NPS Form 10-900
(7-81)

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United States Department of the Interior
National Park Service

National Register of Historic Places Inventory—Nomination Form

For NPS use only
received
date entered

See instructions in *How to Complete National Register Forms*
Type all entries—complete applicable sections

1. Name

historic Fort Hancock and the Sandy Hook Proving Ground Historic District

and/or common Fort Hancock

2. Location

street & number Sandy Hook, State Route 36 ___ not for publication

city, town Highlands ___ vicinity of [redacted]

state New Jersey **code** 34 **county** Monmouth **code** 25

3. Classification

Category	Ownership	Status	Present Use	
X district	X public	X occupied	___ agriculture	X museum
___ building(s)	___ private	___ unoccupied	___ commercial	X park
___ structure	___ both	___ work in progress	X educational	X private residence
___ site	**Public Acquisition**	**Accessible**	___ entertainment	___ religious
___ object	___ in process	X yes: restricted	X government	___ scientific
	___ being considered	___ yes: unrestricted	___ industrial	___ transportation
		___ no	X military	___ other:

4. Owner of Property

name National Park Service, Washington Office (See continuation Sheet)

street & number

city, town Washington ___ vicinity of **state** DC 20240

5. Location of Legal Description

courthouse, registry of deeds, etc. Monmouth County Courthouse

street & number

city, town Freehold **state** New Jersey

6. Representation in Existing Surveys

title Richard E. Greenwood, "National Register Survey" **has this property been determined eligible?** X yes ___ no

date 1977 X federal ___ state ___ county ___ local

depository for survey records National Park Service, North Atlantic Region

city, town **state**

7. Description

Condition		Check one	Check one
___ excellent	X deteriorated	___ unaltered	X original site
X good	X ruins	X altered	___ moved date _____
X fair	___ unexposed		

Describe the present and original (if known) physical appearance

Fort Hancock and the Proving Ground Historic District, at Sandy Hook, New Jersey, is part of the Sandy Hook Unit of Gateway National Recreation Area. A section (97.1 acres) at the north-western part of the Hook, which is under the jurisdiction of the U.S. Coast Guard, is historically part of the Fort Hancock and Proving Ground Area, and is part of the Historic District. The District includes the entire area of Sandy Hook including all National Park Service, United States Coast Guard, United States Army and State of New Jersey Property. It contains approximately 110 significant historic buildings and 16 Batteries dating from the last quarter of the 19th through the first half of the 20th centuries. These structures reflect the history of the U.S. Army's Ordnance Department Proving Ground and Fort Hancock Military Reservation, a vital defense installation guarding New York City from 1895 through the 1950s and 60s Cold War era until 1974.

Alternately an island and a peninsula, Sandy Hook has gradually extended northwest, because of the action of the ocean's currents. A lighthouse had been built on the northern tip of the Hook in 1764, but as a result of this gradual growth it was approximately a mile south of the tip one hundred years later. The one hundred years that have passed since 1874 have not marked so great a change in the outline of Sandy Hook, but within the bounds of the military reservation, the changes have been extensive.

In 1874, most of Sandy Hook was covered with holly and cedar forests, thickets, and tidal marshes which still cover a large percentage of it today. Except for the Spermaceti Cove Life-Saving Station to the south, the Federal development of the Hook was concentrated on the northern end. A huge granite five-bastioned fort near the northern end of the Hook, dominated the area, even though it was still incomplete and was destined never to be completed. In addition to the fort, there was the Engineers' wharf, erected on the western shore in 1857, to accomodate the fort's construction, the Engineers' shop and quarters, and the Sandy Hook Life-Saving Station, established on the northeastern shore in 1854. The lighthouse was in the north central part of the peninsula, approximately a half mile south of the Civil War era fort. It was decided to lay out the Proving Ground on the eastern margin of the Hook, just below the southeast bastion of the fort. The firing range was to extend southward along the beach. Facilities consisted of the wooden gun platforms of the proof battery, a bombproof, a frame instrument house, and sand butts on the firing range. Some expansion of the Proving Ground facilities occurred in the following decade, but the next major change came in 1890.

8. Significance

Period	Areas of Significance—Check and justify below			
___ prehistoric	___ archeology-prehistoric	___ community planning	___ landscape architecture	___ religion
___ 1400–1499	___ archeology-historic	___ conservation	___ law	___ science
___ 1500–1599	___ agriculture	___ economics	___ literature	___ sculpture
___ 1600–1699	___ architecture	___ education	X military	X social/ humanitarian
___ 1700–1799	___ art	X engineering	___ music	___ theater
X 1800–1899	___ commerce	___ exploration/settlement	___ philosophy	___ transportation
X 1900–	___ communications	___ industry	___ politics/government	___ other (specify)
		___ invention		

Specific dates 1874-1919/1859-1950's 1895-1949 **Builder/Architect** UNITED STATES ARMY

Statement of Significance (in one paragraph)

Sandy Hook is significant is American History as the site of the Federal Reservation that has played dual roles in United States Military History.

The Sandy Hook Defenses (Fort Hancock) for nearly 80 years were the key fortification guarding the approaches to America's most important harbor and its largest metropolis. It was during these years that the United States defeated Spain and emerged as a world power; tipped the scales against the Central Powers in World War I; retreated into the isolation of the 1920s and 30s; and emerged from World War II as a super power.

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 coincided with a time when practical application of technological advances in the design and manufacture of artillery produced a revolution in weaponry.

Sandy Hook Proving Ground is also significant because it was here that experiments leading to the successful development of radar took place in the years immediately before World War II.

Sandy Hook is also significant as the site of the Spermaceti Cove No. 2 Life-Saving Service Station. The Spermaceti Cove No. 2 Life-Saving Service Station is significant because of its association with the earliest Federally sponsored efforts to save life and property from coastal shipwrecks. The station was built in 1894, and up until 1915, the U.S. Life-Saving Service (USLSS) conducted rescue missions from this building. The U.S.L.S.S. was the parent organization of the U.S. Coast Guard which was founded in 1915. The Sandy Hook Station continued to be used as a U.S. Coast Guard Station until 1949.

Also at Sandy Hook is the Sandy Hook Lighthouse, a register National Historic Landmark. The Sandy Hook Light, although within Fort Hancock Military Reservation is maintained by the United States Coast Guard and is a part of this nomination and a part of the Historic District.

A detailed statement of significance for each of the above resources follows:

Fort Hancock

For over 200 years Sandy Hook played an important role in the defense of the approaches to New York Harbor. In the summer of 1776 British warships and transport used Sandy Hook and Raritan Bays as a rendezvous, while Maj. Gen.

9. Major Bibliographical References

See continuation sheet.

10. Geographical Data

Acreage of nominated property 4584

Quadrangle name Sandy Hook, N.J.-N.Y. **Quadrangle scale** 1:24,000

UMT References

	Zone	Easting	Northing
A	18	585020	4448040
B	18	586300	4477530
C	18	586960	4471540
D	18	583060	4480340
E	18	583440	4481260
F			
G			
H			

Verbal boundary description and justification

The boundary of the National Historic Landmark District includes the entire area of the peninsula between the highway 36 bridge (but not including the bridge) and the northernmost point of the peninsula as shown in red on the accompanying USGS map. (See continuation sheet).

List all states and counties for properties overlapping state or county boundaries

state	code	county	code
state	code	county	code

11. Form Prepared By

name/title Harry Butowsky, Historian

organization National Park Service, Division of History **date** 6-20-82

street & number 1100 L Street NW, Room 4141 **telephone** 523-0089

city or town Washington **state** DC

12. State Historic Preservation Officer Certification

The evaluated significance of this property within the state is:

___ national ___ state ___ local

As the designated State Historic Preservation Officer for the National Historic Preservation Act of 1966 (Public Law 89-665), I hereby nominate this property for inclusion in the National Register and certify that it has been evaluated according to the criteria and procedures set forth by the National Park Service.

State Historic Preservation Officer signature

title **date**

For NPS use only

I hereby certify that this property is included in the National Register

date

Keeper of the National Register

Attest: **date**

Chief of Registration

U.S. Coast Guard
Third Coast Guard District
Governors Island, New York 10004

United States Army Engineer Division
North Atlantic
90 Church Street
New York, N.Y. 10007

State of New Jersey
Trenton, New Jersey

In 1891, the granite fort was declared obsolete and construction of Endicott defenses was undertaken on the high ground along the eastern shore, both above and below the Proving Ground. Virtually uninterrupted construction of batteries continued for the next twenty years. In 1896, plans for the main post at Fort Hancock were drawn up, and by 1899 a large section of the post was completed.

By 1919, when the Proving Ground was deactivated, it encompassed approximately fifty buildings, which stretched from the proof battery west across the peninsula to the wharf which had since been reconstructed. Fort Hancock had expanded to the north and south of this strip, with its harbor defenses concentrated along the eastern shore. The center of Fort Hancock was below the wharf, on the western side of the Hook. The great stone fort had been dismantled except for the southwest bastion which supported a water tank (523) that still stands today, and a section of the west curtain. Although more than half of the Proving Ground structures of 1919 have been destroyed, some of the most significant buildings are extant. In the case of Fort Hancock, many buildings of the World War II era and later have been built along side the more historic structures, but the major portion of the Endicott and Taft period installations are readily apparent.

The Spermaceti Cove Life-Saving Station

Also included in this nomination is the Spermaceti Cove Life-Saving Station. Although the first Spermaceti Cove Life-Boat Station was built in 1849, the present building dates from 1894. Built about 310 feet south of the 1849 site, the shingle style building is a 1-and-1/2-story office section, with a 2-bay boathouse on one end and a 4-story tower on the front with a pyramid roof (facing the sea). The second story of the tower is connected to the pitched roof of the office section by an enlarged dormer form whose walls are flush with the sides of the tower. The boathouse has a shallow pitched roof and two sets of double doors facing the sea.

The fourth floor of the tower has a cantilevered balcony on all four sides which is supported on framing principals. The office section has a central chimney, a jerkin head gable with an entrance door which is reached by means of an exterior stair of two colinear flights with a landing between. There is also a bent dormer on each side and a front porch which encloses the base of the tower.

The porch was enclosed in 1962 with weather boards and the main entrance was placed there.

The porch the building is cedar shingled excluding the porch. The windows are chiefly pairs of 1-over-1 sash type, with 1-pane casement windows set into the tower. The railings on the balcony and exterior stair and the framing principals are cleanly articulated with simple rectangular balusters and struts.

The structure is east of Hartshorne Drive on a sandy knoll which overlooks the Atlantic Ocean. When constructed in 1894, the life-saving station stood more than 800 yards from the ocean. Beach erosion, however, has reduced that distance to 200 feet.

Prehistoric Resources

In addition to significant historic structures, Fort Hancock and the Proving Ground Historic District may have significant prehistoric and historic period archeological deposits.

To date there is little physical or documentary evidence which can be of assistance in precisely locating sites of historic and prehistoric origin on Sandy Hook. In view of the lack of information concerning archeological sites no level of significance can be assigned to known archeological sites at this time.

National Park Service Structures

Since the creation of Gateway National Recreation Area in 1972 the National Park Service has erected a number of temporary and permanent facilities to serve the visiting public. These new facilities are not historic and do not contribute to the significance of the National Historic Landmark District.

The Proving Ground Structure

As the weapon testing area of the Army (1874-1919), the Proving Ground is the most significant section of the Historic District. Four buildings and structures--the 1901-1919 Proof Battery (174A), the Brick House (114), the Powder Magazine (350) and the (109) Chemistry Lab are of first order of significance. All other extant structures of the Proving Ground are of less importance, but nevertheless relate to the main functions of the weapon testing area.

Proof Battery and Magazines (HS 173, 174, 174A, 350)

These four structures were directly involved with the test firings on the proof range. The proof battery itself (174A) and the foundations of two magazines (173 and 174) are on the second and final proof battery site

(1901-1919), just off Atlantic Drive. The proof battery is a raised concrete platform, approximately forty feet wide and two hundred feet long. It extends from east to west and faces south, down the beach. The raised platform is divided into nine gun emplacements, equipped with various gun mounts, for the different types of test guns.[1] On either side of each emplacement, there is an open area where the ammunition for the test firings was laid out. There are eight short flights of steps leading onto the platform at these areas. Behind and parallel to the gun emplacements, there are two sets of railroad tracks. The outer or northern-most set, was for a gantry crane (this crane was transferred to Aberdeen in 1919) that mounted and removed the guns being tested. The inner set was for flat cars that transported guns and ammunition to and from the proof battery. To the north of the battery and gantry runway, five thick concrete traverses, approximately nine feet tall, were erected to provide blast protection. Today, only two of these traverses, with niches in their walls for overhead protection, remain. On the eastern end of the proof battery there is a ribbed ramp, which provided access for the wheeled field artillery which was to be tested. Although some portions of the battery have deteriorated, expecially on the western end, the major part of it is in good condition and its former use is readily discernible. The range to the south is still relatively undeveloped and open. Here can be found lead and iron shrapnel balls, shell fragments, artillery projectiles, and remains of old target butts, especially in the area opposite (east of) the radar site in the dunes, where there is a massive concrete butt.

In the rear of the Proof Battery, a gun park was established (in 1901). It included concrete skids topped by iron rails, and had space for 16 12-inch rifles, 24 10-inch rifles, and 10 12-inch mortars. Space was available for additional skids for 12-inch mortars and rapid fire guns. At the present time four of these concrete wall skids remain. These walls are 60 feet long, about 4 feet high and are topped with an iron railroad rail. These are the last remaining examples of this structure.

To the north of the proof battery were two large L-shaped concrete traverses, which formerly protected the ammunition magazine (173) built in 1905, and the constant tempreature magazine (174) built circa 1914. Nothing but the concrete slab foundations remain of these two rectangular, single story, red brick buildings, which were demolished within the past decade.

The surviving Proving Ground magazine (350) is down range, approximately three-quarters of a mile south on Atlantic Drive. This concrete structure is rectangular, one story high, gable roof, with corrugated steel deck supported by steel beams. There is an internal gable end vent, of concrete construction.

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[1] There was a 10th gun emplacement for a 14" gun on the extreme western end of the Proof Battery.

The foundations are concrete. The door is steel as are the window shutters. The windows themselves are the wooden, double hung sash type. The interior partitions and the floor slab are concrete. The building has no mechanical utilities and the electrical system is not usable. The construction date of the structure is given in a plaque set in the gable end, which reads, "Erected 1904." The roof condition of this structure is hazardous; its general condition is very poor.[2]

Bombproof Observation Stations

Associated with the Proof Battery are two bombproof observation stations. (circa 1902). Station A is 200 yards east of the NIKE Radar Site. Station B is 400 yards southeast of the NIKE Radar Site.

These two stations are square blockhouses made of concrete, stand about 12' x 12' square, about 8 feet high, with viewing slit-type windows, rectangular, in the east and south walls. A doorway is set in the west wall of each station.

Proof Range Target Platforms

These two structures are southeast of the Proving Ground "Bombproof" observation Stations. They consist of two platforms built of squared timbers, 4 x 4 squared timbers at each corner, each timber "leg" rests on a square concrete footing. These platforms, which are about 6 feet square, may have mounted some type of equipments to measure velocities of artillery shells or were reference points regarding shell impacts on the Proving Ground Range c. 1902-1918.

Brick House (HS 114)

This is the oldest brick building (1878-79) on Sandy Hook, and used to quarter officers on duty at the Proving Ground. Known as Ordnance Officers Quarters, it was used after termination of the Proving Ground in 1919 as the Fort Hancock Officers' Club. The officers' club is a roughly rectangular, two and a half story, painted brick building with an asphalt shingled mansard roof supported by wooden rafters. On its north wall, there is a single story, demi-hexagonal bay on the eastern end and a two story rectangular bay on the west end. There is a similar two-story bay in the center of the west (rear) facade. Attached to the length of the south wall is a single story, one-room deep addition, and serving as the club bar and lounge. An addition on the west side of the building was added in 1905. A single story, wooden porch runs the length of the east (front) facade and for a short distance along the north facade. Its flat roof is supported by wooden columns and the porch itself is enclosed with wooden railings. The roof is pierced by dormers, which house alternately two and one double hung sash windows. The brick chimneys are located internally in the center of the roof.

