1,665 acre barrier beach peninsula curving into New York Harbor at the northern tip of the New Jersey shore (see Frontispiece). Its distinctive formation, originally made up of smaller islands, has long been a landmark for sailors. The shoreline is constantly changing despite efforts at stabilization, as ocean currents drive sand northward along the New Jersey coast. Although the ocean beaches attract most of the visitors now, Sandy Hook offers abundant opportunities for birding, fishing, windsurfing, and exploration of salt marshes and dunes.

The study area is located near the tip of Sandy Hook, and is approached by automobile from the town of Highlands. The drive up the peninsula provides many views of the bay and marshes to the west, but views of the ocean are mainly obscured by the dunes to the east. The road proceeds through low, dense stands of trees and shrubs, including many large American holly, Eastern redcedar, bayberry, and beach plum. Staying left on Hartshorne Drive takes the visitor past Guardian Park, a monument to Nike Air Missiles, the last coastal defense weapons installed at Sandy Hook. One of these missiles is displayed in this small park. Following the curve of the bay along Hartshorne Drive, the visitor comes into the Historic District of Fort Hancock with the original buff-colored brick buildings of Officers Row on the right facing the bay. The military origins of this distinctive row of residences is not apparent until one reaches the 20-inch Rodman gun located in the triangle at the intersection with South Bragg Drive.

#### B. Proving Ground District

##### Residential area

At the Rodman gun, Hartshorne Drive turns left through the wire fence into the Coast Guard area. North of this intersection the pavement continues as Kearney Road and enters the Proving Ground District as it was delineated in 1919 when the Ordnance Department was phased out of Sandy Hook. This was the rear of the Proving Ground's residential zone, and the white wooden structures (Buildings 119 & 120) on the right were Fort Hancock barracks built in 1941 at the time of the expansion for World War II. The red brick building on the right, now the Education Center (Building 102), was a barracks built in 1909 for enlisted men of the Ordnance Department (Figure 37). Leading to its front door and porch which overlooks the bay are a long walk and steps with an attractively detailed cheek wall which dates from the Proving Ground period (Figure 38). The flagpole in front of the building was installed for the Young Adult Conservation Corps (YACC) camp which used these buildings from 1979 to 1981. It is partially obscured by the Eastern redcedar planted at this time which is now overgrown.



Figure 37: View to the east of the front door of the Education Center (Building 102) formerly the enlisted men's barracks for the Proving Grounds. Photo by author, 1998.

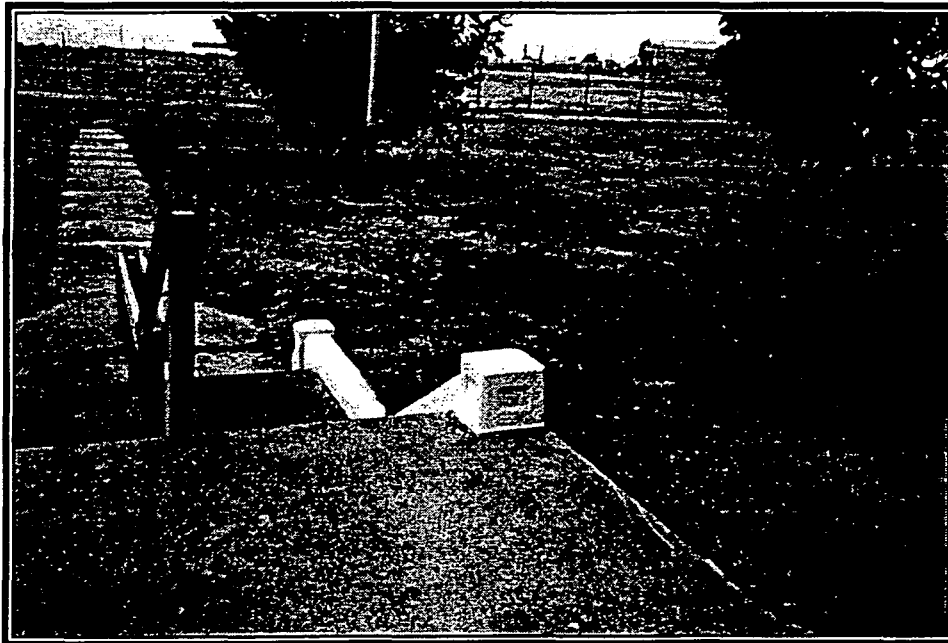
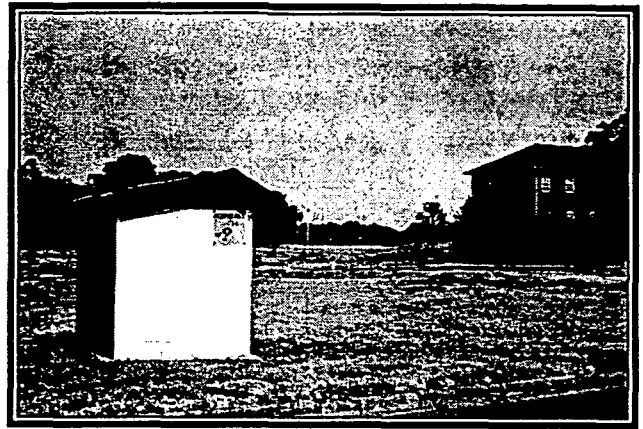
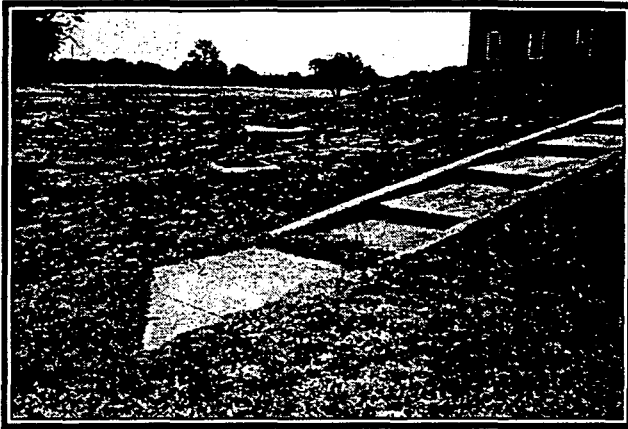


Figure 38: Photo looking west of steps to the Education Center showing the cheek wall, new wooden handrail, and base of flagpole. Photo by author, 1998.

In the lawn to the north of this building are indentations marking the bed of railroad tracks and a road that connected the docks to Battery Potter at the time of its construction. The steps from the north of Building 102 end at an angle that would have met the old road (Figure 39). East of the steps is a lamp base dating from the Proving Ground era.



**Figure 39:** Contemporary view looking east, of walk from the north of Building 102 with end angled to meet old roadway. Photo by author, 1998.

**Figure 40:** Bus stop #2 along Kearney Road built in 1965. Note original sign. Education Center in background. Photo by author, 1998.

Kearney Road continues past a bus stop (Building 110) dating from 1965 (Figure 40). It retains a sign stenciled with "School Bus Stop NO. 2." Two small white wood-framed structures (Buildings 104 & 108) built in 1905 and 1894 respectively, as noncommissioned officer's quarters (Building 104) and the Locomotive Engineers Quarters (Building 108) are immediately on the right (Figures 41 & 42). The original porches were enclosed and asbestos shingles added over the original wooden clapboard siding during the post WWII period. This has changed the original appearance of these structures, which now contain offices, housing for park service personnel and guest quarters.

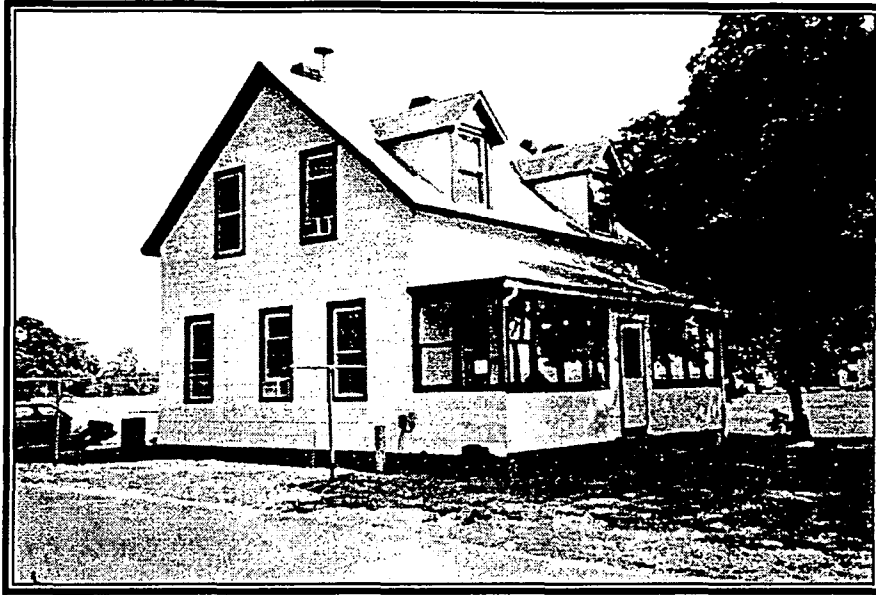


Figure 41: Contemporary view of Building 104. This structure was built in 1905 as noncommissioned officer's quarters. Note clothesline along side of house. Photo by author, 1998.

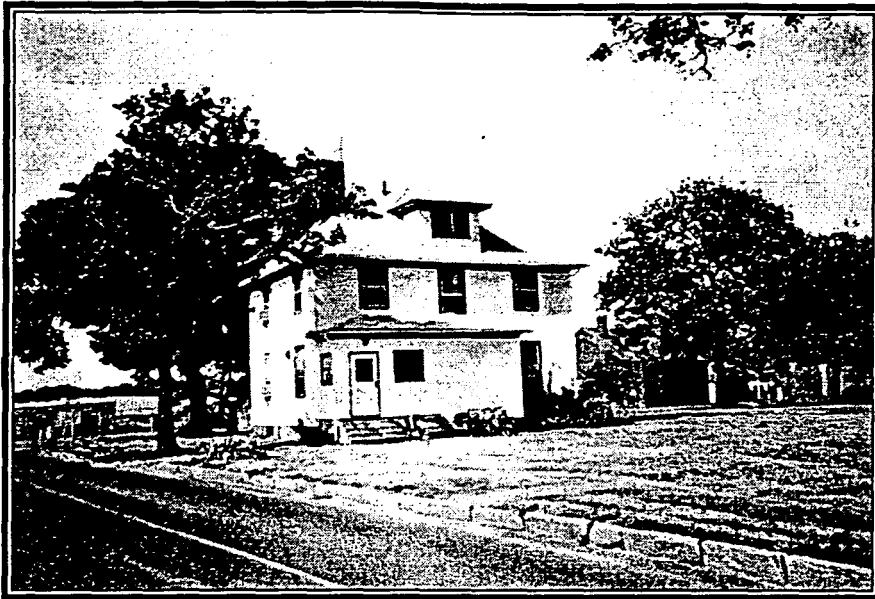


Figure 42: Contemporary view of Building 108, looking north. Built in 1894, this building was originally Locomotive Engineer's quarters. Photo by author, 1998.

Turning east onto Canfield Road, the visitor may notice on the right the wooden infill in the bluestone curb that marks the location of a former accessway (Figure 43). Farther east, on the right there are steps leading to a slightly raised mound, which was the location of the Master Mechanic's Residence (Building 112), a wood-framed building built in 1878 that was destroyed by fire in 1991. The "Map of Sandy Hook Proving Ground Showing Vicinity of Office" (Figure 15) shows this residence, the accessway and two other residences that were in this location at the time the Ordnance Department left Sandy Hook (the small square building was the former telegraph employees quarters that was moved from the dunes at the site of the original, pre-1900 Proof Battery). This area is now quite open with lawn and large trees, but despite the obvious residential qualities of the buildings, there is little to distinguish it as a residential or domestic area.



Figure 43: Break in bluestone curbing at location of driveway to missing residential buildings. See Figure 15 for map made in 1918 at the time the Ordnance Department left Sandy Hook which shows the existing and missing structures. Photo by author, 1998.

#### Officers' Quarters & Grounds

Continuing east on Canfield Road the brick Officers' Club (Building 114) is located to the right, on noticeably higher ground. The windows in this structure are boarded and the buff-colored paint on the red bricks is peeling off (Figure 44). It has such a prominent place in the landscape that its derelict appearance detracts from the nearby well-maintained structures.

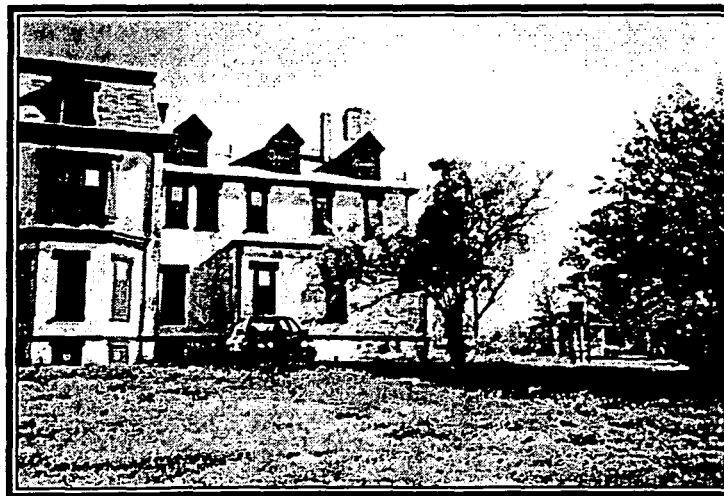


Figure 44: Contemporary view of Officers' Club looking south. Photo by author, 1998.

The grounds around the Officers' Club include lawn with several large catalpa and hackberry trees (Figure 45). London plane trees and maples line the roads around the Officers' Club. Large American holly trees and ornamental shrubs such as lilacs, yews, and junipers are scattered informally throughout the lawn. Many of these trees, especially the holly trees, are overgrown and crowd the walks that lace the grounds (Figure 46).



Figure 45: Contemporary view looking south of Officers' Club lawn. Photo by author, 1998.

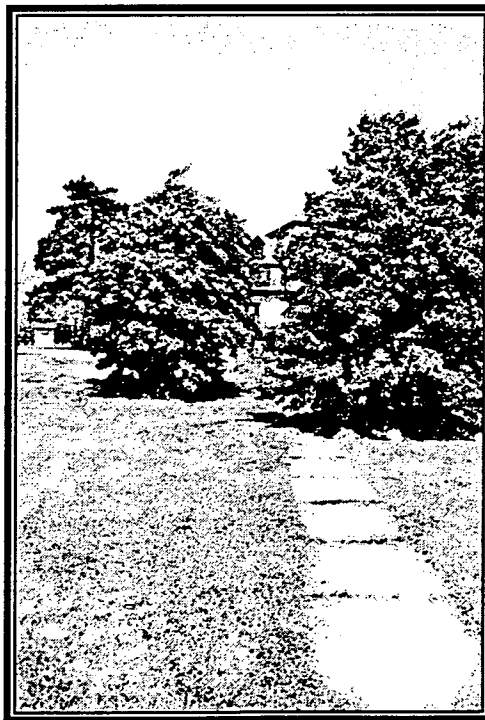


Figure 46: Looking north to Officers' Club, walk overgrown with holly trees. Photo by author, 1998.

The Officers' Club faces east toward the ocean and the former Proof Battery, and a concrete walk with overgrown spreading junipers planted at the street curb extends to the porch (Figure 47). The front porch steps are missing and large weeds are growing in the three-foot wide planting beds next to the house. There is a utility vault flush with the lawn approximately halfway up the walk on the south side, and across from it is a very large spreading juniper. The walk continues parallel to the front of the house connecting the driveway to the south lawn and farther to South Bragg Drive. A large, 20 foot high yew is growing in the north corner of the intersecting paths in the front of the Officers' Club, with a small chokecherry to the north of the yew (Figure 48).



**Figure 47:** View looking west at the front of the Officers' Club. Compare with similar view from 1930's (Figure 24). Photo by author, 1998.



**Figure 48:** Close-up of overgrown shrubs and small chokecherry tree at northeast corner of Officers' Club. Photo by author, 1998.

The asphalt parking area has been extended to the foundation of the north side of the house. Concrete curbing in good condition defines the edge of this parking area.

Another concrete walk extends from the paved area at the rear of the Officers' Club to the Caddy House (Building 113). To the north of this walk near the house is a garbage shed painted white with lattice on the upper half of the wooden and concrete block structure (Figure 49). In front of the Caddy House is a concrete terrace with a barbecue with three grills built into a curving concrete block wall that stretches almost the whole length of the southern edge of the terrace (Figure 50). Poison ivy and other weeds are growing through the cracks in the concrete, and metal parts of the structure have rusted. However, the location is very pleasant, offering views to the south and west. The concrete steps from the Caddy House to the road to the north need repair. Large electrical boxes north and east of the terrace intrude on the residential nature of this landscape (Figure 51).

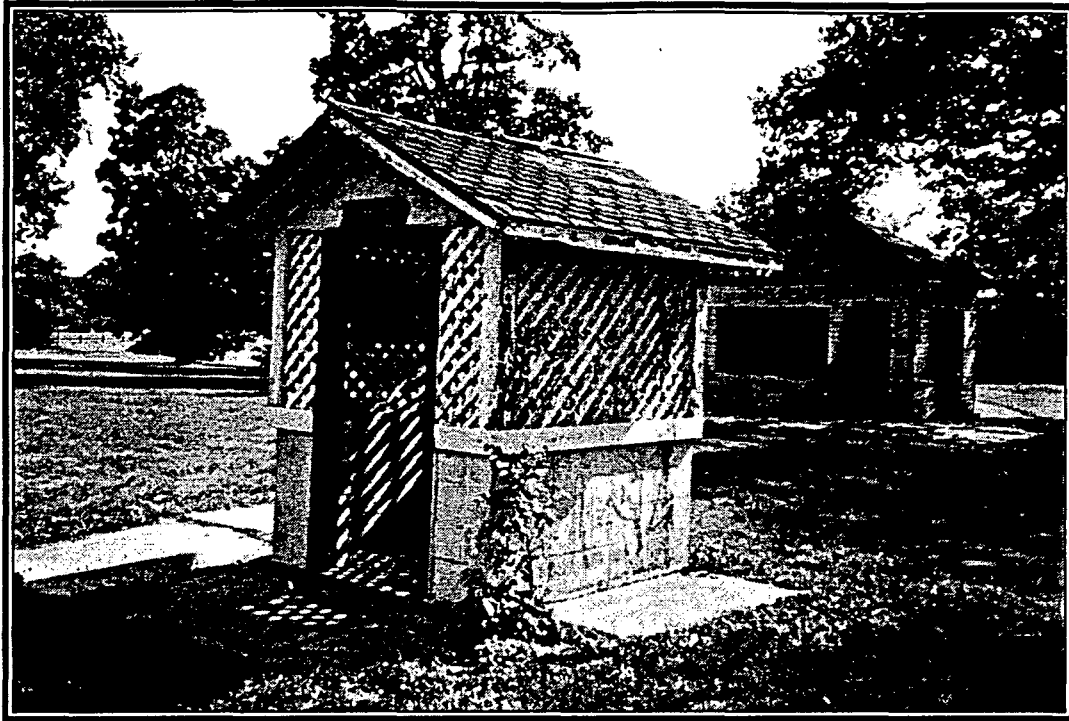


Figure 49: View looking west of ornamental shed for storing garbage, with Caddy House in background. Photo by author, 1998.



Figure 50: Caddy House with terrace and barbecue, looking south. Photo by author, 1998.

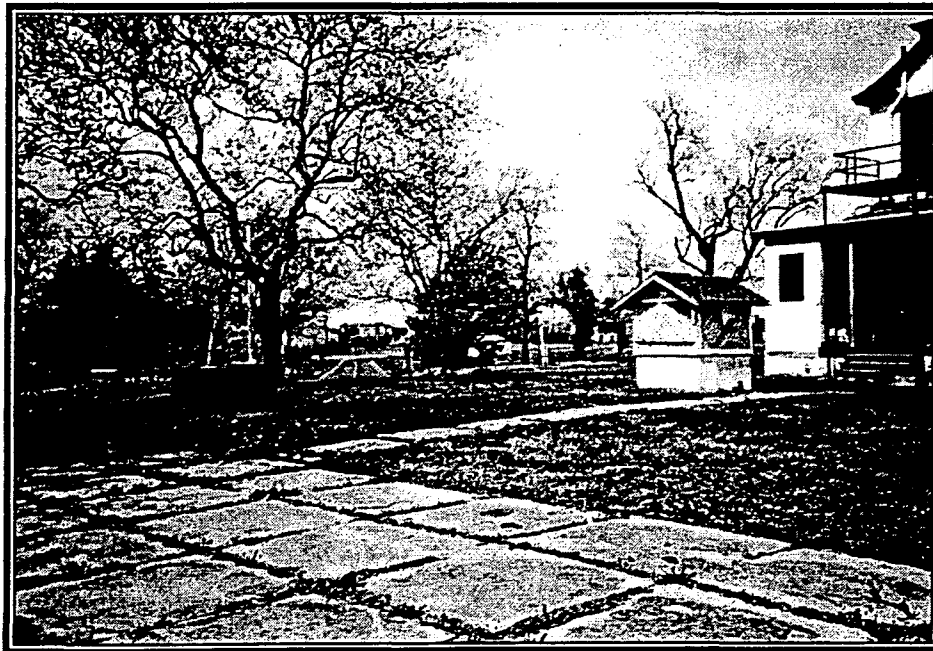


Figure 51: Looking north from terrace at Caddy House, with electrical vault dating from 1981-82 on left, garbage shed on right behind Officers' Club. Photo by author, 1998.

On the south side of the Officers' Club is a four-foot wide concrete walk extending the length of the façade. It is in disrepair and weeds grow between it and the building. Near the door frame in the middle of this façade the paving widens slightly, although its exact shape is obscured by weeds (Figure 52).



Figure 52: South facade of Officers' Club with concrete paving at doorway. Photo by author, 1998.

From this side of the building there is a view to the south of the lighthouse. This view is not obscured either by the catalpa and hackberry trees scattered across the lawn of the Officers' Club or by the overgrowth in the flat open space across the road. On the southwest corner of the building, between a fork in the concrete walks, is a light fixture dating from 1897 (Figure 53). However, this is probably not the original site of this fixture. About 100 feet from the building, the ground drops to a flat area where the former greenhouses were located. A concrete ramp descends from the east to this lower area (Figure 54). At the top of the ramp is a fragment of the base of a light fixture similar to that near the southwest corner of the house.

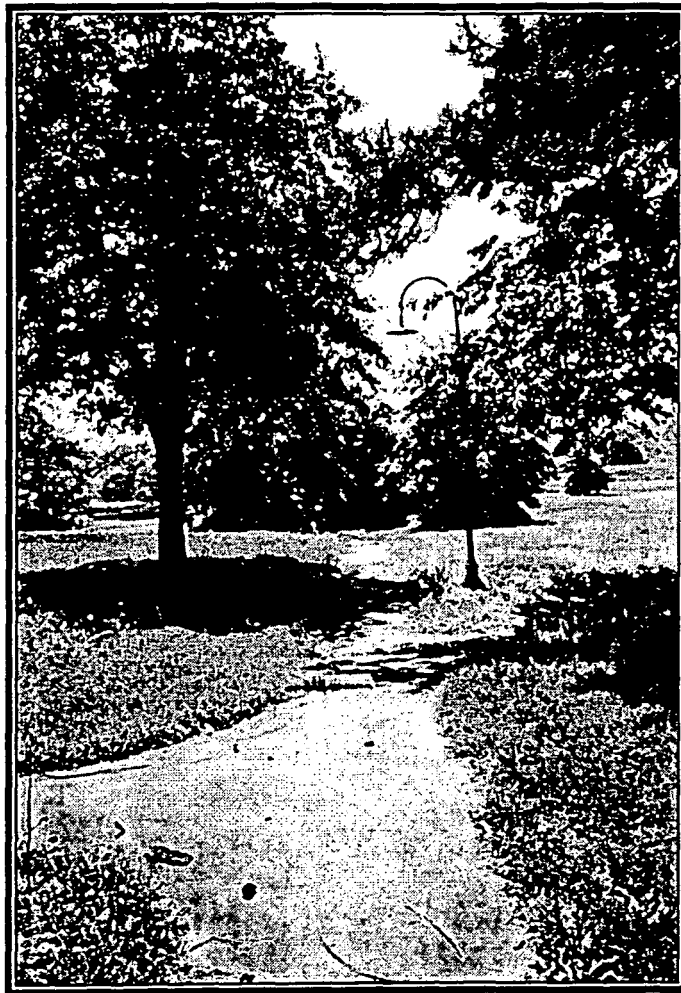


Figure 53: Historic light fixture along walkway, near southwest corner of Officers' Club. Photo by author, 1998.



Figure 54: View to north of ramped walkway going from South Bragg Drive, past location of former greenhouse, to Officers' Club. Photo by author, 1998.

Figure 55: View south from Officers' Club tennis court to Battery Potter and rear of duplex (Building 145). Photo by author, 1998.

From the front yard of the Officers' Club looking east, a tennis court and back-fence are in clear view. Nine-gun battery and the roof of the concession stand at North Beach are also clearly visible from this location. The rear of the duplex (Building 144), built in 1939, with well-maintained backyard and gardens, is visible in the southeast corner of the Officers' Club grounds.

Across Canfield Road in the open area containing the tennis court, are visible sections of concrete walks. These once served the World War II structures that filled this area. From the tennis court area there is a dramatic view to the south of the mounded side of Battery Potter (Figure 55).

Turning south onto Canfield Road from the Officers' Club, the visitor passes between the two buff-colored brick duplexes (Buildings 144 & 145) built for Officers and their families in 1939. Currently used as residences for Park personnel, these well maintained buildings contrast with the abandoned Officers' Club.

### Proof Battery & Range

Taking a left onto South Bragg Drive, the visitor continues east to Atlantic Drive and the North Beach parking area 'J' which is north of the former Proof Battery. The concrete ruins of the traverses, gun mounts, and other structures (173, 174, 174A) are very prominent features in the landscape and their unusual shapes make it difficult to determine their original use (Figure 56). This area is sandy, with some herbaceous plants and small shrubs. Looking back toward the west you can see Battery Potter, the rear of duplex 145 and the Officers' Club. There is a small concrete interpretive sign between the parking lot and the Proof Battery (Figure 57). Looking south, down the dunes from the top of the concrete ruins, the newly constructed parking lot for North Beach is hidden from view. The concession stand and beach are farther along the service road.

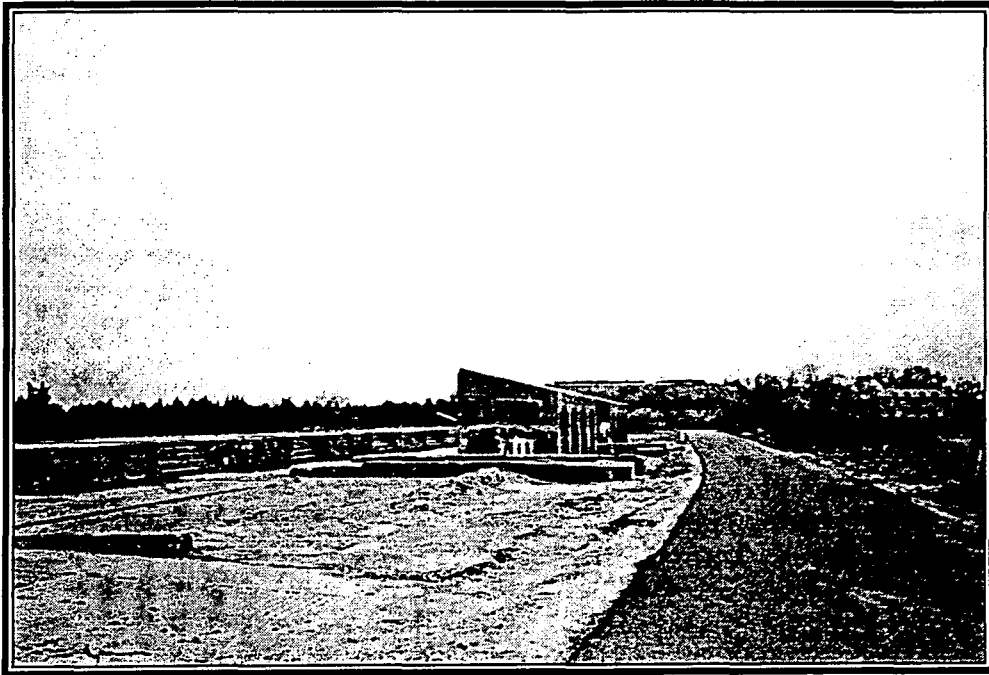


Figure 56: Proof Battery traverses looking west, with Building 145 in background. Photo by author, 1998.



Figure 57: Proof Battery looking west with interpretive sign in the foreground and Officers' Club and rear of duplex (Building 145) in background. Photo by author, 1998.

#### Maintenance Area

The NPS North Maintenance Area consists of several large brick buildings (# 124, 125, 130, 131, 132, 133), and is located on the north side of Canfield Road, across from building 108 (Figure 58). The brick detailing of these buildings is very well done and their wooden trim is painted green. Although these structures appear to be mostly well cared for, the roof of Building 125 is collapsing as can be seen from the road (Figure 59). These buildings are used by the park service for maintenance offices and shops, and cars and trucks are parked in the large paved area between the buildings.

West of the maintenance area is a gate to the Coast Guard property and the dock, which are restricted to visitors. On the left is the Chemical Laboratory (Building 109), which later became the post school and now stands vacant.



Figure 58: Park Service maintenance area looking east. Photo by author, 1998.

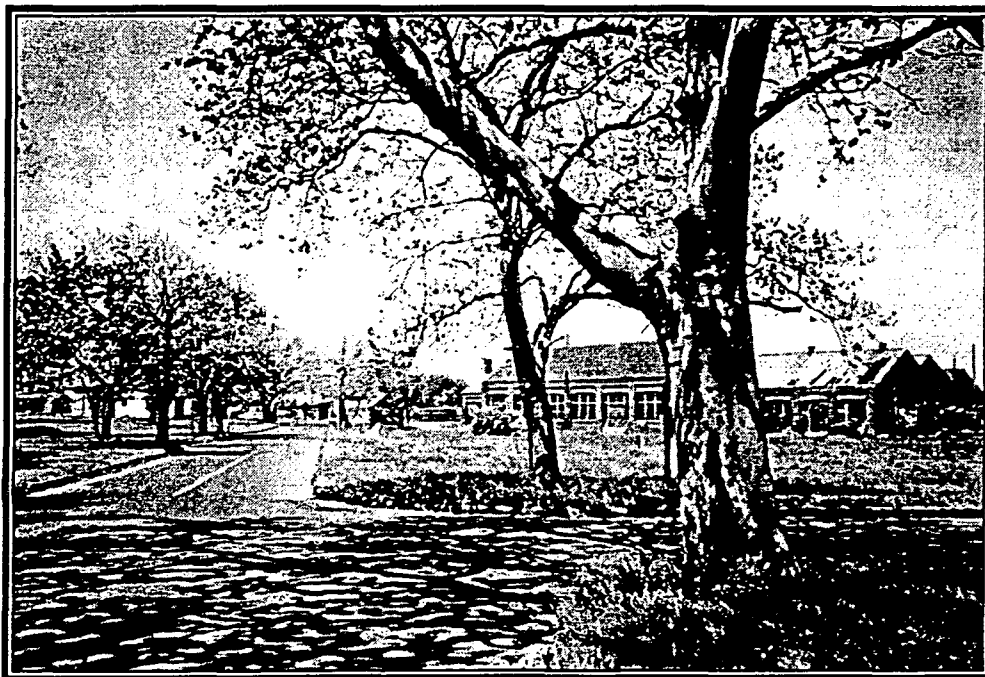


Figure 59: Looking west along Canfield Road; note collapsed roof on Building 125 at the far right. Photo by author, 1998.

### C. World War II Expansion Areas

Going south along Kearney Drive and taking a left at the Rodman Gun onto South Bragg Drive, the visitor proceeds along the southern border of the former Proving Grounds. On the left are two buff-colored brick buildings. The one closest to the road was the former stables (Building #36) built in 1899 as part of Fort Hancock. The smaller building (Building #80) behind it was built in 1911 to house civilian teamsters. This structure was also part of Fort Hancock. The stable and associated buildings for the Proving Ground no longer exist. They were located across the South Bragg Drive in approximately the same location as the current corral (the former location of these structures can be seen in Figure 15).

Continuing east along South Bragg Drive, a water spigot can be seen at the southeast corner with Knox Road. In the growth behind it a fence is still barely visible. This has been the site of many gardens, one of which can be seen in the aerial photo taken in 1943 (Figure 27). More recently the fenced area contained a garden maintained by National Park Service personnel stationed at Sandy Hook. Knox Road continues to the south through an area that was developed for World War II troops. It has been allowed to grow up with various species of trees, shrubs and other herbaceous plant materials. Some of these spaces are still quite open with eastern red cedars growing in grassy areas. Phragmites, an invasive weed, is growing in some small areas indicating wetland conditions. At various locations asphalt pavement can be seen leading into these overgrown areas (Figure 60).



Figure 60: Paving leading into overgrown World War II expansion area. Photo by author, 1998.

Taking a left onto Hudson Drive east of the Mortar Battery, a rusting baseball backstop, which dates to 1966, can be seen to the south in a large, overgrown area. This was the site of a recreation field during World War II containing a track within a large cleared space. In the early 1980s, this area was used for overflow visitor parking as Parking Area 'H'.

Hudson Drive continues past Batteries Granger and Potter through similar conditions. Going east on South Bragg Drive and crossing Atlantic Drive, the visitor enters parking area 'K' directly east of Nine-Gun Battery. Ringed by an asphalt drive, this largely gravel parking lot is interspersed with utility poles lying along the ground to indicate parking aisles. The surface is in bad repair and riddled with large potholes and weeds. From the northern paved end of this parking area, visitors can access foot trails leading to fishing areas and the overlook at the northern end of the Sandy Hook peninsula.

A small concrete building (Building # 157) at the intersection of Ford and Kilpatrick Roads was built in 1973 to house services for campers at the 1<sup>st</sup> U.S. Army Recreation Area, and now serves as restrooms for visitors. North of it is a wooden storehouse (Building # 156) dating from the World War II expansion. This location provides very good views south to the Officers' Club, and its siting on a knoll is particularly evident from this vantage point.

Continuing south on Ford Road to Atlantic Drive, the road passes by the Proof Battery and site of the former target range to the east. Both sides of the road are overgrown with shrubs and small trees. A parking lot for North Beach, built in 1997-1998, is on the left. The lot has been designed so that the vegetation around it screens it from view from the Proof Battery.

Turning right at the intersection with Gunnison Road the visitor passes through the area that was known as "tent city" during World War II. The platforms are no longer existing, but the concrete support buildings remain and have been upgraded and maintained by the Marine Academy of Science and Technology High School (MAST) of New Jersey. Ten concrete support buildings including laundries, latrines, and mess halls were converted by MAST for use as their campus between 1985 and 1997. This is the most successful example of adaptive rehabilitation of historic buildings at Fort Hancock. Behind these well-kept buildings can be seen the remains of the trailer park that the Army established for extra housing in the 1950s and, further to the south, the former Coast Guard trailer park area that was closed circa 1993-94. The Coast Guard trailer pads angled in from the road can still be seen, as can some of the evergreens that residents used to personalize their spaces (Figure 61). The rusted remains of a playground remain, as does the striped pole where an emergency fire alarm phone was located. North of the intersection of Gunnison and Magruder Road is another contemporary parking lot built in 1974.



Figure 61: Trailer park area looking west, with trailer pad in the foreground. The trailer park drive in the foreground was regraded and repaved in June 1999 to create a new access to the Gunnison Road parking area. Photo by author, 1999.

#### IV. ANALYSIS OF SIGNIFICANCE AND INTEGRITY

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##### A. Current National Register Status and Areas of Significance

Fort Hancock and the Sandy Hook Proving Ground were first nominated to the National Register of Historic Places in 1980 (NJ 36, Fort Hancock and vicinity, NHL, NPS-80002502). The Sandy Hook peninsula was designated a National Historic Landmark (NHL) District in 1984. This district includes the Sandy Hook Lighthouse which was listed individually as a NHL in 1964 (NHL 66000468).