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[2] This building could have been associated with Battery Gunnison (337), as both these structures were built in 1904.

The wooden cornice is bracketed and extends along the perimeter of the house. The double hug sash windows and the doors are of wooden construction. The windows have stone sills and flat stone lintells. There are projecting demi-hexagonal bay windows in the center of the second story facades. The building has a partially raised basement and masonry foundations. The interior partitions are of plastered wood frame construction. The stairways and floors are wooden. The floors are covered with carpet and asphalt tile. The ceilings are stamped metal. the heating, plumbing, air conditioning and electrical systems are in good to fair operating condition. The building is equipped with a walk-in cooler as well. When the building was converted into the officers' club following the closing of the Proving Ground, the interior was altered somewhat, but such details as the stamped metal ceilings remain. A fire in 1938 damaged the upper part of the building.

Laundry (HS 113)

Erected in 1905 to the west of the Brick House, this structure, also known as Caddy House, originally served as the laundry for the Proving Ground. This structure is a T-shaped frame building, covered with white clapboarding and an asphalt shingled hip roof. There is a circular metal vent installed in the peak of the roof. The building has wood framed, double hung sash windows, grouped in threes, as well as wood doors. The building has wood flooring on sleepers as well as rafters. There are operable electrical and plumbing facilities. The east side of the building faces over a concrete slab patio. The building is unoccupied.

Master Workman's Residence (HS 112)

To the west of the Brick House, at the junction of Knox Road and Canfield Road, is this structure built in 1877, the oldest wooden structure extant on Sandy Hook. This L-shaped residence consists of a rectangular central structure, two stories tall with a flat roof and a single story, enclosed porch on its facade, and two wings, one of which extends to the north and the other to the west. Both wings are one story high; the north wing has a flat roof and the west wing has a low gable roof. There is a small extension built on the north end of the north wing. This attachment has concrete foundations, not the brick foundations of the rest of the house. The main house has a basement. The doors and the double hung sash windows are wood framed. The house is outfitted with aluminum storm windows. The interior is divided into eight rooms, four of which are bedrooms and one of which is a bathroom. The interior frame partitions and the ceilings are plastered. The floors and stairways are wood. The building was occupied as a residence on short-term lease to the Coast Guard from 1975-1977. It has been unoccupied since 1978, and is in need of major repairs.

Foreman's Residence (HS 104)

This is one of four structures facing each other across Kearney Road, west of Structure 112. This structure is a one a half story, rectangular frame building with a gable roof and a hip roofed, enclosed, single story porch on its front (north) facade. Both the house and porch roofs are covered with asphalt shingles and supported by wooden rafters. The house has two gable roof dormers on the northern slope of the roof. On the southern slope of the roof are two internal brick chimneys. Brick walls form the foundations of the house. There is a basement as well. The doors and windows, which are the double hung sash type, are wood framed. The windows are fitted with aluminum storm windows. The house has a total of six rooms, two of which are bedrooms and one of which is a bathroom. The interior frame partitions and the ceilings are plastered. The stairways and floors are wooden, except for the basement floor which is concrete. The residence, which was constructed in 1894, is presently occupied as such by the Coast Guard.

Locomotive Engineers' Residence (HS 108)

This structure is a rectangular, two and a half story building with an asphalt shingled hip roof supported by wooden rafters. There are single hip roofed dormers on the north and south slopes of the house. Attached to the southwest corner of the house is a single story hip roofed enclosed porch. The first floor of the north (front) facade has a protruding bay on the western half and a screened in wooden porch on the eastern half. The house has brick masonry foundations. The doors and the double hung sash windows are wood framed. The windows are equipped with aluminum storm windows. The house has a total of ten rooms, four of which are bedrooms, one of which is a bathroom and two of which are porches. There is a basement as well. The interior frame partitions and the ceilings are plastered. The floors and stairways are wooden except for the basement floor which is concrete. The house is in active use as a residence; it is on short-term lease to the Coast Guard. It was built in 1905. Structure 108, covered in asbestos siding, is used as NCO quarters.

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

This building is a 1-1/2 story ornate, Georgian colonial design, schoolhouse type building. Basic plan is rectangular in shape 40' x 58' including two small wings attached 2(7' - 2" x 16' - 10") with full basement and attic area. Exterior of the building is yellow brick bearing walls with some decorative brown sandstone around the windows and the sill of windows is brown sandstone color. The cornices of the bulding are ornamental metal with metal roof drains attached. The front entrance to the building is stepped up and has wood pillars with some colonial design features. The first floor of the building has wood columns and double wood floors over a full basement. The partition walls are brick bearing walls down to the cellar or basement footing slabs. The ceiling height is twelve feet.

The second floor is wood frame with sloped "mansard" type walls of slate exterior finish and projected dormers. The second or attic floor has a single wood floor on wood joists and a very low ceiling height with the brick chimney taking up most of the space. Windows are wood frames, double hung with upper window elliptical in shape. Doors are heavy wood frames with double door at entrance. Roof is slate built up type, hip roof. No major alternations are evident.

The building was built in 1904 as a Chemical Laboratory for the Sandy Hook Proving Grounds at a cost of $23,500. In early 1908, the equipment of the laboratory was transferred to the Picatinny Arsenal and the electrical laboratory machinery was moved into the building. in 1903, a school for instruction of student ordnance officers was established at Sandy Hook. The school was for the purpose of providing practical and theoretical work and study. The curriculum began as a one-year course of learning but was later extended to two years. The class size appears to range from 4 to 9 officers per class. The Chemical Laboratory building was used for the school. In 1919, the "School of Application" was transferred to Aberdeen, Maryland and the building was used as the post artillery engineer's office. Susbsequently, the building was used as a dependents grade school for the Fort Hancock Garrison from 1935 to 1960. In 1973, the buildings was transferred to the Coast Guard. Currently, the building is unused.

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

Built in 1901 as a Roman Catholic Chapel and changed in later years to a Unit Chapel. The building was changed or renovated in or about 1946 to a Rod and Gun Club with an enclosed front and rear porch addition. Basic plan is square in shape, 36'-6" by 36'-6" including the enclosure of an open porch in front of the building and a stub 36' by 8' in the rear of the building. Building is a wood frame structure with asbestos siding over wood clapboard exterior. The main building is a stepped up building with wooden barrels about four feet above grade. The west side of the building has a brick footing with a small 10' x 10' dirt floor, basement area. The heating unit is located by the enclosed rear porch. The original portion of he building has a stepped-up stage area with a raised ceiling held up by square wood pillars. The floor is tile on wood subfloor with wood floor beams. This area is used as meeting room. West portion of the building is on brick bearing walls and columns extending to the dirt basement floor. The first or main floor of this area consists of tile on a wood subfloor or wood beams. Windows are double hung wood with two bay windows in the housing quarters. Doors are standard wood exterior type with double wood doors at the main entrance. Roof is hip type with asphalt shingles except where the new addition is located, which has a single slope roof with rolled asphalt shingles. The exterior of the building has no distinctive architectural features or decorative elements. A brick chimney for the oil burner was installed with the new extension on the west side of the building. The building is used as a community center.

Ordnance Barracks (HS 102)

This T-shaped red brick building is two stories high with a partial basement and a slate tiled hip roof supported by wooden rafters. The central block of the building, which is flanked by two, slightly recessed wings on the north and south, has a single story wooden porch which has been partially enclosed. This porch on the western facade has a flat roof supported by wooden columns. The building has four dormers on its western facade, two on the central block and one in the center of each of the wings. The hip roofed dormers have louvered windows. On the western slopes of the wing roofs, near their junction with the central roof, are two brick chimneys. The doors and the double hung sash windows are wood framed. The sills and the elliptically arched lintels are of brick construction, extends the length of the central block, but not under the wings. The interior partitions are painted brick. The floors are wooden and covered with asphalt tile. The ceilings are covered with metal and acoustic tile. The stairways are wooden also. The heating, plumbing, cooling, and electrical systems are in fair to good operating condition. The basement is equipped with a laundry. The building was constructed in 1908 for soldiers on duty at the Ordnance Proving Ground and was recently vacated by the Coast Guard who was using it as barracks and mess hall. It has a 94-person capacity. It is now unoccupied.

In addition to the above structures, the maintenance complex of the Proving Ground has been preserved and some of the buildings are still in use by the maintenance staff of the National Park Service. This complex on Canfield Road is as follows:

Power Plant (HS 124)

This rectangular single story red brick building, built in 1907, has a wooden gable roof, covered with slate tiles and supported by steel trusses. There is a single metal stack on the north side of the building. The building has large banks of double hung sash windows with elliptically arched brick lintels. There are brick pilasters between the windows banks. Both the windows and the doors are of wood construction. There is a concrete slab floor. The boilers and other utilities have been removed and the electrical system has been disconnected. The building was constructed in 1907 as the power house for the Proving Ground operations. It is presently unoccupied. The doors and windows need to be boarded shut for safety reasons. The roof is in need of repair as well.

Machine and Blacksmith Shop (HS 125)

The motor shop consists of a long rectangular building connected to two smaller rectangular buildings, on the east and west ends of its south wall. The smaller buildings extend beyond the main building to the east and west, respectively. All three buildings have large banks of double hung sash windows with elliptically arched brick lintels, and separated by brick pilasters. The foundations are brick.

The doors and windows are of brick construction. All three sections are one story high with ceilings open to the roof trusses. The interior partitions are brick and the floor is wood on dirt. There are still rails set into the floor. The heating, plumbing, and electrical systems are in poor operating condition. Constructed in 1907 as the blacksmith ship, the building is now used by the Marine Laboratory and the Park Service, as a warehouse. The windows and doors need to be secured for safety reasons. The roof has leaks and is in need of repair as well.

Warehouse and Storehouse (HS 130)

This U-shaped, single story, red brick building has three asphalt shingled gable roofs, supported by steel trusses on the south wing and by wood trusses on the north and east wings. The south wing has skylights set in the roof and a gable end projecting from the center of the southern slope of the roof. A hip roofed hood projects over a loading door and a loading platform. On the southern end of the eastern wing there is a concrete ramp and another door. There are round windows in the gable ends of the southern wing and fanlights in those of the eastern wing. The lintels of the southern wing are keyed, elliptically arched brick. The other two wings have flat stone sills and lintels. The double hung sash windows and the doors are of wood construction. The windows on the east wing have overhead rolling metal shutters. The other windows are barred. The foundations are brick. There is a loading platform on the north side of the building as well. The interior partitions are brick, the floors are wood and concrete slab. The north wing has a mezzanine, constructed of wood joists and plywood. The ceilings are wood strip. The shops have oil heat with above-ground storage. The heating, plumbing, and electrical systems are in fair operating condition. Constructed in 1907 as the post engineer's shops, the building is now used as the Park Service carpentry shop. Repairs are needed on the rotted roof framing and the lintel on western overhead door. The electrical panels are exposed; drain pipes need repairs and miscellaneous weatherproofing.

Shelter House (HS 131)

This rectangular red brick building is one story with an asphalt shingled hip roof. The building has concrete foundations with a stone watertable and stone window sills and keyed lintels. The double hung sash windows and the doors are wood framed. The door in the north facade has a simple hood supported by wrought iron brackets. The interior partitions are panelled with wood. The flooring is asphalt tile on concrete, and the ceiling is fiber board. There is a crawl space, but no basement. The building is heated by the system in Structure 130. The plumbing and electrical systems are functioning, although additional electrical circuits are required. Built in 1907, the building has been recently remodeled and is in use at the National Park Service maintenance office.

Paint Shop (HS 132)

This single story, rectangular, red brick building has a gable, wood roof, covered with asphalt shingles and supported by steel trusses. There are metal vent stacks at regular intervals along the roof peak. The wooden doors and banks of double hung sash windows have elliptically arched brick lintels. There are two overhead doors in the west end and one in the center of the south side. The interior partitions are constructed of brick, the flooring is concrete. There is a partial dock on the eastern end. The heating, plumbing, and electrical systems are in fair to good condition. Constructed in 1907 as an explosion proof paint storehouse, the building is now used as the Park Service auto maintenance shop. It is in need of minor weatherproofing.

Magazine Building (HS 309)

In Fiscal Year 1899 a magazine was built about 800 yards south and down the beach from the 1874-1900 Proof Battery Site in a sheltered position. Its inside dimensions were 60 x 40 feet. The foundations were brick and concrete, the footing coarse concrete. The walls of the magazine were red brick, and hollow for ventilation. Floors, windows, and doors were fireproof, while the roof was galvanized corrigated sheet iron, resting on steel trusses. The magazine is believed to have been demolished by the Army circa 1971-1973. The brick-concrete foundation remains with the interior wooden floor. Many red bricks and sections of wall remain nearby, along with sections of the corrigated iron roof.

Harbor Defense Structures

Construction of the first gun batteries at Sandy Hook referred to as Endicott System of Coastal Defense: (1890-1910) began in November 1890 with ground breaking for foundations of the seacoast Mortar Battery. Following a survey of the peninsula, the sites for the dynamite battery, the mining casemate, a twelve-inch lift gun battery, and a seacoast mortar battery were laid in a rough semicircle from north to south, respectively, along the eastern shore.

The first and perhaps the most important facet of the harbor defenses at Sandy Hook was the submarine mine network. The first mining casemate, which housed the plotting room and command center for the mine system, was in the remaining bastion of the stone fort (523). The granite bastion was filled in and its southwest face was strengthened with additional granite, when it was converted into a mining casemate.

The supporting buildings, the torpedo (mine) storehouse, the torpedo (mine) loading room, and the cable tanks were built in proximity. Due to excesive moisture in the stone bastion, the casemate was relocated in a frame building behind the concrete and earth parapet of the former dynamite battery. Following

World War I, a concrete structure, incorporating the concrete papapet, was built to house the mining casemate. This structure (541) is on the northern tip of Sandy Hook, on Hartshorne Drive. The basically rectangular, single story structure has sloping concrete walls, steel doors, and is covered with earth. The support buildings, near the original casemate site in the southwest bastion are: the torpedo (mine) storehouse (509), a single story, rectangular, red brick building with a gable roof, built circa 1891; the torpedo (mine) loading house (510), a single story, rectangular, steel frame building with metal siding and gable roof, built circa 1940; and the cable tanks storehouse (516), a rectangular, single story wood frame building with four parallel gable roofs, built circa 1898 to house the mining cables when they were not deployed to the harbor.

The bastion, the mining casemate, the storehouse, and the torpedo (mine) loading house are on Coast Guard property.

Storehouse (HS 516)

The cable tanks storehouse (1897-98) sheltered the mine cables of the submarine mine defense system. This single story, rectangular building has wood frame walls, supported by heavy timber posts, and a quadruple gable roof, covered with wood shingles and supported by wood rafters. The flooring is concrete slab. There are large double doors, also wooden, in each of the gable ends. One set of doors in its gabled end fell down during the severe winter storm of 1977-1978. The building has no mechanical or electrical utilities. The roofs and the siding are in a very deteriorated condition. The open doorways should be barricaded for safety reasons. An addition to this structure was made during World War I doubling the size of the structures east side. This is the nation's only surviving structure of this character.

Torpedo (Mine) Storehouse Building (509)

The building was constructed in 1891 as a fireproof brick shed for storage of torpedoes (mine). The building is rectangular 42' x 92', constructed of brick, with walls 1-foot thick and is 10' high under the eaves. The floor is concrete slab on grade. Originally the narrow gauge construction railroad from the Engineer wharf ran into the structure. On each side of the track are racks of 10 by 8-inch timber, arranged for the storage of the buoyant torpedo (mine) cases. The roof is gable with wooden framing and asphalt shingles. Original construction was a slate roof supported by eight iron trusses. The windows are wood frame. The entrance doors are heavy wooden sliding doors. The building has no decorative elements. In 1894 a 3,000-pound capacity overhead travelling crane was installed in the east end for handling heavy anchors and mines. In 1908 the overhead crane was extended the length of the building.

In November 1901, a storm flooded the building for the second time. The building was inundated to a depth of four feet, ruining hundreds of dollars of equipment. Because the building had proven too small for its mission in that

material could not be "sorted and properly handled", it was recommended by the Engineer that a new and larger torpedo shed be built and the Building #502

be used as a storehouse. In 1906 a new 160' x 30 foot steel frame torpedo storehouse (Building #508) was built near the Engineers' Wharf. By 1914 the tracks leading to Building #509 had been removed. Between 1956 and 1972 the the building was under a permit to the United States Navy. In March 1973 the Coast Guard acquired custody of the building.

Mine Storehouse Building (HS 510)

Built in 1940 as additional mine storehouse when the number of mine groups (fields) was expanded from eight to 23 groups. It is a rectangular steel frame building, 150' x 55' with metal siding on concrete foundation wall, three feet high with a fully reinforced concrete floor. Exterior of building is straight up and down steel metal siding with a primer coat of paint. Roof is gable with metal type channel top supported by steel joist frame. Interior is high ceiling open space with two enclosed areas partitioned with metal walls near the entrance of the building. The door is an aluminum overhead roll-up type. Narrow gauge railroad tracks run through the building. Building has no decorative elements and is in fair condition.

The building was linked to other structures of the Submarine Mine Defense by a narrow gauge railroad. The only remaining section of this railroad is the portion between Buildings #510 and #512 and a spur through 510 running west toward the coastguard docks. At one time, the submarine mine railroad linked Buildings #508, #511, #509, #512 and #516 and the Engineer's Wharf, #535. The link to Building #509 was before 1904. Building 510 was under permit to the U.S. Navy from November 1956 to March 1971.

Ownership of Building #510 was transferred to the Coast Guard in March 1973.

Mine Loading Room Building (HS 512)

Built in 1940 as the #2 Mine Loading Room, the building was changed to a mine case fill plant in 1954 with some minor space changes in the floor area. Building is of simple type corrugated metal construction with concrete floor and footings. Building has a gable roof. Rectangular in shape 24' x 50', typical barrack type structure. Walls and roof are metal with steel windows double hung and steel roll-up garage door. Narrow gauge railroad tracks run through the building. This building is owned by the U.S. Coast Guard and is badly deteriorated.

Southwest Bastion Fort at Sandy Hook (HS 523)

The structure is the salient angle of the SW Bastion of a five-bastion granite fort constructed by Corps of Engineers between 1859 and 1868. The Civil War accelerated a technological revolution in weaponry which made this fort obsolete before completion. Four of the bastions and the three channel fronts were nearly completed when construction was suspended. The salient angle measures

approximately 150 feet along the south and west exterior faces. The three interior faces of the salient structure measures approximately 90 feet on the north, 50 feet on the northeast 90 feet on the southeast. The salient is approximately 35 feet tall. The exterior is granite block and interior appears to be brick and concrete. A small portion, approximately 80 feet long of the northern granite curtain wall remains attached to the eastern face. On top of the structure is a 300,000-gallon water tank (circa. 1910) which provides water storage for the common water system for Coast Guard and National Park facilities. On the interior of the structure are two connecting vaulted rooms which were built during the construction of the bastion. Access to these rooms is through a partially filled tunnel which commences behind the curtain wall attached to the north face of the structure.

Because of the technological revolution in weaponry that had made the Fort obsolete before its completion, the Fort was gradually pulled down and the granite stockpiled for use as riprap. By 1915 all that remained of the Fort was the salient angle of the SW bastion and the section of the northwest curtain wall shielding that elevation of the mine cable tanks' shelter. In 1889, $60,000 was appropriated for the conversion of the SW bastion into a mining casement. Plans called for the conversion of loopholed casemates Nos. 104-50 in the west face of the SW bastion into a mining casemate. Twenty-five feet of masonry would be added to the west front of the bastion. The adjoining salient magazine and loopholed and gun casemates in the subject bastion would be filled with masonry. Access to the mining casemate, the arches of which were to be lowered, would be through a vaulted 40-foot passage. The loophole embrasures would be sealed. The cable gallery (3 feet in diameter) would pass under the foundation of the bastion in a southwesterly direction 600 feet to enter the bay. A vertical shaft, extending down 15 feet from the floor level of the south casemate was completed as planned. The Submarine Mine Defense System was briefly active during the Spanish-American War between April 25 and August 16, 1898. The mines planted in April were removed and disarmed. The cables were taken up, the mining casement dismantled, and the material cleaned and stored in the torpedo shed and cable tanks. In 1902, the mining casement was determined to be unserviceable because of lack of proper ventilation for the use of engines, generators, and accumulators (batteries) in the casement. This use had not been contemplated in the original construction. It was estimated that $7,000 would be required to provide proper ventilation. In FY 1904 money was made available to construct a properly ventilated mine casemate to replace the one in the southwest bastion In 1905, a new mine casemate in the form of a wooden frame building was constructed within the Dynamite Battery Enclosure and the mining plant from the SW bastion was relocated to the new casement.

Dynamite Battery Structure (HS 541)

The battery is a rectangular concrete and sand fortification approximately 375 by 200 feet. The interior parade is approximately 60 by 200. The height of the fortification is approximately 15 feet. There are two double hung steel doors which provide interior access at ends of the southwest wall. In the northeast corner of the parade is a single story frame building. A thirty-foot wooden observation tower is mounted on the southeast corner of the revetment. The frame building and tower were built circa. 1942-1945 while the basic fortification was built in 1900. In the southeast end of the battery there are nine rooms in clusters of three and two rooms, and in the northwest corner there are two rooms. The rooms vary in size with the largest room being approximately 10 x 10 feet. The ceiling is eight-foot. There are no windows to the outside. The rooms were constructed as the mine commander station, operating room, plotting room, engine and storage rooms (circa. 1919-1921).

The Dynamite Battery was constructed in 1898 out of timber and sand bags to protect two 15-inch and one 8-inch dynamite guns. In 1901 the sand bag retaining walls and timber magazines were replaced by one of concrete. In 1902, the Dynamite Battery was dismantled because The Board of Ordnance and Fortification had declared pneumatic dynamite gun batteries obsolete. In 1906, a wooden frame mine casement was built in the parade of the Dynamite Battery.

In 1907-1908, the primary command station for the Submarine Mine Defense was established near the left flank of Battery Alexander. In 1920-1921, a "protected" mining casemate was developed in the southeast side of the former Dynamite Battery. Included in the construction was an "emergency mine commander station." The current primary station was retained. "Thus, in event of attack, the primary station could be destroyed, and the foe possibly deceived into believing that the mining system had been permanently crippled." Subsequent to World War II, this system of mine defense was apparently abandoned. In 1956, the use of the Dynamite Battery and Mining Casement was given under a permit to the U.S. Navy for use as a training facility for its Reserve Mobile Enshore Undersea Warfare Units. The permit is only revocable by the mutual consent of the Secretaries of Army and Navy. In 1973, the Dynamite Battery was excluded from the transfer of property from the Army to the Coast Guard.

Mine Secondary Station

The Mine Secondary Station is near the north tip area of Sandy Hook. This structure was used for calculating base-lines for Battery Peck (first for the 6" RF and then for, the AA guns that could also be used against vessels trying to destroy the mines) to the northeast and southeast off Sandy Hook during World II. The square concrete structure is sited atop a sand dune ridge about 22 feet

high. The station stands 10 feet high from top to roof to ground level. This top section is the observation part of the station; below is an underground room 8' 3" from ceiling to floor. The structure is 14 feet square each side, outside measurement, inside rooms are 12 feet square each side, and the walls are 1-foot thick reinforce concrete. The top observation room is 7' from floor to ceiling, the floor being 6" thick. At the southwest corner of the structure is a manhole entrance shaft for access to the underground room.

The shaft walls are 1-foot thick each side, the shaft is 4 feet square to a side, and is 8' 3" deep from shaft floor to manhole cover. Plans and sections date to August 26, 1943, and station was constructed 1943.

Battery Potter (HS 264, 256-260)

Battery Potter (on Hudson Drive), is a D-shaped massive structure, between two and three stories high, encircled by a Rosendale cement wall, approximately fourteen feet high. Above this wall, the concrete roof tapers upward to form a flat terreplein, covered with sand and overgrowth. On top of the battery is a long, low, concrete structure which formerly housed fire control activities. Although from the east Battery Potter presents the appearance of a large mound or sand dune, from the west, the Gothic-style, cut stone portal, with its twin octagonal towers flanking the round-arched entranceway with its wrought-iron gates makes a far different picture. The stone for this portal came from the earlier stone fort on Sandy Hook.

Inside the battery, the floors and walls are concrete; the ceilings are concrete vaults. The roof is concrete supported by iron beams. The interior of the battery is in poor condition and appears to be stripped. There are wooden and iron and iron bar doors at the front entrance. No utilities are presently serving the structure, but certain interior portions of the battery have been rewired and contain light for guided ranger tours. The miscellaneous railings and roofs are in need of stabilization and protective fence enclosures are needed. The battery magazine needs to be ventilated and rewiring of the entire structure completed.

Construction of the battery began in 1891 and the two Battery's guns were both emplaced by 1895. These were two twelve-inch guns on hydraulic lift elevator barbette carriages. The guns were removed in 1906. Following the deactivation of the battery, several rectangular concrete fire control booths were erected on the roof of the gun battery. A two-story fire control structure was built on top of the battery in 1905 and was demolished sometime after 1954. Potter is presently unoccupied.

Several minor structures associated with Battery Potter--Storeroom (256), Storehouses (257-60), and Latrine (258) built of concrete masonry, concrete block masonry, and brick masonry, are in poor condition. Buildings 256 and 257 were telephone operator "rooms" linking the fire control stations atop Battery Potter with their respective gun batteries around Sandy Hook; these structures were built in 1907. Buildings 256 and 257 were telephone operator "rooms" linking the fire control stations atop Battery Potter with their respective gun batteries around Sandy Hook; these structures were built in 1907. Building 258 is a conduit hut for underground electrical wires; Building 259 (1901) is the powerhouse that generated electricity for Fort Hancock gun batteries and other post buildings; No. 260, next to 259, is the coal shed built in 1901. Battery Potter is the only one of its kind in the United States.

Batteries McCook and Reynolds (HS 349)

These seacoast mortar batteries on Hudson Road, consist of two mortar pits each, thereby establishing a total of four pits. These four pits create one combined structure, which is enclosed by a high concrete wall. Each pit is enclosed by vertical concrete walls which arise to a height of approximately ten feet and then taper outwards, approximately ten to twelve feet higher. The four pits are arranged, in a square, one on each corner. Inside the concrete walls which separate the pits are tunnels leading to the magazines and the shell rooms for each pit. The floors of the batteries are concrete as well. There are steel tracks set in the passageways leading into the pits, used by the small gauge railroad which transported ammunition into the tunnels for storage. On top of the batteries, there are two small concrete observation huts, opposite each other atop the sandearthwork paparets of the mortar pits.

These single room, flat roofed booths, have no sashes in the windows, no doors and no utilities. Also on top of the batteries, which area is covered with sand and overgrown with brush, are the concrete bases of the three antiaircraft emplacements which were installed in 1922-23. The batteries are presently unocccupied. They are generally deteriorated, especially at the concrete steps which lead up to the observation huts. The area should be enclosed for safety reasons.

Constructed between 1891 and 1894, the mortar batteries were originally known collectively as Battery Reynolds, which it was named in 1903. In 1906, it was decided to establish two batteries each with two pits rather than four. The newly constituted battery (the north mortar pits) was named McCook. Each pit originally emplaced four 12" seacoast mortars. The number was subsequently reduced to one mortar per pit and finally in 1920, the mortars were removed. Following the removal of the mortars, the bombproof rooms were later converted for use as the Central Command post for the New York Harbor Defenses during World War II.

Eastern Shore Batteries (HS 180-181, 266, 337, 539, 540)

Following the initial period of construction, a succession of batteries, as prescribed by the Endicott Board, were erected along the eastern shore after 1896. From north to south these batteries were:

Battery Urmston (540), built in 1899-04, six three-inch rapid-fire gun emplacements.

Battery Morris (539), completed in 1904, four three-inch rapid-fire guns emplaced in 1909.

Battery Engle (189A), just south of 180, completed in 1898, deactivated in 1918, one five-inch gun.

Battery Peck (180), completed in 1902, armed with two six-inch barbette guns in 1903, disarmed in 1943, when two 90 mm anti-aircraft guns were emplaced.

Batteries Alexander, Halleck, Bloomfield, and Richardson (181)

(181), were built in 1899 [A], 1898 [H], 1899 [B], and 1902 [R], and armed with two twelve-inch guns, three ten-inch guns, two twelve-inch guns, and two twelve-inch guns, respectively, all on disappearing carriages.

Battery Granger (266), built in 1896, and armed in 1897 with two ten-inch guns on disappearing carriages.

Battery Gunnsion (337), built in 1904, formerly mounted two six-inch guns on disappearing carriages, converted to barbette mounts in 1943. Two six-inch guns on barbette mounts re-emplaced in 1976.

Although each battery varies from the others, the types of guns employed and the construction methods ensured a basic similarity between them. Constructed of reinforced concrete, the batteries are all one and half to two levels high on the inland side, with sand bulwarks built up to their superior slopes on the ocean side. The ground levels house the ammunition magazines and the shell lift elevators. The overhead rails used by the shell-moving machinery are still installed in the ceilings of some of these magazines. The gun platforms are on top of these magazines, on the second level, which generally is open.

The circular or square gun platforms are indented between concrete traverses, and have low concrete parapets on the ocean side. Some batteries are equipped with a raised observation booth, constructed of concrete on a traverse between the gun platforms on its own supports. The batteries, except Battery Gunnison were all deactivated by the end of World War II, if not sooner, and the guns, ammunition, and machinery have long been removed. Battery Gunnison, however, was converted from a disappearing to a barbette-armed emplacement and the two six-inch guns removed from Battery Peck remounted there, as well as a shell lift, making it one of the few extant armed batteries of the Endicott period.

Most of the batteries are still furnished with some hardware, such as the steel shutters on the windows and lift elevators. With the exception of Battery Engle, which has been built over, all of the major Fort Hancock fortifications have survived and are under the custody of the National Park Service. Virtually every battery, however, is in need of rehabilitation, because of weather and encroaching vegetation. Of the Dynamite Battery, only the concrete parapet walls remain.

Central Range Finding Station (Battery Morris)

One hundred feet east of Battery Morris is the Central Range Finding Station for Battery Morris.

The station is a square, concrete structure with windows set in the east, north, and west walls, and an entry door in the south wall. The structure is supported on four square concrete legs 9'3" high from the ground to the base of the station structure. The station stands more than 17' high from the ground to roof, was completed by late October of 1920, and employed a Coincidence Range Finder for fire-control of Battery Morris' four 3-inch rapid fire guns.

Central Range Finding Station (Battery Peck)

Built over Battery Engle is the Central Range Finding Station for Battery Peck. The magazine for Battery Engle was converted in 1920 for use as a plotting room for Battery Peck. Window slits for the Central Range Finding Station are set in the east, north, and west walls, with an entry door in the south wall. The floor and walls of the station are one-foot thick concrete, and the height from the floor to the highest middle point of the sloping concrete ceiling forming the roof of the station is almost 7 feet. This structure was in use through World War II.

Atop Battery Peck, north of the west emplacement (Gun Emplacement No. 2); is a one story wooden frame building with wooden platform atop the roof. Up against the south wall of this wood frame building is a large metal (6' wide 4' deep and 6' high heavy metal locker marked "documents" on the inside right door of the locker. West of the building is a silver colored, metal mobile trailer minus wheels sitting on wooden blocks on the ground (Trailer size 10 feet wide by 20 feet long by 8 feet high). Building and trailer area is surrounded by 12 foot high chain link fence, square in shape, topped with barbed wire. The north slope opposite the No. 2 gun emplacement and wooden house has metal pipes, a few rotting wooden timbers and bobbed wire laying on the ground slope.