In determining significance the nomination uses the following criteria

A. Property is associated with events that have made a significant contribution to the broad patterns of our history.<sup>1</sup>

The three areas of significance noted in the nomination were engineering, military, and social/humanitarian. The nomination also states that Sandy Hook is significant for the dual role it played in the military history of the United States, both as a key coastal defensive fortification and as the site of the development of weapons during the period that the United States was becoming a world power. The study area of this report includes most of the area historically known as the Proving Ground, and a portion of Fort Hancock that was used for expansion during the build-up for World Wars I and II. Thus the significance of the landscape discussed in this report involves both historic military roles of Sandy Hook.

The nomination states that the Proving Ground became one of the Army's most important installations:

The Sandy Hook Proving Ground, from its establishment in 1874 until it was phased out in 1918-19 by transfer of its activities to the Aberdeen Proving Ground, had a key role in the development of the weapons employed by the U.S. Coast Artillery and U.S. Field Artillery during the vital years that the nation emerged as a world power. These years also coincide with a time when practical application of technological advances in the design and manufacture of artillery produced a revolution in weaponry.<sup>2</sup>

In addition, the nomination recounts that the Sandy Hook Proving Ground played a vital role in the program to develop coastal defenses because all the experimental guns and carriages for sea coast defenses were tested there.<sup>3</sup>

As part of Fort Hancock, the wartime expansion areas are significant for their role in guarding the approaches to New York Harbor.<sup>4</sup>

Fort Hancock had an important role in the country's build-up of its defenses in the months between September 1940 and the attack on Pearl Harbor. Units trained at Sandy Hook were manning coastal defense guns in Newfoundland and Bermuda when Japan struck.<sup>5</sup>

In addition, Fort Hancock served during World War II as a base for the organization of units slated for service abroad, and as a primary reception center for troops returning from Europe.<sup>6</sup>

### **B. Periods of Landscape Significance**

Determining the periods of significance for the Sandy Hook site is a complex task because of the varied areas of significance over the site's long history. The nomination notes three periods of development as they relate to the two themes of Proving Ground and coastal defense:

- 1874 - 1919 (Proving Ground)
- 1859 - 1950's (coastal defense)
- 1895 - 1949 (Fort Hancock).<sup>7</sup>

The end date of the period of significance was not clearly stated within the nomination. In updating the List of Classified Structures (LCS) for Sandy Hook, the NPS recommended that the end date of the period of significance be extended to December 31, 1974, the date of the transfer from the military to the National Park Service. The New Jersey Historic Preservation Officer agreed to this clarification (see letter and attached LCS, Appendix B).

The areas addressed in this report have overlapping resources with evolving functions and shifting jurisdictions. While the Proving Ground period is the main focus of this report, the periods of coastal defense and Fort Hancock are also covered as necessary to understand the wartime expansion areas. Thus, to simplify the discussion of the significance of the landscape of the study area, the following major periods are proposed:

- |   |           |
|---|-----------|
| 1. Development of Military Technology at the Proving Ground     | 1874-1919 |
| 2. Harbor Defense & New Role for the Former Proving Ground Area | 1919-1945 |
| 3. Wartime Expansion at Fort Hancock                            |           |
| World War I   | 1917-1919 |
| World War II  | 1940-1945 |
| 4. Post World War II/Cold War at Fort Hancock                   | 1945-1974 |

Over these periods, many layers of modifications to the landscape have resulted, reflecting changes in society through new uses for the landscape at Sandy Hook. The following summarizes the alterations to the landscape during the periods listed above.

#### **1. Development of Military Technology at the Proving Ground** **1874-1919**

Originally considered a temporary site, the worth of the Proving Ground was quickly and clearly demonstrated. Its jurisdiction of the site was firmly established, and it became a permanent function within the military by 1901. The second installation of the Proof Battery on the beach dunes, dating to 1900 (just 26 years after the original installation beneath the walls of the old granite fort), was sophisticated and showed how much had been learned about the requirements for this new function at the site.

The remainder of the landscape in the Proving Ground area was a more familiar type than the Proof Battery. The Officers' Quarters was distinctively sited on a knoll, clearly revealing the status of the officers and expressing the military hierarchy of the Ordnance Department. A residential zone was established in the close proximity of the Officers' Quarters, including barracks and housing for the master mechanic and others. The landscape also contained support buildings where machinery could be refined as testing proceeded, and a school for advanced studies in this field.

Unfortunately the documentation for the landscape of this period is limited. However, the map of 1908/18 (Figure 15) and the aerial photograph from 1924 (Figure 16) provide much information. From these can be seen the prominence of the railroad tracks and walkways that crisscrossed the site. The roads appear to be secondary in the photograph, but the importance of the dock is clear from both the map and aerial photograph. There are no photographs or other documentation available at this time to clarify the details of the types of trees and other plantings, or of site furnishings at the Officers' Quarters or other residential areas.

During 1919 the function of the Proving Ground was transferred to Aberdeen, Maryland. However, the Sandy Hook Proving Ground's role in the early development of weapons makes this period the most significant in the history of the study area.

## **2. Harbor Defense & the New Role for the Former Proving Ground Area 1919-1945**

This historic period includes the early Fort Hancock tenure of the former Proving Ground site and facilities. The Proof Battery was abandoned and partly dismantled during this period, and the loss of this function had a profound impact on the whole site.

The role of the Officers' Club for ceremonial functions and for social or recreational purposes increased during this period. In the 1940's alterations were made to the interior of the laundry behind the Officers' Club, which then became known as the "Caddy House," reflecting its use for social rather than functional purposes. Other improvements, such as expanding the parking area and extending the driveway reduced the residential feel of this landscape. Since a tennis court remained east of the Officers' Club, the loss of the court near the Officers' Club to additional duplex housing did not greatly detract from the character of the landscape.

The loss of the Proof Battery structures, the traverses, gantry, guns and other equipment necessary for testing was the most dramatic and permanent change to the Proving Ground area in this period. The spatial organization and use of the land did not change significantly, although circulation patterns were altered as a result of changes in the area's function.

## **3. Wartime Expansion at Fort Hancock**

### **World War I 1917-1919**

Two cantonments were constructed west of Nine-Gun Battery to house and provide services to men

during the build-up for World War I. These were temporary structures constructed of batten and tar paper in an area designated as within the jurisdiction of Fort Hancock. A macadam road separated the cantonments, and connections for water and fire hydrants were made to the existing water supply. Additional services for the men were provided by Fort Hancock.

## **World War II**

**1940-1945**

A major construction effort took place in the study area as a part of the expansion for World War II. Wooden structures and tent platforms were built to accommodate the additional forces in vacant spaces that were historically part of Fort Hancock. The construction occurred in three major sites within the study area, between existing Fort Hancock support buildings and Batteries Potter and Granger, along Gunnison Road, and west of Nine-Gun Battery. In addition, construction took place in the open space across from the Officers' Club on land that had been part of the Proving Ground. After grading to level the sites, the military installed utilities, roads, and walkways to provide access to these new structures. Whole new communities complete with all the services needed by those who were stationed at Fort Hancock were created in these spaces. This expansion had a profound impact on the spatial quality of the site, changing views and filling spaces that had been open.

The enclosure in 1943 of part of the Officers' Club porch made the outdoors much less accessible, both visually, with the loss of windows, and actually, with the loss of porch space. The resulting room, used as a bar, provided more space that could be used year-round.

## **4. Post World War II/Cold War at Fort Hancock**

**1945-1974**

After the war the army continued to maintain the landscape at Sandy Hook, and from 1954 to 1974 much of the temporary construction for WWII was removed. Anti-aircraft guns were replaced by Nike Air Defense Missiles at Sandy Hook and the advent of Inter-Continental Ballistic Missiles (ICBM's) brought about the end of Sandy Hook's defensive role. During the 1960s, the site started to be used for recreational purposes for the military. The area west of Nine-Gun Battery was adapted for motorized campers and a "camper support" building was built in 1971. There were no other major intrusions into the study area. Finally, in 1974, Fort Hancock was deactivated and turned over to the National Park Service.

### **C. Landscape Integrity**

The historic integrity of a landscape is defined as "the authenticity of a property's historic identity, evidenced by the survival of physical characteristics that existed during the property's historic period."<sup>8</sup> The period of significance for the Proving Ground landscape covered in this report extends from 1874 to 1919, and from 1919 to 1974 when it was under the jurisdiction of Fort Hancock. The period of activity of the wartime expansion areas extends from 1917 to 1919 for World War I, and from 1940 to 1945 for World War II.

The seven qualities recognized as contributing to historic integrity are defined as follows:

**Location:** quality of integrity retained by a historic property existing in the same place as it did

during the period of significance.

**Design:** quality of integrity applying to the elements that create the physical form, plan, space, structure, and style of a property.

**Setting:** quality of integrity applying to the physical environment of a historic property.

**Materials:** quality of integrity applying to the physical elements that were combined or deposited in a particular pattern or configuration to form a historic property.

**Workmanship:** quality of integrity applying to the physical evidence of the crafts of a particular culture, people, or artisan.

**Feeling:** quality of integrity through which a historic property evokes the aesthetic or historic sense of past time and place.

**Association:** quality of integrity through which a historic property is linked to a particular past time and place.<sup>9</sup>

A comparison of the existing conditions to those that defined the historic character of this landscape, and consideration of the following questions are helpful when evaluating integrity:

1. To what degree does the landscape convey its historic character?
2. To what degree has the original fabric been retained?
3. Are the changes to the landscape irrevocable or can they be corrected so that the property retains its character?<sup>10</sup>

The framework for the analysis of integrity for a landscape must look at the "big picture" beyond the project study area boundaries. This raises several problems for this study. Two general areas were designated by Park management as the study area for this project: the Proving Ground and the wartime expansion areas. The Proving Ground has historical significance in its own right. Historically it was delineated separately from Fort Hancock both physically, and through a separate chain of command, and by the development of its infrastructure independently from the other organizations on Sandy Hook (see Figure 15 for a map showing the delineation of the Proving Ground and Fort Hancock in 1918). To a very great degree it had a separate identity.

In contrast, the wartime expansion areas never had a separate physical identity. Located in areas historically considered part of Fort Hancock, the expansion areas were always considered part of Fort Hancock. Thematically these areas have a degree of autonomy, but even here they must be considered within the greater context of Fort Hancock since the whole site was involved with the effort of World Wars I and II. Although the structures and functions were considered to be only temporary, the character-defining features and integrity must be considered in the wider context of Fort Hancock as a whole.

Unfortunately, there is little documentation to aid our understanding of historical conditions and changes,

and trying to unravel or read these layers can be difficult. However, considering the Proving Ground and wartime expansion areas separately should help to clarify this situation. This separation will also help elucidate the many changes to the landscape during the 100-year span included in the periods of significance, all of which have contributed to the layers of landscape history.

## 1. The Proving Ground

The landscape of the Proving Ground suffers from diminished integrity. However, the fundamental qualities of **location** and **setting** of the Proving Ground still exist. This is remarkable in the metropolitan area of New York City that has experienced significant growth of housing, commercial development, highways and the other modern intrusions in the landscape. The Sandy Hook peninsula is highly desirable as a site for development and its long ownership by the military has protected it from the growth effecting the neighboring area. Major features at the Proving Ground such as the topography have not changed, and although the coastline is constantly being altered by natural forces, this has always been a factor at Sandy Hook. The skyline of Manhattan in the distance has, of course, changed since 1874, but the overall character of the harbor setting is consistent with that of the past.

**Setting** and **location** are key to the significance of Sandy Hook since its role in coastal defense was directly dependent on its location at the entrance to the harbor. Its role as a site for weapons testing was dependent on the remoteness of the site and the long stretch of dunes available. Fortunately the site has escaped the development that has occurred directly south on the mainland and large stretches of the shore and bay coastlines of the peninsula remain open, as well as much of the interior. The Sandy Hook Lighthouse, a significant feature in views to the south from the Proving Ground remains, and although other buildings have been added or removed from the study area, these changes have not significantly diminished the integrity of the **setting**. The construction of the concession stand at North Beach and the parking lot in the former target range are sensitive to the site and do not intrude visually into the historic landscape. The openness and the sense of the sea are still very evident at the site, which also helps to maintain the qualities of **location** and **setting**.

However, the integrity of the site based on the quality of **design**, has been diminished by several changes over time. The loss of the Ordnance office, which served a critical function at the Proving Grounds and was an important destination, changed the plan of the Proving Ground. The deterioration of the Proof Battery has to some degree had the same effect, diminishing this very important part of the design of the Proving Ground site. The circulation patterns have changed with the loss of the railroad and access to the dock, which served as the main entrance to the site early in its history.

The connection between the Officers' Club and the landscape has been weakened with the enclosure of a large portion of its porch in 1943. This altered the important relationship of the inside to the outside, and diminished the integrity of **design**. Altogether, changes to these elements have altered our perception of the spatial relationships which contribute to the integrity of the quality of **design** of this site.

Another critical loss has been that of the equipment, including the guns, carriages, shells and all the other materials required for testing, at the Proof Battery. These materials, stacked in the gun park and spaced along the range, were critical to the integrity of the Proof Battery based on the quality of **materials**.

The integrity of the Proving Ground based on the quality of **workmanship** has been diminished due to poor maintenance and the loss of exterior details. The craftsmanship and ingenuity of the engineers and workmen who modified the designs of the carriages and guns in response to testing is now lost since both the objects and the processes of refining and tinkering with the weaponry in the machine shop and other related buildings are gone. The changes in the design of the exterior and the overall lack of maintenance have lowered the quality of **workmanship** of the Officers' Club.

The quality of **feeling** of the landscape surrounding the Officers' Club as a place of privilege has been diminished, but not irrevocably lost. This is mainly a result of lack of maintenance. However the poor design and workmanship of the enclosure of the porch in 1943 also has contributed to the loss of this quality. The loss of one tennis court and the disrepair of the remaining tennis court and of the terrace area east of the Caddy House have also diminished the ability of the Officers' Club to evoke the past history of this important area of the Proving Ground.

The qualities of **feeling** and **association** at the Proof Battery have been diminished mainly as a result of the loss of many of the structures and the change in character of the target range and gun park. However, although many of the features of this landscape have been lost, the remains of the Proof Battery are so intriguing and compelling that despite their loss, the feeling or evocation of the "historic sense of past time and place" is not irrevocable.<sup>11</sup> The fact that this military landscape is now used mainly for recreational purposes is ironic and adds to the diminished quality of **association** as well as **feeling**. The losses here also diminish the quality of **feeling** of the rest of the Proving Ground landscape, mostly because of the loss of the activity of the test firings and the work on the weapons and all their accompanying materials. The sense of the size and scale of these objects in the landscape has been lost, as well as the importance and sense of danger of the work conducted on them. Since the Proof Battery is one of the most significant sites at Sandy Hook, and a "one-of-a-kind" military ruin, its diminished integrity is a huge loss.

## 2. Wartime Expansion Areas

The wartime expansion areas have for the most part lost their integrity. Since they are significant for housing and supporting the temporary build-ups during wartime, and since most of these structures are now gone, there is diminished integrity to this period. Although in general the qualities of **location** and **setting** of these areas have not greatly changed, there are very few visible landscape features left of these temporary "communities". The alterations to the original topography for the construction of the roads, utilities and structures are not noticeable under the plant materials that have grown up in these areas or the subsequent development that has taken place. The few remnants of paved drives leading into the overgrown areas east of Fort Hancock are intriguing, but not sufficient to evoke the former historic density of the structures. In the area west of Nine-Gun Battery the subsequent changes to accommodate

recreation have removed almost all traces of historic features.

The few remaining features, such as the two World War II buildings (Building #'s 119 and 120) along Kearney Road, are reminders of the WWII period. Their architectural design is clearly of the war era, but sitting alone in the landscape they fail to convey the magnitude of the expansion period, thus greatly diminishing the qualities of **feeling** and **association**. In addition, the historic spatial relationships among the structures in the expansion areas are lost, as well as the relationships with the surrounding landscape of Fort Hancock, diminishing the quality of **design**. Since there are so few remains, the qualities of **workmanship** and **materials** of these temporary communities have also been lost.

The wartime appearance of the area along Gunnison Road also has been seriously diminished, despite the fact that many of the buildings along it have been retained and have been adapted for reuse. During World War II this area was the site of a "tent city", almost all traces of which have disappeared.

## Endnotes Section IV

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1. U.S. Department of the Interior, National Park Service Interagency Resources Division, *Bulletin 16A: How to Complete the National Register Registration Form*. (Washington, D.C., Government Printing Office, 1991) 35.
2. U.S. Department of the Interior, *National Register Nomination Form: Fort Hancock and the Sandy Hook Proving Ground Historic District*, by Harry Butowski. (National Park Service Division of History, 1980) Item 8, 1.
3. *Ibid.*, Item 8, 5.
4. *Ibid.*, Item 8, 3.
5. *Ibid.*, Item 8, 4.
6. *Ibid.*, Item 8, 4-5.
7. *Ibid.*, Item 8, 1.
8. *Bulletin 16A*, 4.
9. *Ibid.*, 1-4.
10. U.S. Department of the Interior, *Bulletin 18: How to Evaluate and Nominate Designed Historic Landscapes*. (Washington, D.C.) 6.
11. *Bulletin 16A*, Appendix IV:2, definition of Feeling - "quality of integrity through which a historic property evokes the aesthetic or historic sense of past time and place."

## V. CHARACTER-DEFINING FEATURES

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The historic character of a landscape is conveyed by the spatial organization of the landscape and the individual features such as topography, vegetation, circulation, structures, buildings, furnishings and objects that make up the landscape.<sup>1</sup> Understanding the character-defining features of the landscape of the study area at Sandy Hook is helpful in determining the landscape's integrity and appropriate treatment. As discussed earlier, this landscape is comprised of layers of changes, both man-made and natural. The sum of these changes is a measure of the integrity of the site. The following is an analysis of the surviving character-defining features as defined in the *Guidelines for the Treatment of Historic Landscapes*. These are organized by the Proving Ground and wartime expansion areas, into four categories:

1. Spatial Organization, Topography and Views
2. Circulation
3. Vegetation
4. Site Structures and Furnishings<sup>2</sup>

### A. Proving Ground

#### 1. Spatial Organization, Topography and Views

The spatial organization of the landscape "transforms an amorphous environment into a human landscape, and nothing more clearly shows some of the cherished values of a group than the manner in which they fix those boundaries, the manner in which they organize space."<sup>3</sup> The organization of the landscape at the Proving Ground reveals much about the values of the U.S. Army and the Ordnance Department, whose decisions were based on the needs of this new department and the existing natural and man-made conditions on the site. Many major built elements are still existing, including the remains of the Proof Battery, the Officers' Quarters and other residences, the Chemical Lab, the dock, and the mechanics shop and other service buildings. Although the Ordnance Office no longer exists and access to the dock is restricted, the elements are nonetheless seen to be organized logically by function into zones, as has been discussed earlier. In addition the Officers Quarters' was given the most prestigious location within the boundary of the Proving Ground.