Battery Arrowsmith (HS 348)

In addition to the batteries along the eastern shore, there were three batteries established on the western side of Sandy Hook.

Battery Arrowsmith, on Horseshoe Cove, was constructed in 1908. It is a single level concrete structure containing three disappearing gun emplacements. Between these semicircular emplacements with their high concrete walls, are ammunition magazines. The magazines are on either side of an unenclosed corridor which runs the length of the battery on an east west axis. In the two areas between the emplacements, concrete roofs cover the corridor. Into the roofs are set the steel tracks used by the shell-moving apparatus. These rails lead into the magazines on the south of the corridor. There are also partially sunken rooms on the north of the corridor. None of the rooms are equipped with mechanical or electrical systems. When the 8-inch guns at Arrowsmith were removed in circa 1928-1933, the battery was outfitted with two anti-aircraft guns. These were installed on the small hills between the original emplacements, just south of the magazines.

Today only circular concrete pads indicate the latter emplacements. The battery is presently unoccupied. Severe beach erosion threatens the west side of the battery; masonry is in bad shape in middle gun emplacement due to artillery shell detonations.

Batteries Mills and Kingman (HS 440,441)

Batteries Mills and Kingman are basically identical concrete bunker-type gun emplacements, situated side by side on the southern shore of Horseshoe Cove. Each battery consists of a central traverse, open at both ends, via tunnels which widens out on the northern and southern end to form rectangular areas areas where the 12-inch guns were positioned. In the center of the floor is the large circular depression where the carriage was installed. Projecting

the open end of the casemate, through which the gun barrels protruded, is a semicircular concrete roof. Leading off the central tunnel corridor are smaller corridors which lead into the ammunition magazines (the central traverse) which supplied the guns. These magazines and corridors form ells which have steel doors leading into them on the west side of the battery, to the south or north of the main corridor. The entire concrete structure has been covered over with earth and sand and is overgrown with underbrush. Thus both batteries have the appearance of small oval hills. There are no mechanical or electrical facilities in either bunker. They are not presently in use, except when the neighboring area is employed as a organized group campground. Both batteries were constructed and completed in late 1917 and armed in early 1919. They were each equipped with two twelve-inch guns on hydraulic high angle barbette carriages. In 1942 the guns were converted from high angle barbette to casemate.

Outside the boundaries of today's Sandy Hook Unit, GNRA, are three additional gun emplacements. These structures are not included boundaries of the National Historic Landmark District.

Battery Lewis

Battery Lewis was constructed in 1942-43 and mounted two 16" guns in Casemates. These guns were on the Navesink Highlands overlooking the North Branch of the Shrewsbury River.

Battery 219

Battery 219 mounted two 6" guns in barbette with shielded turrets. Battery 219 is east of Battery Lewis. Both batteries were constructed with underground traverses consisting of tunnels and magazine rooms of reinforced concrete.

Navesink Mortar Battery

The Navesink Mortar Battery is a World War I Mortar Battery formerly mounting four 12" mortars. The battery was constructed in 1918 and is 400 yards North of Battery Lewis.

These structures are not located within the Fort Hancock Historic District.

Concrete Fire Control Tower

The Concrete Fire Control Tower is on the beach just south of structure 179 (Bathhouse), was built in 1943 and designated "Fire Control Station B".

It is square concrete tower with a ground-level first floor room, than a second and third floor levels which were the observation levels. There are slit windows in the east wall, and half way in the north and south wall on the second and third floor levels. The tower stands 25 feet high from roof to ground level, is 14 feet square each side, outside measurement, inside rooms are 12 feet square each side, and the walls are 1-foot thick reinforced concrete. Original construction plans dated September 9, 1943, show that the tower would consist of a ground floor room, then enclosed observation room on the second floor, and open observation area atop the second floor room. Apparently sometime during the planning or construction of this tower plans were changed and the open observation area, the third floor level, was enclosed with roof and viewing slit windows.

The second story level mounted azimuth sighting instruments for sighting target offshore for the Underwater Mine Casemate, Battery Peck, and Battery #219 sited on the Navesink Highlands.

In the 1950s the rear (west side) of the tower was used as a recreation beach concession stand run by the Army.

Another fire control tower no longer stands, but it does exist in the form of a ruin visible at low tide offshore.

Designated "Fire Control Station E" it was constructed in 1942. In 1942 it stood more than 2200 feet northeast of the Spermaceti Cove Coast Guard Station (Bld. #436, now the visitor center), from the south side wall of the 1938 Igloo Magazine bunker at South Beach it stood more than 2200 feet southeast, and was 240 feet west of mean high water on the ocean beach east of the tower. The tower was 40 feet high from top to ground level and 14 feet square each side, outside measurement. By early 1943 two power house buildings, a transmitter building, a barracks, and a 75' high steel girder tower mounting SCR radar were constructed behind (west) of the tower.

In 1942 the tower stood atop a dune ridge 18' above sea level. Circa 1962-63, when the beach area south of the tower became Sandy Hook State Park, it is believed that the army tore down the tower, considering it a safety hazard if left standing. The entire 1942 back-dune and beach area is now ocean area because of beach erosion since 1945. The concrete foundation can be seen off-shore at low tide, and the tower structure is probably on the bottom underwater.

NIKE Missile Launch Control Area (HS 425, 426, 427, 428)

The final defensive element installed (in the mid-1950s) at Sandy Hook was the NIKE Missile Launch Area (14.69 acres), which consists of the launching complex, where the missiles were stored in underground silos, and two tracking stations, each of which contained an individual radar for tracking each of the four missiles. The launch area, just off Hartshorne Drive at Spermaceti Cove, is now used by NPS maintenance. These four basically identical silos are concrete beam and concrete slab structures, sixteen feet deep and covered with four feet of earth. All four silos are contained in a fenced compound, which has been paved with asphalt. On the surface level, the folding double steel doors through which has been paved with asphalt. On the surface level, the folding double steel doors through which the missiles pass and the missile launch elevator apparatus are visible. The silos themselves have concrete foundations, floors, and painted concrete wall. The silos contain no missiles, however, much of the machinery is installed. The hydraulic elevator doors are closed. The sump pumps are installed as are the exhaust fans. Some of the equipment is operational although the silos are unoccupied and contain water.

Tracking Station Towers (HS 417-422; 467, 472-473)

The two Tracking Station are to the north, just off Hartshorne Drive at Horseshoe Cove. The complexes include the concrete radar towers and several support buildings including barracks, generator buildings, and sentry booths. The identical platforms, which formerly were mounted with radars, are open decks of reinforced concrete, rectangular in shape, and supported by concrete piers, three on either side by rectangular steel platforms of the same height, which are supported by steel beams with concrete footings, two on either end. The steel platforms are longer, but not as wide as the concrete platforms. Thus each radar tower is a raised rectangular platform, formed by the concrete section in the middle and the steel sections on either side. The platforms are approximately twelve feet off the ground and have a surface area of approximately 1,150 square feet. Each platform is enclosed by a steel pipe and mesh fence. The towers have no mechanical utilities, but the wiring for the electrical system is still intact and probably usable. The towers are not presently in use. They formerly were employed by the Inter-flight Control units on Sandy Hook.

TNT Igloos (HS 442-443)

On the southern verge of Horseshoe Cove and south of Battery Mills are four "igloo" type concrete storage bunkers. Constructed about 1943, they were used for the storage of TNT explosives used in underwater mines. Because the bulkheading behind these bunkers has fallen apart, the bunkers are being undermined as the sand and dirt base erodes away by rainwater, wind, wave, and high tide action. The north bunker's mid and rear sections are slanted down and laying on the beach

behind the bulkheading--during high tides the bay surrounds these sections. The south bunker is intact on ground level, but the rear area behind the bunker is eroding away badly and rapidly. While the interiors of the bunkers are not clean, they are very dry, and both have had most of their sand, cinder, and dune grass covering their roofs blown away by the force of wind action.

Two additional and identical "igloo" type concrete storage bunkers are on the south side of the dirt and gravel road near the Fishermens' Parking Area known as South Beach. One bunker was built in 1937 while the other was built in 1938 (both are so marked in concrete over their doorways). Both bunkers are in good sound condition, the insides being very dry yet rather clean with some dirt, sand, and broken glass laying on the floors. The large metal doors of the bunkers have been bolted shut by the Sandy Hook Maintenance Division. The sand, cinder, and dune grass covering the roofs of the bunkers are mostly intact, although wind erosion is exposing parts of the roof of the 1938 bunker nearest the parking area.

Opposite these bunkers, on the north side of the dirt and gravel road, are two small concrete gun "nests" that face south toward the storage bunkers. These "nests" were probably built circa 1937-1938 to guard a nearby radar testing site. Both are filled with brackish rainwater and the "nest" nearest the parking area has poison ivy growing around it.

Radar Equipment Site (HS 707)

Also near Fishermens' Parking Area are four concrete slab foundations, which probably served to support buildings used in testing radar equipment between 1937-1941. One slab foundation is at the southeast corner of the Fishermen's Parking Area at South Beach. It is being undermined by wave action and beach erosion. It measures about 25 feet long and 20 feet wide. From time to time it is covered with drift sand, and is surrounded with concrete fragments from other apparent slab foundations or structures.

About 30 feet north of the Parking Area is a cluster of three slab foundations. The longest measures from about 60 to 100 feet in length and about 25 feet in width. Evidence of latrine-toilet pipes can be found on the south section of this foundation. The foundation nearest the Fishermen's Parking Area measures about 50 feet in length and about 25 feet in width. North of this foundation is another foundation measuring about 30 feet in length and about 20 feet in width. On the extreme west side of this foundation in the middle stands a concrete block measuring three feet in height, 1 1/2 feet in length and about 2-2 1/2 feet in width.

All the slabs are covered with drifting sand, dune grass, seaside goldenrod, drift wood, and scattered garbage (plastics, bottles, etc.)

Along either side of the dirt jeep road south of the Fishermens' Parking Area at South Beach are several concrete slab foundations. These are also related to the radar testing site near South Beach.

The South Beach Radar Testing Reservation was in use from 1937 through 1941. Most of the structures which supported the first Sandy Hook radar tests during this period were salvaged by the U.S. Army after January, 1946, and by August,1951.

Buildings located in this area between 1937 and 1941 include the following:

Building 1 Radar Shelter Building
Building 2 Radar Shelter Building
Building 3 Radar Shelter Building
Building 4 Radar Shelter Building
Building 5 Radar Shelter Building
Building 6 Radar Shelter Building
Building 7 Radar Shelter Building
Building 8 Radar Shelter Building

Concrete Machine Gun Emplacement Bunkers

Two other structures complete the known facilities that made up the Signal Corps Radar Testing Reservation at South Beach. These are two concrete machine gun emplacement bunkers which have not been given building numbers.

Both machine gun emplacements are on the north side of South Beach Road facing south. They are about 15 feet long, 10 feet wide, and stand about 4 feet high from ground surface to top of roof. The structures are rectangular in shape on the east, west, and north sides, with door way on the north side, but the south side is curved outward with a viewing slit aperture. One emplacement stands diagonally across the road from the 1937 Igloo Magazine on a northeast line, the other emplacement stands diagonal across the road from the 1938 Igloo Magazine on a northwest line.

The emplacements were the checkpoints for anyone entering the radar testing area at South Beach.

Ordnance/Quartermaster Wharf (HS 536)

The wharf was a 475' (approximately) angled wharf with an ell-shaped end whose face is approximately 125 feet in southwesterly direction. The main portion extended approximately 120 feet in a southerly direction while the ell portion extended in an easterly direction. The width of the approach varied from 40 to 55 feet, the widths of the main portion and ell were approximately 80 feet. The wharf was of timber construction on piles. On the main portion of the wharf there was a 40' x 20' one story wooden frame dockhouse circa 1896. On the ell portion there was a 10' x 10' one story wooden tide gauge hut.

The wharf was largely removed by the U.S. Coast Guard in 1978-1979.

Fort Hancock Buildings

Upon the completion of the initial set of Endicott Defenses at Sandy Hook, it became essential that permanent facilities for a garrison be erected. In 1896, the Quartermaster Department detailed Captain Arthur Murray to draw up a master plan for the newly designated Fort Hancock. The site selected for the post was to the south of Battery Potter and the west of Battery Reynolds, but within a convenient distance of each. Plans for an initial thirty-four buildings were drawn by the Quartermaster Department and reviewed, in part, by the architectural firm of Carrere and Hastings. The proposed post would accomodate a battalion of artillery and allow for expansion as well. The site on the western side of the peninsula was cleared and graded and an irregularly oblong parade was laid out. The officers' quarters were arranged in a row along Hartshorne Drive on the western side of the parade and the enlisted men's barracks were constructed on the eastern side. The guardhouse and administration building, as well as a bachelor officers' quarters, were arranged across the middle of the parade. The NCO quarters, bakery, storehouses, stable, and workshop were laid out along Kearney Road on the northwest corner of the parade. The initial buildings were largely completed by private contractors by December, 1899. As the fortifications expanded it was necessary to enlarge the garrison as well, and construction of the post continued at a steady pace up to 1918 after which time it became sporadic, until the pre-Pearl Harbor and National Emergency years when there was a crash building programs.

The post, as it appears today, is composed primarily of these buildings erected at the turn of the century, although some buildings date from the 1920s and 1930s and a larger number remain from the expansion of the post during World War II. Generally speaking, the earlier buildings were constructed of buff-colored brick, while the majority of the later buildings are wood and steel frame, or concrete structures. The post retains other features such as 20-inch Rodman gun display and the Parade Ground and flagstaff which are part of the historic setting. The following building contribute to the architectural and historical character of the District:

Officers' Row (HS 1-18)

Fronting on Hartshorne Drive and built in 1898-99, the 18 handsome quarters which constitute Officers' Row (HS 1-18), are basically identical two and half story L-shaped buff-colored brick buildings are designed in a plain Georgian style, with both triangular and elliptical pediments on the dormers, plain box cornices, and flat keystoned lintels. They all have interior brick chimneys. Alterations have generally been confined to maintenance and modernization of the utilities; surface appearances are unchanged, except in the rear of the buildings, where single car garages were added in the late 1930s to buildings No. 6-16. These buildings have stabilized to correct problems like roof leakage, defective flashings, deteriorated brick mortar, faulty gutters and downspouts, rusting of press metal soffits, and wood window sash and frame decay. Building 18 is on permit to NOAA and the others are used for interpretation or by summer permittees for programs.

Enlisted Men's Barracks (HS 22-25)

Structures 22, 23, 24, and 25, east of the Parade Ground, are basically identical rectangular-shaped, two story barracks, built of the same buff-colored brick as the Officers' Quarters. The west facades of the barracks, which face the Parade Ground, are dominated by central, gable roofed, projecting bays, which are flanked by double tiered wooden porches. The upper tiers are supported by square brick columns, while the flat porch roofs are supported by paired wooden columns. The barracks have gable roofs, covered with asphalt shingles. They have internal brick chimneys located centrally, as well as circular tin stacks. The buildings have plain box cornices with partial cornice returns on the gable ends, as well as bracketed eaves on the gable ends. On each, the roof itself is supported by wooden rafters. On the east facades of the barracks, there are single story porches with decks, supported by wooden columns, protecting the central doorway. These porches extend over a central portion of the east facade. The barracks have raised basements, with stone-faced concrete foundations. The barracks have wood framed, double hung sash windows at regular intervals along the first and second stories. These windows have stone sills and flat, keyed arches, and are equipped with aluminum storm windows. Under the peak of the roof in each gable end is an oval bull's eye window. The interiors of the barracks were laid out in identical fashion. The first floors had one dormitory, one lavatory, and eight squad rooms. The second floors had two dormitories. The stairways and the floors are wooden. The frame partitions and the ceilings are plastered. The heating, plumbing, and electrical systems are functioning. Necessary maintenance would include pigeon control, secure locks on doors and windows, replacement of rotten porch members, repair of gutters and downspouts, and repointing of brick and stone. Structures 22 and 23 were built in 1899 and the others in 1898. Building 23 is not used at the present time. Building 22 is used by the Marine Science Consortium and the American Littoral Society and 24 and 25 by the U.S. Army Reserve.

Mess Halls (HS 55-58)

East of the Enlisted Men's Barracks, these structures are similar and served Barracks #22-25. They are one a half story rectangular brick buildings, constructed of the same buff brick as the post quarters, with white stone watertables and brown stone facing on the concrete foundations. The buildings have hip roofs with raised gable ends housing two pairs of windows on each building. The cornices on the partial gable roofs are bracketed with partial cornice returns, but the hip roofs have plain box cornices. The roofs are covered with asphalt tiles. Each building has a single internal gable end chimney as well as metal vent stack. The west facade of each building has a flat roofed wooden porch which extends almost the length of the building. On the east facade of each building, on the northern end, is another wooden porch, one story high, flat roofed and supported by wooden posts. This porch is lacking on building 56, although it has a wooden stoop. The wooden framed doors and double hung sash windows have stone sills and the windows have flat, keyed arches. Several metal lintels installed in the masonry have begun to rust. The interior partitions have wooden but the basement floors are concrete.

Each mess hall was designed with a 140-man capacity, and divided into a kitchen, a mess hall, a lavatory, a cooks' room, and three rooms. The buildings are presently used as mess halls for the Army Reserve. They were built by the Army in 1905. Needed repairs include miscellaneous repairs to the porches to prevent further decay, minor brick pointing, replacement of rusted lintels, and repair of gutters and downspouts.

Barracks and Mess (HS 74)

This U-shaped, two and a half story building on Magruder Road, has an asphalt shingled gable roof supported by wooden trusses. The raised basement is faced with field stone. There is a stone watertable and the windows have stone sills. The lintels are elliptically arched brick constructions. There are hip roofed dormers positioned regularly along the base of the U. The building has a plain box cornice with partial cornice returns on the gable ends. There are two story, wooden porches, supported on concrete piers, with flat roofs, along the inner court of the barracks, as well as on the center of the west facade, which faces the parade ground. There are internal brick chimneys near the gable ends, as well as internal metal vent stacks along the roof line. The double hung sash windows and the doors are of wooden construction. The building is outfitted with aluminum storm windows as well. The interior frame partitions and some of the ceilings are plastered. Other ceilings are metal or covered with acoustic tile. The floors and stairways are wooden, except for the basement floor which is concrete. The exterior stairs and the foundations are concrete as well. The heating, plumbing, cooling, and electrical systems are in good operating condition. The building was constructed in 1909 and had a 218-person capacity. It is presently in use by NOAA. The inner court is employed as a parking lot. The exterior wood trim needs painting, the gutters and downspouts need repair. Minor brick pointing and pigeon control are also required.

Post Headquarters (HS 26)

This rectangular, two story buff-brick building on Hudson Road, has an asphalt shingled gable roof supported by wooden rafters. There are two internal brick chimneys joined by a curtain wall at the peak of each gable end. There are fanlights set into each gable end as well, just below the peak of the roof. The building has a partially raised basement. There is a single story wooden porch on brick piers, which extends the length of the south facade. This porch has a flat roof supported by wooden columns and is enclosed with a wooden railing. The building has a stone watertable and stone facing on the raised basement. The windows which are the double hung sash type are grouped in pairs and have keyed flat arched brick lintels. There are fanlights above the central pairs of windows on the second story of the gable ends. The doors and the windows are of wooden construction. The foundations are of brick and concrete construction. The interior partitions and floors are wood frame. The walls and ceilings are

plastered. The stairways are wooden as well. The building was renovated in 1975 to serve as the park headquarters. The heating, plumbing, and electrical systems are in operating condition. Some brick repointing has been required and some windows joists have deteriorated. The building was constructed by the Army in 1899 as the post headquarters. This building is similar in appearance to the Officers' quarters. Its interior has been renovated to serve as the NPS Unit Office.

Bachelor Officers' Quarters (HS 27)

On Hudson Road, this quarters is a rectangular, three story buff brick building with two story semicircular bays attached to the east and west ends of its south facade. There is a single story wooden porch supported on masonry piers which runs along the south facade between the two bays. Its flat roof is supported by paired wooden columns of brick pedestals. There is a second wooden porch, also one story high, attached to the east end of the north facade. The building has a stone watertable and a partially raised basement which is stone faced. The flat wooden roof has asphalt covering. There is an internal brick chimney in the center of the south roof line. There is a simple box cornice. The two bays have dentillated cornices. The doors and the double hung windows are wood framed. The windows have stone sills and keyed, flat arched, brick lintels. The third story windows are shorter and wider than the lower windows. There is a steel fire escape on the east wall of the quarters. The interior partitions and the floors are wooden, as are the stairways. The walls and ceilings are plastered and the floor is covered with asphalt tile. The heating and plumbing systems are in fair condition and the electrical system is in good condition. Built as a bachelor officers' quarters in 1898, the building has eleven bedrooms It is presently occupied, as seasonal housing for park employees. There are some lintels in need of replacement.

Guardhouse (HS 28)

This rectangular, one and a half story buff-brick building on Kearney Road has a hip roof and a partially raised basement. The roof is supported by wooden trusses and is roofed with asphalt shingles. There is a louvered belvedere in the center of the roof, with a metal stack attached to it. There is a gable roofed dormer postioned in the center of the western slope of the roof. The internal brick chimney is one the north slope. The basement has stone facing. There is a single story wooden porch on brick piers along the western facade. The flat roof is supported by wooden columns and it has a bracketed cornice. The doors and the double hung sash windows are wood framed. The building was constructed in 1899 as the post guardhouse. It houses a new furnace, which was installed two years ago, cells and has a metal ceiling. The heating and plumbing systems are in fair to poor condition. The electrical system is in need of renovation. The building is now used as a museum and for curatorial storage by the Park Service. The exposed wood and metal trim needs to be painted. A new furnace was installed two years ago.

Post Hospital (HS 19)

Post Hospital (Marine Laboratory) on Hartshorne Drive is a conglomerate structure, composed of a rectangular, two and a half story building, connected to a smaller, rectangular, two and a half story building to the east, by a two story passageway. The western building is flanked by two symetrical, one and a half story wings on the north and south sides. The eastern building has a single story addition along the length of its east elevation. Except for the last addition, all the structures have gable roofs. All the roofs have asphalt covering and are supported by trussed wooden rafters. The gable roofs have simple box cornices with partial returns on the gable ends, as well as bracketed eaves. The western building has three dormers on either side of the roof. There is a central palladian dormer, flanked by two smaller dormers, all on each slope of their roofs as well. The eastern wing has three, gable roofed dormers, all on each slope as well. The whole complex is constructed of the same buff brick as the main buildings at Fort Hancock. The eastern wing has a wooden porch with a hip roof, supported by wooden columns on brick piers. The flanking wings have flat roofed porches, enclosed with clapboarding, along their open sides. The building has basements under all wings except for the easternmost attachment with a shed roof. The foundations are constructed of brick and concrete. The basements are partially raised. The building has internal gable end, brick chimneys. The doors and the double hung sash windows are wooden. The interior partitions are wood frame and like the ceilings, are plastered. The flooring is wooden, except in the basement, where it is concrete. The oil heating system is in good condition, and has underground fuel storage. The plumbing and electrical systems are also in good condition, as are the window unit air conditioners. This building was constructed as the Post Hospital in 1899. It has been leased as a headquarters to NOAA for three years and is used as Marine Laboratory. The annex behind the main hospital was constructed in 1905.

NCO Quarters (HS 20)

Structure #20 is a simple, two story, rectangular building on Hartshorne Drive, constructed of buff colored brick, with a frame porch enclosed with asbestos siding attached to the east (rear) facade. The residence has a gable roof covered with asphalt shingles. There is a simple box cornice with partial cornice returns on the gable ends, as well as bracketed eaves on the gable ends. There is an internal brick chimney in the center of the roof. The enclosed porch on the rear has a metal covered shed roof. The double hung sash windows are wood framed, with stone sills and flat, keyed arches, and aluminum storm windows. There is a stone water table and a partially raised basement.

A bulkhead cellar entrance is in the east facade. The doors are wood. The interior of the house has plastered frame partitions and ceilings. The stairways are wooden, as are the floors, which have been tiled with asphalt. The heating, plumbing, and electrical systems are all functioning. The building is used under

permit by NOAA. It has seven rooms, three of which are bedrooms and one of which is a bathroom. Only minor repairs are needed to the doors and windows. The building was erected by the Army in 1899 as a hospital steward's quarters and has been stabilized.

NCO Quarters (HS 335)

On Magruder Road, this structure is an L-shaped residence, one story high. The central portion of the house has a gable roof, while the enclosed porch on the front (north) and the ell wing on the east both have shed roofs. All the roofs are supported by wooden rafters and covered with asphalt shingles. The central portion of the house has brick bearing walls, while the porch and wing have wood studs, covered with asbestos siding. The residence rests on concrete foundations and has a partial basement and crawl space. The doors and the double hung sash windows are wood framed. The house is fitted with aluminum storm windows and doors. The porch and wing windows have simple rectangular frames with wooden sills. The central portion has stone window sills and elliptically arched lintels. The outside steps to the raised porch are wooden. The house is divided into six rooms, two of which are bedrooms and one of which is a bathroom. The interior frame partitions and the ceilings are plastered; the floors are wooden. The mechanical and electrical systems are operable. The building used as a day care center for NOAA employees children.

Miscellaneous repairs are needed to the window frames and doors. The building was erected in 1898 and served as the engineer's quarters.

Duplex NCO Quarters (HS 29 and 30)

Structures 29 and 30 on Kearney Road are two identical two-family residences, built of buff brick, two stories high and rectangular. They have gable roofs, covered with asphalt shingles, and two internal chimneys, located centrally on either side of the roof peaks. The cornices receive simple box treatment, with partial returns on the gable ends. The eaves on the gable ends are bracketed. Each house has a single story screened-in porch extending the length of the front facade. These porches have metal-covered, slightly pitched roofs. There are single story, single bay rear porches attached centrally to both apartments in each house. These porches are enclosed with asbestos siding. The houses have partially raised basements which are stone-faced. The foundations are stone. The wood framed double hung sash windows have stone sills and flat, keyed arches. They are also equipped with aluminum storm windows. There is a fanlight under the peak of the roof in the gable ends of both houses. Each apartment has wooden front and back doors, the front doors on either end of the front facade and the rear doors in the center of each apartment's rear facade. The interior partitions and the ceilings are plastered. The stairways and the floor joists are wood; the floors are covered with asphalt tile. Each building has eight rooms, four of which are bedrooms and two of which are bathrooms. The buildings are used as NPS

quarters and the heating, plumbing, and electrical systems are operable. Necessary repairs are required for the porch members; minor brick pointing is needed and broken doors and windows need to be repaired. Quarters 30 was constructed in 1898 and Quarters 29 in 1899, both by the Army.

Duplex NCO Quarters (HS 52)

Structure 52 on Kearney Road is a duplex residence, divided down the middle, built of buff brick, two stories high and rectangular. It has a gable roof, covered with asphalt shingles, and two internal chimneys, located centrally on either side of the roof peak. The simple box cornices have partial returns on the gable ends, and the gable end eaves are bracketed. The house has a single story, hip roofed and metal covered porch extending the length of its front facade. The porch is screened in with a single door to each residence at either end of the facade. There are also single story, single bay porches attached to the center of the rear facades of each apartment. These porches are enclosed with asbestos siding. The house has a partially raised basement. The foundations, are stone. The wood framed double hung sash windows have stone sills and elliptically arched lintels. The interior partitions and the ceilings are plastered. The stairways and floor joists are wood and the floors are covered with asphalt tiles. The building has eight rooms, four of which are bedrooms and two of which are bathrooms. The building is used as NPS quarters and the heating, plumbing, and electrical systems are operable. Necessary repairs are required for the porches and broken windows and doors. Some minor brick pointing is needed as well. Quarters 52 was constructed by the Army in 1906.

Duplex NCO Quarters (HS 66)

This roughly U-shaped building on McNair Road is divided into east and a west duplex apartments. It is a single story frame building with asbestos siding and asphalt shingled hip roofs. Each apartment has two internal brick chimneys.

Each residence has a single story screened in porch in the angle of its front facade. These porches are reached by wooden stone and have gable roofs. The doors and the double hung sash windows are wood framed. The interior partitions and the ceilings are plastered. The floor is wooden in both apartments. The building is equipped with heating, plumbing, and electrical systems. There are eight rooms in all, with two bedrooms and two bathrooms. The apartments were built by the Army in 1908 and are presently used as quarters by the National Park Service.

Bakery (HS 33)

This rectangular two story buff brick building on Kearney Road has a slate tiled hip roof supported by wooden rafters. There is a louvered cupola in the center of the roof for ventilation. A tall brick chimney is attached to the

center of the eastern wall. There are single story, stuccoed sheds attached to the north, south, and east walls of the bakery and a concrete porch on the west side. The double hung sash windows and the doors are of wood construction. The interior partitions are brick and the flooring is concrete slab. The ceiling is covered with wood stripping. The building has a crawl space underneath it. The heating, plumbing, and electrical systems are all in need of replacement. The ovens are inside the bakery. The building was constructed in 1898 and is presently abandoned. The roof is partially collapsed and its joists need to be stabilized and the eaves and shingles need repairs.

Fire Station Office (HS 34)

Structure 34, on Kearney Road, is a single story, rectangular building, built of buff brick with stone-faced concrete foundations. The building has a partially raised basement and an asphalt shingled gable roof, supported by wooden rafters. There are two internal brick chimneys located centrally. The wood framed doors and double hung sash windows have stone sills and elliptical arches. The doors are outfitted with wooden stoops, though one has apparently been removed from the southernmost of the two doors on the west facade. The interior frame partitions and the ceiling are plastered. The wooden floor frame is covered with asphalt tiles. The heating, plumbing, and electrical systems are functioning. The building is presently occupied by the Sandy Hook fire department and park safety officer. It was built in 1899 as a black smith shop.

Quartermaster Office and Storehouse (HS 32)

This rectangular, two story buff brick building on Kearney Road has an asphalt covered gable roof supported by wooden rafters with heavy timber beams. The building has an attic and a partially raised, stone-faced basement. There are wooden porches, one story high and without roofs, two of which are one the west side and one one the east side. The double hung sash windows and the doors are of wooden construction. They all have elliptically arched brick lintels and the windows have stone sills and are barred. There are two loading doors in the east and west facades. The interior partitions are of wood frame construction and some of brick masonry. The floors are wooden; the first floor has heavy timber beams. The foundations and the basement are of concrete construction. The heating, plumbing, and electrical systems are in fair to poor condition. The building is presently vacant. The outside rotted porch stairs and the open doors and broken windows need to be secured for safety reasons. The building was constructed in 1898 and the second floor added in 1910.

NCO Club-Post Stables (HS 36)

Structure 36 on Kearney Road is a two story, rectangular buff brick buiding with two single story shed attachments on the east end and the center of the north facade. The building has a slate tiled gable roof with frame and clap-

board dormers, also with gable roofs. There are two metal stacks on the roof peak, and a chimney, attached to the north wall of the north shed. The building is equipped with steel fire escapes. The wooden doors and double hung sash windows have rounded arches; the windows have stone sills. The building rests on sleepers and concrete slabs. The second story floor is wooden, as are the rafters. The interior walls and ceiling are plastered and the paint is peeling badly on the first floor. The building is equipped with heating, plumbing (but not operational), and electrical systems. Built by the Army as a stable in 1899, it now serves as the NPS recycling center.