The hazardous nature of the work at the Proof Battery as well as the need for long, open distances for test firings made siting the Proof Battery on the empty dunes on the east side of the peninsula a logical decision. The concrete remains of the Proof Battery and the long views down the empty dunes still exist as character-defining features (see Figure 62 for the important views within the study area).

The siting of the Officers' Quarters on the highest location in the Proving Ground was an important decision, and one that the Ordnance Department was willing to argue for. This feature is still clearly evident in the topography today, and this decision placed the Officers' Quarters in a commanding location on the flat site, physically expressing the military hierarchy. The elevation also provides views to the south which include the Sandy Hook Lighthouse, and to the east toward the Proof Battery and ocean. The location and character of the Officers' Quarters site no doubt was a coveted position, and as a character-defining feature its importance is still felt on the site.



The area of the Proving Ground containing the machine shop, warehouse, and other brick buildings was organized loosely around a "yard." This enclosed spatial quality has been retained, although access is restricted.

## 2. Circulation

Circulation is an important characteristic because it ties the buildings and spaces together in a landscape, thereby largely determining our experience of it as we move from one building or space to another. Circulation is established by the alignment or layout of the roads and walks, and by the details of the surface treatments, curbs, drainage structures, and other features, which all contribute to the historic character of a site.

### Road Layout

The historic circulation patterns at the Proving Ground have stayed very much the same over time, although some minor changes have occurred, including the realignment of the road through the former WWII expansion area to be directly opposite Knox Road at the intersection with South Bragg Drive in the 1980s. The most important change has been not to the circulation system, but to the sequence, for early access to the site was generally from the dock, with most materials and visitors arriving and departing by boat. This arrival sequence culminated at the Officers' Club on its knoll. By contrast, the site is now approached from the mainland to the south as roads and automobiles have become more reliable and the common mode of transportation. The sequence now takes the visitor past the formal Officers' Row of Fort Hancock, and makes the arrival at the Officers' Club somewhat anticlimactic. The current arrival sequence has thus changed our experience of the landscape's historic character.

### Railroad

The railroad, which once played a very important role at the Proving Ground, is now evident in only a few remnants of tracks at the maintenance area, between parking lots J & K, and the Proof Battery, as well as the indentations of the old railroad bed in the lawn north of the Barracks (Building 102).

### Roadway Surface Treatments and Curbing

Little documentation for surface treatment of the roads in the early Proving Ground period remains. However, in 1899 a discussion concerning the construction of roads for Fort Hancock elucidates the historic conditions of roads and walks at the Proving Grounds:

The soil was a loose sand, making it difficult for a team to pull much more than an empty wagon and quickly filling the shoes of a pedestrian. Therefore, plank roads and boardwalks, such as those found on the proving ground, were a necessity.<sup>4</sup>

It is not clear when roads at the Proving Ground were "macadamized". It is likely that it was done in conjunction with similar roadwork for Fort Hancock, either before or after the Proving Grounds left in 1919. The surface treatment was probably "layers of broken stone, graduated from large aggregates on the bottom to smaller pieces at the surface. The final wearing course of the roadway was surfaced with water bound macadam."<sup>5</sup> Later, as the automobile traffic increased in volume and speed, bituminous asphalt was applied with a final coat of stone screenings. In the 1950s all roads were covered with plant-

mixed hot asphalt, and in 1984-85 further work was completed on them.

At the gun park north of the Proof Battery, another surface treatment was the spreading of cinders to prevent the sand from drifting during storms.<sup>6</sup> These differing early surface treatments have all been lost and the modern treatments, while much more practical, are not historic or character- defining.

Today, bluestone curbing lines Canfield and Knox Roads, South Bragg Drive, and portions of the driveway to the Officers' Quarters. Curbing in other areas is cast-in-place concrete. Drainage inlets in the road pavement along the curbing are cast iron with a pattern of regular square openings, similar to those at Fort Hancock.

#### Road Signage

As discussed in the *Historic Landscape Assessment for Fort Hancock*, the only documented street signs used historically at Sandy Hook were of cast iron construction and are known to have been in use circa 1934, and perhaps earlier. The words "Fort Hancock" were placed at the top of the street name, and they were placed at intersections. The Proving Ground area would have been under the jurisdiction of Fort Hancock in 1934, but it is not known if the use of these signs extended to the former Proving Ground area.<sup>7</sup>

#### Officers' Club Driveway

The character of the driveway at the Officers' Quarters has changed to reflect new means of transportation and different priorities for the use of the building. Originally the driveway was a loop that was entered from the west. It was expanded in 1938 with the addition of parking spaces and carried through to Canfield Road. This accommodated the increased use of automobiles at Sandy Hook, and the larger gatherings held at the Officers' Club during the Fort Hancock tenure. By 1974 the driveway was paved up to the foundation of the house, with wheel stops and parking spaces marked for the "CO", or Commanding Officer, and other high ranking personnel.<sup>8</sup>

#### Walkways

The alignment of the walks on the grounds immediately surrounding the Officers' Quarters have remained very much the same, although some of their destinations, such as the greenhouse, no longer exist. However, the walks which radiated further into the landscape from the immediate vicinity of the building have in many cases been lost. The most significant of these losses was the walk to the Proof Battery across the open space east of the Officers' Quarters, which was destroyed by construction during World War II. Only traces remain of the walk north across the open space to the former location of the Ordnance Office. The early surface treatment of these walks is not known.

### **3. Vegetation**

Vegetation is a natural feature in the landscape, which can be used intentionally by man to change and form spaces and to give meaning to different areas. Within the study area at Sandy Hook plant materials were used for public plantings, for domestic ornamental plantings and in gardens for produce.

Unfortunately, there is very little documentation about specific plantings in the study area, and few

original plantings remain. This is especially a problem with ornamental plantings, which require considerable care to survive. An aerial photograph from 1924 does not show a clearly defined planting scheme at the Officers' Quarters, but intentional plantings are visible by the laundry and other residences. What looks like hedging appears near the laundry, which may indicate that this area was used as a drying yard, and the hedging used for drying laundry or as screening from the Officers' Quarters. Very little is known about ornamental plantings in the other residential areas of the study area.

### Street Trees

Street trees are an important character-defining feature in the landscape, defining the circulation patterns, giving importance to certain roadways, making the roadways more hospitable, and unifying the entire landscape. In the 1924 aerial photo some street trees are in evidence, especially along Canfield Road from the intersection with Kearney Road east to the Officers' Quarters, and in front of the Barracks along Kearney Road (Figure 16). The 1943 aerial also shows trees along Canfield Road from Kearney and also in front of the Officers' Club (Figure 27). The landscape plan done in 1941 by Wolcott Erskine Andrews documents the location, trunk diameter, and common names of street trees then existing as well as a planting plan for trees and shrubs throughout the site, but especially at the location of the new construction for World War II. It is doubtful if any of this was planted since there is no documentation or traces of these plants, and it is unlikely that such an ambitious project which would involve considerable expenditure of time and money would be given a priority during this wartime period. Appendix D includes a list of the existing trees noted on the Andrews's plan within the former Proving Ground area in 1941. Many of the shorter-lived trees, such as the poplars, elms, and oaks are now gone, victims of storms and the difficult conditions on the sandy point.

However, comparing the information regarding trees at the time the plan was done in 1941 with existing conditions shows that many of the trees still exist from this period (Appendix D, Figure 63). This comparison also highlights the important street trees that are missing, most notably along Canfield Road west of the Officers' Club. The Andrews's drawing noted fifteen London Planetrees and maples in this stretch, planted next to the road, and the aerial photographs show trees lining this road. Almost all these trees are gone now, which greatly changes our perception of this space. The Andrews's drawing also notes fifteen planetrees planted on Canfield Road in front of the Officers' Club and extending between the duplexes to South Bragg Drive. These also show up on the 1943 aerial. Fortunately many of these trees have survived and give us a sense of what the section of Canfield Road west of the Officers' Club would have been like lined with trees. Street trees are important to the historic character of the Proving Ground, and remind us of how impressive and pleasant the streets would have been in the former Proving Ground area.

### Lawns

The use of turf grass for lawns is another important feature in the landscape. In this difficult, sandy location large amounts of topsoil had to be imported to allow even a simple lawn. Despite struggles with the conditions faced by the early inhabitants, lawns have been maintained in the residential areas of the Proving Grounds. These lawns are still in fair condition, thus making an important contribution to the site's historic character.

#### 4. Site Structures and Furnishings

The structures and furnishings in a landscape are a reflection of the preferences of the times for using outdoor spaces. For example, terraces and porches are places used to enjoy the outdoors. They are the "middle ground" between indoors and outdoors, and our use of them reflects our personal and cultural attitudes toward nature. In addition, the site ornaments, light fixtures, and other structures built in the landscape exemplify these attitudes, as do recreational spaces such as playing fields and tennis courts.

##### Porches

Porches were a typical feature of homes and other buildings at the turn of the century.<sup>9</sup> At Sandy Hook the porches on the Officers' Club, residences, and barracks would have been especially welcome places to enjoy the breeze from the bay or ocean while sheltered from the sun. Most of these porches have since been enclosed, at least in part, which implies a change in our preferences for leisure time, as well as other more technically advanced ways to remain cool. Nonetheless, enclosing the porches represents a major alteration to an important character-defining feature.

##### Terraces

There is no documentation dating the existing terrace and barbecue located east of the Caddy House. The terrace is shown in a map from 1919, but at this time it probably served a purely functional purpose in keeping with the structure's original use as a laundry.

The use of the terrace probably changed in the late 1930s at the time the building became known as the Caddy House. With the addition of a bar to the interior of the building, the use of the terrace would have become a place for social gatherings in keeping with the character of a recreational club. Although its construction is not documented, the barbecue would have augmented the social use of this space. This evolution of leisure spaces from porch to terrace and barbecue reflects changes in society and at Sandy Hook. The terrace is important to the recreational character of the Officers' Club.

##### Site Structures

The ornamental structure used as a garbage shed is also an important feature in the landscape, for the fact that such a purely utilitarian structure was given an ornamental design shows the importance of an attractive appearance to the grounds around the Officers' Quarters. There is little known about when it was built, although a small structure in the same location is documented on the map and aerial photograph at the time the Ordnance Department left Sandy Hook (Figures 15 & 16). This structure is noted in the List of Classified Structures, as a NPS-owned structure not previously described or listed in NHL documentation (Appendix B, attachment, page 6).

##### Recreational Features

The tennis court in the open space across from the Officers' Club dates back to the Proving Grounds period before 1919. It is an important feature in the landscape, contributing to the character of the grounds as a place of leisure for the Officers of the Proving Ground and later Fort Hancock. Playing tennis was becoming popular at the end of the century, and the existence of tennis courts at this early date, indicates that the officers at the Proving Grounds, despite the remote location, led a privileged

life.<sup>10</sup>

#### Outdoor Lighting

The remaining Proving Ground light standard dating to 1897 is an important character-defining feature in the landscape.

#### Military Site Ornaments

A photograph from the late 1930s shows the tip of an artillery shell alongside the walk leading to the front of the Officers' Club (Figure 24). Underwater mines were also used as ornaments on each side of the front steps to the former Barracks (Building 102) now the Education Center. As at Fort Hancock, military objects may have been used for decoration at other locations on the Proving Ground site, although none exist here currently. These features once contributed to the military character of the site.

The flagpole in front of the Barracks dates to 1979-80. It is the only flagpole on the Proving Grounds site and although it does not date to a historic period, it is a feature that contributes to the site's military character.

#### Domestic Features

The clothesline north of the residence, Building 104, very simply constructed from pipes, contributes to the domestic feeling of this landscape. There is no documentation available to date this feature which is consistent with others throughout Fort Hancock.

#### Bus Shelters

The bus shelter dating from 1965 north of Building 102 is one of two originally within the study area (the other was located south of Gunnison Road). This small structure contributes to the "community" character of the site.

### **B. Wartime Expansion Areas**

#### **1. Spatial Organization, Topography and Views**

The World War I expansion area north of the Officers' Club has been subject to so many layers of subsequent change that the character of the early period has been lost.

A great majority of the structures dating from the World War II expansion period have been removed. In the area northeast of the Officers' Club there were approximately 50 buildings; west of Batteries Potter and Granger there were approximately 50 buildings; in the Gunnison Road area there were over 450 tents and more permanent structures. A few others were scattered throughout the site where room allowed, including three south of the Barracks (Building 102). Of these many structures there are few remaining: three behind the maintenance area, two south of the Education Center, one in the area west of the batteries, and fourteen along Gunnison Road. Many of these structures were considered temporary when they were built, and their removal was anticipated.

However, the few remaining structures cannot give a sense of the landscape's character extant during the

period of significance. The manipulated landform that had been graded to provide a flat surface for the new structures is a cultural feature that is now invisible under the vegetation that has gradually overgrown the vacant land that had contained these communities. The relationship of these temporary structures to the permanent structures of Fort Hancock has also been lost, as has the density of the buildings in these spaces and their regular, orthogonal organization that would have produced a distinctively military appearance.

## **2. Circulation**

Mere remnants of the roads and driveways still exist in the World War II expansion area east of the Fort Hancock service buildings. The few remaining road traces entering into the overgrown areas are the only features remaining of the circulation system that served this dense community.

Gunnison Road is still lined with World War II support buildings, but nothing remains of the circulation that gave access to the "tent city" complex that had been to the south. The area west of Nine-Gun Battery that housed the World War I and II build-ups has had many subsequent changes that have removed traces of the historic circulation. Any character-defining features have been lost.

## **3. Vegetation**

As described above, native and naturalized grasses, shrubs and small trees have been allowed to take over the open spaces once used for World War II expansion. The few ornamental plants and gardens shown in historic photographs have been lost to the new growth with the exception of a few remaining yucca and daylily plants which probably date from this era. None of the hedges that helped to screen and define the spaces remain.

## **4. Site Furnishings and Structures**

There was very little time or money to devote to adding the small outdoor structures that would have enhanced life here. Photographs show low fencing and signs that named the battalion stationed at the area, but these have all been destroyed. One of the few surviving features of this period is the track and recreation area built northeast of Mortar Battery. However, the track is barely discernible (the baseball backstop in this area dates to 1966-67 and is also seriously deteriorated).

## Endnotes Section V

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1. U.S. Department of the Interior, *Guidelines for the Treatment of Cultural Landscapes*, (Washington, D.C.: 1996) 14.
2. *Ibid.*, 15-16.
3. John Brinckerhoff Jackson, *The Necessity for Ruins*, (Amherst, MA.: University of Massachusetts Press, 1980) 115.
4. U.S. Department of the Interior, *Historic Resource Study: Fort Hancock 1895-1948, Gateway National Recreation Area, New York-New Jersey*, by Edwin C. Bearss, Washington, D.C., National Park Service, 1981) 17.
5. U.S. Department of the Interior, *Historic Landscape Assessment for Fort Hancock*, Olmsted Center for Landscape Preservation, (Boston, MA. National Park Service, revised 1997) 55.
6. U.S. Department of the Interior, *Historic Resource Study: The Sandy Hook Proving Ground 1874-1919*, by Edwin C. Bearss, (Washington, D.C., National Park Service, 1983) 184.
7. Olmsted Center for Landscape Preservation, 62. There is one sign remaining in the collection at Sandy Hook.
8. Thomas J. Hoffman, Park Historian. Conversation with the author, February 3, 1999
9. Thomas J. Schlereth, *Victorian America: Transformations in Everyday Life*, (New York, NY.: Harper Perennial, 1991) 133-4.
10. *Ibid.*, 211.

## VI. TREATMENT RECOMMENDATIONS

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The treatment section of a cultural landscape report attempts to articulate a preservation strategy for the long-term management of the landscape based on its history, existing conditions, and an analysis of significance and integrity. This section is meant to provide the initial framework for developing a more detailed approach for the future care and management of the Sandy Hook landscape. The treatment recommendations must take into consideration a broad range of relevant issues relating to the maintenance of structures, vegetation, visitor access, and safety, among others. This section begins with an evaluation of four primary preservation treatment alternatives: preservation, rehabilitation, restoration and reconstruction. Consideration of management goals and issues associated with the study area at Sandy Hook has led to the selection of rehabilitation as the recommended treatment approach.

### A. Goals of the General Management Plan

The General Management Plan for Sandy Hook states that the goal for the North Area of the peninsula is "to provide year-round use at Fort Hancock by converting it to a Gateway Village related to the fort's cultural resources and the adjacent beach and ocean."<sup>1</sup> Because of the number of buildings and the minimal funding available, the GMP recommends long-term leasing by the private or non-profit sector. Under this scenario the lessees would be responsible for physically adapting the space to their needs. In addition the lessees will provide support facilities and maintenance, cooperating with the National Park Service in maintaining the historic character of the Fort Hancock landscape.

Adoption of the village concept within the GMP resulted in the definition of management and use zones based on resource characteristics, the existing layout, and the interpretive and adaptive potential of the buildings and landscape. Three zones were specified for the North Area of Sandy Hook. Two of these, the Rehabilitation Zone and the Coastal Fortification Zone, are located within the study area (Figure 2 of this report).

The goal within the Rehabilitation Zone is "to retain the integrity of the historic scene and to provide for adaptive use through rehabilitation of historic structures."<sup>2</sup> Uses suggested for the structures in this area include hostels, conference/education centers, overnight accommodations, restaurants, and health complexes.

The goal within the Coastal Fortification Zone is "to instill a sense of Sandy Hook's significance in harbor defense and as a Proving Ground for military arms development." The GMP further states that the National Park Service will "selectively stabilize portions of four fortifications according to the Secretary of the Interior's Standards for Rehabilitation and will make them safe for public access."<sup>3</sup> The Proof Battery is included within the four selected, as well as Battery Potter, Mortar Battery and Battery Grainger.

Of the interpretive themes discussed in the GMP, four include the landscape within the study area:

Central Theme: Natural forces have created a landform that, because of its relationship to New York Harbor, is important to wildlife and people.<sup>4</sup>

Theme: Military Presence and Garrison Life - Military and garrison activities have evolved from the 18th century to the present.<sup>5</sup>

Theme: Arms Development - Each stage of the arms race requires testing, and together they chronicle America's development as a world power.<sup>6</sup>

Theme: Coastal Defense - The military and commercial importance of New York Harbor demands an elaborate defense system.<sup>7</sup>

## B. Treatment Alternatives

There are four broad alternatives for treatment of historic landscapes as specified in the Secretary of the Interior's Standards. These strategies include preservation, rehabilitation, restoration and reconstruction. **Preservation** focuses on the maintenance and repair of existing historic materials and retention of a property's form as it has evolved over time.<sup>8</sup> **Rehabilitation** is a treatment that allows for the construction of new features, such as parking and structures to facilitate a contemporary use. While limited replacement of missing features may be accomplished, care must be taken not to alter the overall character of the property. Missing features may be replaced as they existed historically based on documentary evidence, or they may be replaced with a new design provided that the new feature is clearly differentiated.<sup>9</sup> **Restoration** is undertaken to depict a property at a particular time in its history, while removing evidence of other periods.<sup>10</sup> **Reconstruction** recreates vanished or non-surviving portions of a property for interpretive purposes.<sup>11</sup>

## C. Treatment Strategies Considered but not Recommended

A **preservation** approach would prescribe the maintenance and repair of the existing structures and features in the landscape as they currently exist. It would not allow the reuse of buildings and development of the additional support facilities as called for in the GMP village concept. While this treatment would require less intervention and funding than others, it would be beyond the current financial resources of the National Park Service.

**Restoration** would require the depiction of the study area at a certain point in time. The most significant period for the Proving Grounds would be 1900 to 1919 and for the wartime expansion areas would be 1940 to 1945. This treatment strategy would require sufficient documentation for proper restoration. Unfortunately this level of documentation does not currently exist especially for the period of 1900 to 1919. This strategy would involve the reconstruction of many buildings and features, including all the buildings for World War II, and removal of others such as the duplexes near the Officers' Quarters. This approach would have a detrimental effect on natural resources, especially the existing dunes which would be reconstructed as the target area. The expense of this strategy would be far beyond the resources of the National Park Service and would be counter to the goals set forth in the GMP.

A further problem with the strategy of restoration is the physical overlapping of some portions of the Proving Ground and wartime expansion areas and their different periods of significance. One period

would have to be chosen which would exclude the proper restoration of the other area to its period of significance.

A **reconstruction** approach would require the recreation of lost features for interpretation. While this approach would aid in interpreting the Proof Battery, the most historically significant portion of the study area, it also would be prohibitively expensive, although the replacement of certain missing features might be advantageous in interpreting this landscape.

#### **D. Treatment Strategy Recommended: Rehabilitation**

A **rehabilitation** approach would allow for the repair and alteration of features of a historic landscape while maintaining its historic character. It allows for a compatible reuse while preserving the features that contribute to the significance of a property, and accommodates the possibility of multiple and discontinuous periods of significance. Rehabilitation is also in keeping with the goals of the GMP. For all these reasons it is seen as the most appropriate for the Proving Ground and wartime expansion areas.

#### **E. Rehabilitation Guidelines**

“Rehabilitation is defined 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.”<sup>12</sup>

Rehabilitation is the only treatment that allows for the construction of new features and uses, and while limited replacement of missing historical features may also be made, care must be taken not to alter the character defining features which establish the overall historic character of the property. This is especially important when a reuse is being considered, as is the case at Sandy Hook.

#### **F. Treatment Issues and Recommendations**

Cultural landscape management involves identifying the type and degree of change that can occur while maintaining the integrity of the landscape through the retention of historic fabric. In order to be helpful, landscape treatment recommendations must balance historic preservation goals and operational and park management needs. The following treatment issues and recommendations are intended to provide general guidance for the treatment of the Proving Ground and wartime expansion areas within the study area. The issues were identified during meetings with park staff and are grouped into six major categories:

- Issue 1: Deteriorating Landscape Features and Characteristics
- Issue 2: Guidance for Reuse by Private Sector Lessees
- Issue 3: Visitor Safety
- Issue 4: Consideration of Maintenance Requirements
- Issue 5: Accommodation of Universal Accessibility
- Issue 6: Improved Interpretative Opportunities

The recommendations are grouped within the most appropriate category by “Proving Ground” or “Wartime Expansion Area”, generally following the priorities set by park management.

### **Issue 1: Deteriorating Landscape Features and Characteristics**

The treatment of the cultural landscape and historic structures within the study area has become necessary due to the limited resources made available for their preservation during the past 25 years. This has resulted in neglect of the cultural landscape and structures, and made repairs urgently necessary to save important features and characteristics. These recommendations primarily address physical measures that are more appropriately addressed and may be further developed in the design development and construction process.

#### **Recommendations:**

##### Proving Ground – Officers’ Club

The Officers’ Club (Building 114) was the highest priority for treatment identified by park management. However, to properly address this issue, the treatment area was expanded beyond the immediate grounds of the Officers’ Club to include areas of the landscape that are important to understanding the spatial organization and siting of this structure. This expanded area is also important in maintaining the recreational features of the Officers’ Club landscape for proper interpretation of the site as a “Club” suggestive of compatible future uses for this landscape. For this discussion, the Officers’ Club landscape includes the grounds immediately surrounding the Officers’ Club, the triangular “island” areas to the northwest formed by the intersections of Knox and Canfield Roads, and the open spaces to the northeast formed by Ford Road, South Bragg Drive, Kilpatrick and Canfield Roads.

- 1a. The current concrete surfaces of the walkways are showing signs of deterioration. The treatment of the walkway surfaces, either repair or replacement in kind, must be addressed as a preservation and interpretive issue, as well as a safety issue.
- 1b. An inventory and assessment of the woody plants in the Proving Ground area would identify specimens that need arboricultural treatment. Minor problems such as pest infections and poor limb structure could be identified, as well as more serious hazardous conditions such as dead limbs hanging over pedestrian walkways. This would allow a long-term strategy to deal with maintenance and replacement, which is beyond the scope of this report.
- 1c. The tennis court in the open space across from the Officers’ Club is still visible yet in a deteriorated condition. This feature adds considerably to the historic character of the landscape as a place for recreation. Stabilization would allow interpretation of this important aspect of the Officers’ Club. If the new use of the Officers’ Club warrants, the rebuilding and reuse as a tennis court would be compatible with the historic landscape, and an attractive amenity for a potential lessee.

##### Proving Ground – Proof Battery

- 1d. Since the Proof Battery, including the target range and gun park, is arguably the most significant portion of the landscape in the study area, the treatment of the deteriorated

historical features in this landscape is especially important. The concrete remnants of the Proof Battery should be stabilized, as recommended in the GMP, and plant materials should be removed in the least intrusive methods possible to keep the structures in view.

The long view down the target range should also be kept open, with no tall trees or visible human structures to obstruct the view. The design of the North Beach parking area has successfully addressed this issue, and the lot is barely visible from the Proof Battery. The elevation of this lot keeps it generally below the sight lines of visitors and the use of vegetation adds screening without being too high and blocking the view. Persistent selective removal of vegetation that would grow to obstruct views will maintain this important view.

## **Issue 2: Guidance for Reuse by the Private Sector**

Guidance is necessary for the park to manage the reuse of resources by the private sector. While rehabilitation as a treatment strategy allows for alterations or additions necessary for a new use, the features of a structure or landscape that convey historical character should be maintained.

### **Recommendations:**

#### **Proof Battery – Officers’ Club**

The historic uses of the Officers’ Club – as a prestigious residence and place for relaxation and recreational pursuits - presents an excellent model for future uses, and is compatible with the direction of the Park’s General Management Plan.

- 2a. One of the most important character defining features of the Proving Grounds is the siting of the Officers’ Club on a small knoll. This is best seen from the northwest approach along Canfield Road looking across the triangular islands formed by the intersections of Knox and Canfield Roads, and from the northeast across the open spaces formed by Ford Road, South Bragg Drive, Kilpatrick and Canfield Roads. Keeping these spaces open and free of structures will maintain the important view of the Officers’ Club on its knoll. It will also allow important views such as to the Proof Battery and Nine-Gun Battery from the Officers’ Club (see Figure 62). The size, configuration and location of any new structures or plantings that would block the views to or from the Officers’ Club should be very carefully considered.
  
- 2b. The porches on the east and south sides of the Officers’ Quarters are architectural features that are also very important to the landscape. The porches historically were the places the Officers and their guests went to be outdoors. As discussed in Section V of this report, this was typical at the end of the 19th century, and there were no terraces, gazebos or other structures that provided a place to sit in the open air apart from the porches. Repair of the front porch (east façade) will allow the recapture of this experience of the relationship between the inside and outside. An appropriate treatment for the south side of the Officers’ Club also needs to be carefully considered. The enclosure of the porch during 1943 is not compatible in design or materials with the previously detailed bay window of the dining room and the porch that extended from this

window east and joined with the front porch. The architectural detailing of the bay window was sophisticated and would be a good guide for future designs (Figures 20 & 22 show it at the time of the fire in 1938). The porches are a very important character defining feature both to the architecture and landscape, and a new design for reuse should consider restoring this facade to the earlier historic period, or a new compatible treatment that re-establishes the historic relationships between indoors and outdoors with the use of porches.

- 2c. The exterior color of the Officers' Club is an important feature because it distinguishes this Proving Ground structure from the later buff-colored buildings of Fort Hancock. Known informally as the "Brick House" during both the Proving Ground and World War II Fort Hancock eras, the removal of the buff-colored paint, which dates from between 1964 and 1969, from the red brick exterior of the Officers' Club would re-establish this important characteristic.
- 2d. Replanting street trees on the main route to the Officers' Club, from the Rodman Gun along Kearney Road and especially along Canfield Road would reinstate this important character-defining feature and help mark the route to the Officers' Club. Currently arrival at the Officers' Club is almost anticlimactic after approaching by way of Officers' Row. Passing through a row of closely spaced street trees ending at the Officers' Club would clarify this route and give the destination more weight.
- 2e. The repair or replacement of the paved terrace and barbecue, and the restoration of the "Caddy House" west of the Officers' Quarters would provide for interpretation of the social life of the officers at Sandy Hook. Depending on the new use of the Officers' Club, this area could accommodate similar new uses.
- 2f. The ornamental garbage shed should be restored and continue to be used.
- 2g. There is almost no documentation for specific plantings in the lawn areas adjacent to the Officers' Quarters, but from period photographs it appears that the treatment of the landscape was very simple and informal, consisting of lawn, trees and some shrubs. There is no record or other indication of flowering perennials or annuals in ornamental planting beds on the grounds. The most helpful source for treating the plantings along the front walkway and east and south sides of the Officers' Club are photographs from the 1930s. These depict very simple plantings bordering the walk and foundation shrub plantings. This simple palette of plant materials provides good direction for future private sector occupants.

The former greenhouse area to the south of the Officers' Club, while not historically an ornamental area, would be the most appropriate site for a more formal garden. This use could also facilitate the interpretation of the site, as discussed in Issue 6c. However the historic boundary of the greenhouses should be strictly adhered to.

2h. Hedges were used historically for screening the "Caddy House" area and to define walkways as shown in aerial photographs from 1924 and 1943 (Figures 16 & 27). Although there is little specific information about the plant materials used (privet was commonly used at Fort Hancock and lilacs were known to be used south of the Officers' Club) or the height of these hedges, they do provide a historic precedent to be considered for screening proposed modern intrusions into the landscape, and for defining spaces when plans for the rehabilitated landscape are proposed .

2i. The asphalt parking area directly north of the Officers' Club was extended to the foundation of the building sometime between 1937 and 1974, adversely effecting the residential character of the structure. Pulling the pavement back from the foundation and the use of very simple plantings in the small space created between the edge of the pavement and the building would help re-establish the character of this area. A minimal parking area, used only for accessible parking is more in keeping with the historic use of this building as a "Club".

2j. Alternatives to lessen the visual impact of the large parking area that would be necessary for a new use of the Officers' Club should be carefully considered. As discussed earlier, the triangular islands to the northwest and the open spaces to the northeast of the Officers' Club are important in maintaining historic views to and from the Officers' Club and should be left open. One alternate location for parking may be available in the area south of the Officers' Club, across South Bragg Road. Understory trees and shrubs could be used to screen the parked cars from view from the Officers' Club, while keeping the views open to the south and the Sandy Hook Lighthouse. This site would provide fairly easy access to the main entrance of the Officers' Club. However this site has become an important wildlife habitat and a significant birding area which is a concern.

Another location for parking would be east of the former Barracks, Building 102. This site was the location of the theater and other structures and has remained in lawn. It would be further from the Officers' Club and access would have to be routed to the front, main, entrance of the Officers' Club, but it would not be too intrusive.

A parking area west of the maintenance facility has also been discussed. Parking here would not intrude visually, but it would be remote and it might be conflict with the remains of railroad tracks in the area. Routing visitors from here to the Officers' Club would be difficult, as well as keeping them from the NPS Maintenance facility.

Other possible locations for parking are discussed in Issue 2m.

2k. The existing configuration of the walkways around the Officers' Club has undergone very little change from historic periods, and all consideration should be taken to maintaining this authentic configuration.

- 2l. The use of the duplexes (Buildings 144 and 145) for additional housing or conference room space, depending on the requirements of the new use of the Officers' Club, would be compatible with the historic character of the Officers' Club landscape.
- 2m. The use of the former brick buildings (Buildings 125, 124) now in the North Maintenance area should also be considered for reuse. These former Machine Shop buildings could provide the large square footage necessary for recreational facilities as well as other uses. To separate the new function of these buildings from the continued NPS maintenance function of the buildings directly to the north across the courtyard, a different circulation route for the new function could be considered from the east, the former location of the Ordnance Office. An entrance from this location would keep the new function separate from the existing and tie the new function to the Officers' Club by the historic circulation pattern (see Figures 15 & 36). Parking areas are readily available in this lower area and west of Nine-Gun Battery in Parking Lot K.

### **Issue 3: Visitor Safety**

Concerns for visitor safety include the adequacy of lighting, the hazardous condition of walkways, and the potentially dangerous condition of overhead tree limbs. Dealing with these safety concerns in a manner compatible with the historic character of the site is an objective of these treatment recommendations.

### **Recommendations:**

#### Proving Ground – Officers' Club

- 3a. With the expected increased use at the Officers' Club, the adequacy of lighting at the site will need to be upgraded depending on the future use. The new lighting plan should provide adequate lighting for safety without being too harsh in the intensity or color of the light. Several different types of fixtures may be needed depending on the lighting needs, however the fixtures should be compatible with the historic character of the Proving Ground and Fort Hancock. Where possible a replica of the Proving Ground light fixture should be used.
- 3b. The ramp from the Officers' Club to the lower level, former site of the greenhouses, presents a safety hazard because of its deteriorated condition and lack of handrails. Modifications to bring it up to compliance with current standards for handicapped accessibility would solve this problem.
- 3c. Although there are a number of concerns relating to the maintenance of the vegetation on the Officers' Club Grounds, the most urgent concern is providing a safe environment for visitors. The trees and shrubs are in need of pruning to minimize safety hazards in addition to correcting structural deficiencies. In some areas the smaller trees, especially holly trees, are overgrown and have spread into the walkways, making passage difficult. If keeping them pruned becomes a constant maintenance issue or seriously deforms the

plants, removal and replacement in kind is recommended.

- 3d. Another hazard ubiquitous to Sandy Hook is poison ivy, which is especially prevalent on the barbecue near the Laundry and in the open space east of the Officers' Quarters by the tennis court. Increased visitation will make this problem more pressing, and an aggressive Integrated Pest Management (IPM) program should be undertaken to manage this hazard.

#### Proving Ground

- 3e. The use of the historic Proving Ground light fixture for all walkways in the historic Proving Ground area would provide the necessary illumination for most conditions as well as help to clearly differentiate this area from Fort Hancock.
- 3f. Plantings for other residential areas in the Proving Ground should follow the simple features used for the Officers' Club of lawn, trees, shrubs and simple plantings of annual flowering plants if maintenance allows.

#### **Issue 4: Consideration of Maintenance Requirements**

Maintenance resources at the Sandy Hook Unit are continually being stretched in an effort to accomplish more work with static or reduced resources. The maintenance implications of treatment recommendations must be considered in any treatment recommendations.

#### **Recommendations:**

##### Proving Ground- Proof Battery

- 4a. Walking in this sandy area has always presented problems. Boardwalks historically were used in the target range, but the cost of these may now be prohibitive. Cinders were used historically in the gun park to stabilize the sand, and the varied size of the particles and their ready availability may have been a factor in their success. The current use of filter fabric covered with crushed stone is one promising solution, especially with a mixture of varied sized aggregate, which would give the best stability. The successful pinning of the edge of the plastic to keep it hidden is also important.
- 4b. This area historically was very open, the dunes and beach areas were actively used for the target range. However, vegetative materials to stabilize the dunes are the most responsible treatment now. To keep the sense of openness it is important to remove trees or other plant materials that will grow too tall and block the long views.

##### Wartime Expansion Area

- 4c. The open areas east of Fort Hancock have been allowed to grow up with the trees, shrubs and other herbaceous material, covering almost all traces of the community that filled this space during World War II. Maintenance to keep some of the existing roads and ground form clear while not unduly disturbing the natural resources would allow for interpretation of this layer of the landscape (see Issue 6m). Also, while this open space and vegetation now provides valuable wildlife habitat, invasive species should be

monitored and controlled.

- 4d. The area west of Nine-Gun Battery that was both a World War I and II expansion area, has undergone so many changes that very few historic features remain. The perimeter asphalt roadway, especially on the eastern side contains many large potholes. The gravel parking area in the center, which was used for recreational vehicles, is also in serious disrepair. Both these areas need immediate attention if they are going to continue to be used as overflow parking and as the route for visitors to reach the most northern areas of Sandy Hook.