Shell Warehouse (HS 45)

The shell warehouse on Hudson Drive is a rectangular single story concrete building with a small loading dock in the center of its front facade. The building has a low shed roof constructed of concrete slabs and steel beams. The concrete walls are reinforced with cast iron pipe. The loading platform and steps are also concrete, as is the slab floor, which is raised off the ground to the level of the loading platform. The windows are covered with steel shutters, and there is sliding steel door on the loading platform as well. The building has no utility facilities. It was built by the Army in 1918, and is presently used by NOAA for storage. The building is in fair condition. This is only one of three post structures built during World War I that remains.

Two Family NCO Quarters (HS 71, 72, 73, 75)

The first two duplex residences on Mercer Road are identical single story rectangular buildings of buff brick, divided into north and south apartments. Each building has a hip roof covered with slate tiles, and four internal brick chimneys. There are porches extending the length of the east and west facades. The porch on Structure 71 is open, but the porch on 72 is enclosed with asbestos siding. The entrances to the apartments are at either end of each porch. The houses have double hung sash windows with stone sills, which are boarded up. The interior of each house is divided into eight rooms, two of which are bedrooms and two of which are bathrooms. These houses, built by the Army in 1909, are presently occupied.

Duplex 73, also on Mercer Road, is a rectangular, two story building constructed of buff brick and divided into north and south apartments. The house has an asphalt shingled gable roof with two internal, central brick chimneys. There is a open porch supported by square, wood columns, with wood railings. It is one story high. There are two smaller, single story and single bay porches attached to the center of the rear of each apartment. The doors and double hung sash windows are wood framed. The house has a partially raised basement with stone-faced foundations. The interior is divided into eight rooms, four of which are bedrooms and two of which are bathrooms. The interior frame partitions are plastered, as are the ceilings which also has acoustic tiles. The wood floors

are covered with asphalt tiles. The heating, plumbing, and electrical systems are operable. The house is presently used as quarters for the park concessioner. It was built by the Army in 1909. The house needs some minor pointing of the brickwork, minor repairs to the porches, and broken windows and doors need to be boarded up.

Structure 75 is a rectangular, two story frame building sheathed with asbestos siding. It is divided by a central partition into north and south apartments. The building has a gable roof with two internal chimneys. There are two single story, flat roofed porches which extend the length of the front and rear facades. The front (west) porch is open and the rear porch is enclosed with asbestos siding. The basement is partially raised and, like the foundations, is constructed of masonry blocks, covered with stucco. The double hung sash windows and the doors are wood framed. The windows are equipped with aluminum storm windows. The interior frame partitions and the ceilings are plastered. The flooring is wood, except for the basement floor which is concrete. The asphalt tiled roof is supported by wooden rafters. The house is outfitted with heating, electrical, and plumbing systems. The residence has eight rooms, total, four of which are bedrooms, and two of which are bathrooms. Built by the Army in 1910, the building is presently unoccupied. It is need of minor weatherproofing.

Post Library (HS 46)

The Post Library on Kearney Road, built in 1941, is a rectangular, single story building with padstone foundations and an asphalt shingled gable roof, supported by wooden rafters. The wood frame building is sheathed in asbestos siding. The doors are wooden and the double hung sash windows are as well. The windows are also outfitted with aluminum storm windows. There is a small, gable roofed porch which shelters the front door in the center of the north facade. The interior partitions are covered with painted plywood. The ceiling is fiber board and the floor is wood covered with linoleum. The library is outfitted with heating, plumbing, and electrical systems which are in need of renovation. The building is presently unoccupied, and in fair condition.

NCO Quarters (HS 64)

This structure on Kearney Road is a rectangular, two story buff brick building with a stone watertable and partially raised basement. It has a slate tile gable roof with a plain box cornice with partial returns on the gable ends. The house has two porches; one on the east (rear) facade which is one story high with a hip roof. It is enclosed with asbestos siding and supported on short brick posts. It extends the length of the house. The porch on the west facade is constructed of wood. It is one story high, somewhat smaller than the rear porch and is in the center of the facade. The house has wooden framed doors and double hung sash windows, which are also outfitted with aluminum storm windows. The windows have stone sills and elliptically arched lintels. The interior partitions

and the ceiling are plastered. The floors are wood except for the concrete basement floor. The house is equipped with heating, plumbing, and electrical systems. The house has six rooms in all, two of which are bedrooms and two of which are bathrooms. The house was built by the Army in 1907 and is presently occupied by the National Park Service. The building needs minor repointing and roof repairs.

Service Club YMCA Building (HS 40)

This roughly L-shaped buff brick building on Kearney Road consists of a long single story wing on the north, which houses an auditorium, connected by a short passageway to a two and half story main building which has a two story attachment on its south wall. There is a partially raised basement with stone facing under the main building. The auditorium has an asphalt shingled gable roof, the main building has an asphalt shingled hip roof and the passageway and the southern addition have flat roofs. There is a hip roofed dormer in the center of the western slope of the roof of the main building. There is a single story wooden porch in the center of the west facade of the main building. The steps and the floor are concrete and the flat wooden roof is supported by wooden columns. The porch is enclosed with wrought iron railing. There is a steel fire escape running down the western side of the two story addition. There is a brick belt course running the perimeter of the main building at the second story level. There are two internal brick chimneys housed in gable dormers on the north and south ends of the main building. The doors and double hung sash windows are of wood construction. The auditorium has especially large windows, twenty lights over twenty-five. The interior walls are finished with plaster and some with structural glazed tile. The floors are wooden, except for the basement, which is concrete. The heating, plumbing, and electrical systems are in fair operating condition. The service club (YMCA) was constructed in 1901.

In 1941 Fort Hancock saw a huge construction program underway. Many wood frame "temporary" structures were erected. In 1942-1943, probably to provide more recreational facilities for the increased Fort Hancock garrison, a gymnasium "wing" as added on the north elevation of the original YMCA building. Rectangular in shape, the building stands about 120 feet long, 80 feet wide, 20 feet high from ground to roof eave, and 35-40 feet from the ground to the peaked roof point. The interior of the gym is a large room with wooden floor with an elevated balcony about 12 feet above the floor around the entire room. A circa 1942-43 postcard in the Sandy Hook Unit Museum Collection shows the YMCA building with gym addition. On the back of the postcard is noted "Fort Hancock YMCA and Gage Memorial Gymnasium." During WWII Fort Hancock was commanded by Phillip S. Gage, Sr.. It is believed that General Gage and his wife might have led a fund drive to have the gymnasium built, and this is probably why the gym was referred to as such.

Post Exchange (HS 70)

Structure 70 on McNair Road is a rectangular one story building with a raised basement and a partially enclosed wooden porch on its eastern end. The building is constructed of the same buff brick as the other post buildings and originally

was the Post Gymnasium until 1942-43. It has a stone watertable and stone window sills. The building has a hip roof with overhanging rafter ends. The roof is covered with asphalt shingles. There is an internal brick chimney in the southeast corner of the building. The wooden back porch has a shed roof and is partially enclosed with siding. The unenclosed portion protrudes to form a loading dock. The building has concrete steps with iron pipe railings. The windows are wooden framed and double hung sash style with rounded arches. The exterior doors are wooden outside and aluminum within. The interior partitions are frame and are plastered, as are the ceilings. The floor is covered with asphalt tile. The heating, plumbing, and electrical systems are operable. There are also four lanes in a bowling alley, in the basement which has an automatic pin setter. The building is presently unoccupied, but used for storage by the Park Concessioner. It was built in 1909 by the Army. Minor repairs are needed for the exterior brickwork, lintels, and exposed wood trim.

Commissary (HS 47)

This single story, rectangular buff brick building on Kearney Road has a slate tiled gable roof supported by heavy timber beams. The building has a stone-faced partially raised basement with an outside bulkhead entrance on the southwest corner. There is a small, enclosed wooden porch with a shed roof and mounted on tiers in the center of the east facade. Running almost the length of the west facade is a concrete loading deck. The doors and the double hung sash windows are of wooden construction. Some of these openings have been boarded shut and the rest need to be for safety reasons. The building has heating and plumbing systems and the electrical system is operable. The rotted eaves, The building was constructed in 1900. The building is used by the NPS to store large museum artifacts.

Administration (Canteen) Building (HS 53)

This rectangular, single story buff brick building on McNair Road has a slate tiled hip roof supported by trussed wooden rafters. There is a stone-faced raised basement, a stone watertable, and a brick belt course. In the center of the west facade is a single story porch on concrete piers with concrete steps. Its flat wooden roof is supported by wooden columns. There is a smaller, wooden porch attached to the southern end of the east facade as well and another small wooden porch attached near the north end of the east facade the supporting bricks piers are in poor condition. The doors and the double hung sash windows are of wood construction. The windows have stone sills and elliptically arched brick lintels. There is an outside door to the basement under the west porch. The interior flooring is wooden except for the basement which has a concrete floor covered with asphalt tile. The ceiling is metal. The heating system is in poor condition; the plumbing and electrical systems are in fair condition. Repairs are required for the rotted eaves and the roof gutters as well as some minor roof leaks. The building was constructed in 1905 and is used for environmental education by Brookdale Community College.

Duplex Officers' Quarters (HS 21)

Structure 21 on Hartshorne Drive is a two and half story, rectangular brick building with a hip roof, which is divided into symmetrical north and south single family apartments. The building is constructed of the same buff brick as the other quarters on Officers' Row. The corners have brick quoining and there is a band of simulated quoining marking the division of the apartments on the west facade. The hip roof is shingled, with two hip-roofed dormers on the west slope of the roof. There are external gable end brick chimneys at either end of the house. There are also single story, flat-roofed open porches, supported by brick columns at the north and south ends of the building as well. The basement is partially raised. Each apartment has a wooden-framed frontis-iece entrance in the center of its west facade. The entrance has a round arched opening under a triangular pediment and flanked by pilasters. The doorways are reached by a brick stairway with concrete steps and iron railings. The double hung sash windows have stone sills and flat, keyed arches. They are equipped with aluminum storm windows. The floors and the roof rafters are wooden. The frame partitions and the ceilings are plastered. The stairways are wooden as well. The utilities are all functioning, and the building is presently occupied by the National Park Service as residences. The quarters were constructed by the Army in 1939. Only minor weatherproofing is required. The building has eight rooms, four of which are bedrooms and the other two bathrooms.

Chapel (HS 35)

The post chapel on Hartshorne Drive is a single story, rectangular frame building with a low, projecting entrance housing double aluminum framed glass doors. Both the vestibule and the main building have gable roofs covered with asbestos shingles. The main roof is supported by open wooden trusses. The spire and belfry were removed in 1975 to alleviate structural problems. There is also a stack at the west end of the chapel. The wood framed double hung sash windows are in two sizes, eight lights over eight, and sixteen lights over sixteen. The interior is open to the roof truss. There is a raised platform in the front of the chapel. The heating, plumbing, and electrical systems are all operable. The building is presently used by the National Park Service as an auditorium for park programs. The chapel was built in 1941.

Theater (HS 67)

The post theater on Hartshorne Drive, is a basically rectangular single story buff brick structure with a two story addition attached onto its western elevation and a single story addition on its eastern end. The principal building and the western addition have asphalt shingled gable roofs supported by steel trusses. The eastern addition has a shed roof. There is a covered and enclosed passageway which leads up from the sidewalk to the western entrance at the theater. There are brick pilasters at regular intervals along the north and south walls of the theater. The double hung sash windows and the doors are of wooden construction.

There are steel framed casement windows in the main theater as well. Under the roof peak in the western attachment there is a fanlight. This addition also has a plain box cornice with partial cornice returns on the gable end. The theater has concrete slab flooring. The interior partitions and the ceilings are plastered. The heating system is in need of renovation and replacement. The plumbing and air conditioning systems need renovation. The electrical system is in fair condition. Constructed in 1933, the theater is used intermittently, for park programs. The gutters and downspouts are in need of repair. The mechanical system is in need of maintenance and temporary heating is required for maintenance.

Fire House #1 (HS 51)

The rectangular, single story buff brick building on Kearney Road has an asphalt shingled hip roof with a hose tower in the center of the north wall. Attached to the east wall is a shed roofed addition, also one story high. The windows have stone sills and elliptically arched brick lintels. Both the doors and the double hung sash windows are wood framed. There is an overhead sliding wooden door in the center of the west facade. Projecting over this door is a traffic signal. The flooring and foundations are concrete. The interior partitions are painted brick. The ceiling is of wood strip construction. The heating, plumbing, and electrical systems are in fair to poor operating condition. Constructed in 1905, the firehouse is used by the Park Service.

Storehouse (HS 65)

This rectangular, two story warehouse on Kearney Road has a slate tiled, gable roof supported by wooden rafters. There is a wooden loading dock supported by heavy timbers. The doors and the double hung sash windows are wood framed. The windows have steel bars as well. The doors and windows are in deteriorated condition. The building has concrete slab flooring and concrete and brick foundations. The heating, plumbing, and electrical systems are in fair to poor condition. Built in 1905, this storehouse is no longer in use. It is in need of minor weatherproofing.

Duplex NCO Quarters (HS 80)

This two-family residence of Kearney Road is a rectangular building, two stories high and constructed of buff brick. The house has a slate-tiled roof with two internal brick chimneys. The building has a one story, flat-roofed porch which extends nearly the length of the west (front) facade. The porch, which is screened in, is supported by wooden columns. There are two smaller porches, enclosed with asbestos siding, attached to the rear wall of both apartments. There are a total of six rooms, two of which are bedrooms and one of which is a bathroom. There is a basement as well. The interior frame partitions and the ceilings are plastered.

The roof and the floor frames are wood. The basement floor is concrete. The house has operating heating, plumbing, and electrical systems. Built by the Army in 1911, the house is presently occupied by the Coast Guard. It is in need of minor weatherproofing.

Barracks (HS 119 and 120)

These two identical clapboarded frame barracks on Kearney Road are two story rectangular buildings with skirt-roofs on the first floors and gable roofs over the second floors. The roofs are covered with asphalt shingles. The roofs are supported by wooden rafters and there are rafter ends protruding under the eaves of the roofs. The barracks have wooden fire escapes as well. The doors and the double hung sash windows are wood framed. The interior partitions are wood frame, as are the floors. The ceilings are of gypsum board. The stairways are also wooden. The barracks have crawl space but no basements. The heating, plumbing, and electrical systems are in fair to poor condition. These buildings are presently used by the Navy Reserve. These structures were built in 1941.

Duplex Officers' Quarters (HS 144 and 145)

Two identical buildings on Canfield Road are rectangular, two and a half story buff brick buildings with partially raised basements. Each building is divided by a central partition into a north and a south apartment. They have slate tiled hip roofs with two external end chimneys on each house. Each house also has flat roofed, enclosed porches, supported by brick columns on either end of the building. There are also single story porches attached to the rear wall of each apartment. There are hip roofed dormers on the east and west slopes of the roofs as well. The front doorways, which are reached by concrete steps with wrought iron railings, are sheltered by elliptical hoods supported by wooden columns. The buildings have brick quoining on the corners, and a simulated band down the center of the east and west walls. The roofs are supported by a wooden rafters. The houses have eight rooms each, four of which are bedrooms and one of which is a bathroom. The interior frame partitions and the ceilings are plastered. The doors, double hung sash windows, and the stairways are all wooden. Each house is equipped with heating, plumbing, and electrical facilities. Built by the Army in 1939, these quarters are presently occupied by the National Park Service. The exteriors are in need of waterproof painting.

Fire House #2 (HS 76)

This rectangular, single story buff brick building on Hudson Drive, has a single bay attachment on its southwest corner and a square, slate tiled hose tower on its southeast corner. The tower and the main building have slate tiled hip roofs supported by wooden rafters, but the attachment has a shed roof. There is an internal, brick chimney on the southwest corner of the building as well. The double hung sash windows and the doors are wood framed. There are two overhead sliding doors in the north facade. The windows have stone sills and elliptically arched brick lintels. The flooring and foundations are concrete, the ceiling is covered with wood stripping. The heating, plumbing, and electrical systems are in good to fair operating condition. The building was constructed in 1910 and is presently used by NOAA for storage. Minor weatherproofing is required as well.