Using different surface treatments can help to delineate different functions in this open space while allowing for different levels of maintenance. An asphalt-surfaced perimeter roadway and the continued use of a permeable surface for the parking area would balance practical needs of maintenance and overflow parking.

#### **Issue 5: Accommodation of Universal Accessibility**

With many of the historic buildings currently closed to the public, accessibility is not now an important issue. However, it will become so as more of the site is used for interpretation, or leased and adapted for reuse. With the increase in public use, the goal of universal accessibility has implications for the treatment of the cultural landscape and structures. Accessibility should be considered in the initial design phases, and integrated into the whole design. It should not be tacked on as an afterthought, neglecting the important historic relationships of the indoors and outdoors by either masking them or making these experiences inaccessible to future visitors.

#### **Recommendations:**

##### Proving Ground – Officers' Club

- 5a. The addition of a ramp, lift, or other means to allow universal access to the Officers' Club will need to be taken into account in the design for the reuse of this building. The historic uses should be carefully considered as well as the new uses, including automobile access, entrance areas in the structure, and the use of the porches for leisure. Since the east and south sides historically were the most ornamental with porches, and the west side was the working area of the structure with an entrance to the kitchen, the north side may present the most promising area for a ramp or lift to the porch west of the former location of the porte-cochere.
- 5b. Walkways, especially the existing ramp south of the Officers' Club discussed above, will have to be brought to conformity with codes regulating universal accessibility.

### Proving Ground

- 5c. The future uses of the other buildings in the Proving Ground area will determine the necessity for universal access. Those now used by the park service, especially the residential Buildings 104 and 108, will need alterations to accommodate universal access. Maintaining the residential character of these highly visible structures will be important in the design of these contemporary features.

### **Issue 6: Improved Interpretive Opportunities**

Improving the interpretation of the four themes laid out in the GMP that are relevant in the study area is made more difficult by the loss of significant features in the landscape. The development and testing of weapons was the most vital role of the Proving Ground. However, many of the character-defining features of the Proof Battery have been lost. In addition, the antiquated materials and processes of this testing are unfamiliar to most people, making the need for visual and other aids to augment the imagination especially important for effective interpretation of this theme. Also the structures and historic landscape of the wartime expansion areas are almost entirely lost. Although this landscape potentially would be more familiar to visitors, it also presents a challenge to appropriate treatment to aid interpretation.

### **Recommendations:**

#### Proving Ground – Officers' Club

- 6a. As discussed in the recommendations for Issue 2, the porches, Caddy House, tennis court and other structures as well as gardens and plant materials are all important in interpretation of the theme concerning "Garrison Life". Appropriate treatment of these features integrated into the new use of the property will allow for improved interpretation.
- 6b. Depending on the new uses proposed for the areas involved, consideration should also be given to restoring the walkway from the Officers' Club across the open space to the Proof Battery in its historic configuration, as seen in the aerial photograph from 1924 (Figure 16). This would provide an actual link between the Ordnance Officers Quarters and the Proof Battery that could be helpful in interpretation and visitor access.
- 6c. Although the greenhouses at the Officers' Club have been removed, the remaining graded plane south of the Officers' Club suggests the footprint of the former buildings. A spatial representation of these buildings and former use, such as framing, on grade floor plan, or other means, might be investigated to evoke this important former spatial relationship and use. Kept strictly within the historic footprint, this would allow for a more complete interpretation of life at the Officers' Club.
- 6d. The housing and roadways that were located west of the Officers' Quarters are now marked by the curb cut from Canfield Road, the steps up to a small flat area and several indentations in the ground plane. Interpretive signs could be helpful in showing what had been here and help visitors in reading the subtle changes in the landscape.

#### Proving Ground – Proof Battery

- 6e. The Proof Battery is arguably the most significant area in the Proving Ground, and presents the greatest challenges for interpretation of the theme of Arms Development since so few of the original features remain in the landscape. The existing remains of the concrete structures should be stabilized and assessed for any hazardous conditions. The fabrication from concrete or other materials, of replicas of missing features such as the large guns and shells would provide useful interpretive aids, helping visitors to understand the historic use and significance of the site. These replicas could be painted or treated in some other way to distinguish them from a real artifact. The availability of historic materials from other sites should also be investigated.
- 6f. The restoration of the existing remains of railroad tracks in the gun park should be considered as a way to interpret the history of the importance of the railroad at Sandy Hook and the nation in the late 1800s. Keeping parking from these areas and the addition of railroad siding and flatcars to the former gun park area would allow for the interpretation of the importance of transportation to the Proving Ground and the size and amounts of the materials that were tested, developed, and stored here. Loaded with guns or shells (which could be replicas) these would immediately give visitors an understanding of the scale and purpose of the undertaking at the Proving Ground.
- 6g. The target range, south down the dunes, also contained specialized features that are important to the history of the Proof Battery. For environmental reasons, any disturbance to the dunes should be minimized, but the velocity screens, butts, and iron-plated targets would be striking features in the landscape, and would help to interpret the function of this area to visitors.
- 6h. The tests performed at the Proof Battery relied heavily on math, physics, and chemistry. Including these subjects in interpretation, especially with computer simulations, would add a multidisciplinary approach to the interpretation of the site, and should be explored.

Proving Ground

- 6i. Replicas of military objects such as artillery shells and stacks of artillery projectiles or cannonballs used ornamentally may be reintroduced into the landscape, in an understated way, particularly at the Officers' Club (Building 114) and former Proving Grounds Barracks (Building 102) where their use is documented. These objects as character-defining features have a limited role in re-establishing the military character of the site.  
  
The existing flagpole in front of Building 102 that dates to 1979-1980 and was installed for the YACC camp adds another layer to the story of Sandy Hook although it is not within the historic period. However, if it is kept, the Eastern redcedar tree that obscures it should be replaced in kind. This would allow for a small interpretive sign (if one does not already exist) that would properly date the flagpole for visitors.
- 6j. While the Chemical Laboratory and dock played a significant role historically at the Proving Ground, they are now under the jurisdiction of the U.S. Coast Guard and access

is limited. Consideration should be given to obtaining access to these sites so that they might be used for interpretation and recreation.

- 6k. Although these structures are not in the study area, a vegetation management program at Nine-Gun, Potter, and Granger Batteries would reinstate the historic views to these important and striking structures from the Proving Ground. The installation of fencing by the National Park Service to keep visitors away from these dangerous ruins has made it impossible to mow close to the structures and over time plant growth has obscured them (see Figure 35 for a view before the fencing was installed). This would also improve the possibilities for interpretation of this important role of Sandy Hook in Coastal Defense.
- 6l. The use of the top of Battery Potter has been discussed by park management as a location to view many of the areas important in testing and defense at Sandy Hook. It does afford wonderful views of the area and would provide an excellent opportunity for enhancing interpretive programs. The treatment of the Spanish-American War era fortifications within Fort Sumter and Fort Moultrie in the Charleston, S. C. harbor may serve as an apt model for a rehabilitation of a coastal artillery installation for contemporary visitor access.

This viewing area could be an important link in a History Walk or Walks starting at the Fort Hancock Visitor Center which would provide interpretation of the different periods and functions on Sandy Hook such as the Proving Grounds and Coastal Defenses.

#### Wartime Expansion Areas

- 6m. The remnants of the previous roadways that crisscrossed the WWII expansion area east of the service areas of Fort Hancock are signs that speak of the former uses of this area during World War II. Since the forms and uses of this period are familiar to visitors, keeping some of these roadway remnants clear with the addition of wayside exhibits would provide interpretation of this important phase of the history of Sandy Hook.
- The incorporation of selected roadway remnants into future nature trails is also consistent with the park's intended use of this site for the interpretation of the natural habitat that now exists in this area.
- 6n. The two wood-framed barracks (Buildings 119 & 120) built in 1941 during the World War II build-up are the only surviving examples of this type of design that once was so prevalent at Sandy Hook. New uses should be considered that would justify their maintenance so that they can be used for interpretation or adaptive reuse.
- 6o. The permanent buildings facing Gunnison Road that provided support for the "tent city" area were rehabilitated in the late 1980s and early 1990s as part of the Marine Academy of Science and Technology (MAST) high school campus. There are now very well maintained, probably better than during the wartime period. However additional

interpretive signage or an exhibit would allow for the interpretation of the history of this area and the temporary structures that are now gone.

- 6p. The area west of Nine-Gun Battery has had a very long history with many layers of changes to the landscape including the period of the granite fort, through the expansion periods of the First and then Second World Wars, and finally during the Cold War period as a recreation area. This is a complicated story, but interpretive signage would be helpful, especially when tied to that of Nine-Gun Battery.

## Endnotes Section VI.

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1. U.S. Department of the Interior, *General Management Plan Amendment: Development Concept Plan and Interpretive Prospectus, Sandy Hook Unit, Gateway National Recreation Area - New York/New Jersey*. (Washington, D.C., National Park Service, 1990) 9.
2. Ibid., 9.
3. Ibid., 13.
4. Ibid., 17.
5. Ibid., 22.
6. Ibid., 23.
7. Ibid., 24.
8. U.S. Department of the Interior, *Guidelines for the Treatment of Cultural Landscapes*, (Washington, D.C.:1996) 17-19.
9. Ibid., 47-49.
10. Ibid., 89-91.
11. Ibid., 127-129.
12. Ibid., 48.

## Appendix A: Chronology

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- 1609 Sandy Hook Bay explored by Henry Hudson
- 1764 Sandy Hook lighthouse put into service. At this time the beacon stood only 500 feet from the northern end of the peninsula.
- 1813 U.S. Army occupies Sandy Hook and builds a temporary wooden fortification.
- 1857-69 Work on granite "Fort at Sandy Hook"
- 1874 Ordnance personnel comes to site and temporary Proof Battery set up east of uncompleted granite fortifications
- 1878-79 Officers Quarters or Brick House (Building 114) built.
- 1895 Fort Hancock is established.
- 1900 Proof Battery moved south to current location
- 1904 Greenhouses constructed south of Officers Quarters
- 1905 Laundry building (#113) built and additions made to Officers Quarters.
- 1908 Large gardens laid out east of Officers Quarters
- 1919 Ordnance Department phases out of Sandy Hook and moves to Aberdeen, MD. Fort Hancock takes over Officers Quarters and renames it the Officers Club.
- 1926 In response to concerns of Fort Hancock Commanding Officer, extensive work done on Officers Quarters.
- 1937 Porte cochere added, driveway and parking enlarged and improved. Landscaping and foundation plantings around structure done with CCC funds & labor.
- 1938 Fire in Officers Club.
- 1939 Officers duplexes (Buildings 144 & 145) built southeast of Officers Club.
- 1941-45 Fort Hancock serves as major staging area for troops bound for Europe and headquarters for all defenses for New York Harbor.
- 1943 Porch enclosed for bar area.
- 1974 Fort Hancock deactivated and transferred to the National Park Service.

**Appendix B:** Letter from NPS, New England Support Office to New Jersey SHPO, November 1996, with attached LCS.



United States Department of the Interior

NATIONAL PARK SERVICE  
New England System Support Office  
15 State Street  
Boston, Massachusetts 02109-3572

IN REPLY REFER TO:

November 5, 1996

H32(NESO-SP/CRM)

Mr. Terry Pfoutz  
Supervising Historic Preservation Specialist  
Historic Preservation Office  
501 East State Street, CN 404  
Trenton, New Jersey 08625-0404

Dear Mr. Pfoutz:

This letter continues the efforts of the National Park Service (NPS) to update the List of Classified Structures (LCS). Please refer to our April 14, 1996, letter describing the LCS process undertaken at Edison National Historic Site for complete information regarding the LCS and related NPS inventories.

Present submission contents:

The present submission includes information regarding the Sandy Hook Unit of Gateway National Recreation Area.

We direct your attention to the following matter specifically:

1. Fort Hancock and the Sandy Hook Proving Ground Historic District was entered and documented on the National Register (NR) on April 24, 1980. It became a National Historic Landmark (NHL) December 17, 1982. There are two important matters regarding the NHL district and the Sandy Hook Unit of Gateway National Recreation Area.

a. The Fort Hancock and the Sandy Hook Proving Ground Historic District and the Sandy Hook Unit of Gateway National Recreation Area (NRA) are not coterminous. The NHL district includes the entire Sandy Hook Unit of Gateway NRA and resources within the Sandy Hook Coast Guard Station. Because the NPS has no legal interest in structures at the Coast Guard station they *are not* included on the LCS. Structures under Coast Guard jurisdiction are listed under the heading "Contributing Resources within the Boundaries of the Sandy Hook Coast Guard Station" on the attached List of Contributing Resources: Buildings, Structures, Objects, and Sites.

b. The end date of the period of significance for the historic district is not explicitly stated in the nomination. However, because the Nike missile era identified in the NHL documentation continued almost to the date of transfer between the military and the NPS, December 31, 1974, the deactivation date for Fort Hancock, is used as the end date of the period of significance. All

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NPS-owned structures on the attached **List of Contributing Resources: Buildings, Structures, Objects, and Sites** were constructed prior to that date.

2. The Sandy Hook Light (Entered/Documented 6/16/75) is a NR property located wholly within the boundaries of the Fort Hancock and the Sandy Hook Proving Ground Historic District. The SANDY HOOK LIGHT-KEEPER'S QUARTERS 84 is listed on both nominations and is listed beneath each property on the attached **List of Contributing Resources: Buildings, Structures, Objects, and Sites**.
3. The Fort Hancock, U.S. Life Saving Station (Entered/Documented 11/30/81) is a NR property located wholly within the boundaries of the Fort Hancock and the Sandy Hook Proving Ground Historic District. The station is also listed in the NHL documentation and is listed beneath each property on the attached **List of Contributing Resources: Buildings, Structures, Objects, and Sites**. Note: The property name needs to be revised to not include "Fort Hancock"; the life saving station historically was not associated with Fort Hancock.
4. The LCS includes structures not described in the NHL documentation. These structures are important components of the development of the peninsula and are proposed as contributing resources. They are listed under the heading: "NPS-Owned structures not previously described in the NHL documentation" on the attached **List of Contributing Resources: Buildings, Structures, Objects, and Sites**. For your convenience they are also listed here.

FORT HANCOCK-CONDUIT HUT 'B'  
 FORT HANCOCK-CONDUIT HUT 'E'  
 SANDY HOOK PROVING GROUND-GUN SKIDS  
 SANDY HOOK PROVING GROUND-TRANSFORMER SHED  
 SANDY HOOK PROVING GROUND-14" TURRET PROOF PLAT.  
 SANDY HOOK PROVING GROUND-ELECTRICAL SHED 124A  
 FORT HANCOCK-STOREHOUSE 344  
 FORT HANCOCK-POST THEATER-TRANSFORMER BUILDING  
 FORT HANCOCK-NIKE LAUNCH SITE-GENERATOR BLDG. 429  
 FORT HANCOCK-NIKE LAUNCH SITE-READY BARRACKS 430  
 FORT HANCOCK-NIKE LAUNCH SITE-READY BARRACKS 431  
 FORT HANCOCK-NIKE LAUNCH SITE-READY BARRACKS 432  
 FORT HANCOCK-NIKE LAUNCH SITE-READY BARRACKS 433  
 FORT HANCOCK-NIKE LAUNCH SITE-LATRINE 434  
 FORT HANCOCK-NIKE LAUNCH SITE-BOILER HOUSE 435  
 FORT HANCOCK-NIKE RADAR SITE-SENTRY BOX 423  
 FORT HANCOCK-NIKE LAUNCH SITE-READY BUILDING 437  
 FORT HANCOCK-NIKE LAUNCH SITE-SENTRY BOX 439  
 FORT HANCOCK-NIKE LAUNCH SITE-SENTRY BOX 447  
 FORT HANCOCK-NIKE LAUNCH SITE-MISSILE ASSEMBLY 449  
 FORT HANCOCK-NIKE LAUNCH SITE-WARHEAD BLDG. 450  
 FORT HANCOCK-NIKE LAUNCH SITE-STORAGE SHED 457  
 FORT HANCOCK-NIKE LAUNCH SITE-DOG KENNELS 458  
 FORT HANCOCK-PROVOST MARSHAL'S OFFICE 470  
 FORT HANCOCK-GATE HOUSE 471

In addition to the structures listed above, the LCS identifies individual components of larger potential contributing resources. Elements are identified on the LCS for management purposes, but it is the grouping that is proposed as the contributing resource. LCS component elements are identified beneath the name of each potential contributing resource on the list below.

Sandy Hook Shoreline Stabilization System

FORT HANCOCK-HORSESHOE COVE WOOD BULKHEAD  
 FORT HANCOCK-CONCRETE SEAWALL  
 SANDY HOOK-SOUTH SEAWALL  
 FORT HANCOCK-OFFICER'S ROW-WOOD BULKHEADS

Fort Hancock Pedestrian Circulation System

FORT HANCOCK-MILEAGE MARKERS  
 FORT HANCOCK-ENLISTED BARRACKS-WALKWAYS  
 FORT HANCOCK-OFFICER'S CLUB-OUTBUILDING  
 FORT HANCOCK-SERGEANT'S ROW-WALKWAYS  
 FORT HANCOCK-OFFICER'S QUARTERS-WALKWAYS  
 FORT HANCOCK-BLUESTONE CURBING  
 SANDY HOOK PROVING GROUND-1912-13 LIGHTING SYSTEM

Nike Site Pedestrian Circulation System

FORT HANCOCK-NIKE SITES-WALKWAY NETWORK  
 FORT HANCOCK-NIKE RADAR SITE-PEDESTRIAN LIGHTING

Guardian Park, constructed in 1974, was one of the last projects executed by the military. This park commemorates the Nike period at Fort Hancock and also serves as a memorial to 10 servicemen and civilians killed in the explosion of eight Nike-Hercules missiles at the Middletown, New Jersey Nike installation on May 22, 1958. Guardian Park contains the following LCS elements:

FORT HANCOCK-GUARDIAN PARK-NIKE HERCULES MISSILE  
 FORT HANCOCK-GUARDIAN PARK-MIDDLETOWN MARKER  
 FORT HANCOCK-GUARDIAN PARK-WALKWAYS

Note that Guardian Park is the Contributing Resource and appears on the attached **List of Contributing Resources: Buildings, Structures, Objects, and Sites**. Individual LCS structures are listed beneath Guardian Park on our itemization and above but should be regarded as components of that resource, identified for management purposes, and are not contributing resources themselves.

5. Several structures described in the NHL documentation have subsequently been partially demolished. Remaining elements of these structures still convey a sense of the structure's size and shape, but the NHL documentation needs to be amended to reflect current physical condition. These structures are:

FORT HANCOCK - BATTERY ARROWSMITH  
 SANDY HOOK PROVING GROUND - MASTER MECHANIC'S RESIDENCE 112  
 SANDY HOOK PROVING GROUND - POWDER MAGAZINE 309  
 FORT HANCOCK-HOSPITAL 19

6. Some structures described in the NHL documentation are no longer extant. These structures are listed below the attached **List of Contributing Resources: Buildings, Structures, Objects, and**

Sites under the heading "NPS-Owned structures no longer extant". They are not included on the LCS and the NHL documentation needs to be amended to note their absence. For your convenience they are also listed here.

Post Library (HS 46)  
 Warehouse (HS-54)  
 Mess Hall (HS-63)  
 Garage (HS-133)  
 Post Utilities Administration Building (HS-155)  
 Building 164 (Bachelors Officers' Quarters)  
 Building 165 (Bachelors Officers' Quarters)  
 Building 166 (Bachelors Officers' Quarters)  
 Building 167 (Bachelors Officers' Quarters)  
 Structure 168 (Mess Hall)  
 Structure 169 (Mess Hall)  
 Structure 170 (Recreation Building)  
 Building 171 (Bachelors Officers' Quarters)  
 Concrete Fire Control Tower (HS-179A)  
 Bathhouse (HS-179)  
 Tank Pump House (HS-186)  
 Ambulance Garage (HS-322)  
 Ambulance Garage (HS-323)  
 Tool Shed (HS-325)  
 Garage (HS-327)  
 Garage (HS-328)  
 Dental Clinic (HS-329)  
 Nurses' Quarters with Mess (HS-331)  
 Guest House (HS-333)  
 Hospital Annex Building (HS-352)  
 Hospital Annex Building (HS-353)  
 Radar Equipment Site (HS-707)

7. The NHL nomination describes 15 known archeological sites at Sandy Hook. These sites were not assessed for NHL significance in the nomination. Please note that the LCS does not address archeological resources. Any revisions to the NHL documentation that consider significant archeological sites will be made as part of two multi-year programs:

1. Archeological overview and assessment reports for all parks
2. The Archeological Sites Management Information System (ASMIS), a computerized database formerly known as the Archeological Sites Inventory (ASI).  
 Software for the database is under development.

**Key to List of Contributing Resources: Buildings, Structures, Objects, and Sites:**

- Above ground resources with NR significance described in the NHL documentation are listed beneath the NR property.
- Structure names in FULL CAPITALS are as they appear on the LCS.
- Structure names in Upper and Lower case are as they appear in the NHL documentation. These structures are not included on the LCS. (See items 1 and 4 above).
- The name of the NR property is underlined with the date of listing and documentation in parenthesis.

**Itemization of enclosures:**

- A copy of the NHL nomination and all relevant NR nominations

- A complete list of all LCS entries
- Individual LCS forms for each structure
- Reference images for each LCS entry form
- A copy of this letter (enclosed for your files)

Concurrence issues:

We seek your concurrence with items 1b, 4, and 5 above and the attached List of Contributing Structures: Buildings, Structures, Objects, and Sites.

Archeological & Landscape Surveys:

Any revisions to the NR documentation will consider significant archeological sites. Two multi-year programs are pertinent to this effort:

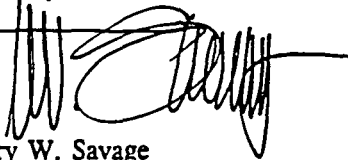
1. Archeological overview and assessment reports for all parks
2. The Archeological Sites Management Information System (ASMIS), a computerized database formerly known as the Archeological Sites Inventory (ASI).  
Software for the database is under development.

The attached List of Contributing Structures: Buildings, Structures, Objects, and Sites includes above ground sites only.

The CLI is evaluating significant landscapes. Character-defining features including topography, vegetation and circulation will be identified and described in a manner consistent with Bulletins 16A, 18 and 30.

Should you have any questions regarding the LCS program please contact Historical Architect/LCS Coordinator Bill Barlow at (718) 816-6436. Regarding the CLI program please contact Historical Landscape Architect Katy Lacy at (617) 223-5271. With respect to ASMIS contact Archeologist Dick Hsu at (508) 970-5146. Concerning the determinations of eligibility/ineligibility please contact Historian Paul Weinbaum at (617) 223-5057.

Sincerely,



Terry W. Savage  
Superintendent

Enclosures

I concur with the above-stated determinations of eligibility and ineligibility.



\_\_\_\_\_  
New Jersey State Historic Preservation Officer

11/2/97  
\_\_\_\_\_  
Date

bcc: GATE Superintendent  
GATE-SHU Unit Superintendent  
GATE, J. Hnedak  
GATE, P. Bathurst  
NESO, B. Barlow  
NESO, P. Weinbaum  
NESO, P. Guthrie  
NESO, D. Hsu  
OCLP, K. Lacy  
CRM reading file  
S&P reading file

P.Weinbaum:P.Guthrie:ijl:G:LCSFILE\LCSFOHA:11/5/96:3-5122

**List of Contributing Resources: Buildings, Structures, Objects, and Sites**

Sandy Hook Light (entered/documentated 6/16/75)

SANDY HOOK LIGHT

SANDY HOOK LIGHT KEEPER'S QUARTERS 84

Fort Hancock U.S. Life Saving Station (Entered/Documented 11/30/81)

SPERMACETI COVE-#2 LIFE SAVING STATION

Fort Hancock and the Sandy Hook Proving Ground Historic District

(entered/documentated 4/24/80)(NHL 12/17/82)

*The following NPS-owned structures were previously described or listed in NHL documentation and relate to the significance of the district:*

FORT HANCOCK-LIEUTENANTS' QUARTERS 01  
FORT HANCOCK-LIEUTENANTS' QUARTERS 02  
FORT HANCOCK-LIEUTENANTS' QUARTERS 03  
FORT HANCOCK-LIEUTENANTS' QUARTERS 04  
FORT HANCOCK-LIEUTENANTS' QUARTERS 05  
FORT HANCOCK-LIEUTENANTS' QUARTERS 06  
FORT HANCOCK-LIEUTENANTS' QUARTERS 07  
FORT HANCOCK-LIEUTENANTS' QUARTERS 08  
FORT HANCOCK-CAPTAINS' QUARTERS 09  
FORT HANCOCK-CAPTAINS' QUARTERS 10  
FORT HANCOCK-CAPTAINS' QUARTERS 11  
FORT HANCOCK-COMMANDING OFFICER'S QUARTERS 12  
FORT HANCOCK-CAPTAINS' QUARTERS 13  
FORT HANCOCK-CAPTAINS' QUARTERS 14  
FORT HANCOCK-CAPTAINS' QUARTERS 15  
FORT HANCOCK-LIEUTENANTS' QUARTERS 16  
FORT HANCOCK-LIEUTENANTS' QUARTERS 17  
FORT HANCOCK-LIEUTENANTS' QUARTERS 18  
FORT HANCOCK-HOSPITAL 19  
FORT HANCOCK-NCO QUARTERS 20  
FORT HANCOCK-TWO FAMILY OFFICER'S QUARTERS 21  
FORT HANCOCK-BARRACKS 22  
FORT HANCOCK-BARRACKS 23  
FORT HANCOCK-BARRACKS 24  
FORT HANCOCK-BARRACKS 25  
FORT HANCOCK-UNIT HEADQUARTERS 28

FORT HANCOCK-BACHELOR OFFICERS' QUARTERS 27  
FORT HANCOCK-MUSEUM 28  
FORT HANCOCK-NCO QUARTERS 29  
FORT HANCOCK-NCO QUARTERS 30  
FORT HANCOCK-QUARTERMASTER'S OFFICE 32  
FORT HANCOCK-BAKERY 33  
FORT HANCOCK-FIRE STATION OFFICE 34  
FORT HANCOCK-CHAPEL 35  
FORT HANCOCK-NCO CLUB 36  
FORT HANCOCK-PUMPHOUSE & SEWAGE LIFT STATION 37  
FORT HANCOCK-BUS SHELTER 39  
FORT HANCOCK-SERVICE CLUB 40  
FORT HANCOCK-ADMINISTRATION BUILDING 41  
FORT HANCOCK-WEIGHING STATION 44  
FORT HANCOCK-SHELL WAREHOUSE 45  
FORT HANCOCK-SUBSISTENCE STOREHOUSE/COMMISSARY 47  
FORT HANCOCK-WAREHOUSE 49  
FORT HANCOCK-FIRE HOUSE #1: BLDG. 51  
FORT HANCOCK-NCO QUARTERS 52  
FORT HANCOCK-POST EXCHANGE 53  
FORT HANCOCK-MESS HALL 55  
FORT HANCOCK-MESS HALL 56  
FORT HANCOCK-MESS HALL 57  
FORT HANCOCK-MESS HALL 58  
FORT HANCOCK-POST EXCHANGE GAS STATION 60  
FORT HANCOCK-FLAG POLE 61  
FORT HANCOCK-NCO QUARTERS 64  
FORT HANCOCK-STOREHOUSE 65  
FORT HANCOCK-DUPLEX NCO QUARTERS 66  
FORT HANCOCK-POST THEATER 67  
FORT HANCOCK-POST EXCHANGE 70  
FORT HANCOCK-FIREMAN'S QUARTERS 71  
FORT HANCOCK-FIREMAN'S QUARTERS 72  
FORT HANCOCK-NCO QUARTERS 73  
FORT HANCOCK-TWO COMPANY BARRACKS 74  
FORT HANCOCK-TWO FAMILY NCO QUARTERS 75  
FORT HANCOCK-FIRE HOUSE #2: BLDG. 76  
FORT HANCOCK-POST EXCHANGE LAUNDRY 77  
FORT HANCOCK-OIL & PAINT STOREHOUSE 79  
FORT HANCOCK-TWO FAMILY NCO QUARTERS 80  
SANDY HOOK LIGHT-KEEPER'S QUARTERS 84  
FORT HANCOCK-GARAGE 85  
SANDY HOOK-HALYBURTON MEMORIAL-MARKER 98  
SANDY HOOK-HALYBURTON MEMORIAL-GROUNDS

**List of Contributing Resources: Buildings, Structures, Objects, and Sites**  
**Fort Hancock and the Sandy Hook Proving Ground Historic District**  
(entered/documentated 4/24/80)(NHL 12/17/82)

SANDY HOOK PROVING GROUND-RODMAN GUN 100  
SANDY HOOK PROVING GROUND-BARRACKS & MESS 102  
SANDY HOOK PROVING GROUND-NCO QUARTERS 104  
SANDY HOOK PROVING GROUND-LOCOMOTIVE ENGINEER QTRS 108  
FORT HANCOCK-BUS SHELTER 110  
SANDY HOOK PROVING GROUND-MSTR. MECHANICS RES. 112  
SANDY HOOK PROVING GROUND-LAUNDRY 113  
SANDY HOOK PROVING GROUND-BRICK OFFICERS QTRS. 114  
FORT HANCOCK-BARRACKS 119  
FORT HANCOCK-BARRACKS 120  
SANDY HOOK PROVING GROUND-POWERPLANT 124  
SANDY HOOK PROVING GROUND-MACHINE/SMITH SHOP 125  
SANDY HOOK PROVING GROUND-STORE HOUSE 130  
SANDY HOOK PROVING GROUND-SHELTER HOUSE 131  
SANDY HOOK PROVING GROUND-PAINT SHOP 132  
FORT HANCOCK-STOREHOUSE 134  
FORT HANCOCK-TWO FAMILY OFFICERS QUARTERS 144  
FORT HANCOCK-TWO FAMILY OFFICERS QUARTERS 145  
FORT HANCOCK-WAREHOUSE 156  
FORT HANCOCK-LAUNDRY & LATRINE 157  
SANDY HOOK PROVING GROUND-MAGAZINE 173 TRAVERSES  
SANDY HOOK PROVING GROUND-MAGAZINE 174 TRAVERSES  
SANDY HOOK PROVING GROUND-PROOF BATTERY 174A  
FORT HANCOCK-BATTERY PECK 180  
FORT HANCOCK-9-GUN BATTERY 181  
FORT HANCOCK-FUEL OIL TANK 182  
FORT HANCOCK-PAINT STOREHOUSE 184  
FORT HANCOCK-PUMP HOUSE 206  
FORT HANCOCK-RADIO STATION 207  
FORT HANCOCK-SWITCHBOARD ROOM 256  
FORT HANCOCK-SWITCHBOARD 257  
FORT HANCOCK-CONDUIT HUT 'A' BLDG. 258  
FORT HANCOCK-CENTRAL POWER PLANT 259  
FORT HANCOCK-COAL SHED 260  
FORT HANCOCK-BATTERY POTTER 264  
FORT HANCOCK-BATTERY GRANGER 266  
FORT HANCOCK-OFFICERS' LATRINE 300  
FORT HANCOCK-OFFICERS' MESS 301  
FORT HANCOCK-CAMP HEADQUARTERS 302  
FORT HANCOCK-STOREHOUSE 303

**List of Contributing Resources: Buildings, Structures, Objects, and Sites**  
**Fort Hancock and the Sandy Hook Proving Ground Historic District**  
(entered/documentated 4/24/80)(NHL 12/17/82)

FORT HANCOCK-OFFICERS' LATRINE 304  
FORT HANCOCK-DISPENSARY 305  
FORT HANCOCK-SEWAGE PUMP STATION 306  
FORT HANCOCK-SEWAGE PUMP STATION 307  
SANDY HOOK PROVING GROUND-POWDER MAGAZINE 309  
FORT HANCOCK-MESS HALL 315  
FORT HANCOCK-POST EXCHANGE 316  
FORT HANCOCK-MESS HALL 317  
FORT HANCOCK-ENLISTED MENS' LATRINE 318  
FORT HANCOCK-ENLISTED MENS' LATRINE 319  
FORT HANCOCK-ENLISTED MENS' LATRINE 320  
FORT HANCOCK-ENLISTED MENS' LATRINE 321  
FORT HANCOCK-EMERGENCY POWER PLANT 324  
FORT HANCOCK-POST MORGUE 326  
FORT HANCOCK-HOSPITAL ADMINISTRATION BUILDING 335  
FORT HANCOCK-BATTERY GUNNISON 337  
FORT HANCOCK-DOUBLE FIREMAN'S QUARTERS 338  
FORT HANCOCK-ENGINEERS QUARTERS 340  
FORT HANCOCK-WATER PUMPING PLANT 341  
FORT HANCOCK-LIMEHOUSE 342  
FORT HANCOCK-AERATOR HOUSE 343  
FORT HANCOCK-BATTERY ARROWSMITH 348  
FORT HANCOCK-BATTERIES McCOOK AND REYNOLDS 349  
FORT HANCOCK-GENERATOR BUILDING 350  
FORT HANCOCK-PUMP HOUSE 354  
FORT HANCOCK-OLD PUMPHOUSE 355  
FORT HANCOCK-PUMP HOUSE 356  
FORT HANCOCK-BUS SHELTER 357  
FORT HANCOCK-PUMP HOUSE 358  
FORT HANCOCK-SEWAGE PUMP HOUSE 401  
FORT HANCOCK-NIKE RADAR SITE-BARRACKS 402  
FORT HANCOCK-NIKE RADAR SITE-BARRACKS 403  
FORT HANCOCK-NIKE RADAR SITE-LATRINE 406  
FORT HANCOCK-NIKE RADAR SITE-BOILER ROOM 407  
FORT HANCOCK-NIKE RADAR SITE-CONNEX. CORRIDORS 409  
FORT HANCOCK-NIKE RADAR SITE-GENERATOR HOUSE 410  
FORT HANCOCK-NIKE RADAR SITE-CONNEX. CORRIDORS 411  
FORT HANCOCK-NIKE RADAR SITE-SENTRY BOX 413  
FORT HANCOCK-NIKE RADAR SITE-GENERATOR HOUSE 414  
FORT HANCOCK-NIKE RADAR SITE-RADAR TOWER 417

**List of Contributing Resources: Buildings, Structures, Objects, and Sites**  
**Fort Hancock and the Sandy Hook Proving Ground Historic District**  
(entered/documentated 4/24/80)(NHL 12/17/82)

FORT HANCOCK-NIKE RADAR SITE-RADAR TOWER 418  
FORT HANCOCK-NIKE RADAR SITE-RADAR TOWER 419  
FORT HANCOCK-NIKE RADAR SITE-RADAR TOWER 420  
FORT HANCOCK-NIKE RADAR SITE-RADAR TOWER 421  
FORT HANCOCK-NIKE RADAR SITE-RADAR TOWER 422  
FORT HANCOCK-NIKE LAUNCH SITE-NIKE SILO 425  
FORT HANCOCK-NIKE LAUNCH SITE-NIKE SILO 426  
FORT HANCOCK-NIKE LAUNCH SITE-NIKE SILO 427  
FORT HANCOCK-NIKE LAUNCH SITE-NIKE SILO 428  
FORT HANCOCK-NIKE LAUNCH/RADAR SITES-CYCLONE FENCE  
SPERMACETI COVE-#2 LIFE SAVING STATION  
FORT HANCOCK-GATE GUARDHOUSE 438  
FORT HANCOCK-BATTERY MILLS 441  
FORT HANCOCK-BATTERY KINGMAN 441  
FORT HANCOCK-IGLOO MAGAZINE 442  
FORT HANCOCK-IGLOO MAGAZINE 443  
FORT HANCOCK-IGLOO MAGAZINE 444  
FORT HANCOCK-IGLOO MAGAZINE 445  
FORT HANCOCK-NIKE RADAR SITE-RADAR PEDESTAL 453  
FORT HANCOCK-NIKE RADAR SITE-EQUIPMENT & OPS. 454  
FORT HANCOCK-NIKE RADAR SITE-TOOLSHED 455  
FORT HANCOCK-NIKE RADAR SITE-TARGET RANGE TWR. 467  
FORT HANCOCK-NIKE RADAR SITE-HIPAR BUILDING 468  
FORT HANCOCK-NIKE RADAR SITE-HIPAR BASE 469  
FORT HANCOCK-NIKE RADAR SITE-HIPAR TOWER 472  
FORT HANCOCK-NIKE RADAR SITE-HIPAR TOWER 473  
FORT HANCOCK-MINE CABLE STORAGE BUILDING 516  
FORT HANCOCK-BATTERY MORRIS 539  
FORT HANCOCK-BATTERY URMSTON 540  
SANDY HOOK-WATER PUMPING PLANT-WELLS  
FORT HANCOCK-BATTERY MORRIS-CRF STATION  
FORT HANCOCK-RADAR SITE MACHINE GUN BUNKER-EAST  
  