20-inch Rodman Gun (HS-100A)

One of the outstanding features of Fort Hancock is the 20-inch Rodman Gun (100A) on Kearney Road. This gun is one of two experimental Models of 1864 20-inch Rodman guns. Cast in 1869, this muzzle-loading, smoothbore cannon weighs 115,200 pounds. Its bore is 210 inches long and 20 inches in diameter. The diameter of the base is 64 inches. The gun fired a 1080-pound projectile with a maximum charge of 200 pounds of mammoth grain powder. The complete length of the gun is 243.5 inches and the muzzle diameter is 34 inches. The gun is presently mounted on a trapezoidal concrete carriage around which are placed five solid shots. The gun was retained at the Proving Ground until 1903, at which time it was transferred to the Coast Artillery Corps, Fort Hancock Garrison. Although the gun never developed beyond the test stage, it was the most powerful in the world when it was cast.

Weighing Station (HS 44)

This simple rectangular, single story brick masonry shed has a slate tiled gable roof, supported on wooden rafters. It has a square, internal gable end brick chimney. The building rests on stone-faced foundations. The floor slab is concrete. The doors are wood and there are no windows or utilities. The building was constructed by the Army in 1898 as a weighing station for trains; it was adapted later as a latrine. It is presently unoccupied. Needed repairs include patching the roof and boarding up the doors.

Post Morgue (dead house) (HS 326)

The morgue is a rectangular, single story building, constructed of buff brick with an asphalt shingled hip roof supported by wooden rafters. There is a metal vent stack near the peak of the roof and an internal brick chimney in the southeast corner. The building has a simple metal box cornice which is in a deteriorated condition. The doors and double hung sash windows have wood frames. The doors and windows also have stone sills and elliptically arched lintels. There are transom lights over the doors as well. There are two doors in the west facade, one at either end. The steps to the western door are removed and those of the eastern door are concrete. The building has a raised floor, but a crawl space instead of a basement. The floor is supported by wooden joists. The building, which was constructed in 1905, has operable utilities and is presently used by NOAA.

The Post Laundry (HS 77)

The Post Laundry was constructed in 1910 after a fire destroyed the previous wood frame laundry building. The one story building is a concrete structure with a frame roof covered with tar and cinders. Inside the 40 x 100 foot main

building was the main laundry while the 29 x 38 foot ell sheltered an engine and a boiler. Although the building's exterior has changed little, during World War II it was used as the Post Exchange Garage, Tailor, and Shoe Shop. Presently, the building is currently used by the NPS as a carpentry shape.

Post Exchange Service Station (HS 60)

The Post Exchange Service Station, a yellow brick story building with a gable roof, and was constructed in 1936 replacing an earlier frame structure. In 1939 a yellow brick two bay garage was added to the north side of the station. The front facade has a gabled canopy extension supported by two yellow brick columns. The building is used by the NPS for storage.

Structures 164-167, and 171 (Bachelors Officers' Quarters) are identical quarters. They are two story wood frame rectangular buildings with white painted clapboard siding. These buildings have skirt roofs on the lower story and across the gable ends of the second story, but gable roofs on the top story. Both sets of roofs are covered with asphalt shingles and have protruding rafter ends under the eaves. The buildings have ventilation stacks along the peak of the roof, but the chimneys, which are metal stacks on brick bases, are outside the buildings on their northwest corners. There are also metal vents set into the gable ends, under the roof peak. The wooden fire escapes are also on the gable ends. Concrete piers are used as foundations. There are no basements, but crawl spaces. The doors and the double hung sash windows are wood framed, but except for Structure 171, are boarded shut. The interior partitions and the ceilings are covered with gypsum board. The floors are wood and like the roofs, are supported by wood framing. The heating, plumbing, and electrical systems are operable, but in poor condition. Portions of the skirt roof has fallen off onto the ground.

Building 171 is occupied by the Navy Reserve but the other four are vacant and are in need of weatherproofing.

Structures 168 and 169 (Mess Halls) are basically identical, rectangular, single story buildings with white painted clapboard siding and asphalt shingled gable roofs. There are rafter ends protruding under the eaves. The buildings are supported by wood framing. The electrical and plumbing systems are not operating. The buildings are not occupied and are in need of minor weatherproofing.

Structures 170 (Recreation Building) is a rectangular, single story structure with an asphalt covered gable roof. The frame building is covered with clapboard siding and the foundations are concrete piers. There are metal vent stacks

internally along the south side of the building. There is also an external heating chimney on the east end of the south wall. The doors and double hung sash windows are wood framed. The building is structurally sound, but the interiors are in a gutted, poor condition.

Buildings (HS 315-321)

The doors are grouped in pairs. There are simple hoods over the side doors and windows as well. The heating, plumbing, and electrical systems are not in operation and the building is not occupied. It is in need of minor weatherproofing, and it is used by the Army Reserve unit at Sandy Hook

When in September 1940, President Roosevelt ordered the National Guard into Federal service, a cantonment was located at Fort Hancock, housed in 384 winterized tent platforms. Buildings #315, 316, 317, 318, 319, 320, and 321 served as support buildings.

Enlisted Men's Mess Hall (HS 315 and 317) constructed by the WPA in 1940 has concrete block walls, concrete floors and foundations, and a wood and composition shingle roof. Each messed 208 men.

The Camp Post Exchange (HS 316, also built by the WPA in 1940, is constructed like buildings 315 and 317, but is one-third the size. Buildings #318, 319, 320, and 321, Men's Lavatory Buildings were built by the WPA in 1940. These buildings remain intact, used by Coast Guard personnel for storage.

Water Pumping Station and Electrical Generating Station (HS 341)

The Pumphouse, built in 1912, is one a half story yellow brick structure with a concrete foundation, flat tar and slag roof, and a leanto addition at the rear. It has large round arch doorway on the front facade, and round arch windows between brick pilasters obstructed by the brick extension 46' long which was added at a later date. The building, which has remained basically unaltered except for the replacement of the original equipment by more modern equipment, is used to pump water. The large windows of this structure have been bricked in.

Limehouse Building (HS 342)

Limehouse Building, built in 1942, is a one story gable asbestos sided building, 24' x 12', resting on a raised concrete foundation. It is used to treat water pumped out of the ground at Sandy Hook.

Aerator House Building (HS 343)

This one story concrete block structure, with an asbestos shingle roof and exposed concrete foundation was built in 1942. It continues to be used to treat water pumped out of the ground at Sandy Hook.

Duplex Residence (HS 338)

On the north side of Randolph Road facing south, this one story yellow brick structure, built in 1910, resembles Building No. 72. This structure was used to house civilian and military personnel, and it is little altered.

Residence (HS 340)

Built in 1899, this one and a half story frame structure with a peaked gable roof housed pumping station employees from 1898-1960s. The house, which rests on a raised brick foundation, remains the same except that the front porch has been enclosed and the building clapboard has been replaced by asbestos shingles.

Locomotive Store and Repair House (HS 503)
General Storehouse

Built in 1920 as a locomotive store house and warehouse. Presently, the building is used as a storage area. Building is a one-story steel columned masonry building with a steel truss roof and corrugated asbestos coated roofing. Sides of the buiding are brick. Interior of the building is open space except for the location of a 14' by 11' - 4-1/2 foot deep concrete well space for the original coal-fired steam heating system. Heating system was removed by Army. Rectangular in shape 72'-10" x 43', building has a contemporary style architecture. Roof is built up type, hip roof. Currently, there is no trace of railroad tracks on either inside or outside of the building. The tracks appear to have been removed by the Army between 1944 and 1956. The building is beginning to show signs of extensive deterioration of the masonry sheathed supporting pillars. Rusting of the internal steel primary structural members because of moisture is causing separation of the masonry sheathing and separation of the supporting pillars from the brick sidewalls.

Second Engineer Cottage (HS 504)
Coast Guard Family Quarters Building

Built as a one-family house for the Post Engineer in 1902. Structure is a two story, wood frame dwelling. Rectangular in shape, 37' x 28', with one wing attached, 11' x 28', and a porch enclosure converted to a kitchen in the rear of the building. Main building is wood frame with asbestos shingles on clapboard siding. First floor is raised three feet on wood beams and girders. The floor is hardwood on a wood subfloor. This area has a full basement with poured concrete walls and footings. The second floor is wood frame with tile floors on

wood subfloor, ceiling beams, and joists. The front porch is built up three feet on partial brick and partial concrete block foundation wall with wood floors. Rear porch was converted to a kitchen area and has a full extended basement. Windows are double hung wood with new aluminum storm windows. Interior doors are wood with new aluminum storm doors on the outside porch. Roof is hip type with asphalt shingles. Chimney is typical brick for heating unit. No special architectural features or decorative elements are evident.

Engineer Quarters Building (HS 526)
Coast Guard Family Quarters

Built in 1892 as engineer officer's quarters. Building is three stories, frame construction with colonial architectural features. Rectangular in shape, 27'-6" x 36' the dwelling has several porch and entrance extensions. Entrance to first floor is stepped up three feet. Floor is wood with some sections covered with tile on tile on wood beams and girders. Main section of the building has a full basement with foundation walls and concrete cellar floor. Enclosed and open porch areas have a crawl space only. Second floor is wood frame and flooring. Third floor is wood frame with sloped walls and projected dormers. Exterior of the building is asbestos shingles on clapboard wood siding. Windows are double hung wood frame with new aluminum storm windows. Doors are wood with aluminum storm windows. Roof is hip and gable type, asphalt shingled. Two brick chimneys extend high above the roof--one for the heating unit and one for the old fireplace. Wood pillars at the entrance and a decorative low fence on second story veranda depict the colonial architecture of the building. The original exterior appearance of this structure has changed little except for the addition of asbestos shingles. The interior of the building was extensively renovated by the Coast Guard in 1980.

Light Keepers' Dwelling (HS 528)
Coast Guard Family Quarters

Constructed in the early 1883s as Lighthouse Keepers quarters, the building is a two story wood frame dwelling with no definite architectural features. Basic plan is rectangular in shape with block or stone foundation wall, 30' x 32'-10", with a 14' x 26' rectangular screened porch on stone pillars. Porch entrance is three feet above grade and is also the elevation of the first floor. First floor is wood on wood girders and leans on a block bearing type foundation wall. Second floor is wood frame with sloped walls and projected dormers. Exterior of the walls are asbestos shingles on top of clapboard siding. Windows are double hung wood frames with new aluminum storm windows. Doors are all wood. Roof is hip and gable combination with asphalt shingles. No decorative elements are evident. The original exterior appearance of this structure was changed little except for the addition of asbestos shingles. The interior of the building was extensively renovated by the Coast Guard in 1980.

ADDITIONAL STRUCTURES (FORT HANCOCK)

HS-322. Ambulance Garage (1925). 19' 10" x 24' 2". Garage is of wood frame, corrugated iron roof, and concrete foundation and floors.

HS-323. Ambulance Garage (1942). Garage has frame wall, concrete foundation, and felt roofing paper roof.

HS-324. Power Plant (n.d.). One story concrete building containing 201 sq. ft.

HS-325. Tool Shed (n.d.). Frame construction containing 132 sq. ft.

HS-327. Garage (1934). 19' x 55'. Garage has wood walls, concrete block foundation, cinder floor, and composition shingle roof.

HS-328. Garage (1941). 20' x 56'. Garage has wood walls, concrete foundation, gravel floor, and felt roofing paper roof.

HS-329. Dental Clinic (1942. 29' 6" x 130' with 10' 5" x 15' 4" boiler room wing. Walls and floors are of wood, roof of relt roofing paper, and foundation of concrete piers.

HS-331. Nurses' Quarters with Mess (1941). 29' 6" x 136'. Structure is of frame construction and has wood floors, felt roofing paper roof, and a concrete pier foundation.

HS-322. Dismantled.

HS-333. Guest House (1941). 29' 6" x 130'. Structure is of frame construction and has wood floors, roof of felt roofing paper, and a concrete pier foundation.

HS-352. Hospital Annex Building (1941). 29' x 6" x 130'. Structure if of frame construction and has wood floors, roof of felt roofing paper, and concrete pier foundation.

HS-353. Same as HS-352.

HS-300. Storehouse (1940). Concrete slab foundation, concrete walls, frame pitched roof.

HS-301. Officers' Mess Hall (1940. 21' 8" x 31' 4" with wing 65' 9" x 21' 5". Building is of cement block walls with concrete foundation and floors and a composition shingle roof.

HS-302. Camp Headquarters Building (1940). 68' x 30'. Building is of cement block walls, concrete foundation and floors, and has wood and composition shingle roof.

HS-303. Garage (1941). Structure is of frame construction and has a floor area of 2448 sq. ft.

HS-304. Officers' Latrine (1940) 20' x 16'. Building is of cement block walls, concrete foundation and floors, and has a frame and composition shingle roof.

HS-305. Dispensary (1940). 66' 4" x 26' 4". Building is of same construction as HS-304.

HS-306. Sewage Pump Plant (1940). 14' 3" x 20'. Building is of same construction as HS-304.

HS-307. Sewage Pumping Station (1941). 21' x 22'. Building is of brick and concrete wall, floors and roof.

HS-41. Post Office (1941). 37' x 108'. Structure is of frame construction with wood floors, concrete pier foundation, and has a felt roofing paper roof.

HS-44. Storehouse (1898). Ashlar foundation, brick walls, and grey slate gable roof.

HS-49. Quartermaster Warehouse (1942). 50' 6" x 153' 2". Building is of same construction as HS-41.

HS-54. Warehouse (1941) 25' 4" x 108'. The warehouse is of frame construction with concrete floors and roof of felt roofing paper.

HS-59. Dismantled.

HS-63. Mess Hall (1942). Building is of frame construction with a concrete perimeter foundation, wood floor, pitched frame roof and contains 4,425 sq. ft.

HS-79. Oil and Paint Storehouse (1918). 30' x 50'. Concrete structure with a frame gable roof.

HS-206. Pumphouse (1940). Building is of frame construction with a concrete slab foundation, wooden drop siding, and an asphalt shingle roof.

HS-207. Concrete building originally used as radio station, World War I era.

HS-133. Garage (1933). Stuccoed concrete block structure with a gable frame roof covered with rolled roofing.

HS-143. Post gas station. 1 story, asbestos sides, flat wood roof. Original structure no longer standing; present gas station erected by National Park Service.

HS-185. Dismantled.

HS-134. Paint Storehouse (1941). 1 story tile masonry with a frame gable roof and a concrete slab foundation.

HS-184. Paint Storehouse (1941). Metal cladding structure with metal roof.

HS-155. Post Utilities Administration Building (1941). 25' 4" x 90' 2". Walls and floors are of wood, roof of felt roofing paper, foundation of concrete piers.

HS-156. Post Engineer Warehouse (1942). 60' 6" x 153' 2". Same construction as HS-155.

HS-186. Tank Pump House. Sheet metal structure has been dismantled; pumping mechanism remains.

HS-179. Bathhouse (1960).

HS-37. Pump House and Sewage Lift Station. 1 story stuccoed brick structure has a concrete slab floor and asphalt composition shingle roof.

HS-84. Sandy Hook Lighthouse Keeper's House. This structure was part of the Sandy Hook Light nomination for which is dated 6/16/75.

HS-85. Garage (n.d.). 1 1/2 story wood frame structure.

Water Treatment and Pumping Plant Station

In addition to the five structures described on pages 36 and 37, this complex contains three historic water wells. Number 1 has a small shed over it, number 2 has a concrete tower and shed over it and number 3 has a similar concrete tower above it. All are more than 50 years of age and are significant to the development of Fort Hancock.