FORT HANCOCK-RADAR SITE MACHINE GUN BUNKER-WEST  
FORT HANCOCK-BATTERY PECK-CENTRAL RANGE FINDING STATION

**List of Contributing Resources: Buildings, Structures, Objects, and Sites**  
**Fort Hancock and the Sandy Hook Proving Ground Historic District**  
(entered/documentated 4/24/80)(NHL 12/17/82)

*The following NPS-owned structures were not previously described or listed in NHL documentation and relate to the significance of the site:*

FORT HANCOCK-CONDUIT HUT 'B'  
FORT HANCOCK-CONDUIT HUT 'E'  
SANDY HOOK PROVING GROUND-GUN SKIDS  
SANDY HOOK PROVING GROUND-TRANSFORMER SHED  
FORT HANCOCK-OFFICER'S CLUB-OUTBUILDING  
SANDY HOOK PROVING GROUND-14" TURRET PROOF PLAT.  
SANDY HOOK PROVING GROUND-ELECTRICAL SHED 124A  
FORT HANCOCK-STOREHOUSE 344  
FORT HANCOCK-POST THEATER-TRANSFORMER BUILDING  
FORT HANCOCK-NIKE LAUNCH SITE-GENERATOR BLDG. 429  
FORT HANCOCK-NIKE LAUNCH SITE-READY BARRACKS 430  
FORT HANCOCK-NIKE LAUNCH SITE-READY BARRACKS 431  
FORT HANCOCK-NIKE LAUNCH SITE-READY BARRACKS 432  
FORT HANCOCK-NIKE LAUNCH SITE-READY BARRACKS 433  
FORT HANCOCK-NIKE LAUNCH SITE-LATRINE 434  
FORT HANCOCK-NIKE LAUNCH SITE-BOILER HOUSE 435  
FORT HANCOCK-NIKE RADAR SITE-SENTRY BOX 423  
FORT HANCOCK-NIKE LAUNCH SITE-READY BUILDING 437  
FORT HANCOCK-NIKE LAUNCH SITE-SENTRY BOX 439  
FORT HANCOCK-NIKE LAUNCH SITE-SENTRY BOX 447  
FORT HANCOCK-NIKE LAUNCH SITE-MISSILE ASSEMBLY 449  
FORT HANCOCK-NIKE LAUNCH SITE-WARHEAD BLDG. 450  
FORT HANCOCK-NIKE LAUNCH SITE-STORAGE SHED 457  
FORT HANCOCK-NIKE LAUNCH SITE-DOG KENNELS 458  
FORT HANCOCK-PROVOST MARSHAL'S OFFICE 470  
FORT HANCOCK-GATE HOUSE 471

**List of Contributing Resources: Buildings, Structures, Objects, and Sites**  
**Fort Hancock and the Sandy Hook Proving Ground Historic District**  
**(entered/documentated 4/24/80)(NHL 12/17/82)**

In addition to the structures listed above, the LCS identifies individual components of larger potential contributing resources. Elements are identified on the LCS for management purposes, but it is the grouping that is proposed as a contributing resource. LCS component elements are identified beneath the name of each potential contributing resource on the list below.

**Sandy Hook Shoreline Stabilization System**

**FORT HANCOCK-HORSESHOE COVE WOOD BULKHEAD**

**FORT HANCOCK-CONCRETE SEAWALL**

**SANDY HOOK-SOUTH SEAWALL**

**FORT HANCOCK-OFFICER'S ROW-WOOD BULKHEADS**

**Nike Site Pedestrian Circulation**

**FORT HANCOCK-NIKE SITES-WALKWAY NETWORK**

**FORT HANCOCK-NIKE LAUNCH SITE-SPOT LIGHTS**

**FORT HANCOCK-NIKE RADAR SITE-PEDESTRIAN LIGHTING**

**Fort Hancock Pedestrian Circulation System**

**FORT HANCOCK-MILEAGE MARKERS**

**FORT HANCOCK-ENLISTED BARRACKS-WALKWAYS**

**FORT HANCOCK-SERGEANT'S ROW-WALKWAYS**

**FORT HANCOCK-OFFICER'S QUARTERS-WALKWAYS**

**FORT HANCOCK-BLUESTONE CURBING**

**SANDY HOOK PROVING GROUND-1912-13 LIGHTING SYSTEM**

**Guardian Park (contributing site)**

**FORT HANCOCK-GUARDIAN PARK-NIKE HERCULES MISSILE**

**FORT HANCOCK-GUARDIAN PARK-MIDDLETOWN MARKER**

**FORT HANCOCK-GUARDIAN PARK-WALKWAYS**

*The following structures, described or listed in NHL documentation, are under US Coast Guard Jurisdiction. They are therefore not included in the LCS inventory:*

**Chemical Laboratory Building (HS 109)(Dependent Grade School)**

**Unit Chapel-St. Mary's (HS 123) (Rod and Gun Club)**

**Ordnance/Quartermaster Wharf (HS 536)**

**Locomotive Store and Repair House (HS 503)**

**Second Engineer Cottage (HS 504)**

**Engineer Quarters Building (HS 526)**

**Light Keepers' Dwelling (HS 528)**

**List of Contributing Resources: Buildings, Structures, Objects, and Sites**  
**Fort Hancock and the Sandy Hook Proving Ground Historic District**  
(entered/documentated 4/24/80)(NHL 12/17/82)

Submarine mine network structures:

- Southwest Bastion Fort Hancock (HS 523)
- Torpedo (Mine) Storehouse (509)
- Torpedo (Mine) Loading House (510)
- Mine Loading Room Building (512)
- Mine Secondary Station
- Dynamite Battery Structure (541)

*NPS-owned structures, described or listed in NHL documentation, that are no longer extant:*

- Radar Equipment Site (HS 707)
- Post Library (HS 46)
- Warehouse (HS-54)
- Mess Hall (HS-63)
- Garage (HS-133)
- Post Utilities Administration Building (HS-155)
- Building 164 (Bachelors Officers' Quarters)
- Building 165 (Bachelors Officers' Quarters)
- Building 166 (Bachelors Officers' Quarters)
- Building 167 (Bachelors Officers' Quarters)
- Structure 168 (Mess Hall)
- Structure 169 (Mess Hall)
- Structure 170 (Recreation Building)
- Building 171 (Bachelors Officers' Quarters)
- Bathroom (HS-179)
- Concrete Fire Control Tower (HS 179A)
- Tank Pump House (HS-186)
- Ambulance Garage (HS-322)
- Ambulance Garage (HS-323)
- Tool Shed (HS-325)
- Garage (HS-327)
- Garage (HS-328)
- Dental Clinic (HS-329)
- Nurses' Quarters with Mess (HS-331)
- Guest House (HS-333)
- Hospital Annex Building (HS-352)
- Hospital Annex Building (HS-353)

## Appendix C: List of Existing Structures

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Bldg#	Name of Structure
36	Fort Hancock NCO Club [1899Stables?]
45	Fort Hancock [WWII 1921]
77	Fort Hancock – Post Exchange Laundry (1910) [ FH Qtrmaster structures]
80	Fort Hancock- Two Family NCO Quarters (1911) [orig to house teamsters]
100	Sandy Hook Proving Ground – Rodman Gun
102	Sandy Hook Proving Ground- Barracks & Mess (1909)
104	Sandy Hook Proving Ground-NCO Quarters (1894)
108	Sandy Hook Proving Ground-Locomotive Engineer Qtrs (1905)
109	Fort Hancock-Bus Shelter (1965)
112	Sandy Hook Proving Ground-Master Mechanics Res. [Destroyed by fire]
113	Sandy Hook Proving Ground-Laundry (1905)
114	Sandy Hook Proving Ground-Brick Officers Qtrs (1878)
119	Fort Hancock-Barracks (1941)
120	Fort Hancock- Barracks (1941)
124	Sandy Hook Proving Ground-Powerplant (1907)
125	Sandy Hook Proving Ground-Machine/Smith Shop (1907)
130	Sandy Hook Proving Ground-Store House (1907)
131	Sandy Hook Proving Ground-Shelter House (1907)
132	Sandy Hook Proving Ground-Paint Shop (1907)
134	Fort Hancock-Storehouse (1941)
144	Fort Hancock-Two Family Officers Quarters (1939)
145	Fort Hancock-Two Family Officers Quarters (1939)
156	Fort Hancock-Warehouse (1942)
157	Fort Hancock-Laundry & Latrine (1973)
173	Sandy Hook Proving Ground-Magazine
174	Sandy Hook Proving Ground-Magazine
174A	Sandy Hook Proving Ground-Proof Battery
184	Fort Hancock-Paint Storehouse (1941)
206	Fort Hancock-Pump House (1941)
207	Fort Hancock-Radio Station (1915-20)
301	Fort Hancock-Officers Mess (1940)
302	Fort Hancock-Camp Headquarters (1940)
303	Fort Hancock-Storehouse (1941-2)
304	Fort Hancock-Officers Latrine (1940)
305	Fort Hancock-Dispensary (1940)
306	Fort Hancock-Sewage Pump Station (1940)
307	Fort Hancock-Sewage Pump Station (1940)
308	Sandy Hook Proving Ground-Powder Magazine [in dunes, demolished?]
309	Fort Hancock-Mess Hall (1940)
315	Fort Hancock- Post Exchange (1940)
316	Fort Hancock-Mess Hall (1940)
317	Fort Hancock-Enlisted Men's Latrine (1940)
318	Fort Hancock-Enlisted Men's Latrine (1940)
319	Fort Hancock-Enlisted Men's Latrine (1940)
320	Fort Hancock-Enlisted Men's Latrine (1940)
357	Fort Hancock-Bus Shelter (1965)

NPS-Owned Structures not previously described or listed in NHL documentation and relate to the significance of the site:

124A      Sandy Hook Proving Ground-Gun Skids  
            Sandy Hook Proving Ground-Transformer Shed  
            Fort Hancock-Officers' Club- Outbuilding [garbage shed]  
            Sandy Hook Proving Ground-14" Turret Proof Platform  
            Sandy Hook Proving Ground-Electrical Shed (1938)

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SOURCES & NOTES:

Building # and names from *List of Contributing Resources: Buildings, Structures, Objects, and Sites Fort Hancock and the Sandy Hook Proving Ground Historic District (entered/documentated 4/24/80) (NHL 12/17/82)*. (see Appendix B this report)

Dates in parenthesis from *Sandy Hook Atlas*.

Brackets contain author's notes.

## APPENDIX D: Vegetation within the former Proving Ground Area

Field inspection and comparison with the "Detailed Landscape Plan" by Wolcott Erskine Andrews revealed the possibility that many trees currently existing in the residential area of the former Proving Ground predate 1941 when the Andrews plan was prepared. This plan showed both existing and proposed plantings, although it is not believed that the proposed design was ever implemented. However the plan is very valuable since it shows trees existing at that time. The residential area of the Proving Ground bounded by Kearney, Canfield, Kilpatrick and Ford Roads and South Bragg Drive, had many existing trees at the time of the work by Andrews. The wartime expansion areas had almost no existing vegetation, probably because the conditions were unfavorable or the grading and construction work to prepare these sites for building had removed vegetation.

As a result of the field inspection, possible trees still existing from 1941 have been highlighted on the Andrews's drawing. This clearly shows the substantial loss of street trees along Canfield and Kearney Roads where no infill has occurred.

A more thorough study of the trees in this area is warranted to confirm the historic trees and to ensure that proper care is given to them.

Existing Tree and Shrub species located in the residential areas of the former Proving Ground:

<u>Botanical name</u>	<u>Common Name</u>
<i>Acer platanoides</i> *	Norway Maple
<i>Acer rubrum</i> *	Red Maple
<i>Catalpa speciosa</i> *	Northern Catalpa
<i>Celtis occidentalis</i> *	Common Hackberry
<i>Ilex opaca</i> *	American Holly
<i>Juniperis sp.</i>	Juniper
<i>Juniperis virginiana</i> *	Eastern Redcedar
<i>Pinus sp.</i> *	Pine
<i>Platanus x acerifolia</i> *	London Planetree
<i>Populus sp.</i> *	Poplar ( <i>P. alba</i> or <i>P. deltoides</i> )
<i>Prunus sp.</i> *	Cherry
<i>Prunus virginiana</i>	Common Chokecherry
<i>Pyracantha coccinea</i>	Scarlet Firethorn
<i>Rosa sp.</i>	Rose
<i>Spirea sp.</i>	Spirea
<i>Syringa vulgaris</i>	Common Lilac
<i>Taxus sp.</i>	Yew

\* Denotes species that were noted as existing on the 1941 "Detailed Landscape Plan" by Wolcott Erskine Andrews (Figure 62).

Based on field inspection by the author, summer 1998 and spring 1999

The following trees and shrubs were noted as "Existing" within the residential areas on the 1941 "Detailed Landscape Plan" by Wolcott Erskine Andrews (Figure 63):

<u>Name used on Andrews' Plan</u>	<u>Botanical Name</u>
Ailanthus	<i>Ailanthus altissima</i>
Catalpa	<i>Catalpa speciosa</i>
Cedar	Eastern Redcedar
Cherry	<i>Prunus</i> sp.
Elm	<i>Ulmus</i> sp.
Hackberry	<i>Celtis occidentalis</i>
Holly	<i>Ilex opaca</i>
London Planetree	<i>Platanus x acerifolia</i>
Maple, Norway	<i>Acer platanoides</i>
Maple, Red	<i>Acer rubrum</i>
Oak	<i>Quercus</i> sp.
Poplar	<i>Populus</i> sp.
Privet	<i>Ligustrum</i> sp.
Willow	<i>Salix</i> sp.

Note: The Andrews drawing does not include detail for the area immediately surrounding the Officers' Club.

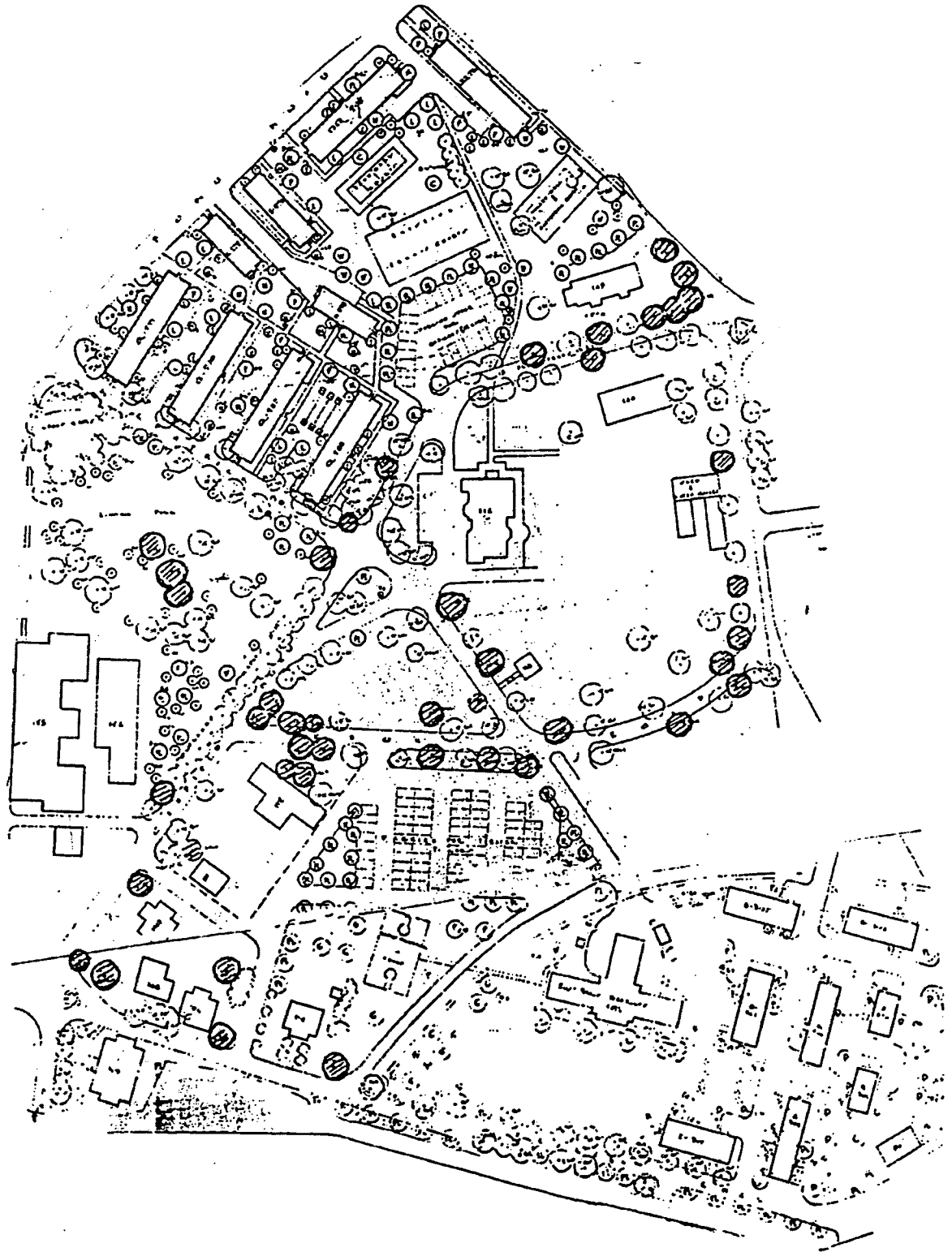


Figure 63: Composite of "Detailed Landscape Plan", Drawings 207 and 210, Wolcott Erskine Andrews, 1941 (east is top of page). Both Existing and Proposed plantings are shown. There is no documentation showing that this planting plan was installed. Trees that may have survived are highlighted on this plan based on field work by the author. Original drawings from files at Sandy Hook, Gateway NRA.

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