Halyburton Monument

This monument was erected in 1937 by C.C.C. camp 288 Sandy Hook, New Jersey, for the Works Projects Administration (WPA) at Sandy Hook, as a memorial to Lieutenant Douglas Halyburton and a number of his men, who froze to death in a blizzard at Sandy Hook on December 31, 1783. Lieutenant Halyburton was serving in the British Navy at the time of his death.

ADDITIONAL STRUCTURES (COAST GUARD PROPERTY)
(Non Contributing to NHL Significance of Site)

A. New Station and Boat Maintenance Facility

Station Building

Two story steel frame and masonry bearing wall building, contemporary style architecture.

Floor area 29,000 square feet used for personnel berthing, messing and offices.

Dock Travel-Lift

Built in 1974 consisting of 10,500 square feet sheet pile w/back fill and crushed rock surface.

Two 182' x 5' wide pile timber docks w/8'56' wood pile and timber finger piers.

New Boat Maintenance Facility

Built in 1974-75.

Open Bay structural steel frame and masonry bearing wall building design, contemporary architectural texture.

Rectangular in shape with 5,300 square feet of floor area.

Interior is made up of boat maintenance area and work spaces.

Machine Launchway

Built in 1938 as a 3 way marine railway with catwalks.

Wood pile and timber construction.

Railways have been removed because of deterioration and obsolescence.

B. Family Housing

New Family Housing Complex

Family Housing consists of 18 units of housing in six buildings built in 1974.

Two story wood frame duplex, triplex and fourplex apartment units.

Exterior of buildings is rough wood rustic contemporary style architecture.

Buildings are built on slab and concrete footings.

Buildings (141 and 142)

Eight apartment units in two identical buildings, 4,100 square feet each.

Construction is two story wood (frame with brick veneer on concrete foundation wall.

Date of construction 1939.

Plan is rectangular 33' x 57' with 17' x 25' rear wing.

Hip roof with dormers and asphalt shingles.

C. Group Office Building (CG-1)

Two and a half story wood frame building of colonial style architecture with wooden shingles on concrete foundation.

Built in 1937, the building plan is "I" shaped with added rear wing in the center of the "I".

DESCRIPTION OF OTHER BUILDINGS AND STRUCTURES ON COAST GUARD PROPERTY
(Continued)

C. Group Office Building (CG-1) (cont'd)

Central section is 36' x 83' and the total wings are 10' x 26'.

Building contains 9,500 square feet.

The roof is gable and the rear addition hip. There are eleven dormers. Roof covering is asphalt shingles.

The northern wing is the family quarters for the Coast Guard Group Commander.

The remainder of the building contains offices and electronic work and equipment spaces.

D. Loran Buildings and Structures

Garage-Loran Generation Building (CG-2)

One and half story wood frame building constructed on a concrete slab

Built in 1938 as a four bay garage, the building plan is rectangular 32' x 50'.

One bay is used for the loran emergency generator.

Roof is gable with eight dormers.

Generators removed after loran rate 3H5 discontinued in December 1980.

Loran Signal Building (CG-7)

One story wooden frame building on concrete slab.

Dimensions are 20' x 26'.

Built in 1956, the building houses the loran signal timing monitoring equipment for loran rate 3H5. All equipment now has been removed from this building.

The gable roof is covered with asphalt shingles.

Loran Antenna

Built in 1956, the 129' guyed aluminum triangular loran antenna has 250' diameter buried copper ground system.

DESCRIPTION OF OTHER BUILDINGS AND STRUCTURES ON COAST GUARD PROPERTY
(Continued)

E. Miscellaneous Buildings

Storage Building (CG-3)

One story masonry block building on concrete slab.

Built after 1944, the building dimensions are 14' x 29'.

The roof is gable with wood trusses and asphalt shingles.

Shed (CG-8)

One store wood frame building 12' x 16' with gable roof built between 1944 and 1951 on a concrete slab.

Shed (CG-12)

One story wood frame building.

6' x 10' with flat roof built between 1944 and 1951 on a concrete slab.

Building 524

Two story, concrete wall house 20' 26' with a 10' x 18' porch built on concrete foundations.

Nothing is known about the original purpose of this 864 square feet building. It appeared to have been used as a radio station in 1914. Built circa 1905.

Presently, it is abandoned and in very poor condition.

Building 525 (Garage Building)

Detached garage was built in 1907 for family housing use as a one car garage.

Building is a 16' x 32' wood one story frame building with a wooden floor on brick piers.

DESCRIPTION OF OTHER BUILDINGS AND STRUCTURES ON COAST GUARD PROPERTY
(Continued)

E. Miscellaneous Buildings (cont'd)

Building 527 (Detached Garage)

Built in 1907 as a two vehicle garage and storage area.

One story wood frame building with concrete floor slab and foundation.

Rectangular in shape, 30' x 20'.

Roof is gable, asphalt shingled.

Siding is asbestos shingles on clapboard.

Building S-103; Carpenter and Maintenance Shops

Originally built in 1941 and the interior renovated for shop use.

Beacon Tower

This beacon tower is of steel mounted on a concrete base with a brass fog bell mounted on the base. The tower is at the west tip of Sandy Hook, the "point" of Sandy Hook, and is about 20 to 25 feet high from ground to beacon light. The beacon is a blinking light. The beacon tower is believed constructed circa 1914-1918 and is scheduled to be removed in F.Y. 83 and replaced with a skeleton tower.

KNOWN ARCHEOLOGICAL SITES AT SANDY HOOK (NHL Significance not assesed at this time)

1. Spermaceti Cove: The Cove House Tavern (c. 1780-1855). Possibly a Block-house Site, Revolutionary War Era or War of 1812.

2. Spermaceti Cove: Skeleton Hill Island, old gravesites.

3. Horse Shoe Cove Point: The area east-southeast of Battery Arrowsmith, the Fort Hancock dump and gravesites. To the south of Battery Arrowsmith, old 1870-1893 dock pilings, dump site.

4. Horse Shoe Cove Shoreline: Halyburton burial vault (stone, subsurface) c. 1785-1788.

5. Guardian Park: From NIKE Missile Display northwest to Building #19, Post Hospital Army dump site of army materials, subsurface.

6. Area west of Buildings #300, 301, 317, and 318: early gravesites, possible Sandy Hook Lighthouse Keepers graveyard c. 1764-1897.

7. Sandy Hook Lighthouse: 1764 to present, a long use period of confined occupation American Revolution War of 1812 fortifications built at and around the light house. Possible gravesites just northeast of Building #85 which stands just northeast of the lighthouse.

8. Northeast of Sandy Hook Lighthouse: In meadow area southeast of Building #254 foundations were located the "Ocean" (shipwreck victims) cemetery (earliest known recorded grave was 1801) and nearby Civil War Soldiers (1864-1866) cemetery. Graves may also have been at the Building #254 foundation site.

9. 300 yards east of above sites: Sites of the 1855 and 1872 U.S. Life Saving Serving Stations. Site occupation 1855 to mid-1886.

10. Two graves discovered 100 yards south of Battery Granger by CCC workers c. 1937. Also trash dump site just south of Battery Granger.

11. Sandy Hook Ordnance Proving Ground Range: Back dune areas from north of North Beach south to south of South Beach: Area includes ruins of structures, structures, trash dumps and was an impact area for cannonballs and artillery projectiles from 1874 to 1919.

12. Civil War Fort: parade ground area, an artifact area, possibly.

13. Coast Guard Dock Area: underwater, china, silverware, artillery projectiles, etc.

14. Coast Guard Area: At tip of Sandy Hook large dump site. Area contains many building sites connected with the Proving Ground, Ft. Hancock Garrison and Harbor defenses, Army Quartermaster and Engineer detachments, U.S. Lighthouse Service, U.S. Life Saving Service, commercial telegraph tower operations, and U.S. Weather Bureau operations.

15. Horse Shoe Cove beaches: Bottles and cannonballs.

William Howe's army flexed its muscles on Staten Island. On August 22 the British and their Hessian allies crossed the Narrows and landed on Long Island. Defeating the Patriots under Gen. George Washington in the battle of Long Island on the 27th, the British in a lightning-like campaign captured New York and secured the adjacent area.

In the summer of 1778, following the battle of Monmouth, the British Army stole a march on the victorious Patriots and retired to Sandy Hook. From there, the troops were shuttled by the Royal Navy to New York City.

During the War of 1812, the United States military, to prevent His Majesty's fleet from again occupying sheltered anchorages in Sandy Hook and Raritan Bays, rushed troops to Sandy Hook. Fortifications were erected and cannon emplaced, thus preventing British seapower from again using Sandy Hook as an anchorage and possible staging area for an attack on New York City, such as had succeeded more than one-third of a century before. At the end of the war, the troops were withdrawn from Sandy Hook and the temporary fortifications and camps merged into the landscape.

By the 1850s the United States had completed an integrated system of masonry fortifications for defense of New York City's inner harbor. But during these same years there had been a technological revolution afloat. Many merchantmen and warships were now propelled by steam, and were no longer subject to the whims of the winds. Powerful long-range shellguns were now mounted on ships and available for emplacement ashore. The time had arrived for the Nation to look to the outer defenses of New York Harbor. A site was selected and plans made for construction of a massive five bastioned fort on Sandy Hook, guns emplaced in the casemates and on the barbette tier of the fort would prevent a hostile fleet from employing Sandy Hook Bay as a base to blockade or attack the New York City area.

In 1857 the Corps of Engineers began preparing the site and two years later broke ground for the fort. Work was pushed during the Civil War years. By 1863 construction had progressed on the huge granite fort to the point where cannon were mounted in a number of casemates of the channel fronts. Troops were sent to the Hook to man this armament and guard the public property.

The Civil War accelerated a technological revolution in weaponry that made the handsome granite fort, and others like it around the world, obsolete before it was completed. Construction was suspended in 1868, by which time four of the bastions and the three channel fronts had been nearly completed. Two years before the garrision had been withdrawn and the fort, its armament, and supporting structures, were placed in the charge of fort keepers' and ordnance-sergeants.

In 1886 the Endicott Board submitted its report calling for a comprehensive defense system to protect the United States' most important ports and harbors from naval attack. These defenses were to consist of high-powered guns and mortars mounted in concrete emplacements; submarine minefields; floating batteries and torpedo boats; and rapid-fire guns to protect the minefields.

Sandy Hook under this program and ensuing ones evolved into the most important complex guarding the approaches to New York Harbor. Construction of the Endicott defenses resulted in demolition of all the old granite fort, except the angle of the southwest bastion and a section of the northwest curtain. These survived, because they were incorporated into the submarine mine defenses system.

In Fiscal Year 1890 work commenced on the mining casemate, which until 1905 was in the angle of the southwest bastion. Other elements of the submarine defense system (torpedo storehouse, cable tanks, etc.) were completed within the next several years. In April 1898, only days before the United States declared war on Spain, the system was activated. In the early 1900s the mining casemate was relocated into the abandoned emplacements of the Dynamite Gun Battery, and additional structures and facilities to support this vital element of the Sandy Hook defenses system constructed.

Beginning in Fiscal Year 1890 and continuing through 1908 hundreds of thousands of dollars were spent on construction and armament of seacoast and mortar batteries. The Sandy Hook lift-gun battery (Battery Potter), emplacing two 12-inch rifles, was the Nation's first completed Endicott disappearing gun emplacement. The mortar battery (Batteries Reynolds and McCook), armed with sixteen 12-inch mortars, was the system's prototype. Other emplacements completed during this period were these 12-inch batteries--Alexander, Bloomfield, and Richardson--each mounting two rifles on disappearing carriages; 10-inch Batteries Granger and Halleck; 8-inch Battery Arrowsmith; and a 3-gun dynamite battery. The Dynamite Gun Battery and Battery Potter soon became obsolete and were disarmed. The emplacements, however, were retained and given another mission.

An integral part of these batteries were the fire control structures--the primary, secondary, and supplementary stations--positioned at other points on the reservation, and the central powerhouse.

During World War I two 12-inch batteries (Kingman and Mills), each emplacing a pair of guns mounted on high angle barbette carriages with a 360-degree field of fire, were constructed. By 1921, when these batteries were transferred to the Coast Artillery, the mortar battery and Battery Arrowsmith had been disarmed and converted to other uses. Battery Arrowsmith and the Mortar Battery were used as antiaircraft defenses.

During World War II two batteries (Lewis armed with 16-inch guns and 219 with 6-inch guns) were added to the Sandy Hook Defenses. Located on the Highlands, they are not within the National Recreation Area. To protect them against aerial attack, Batteries Kingman and Mills and Battery Lewis were modernized--this included placing their 12-inch guns in casemates and gasproofing the traverse.

Beginning in 1897 work commenced on the rapid-fire batteries. By 1909 there had been completed and armed these permanent batteries--Engle mounting one 5-inch gun on a balanced pillar mount; Urmston emplacing four 15-pounders and two 3-inch guns; Morris with its four 3-inch rifles; Peck with two 6-inch guns on barbette carriages; and Gunnison with two 6-inch guns on disappearing carriages. These guns, which fired fixed ammunition, commanded the minefield and had the mission of preventing its penetration and removal by minesweepers and torpedo boats.

After World War I, Battery Engle was disarmed and the four 15-pounders on balanced pillar mounts removed from Battery Urmston. During World War II the rapid-fire guns were given the mission of defense against Axis motor torpedo boats. This resulted in a redeployment of the elements. The two 3-inch guns of Urmston were positioned in anew emplacement northeast of Gunnison; two batteries of 90 mm guns (Nos. 7 and 8) were established; Batteries Peck and Gunnison were disarmed; and, after Gunnison had been remodeled, Peck's 6-inch guns and barbette carriages were remounted in this position.

The Sandy Hook Defenses also included searchlights, antiaircraft guns, and "movable" guns. To service and maintain the batteries, there was a railway and road network, wharves, storehouse, shops, and an Engineer Reservation. To protect the site against the sea, beginning in the 1860s, a system of jetties and seawalls was constructed.

Between World War I and September 1940, the post was home to several coast artillery units of the country's small peacetime military establishment. During the summers, Fort Hancock provided facilities and instructors for the nation guard, civilian military training corps (CMTC), reserve officers training corps (ROTC), and army reserve encampments. Starting in 1937, Fort Hancock was also the site of a vital mission: the testing of equipment by the signal corps, which led the way in the development and deployment of radar. Taking cognizance of the growing threat to American security resulting from the sweeping successes scored by German military power in Europe, President Franklin D. Roosevelt declared a national emergency and federalized the national guard, while Congress passed the nation's first peacetime selective service act. 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.

During World War II Fort Hancock became headquarters for the harbor defenses of New York and the New York Subsector. In addition to coast artillery and anti-aircraft units, a mobile defenses force, the 113th Regimental Combat Team, was assigned to the command. This unit was responsible for protection of the Long Island and New Jersey beaches against enemy attacks. The post, as in the Great War, served as a base for the organization of units slated for service abroad. Beginning in 1943, the tide of war having turned in favor of the United Nations,

coastal defenses was given a reduced priority by U.S. War Department planners. The number and strength of the units assigned to Fort Hancock and the New York Harbor Defenses were slashed. In the spring of 1944, the 113th Regimental Combat Team was reassigned, preparatory to redeployment to Europe. During 1945 and 1946, Fort Hancock served the nation as a primary reception center for troops returning from the European theater of operations, before being demobilized and discharged. It was also the site of a disciplinary barracks, where military prisoners sent to the United States were confined.

During the period 1943-48 the Sandy Hook batteries, because of development of the atomic bomb and missiles and the successful application of new principals of amphibious warfare, were phased out and disarmed. In the early 1950s the missile age came to Sandy Hook with construction and activation of a NIKE missile site. This site, along with other units in the system, defended the vital New York-Philadelphia corridor against air attack. In 1958 it was improved by introduction of the NIKE-HERCULES system, and tracking radar. By the early 1970s this system had become obsolete and phased out. Sandy Hook's days as a key element in the defense of the Nation was over.

Sandy Hook Proving Ground

In August 1874 steps were taken by the Army's Ordnance Department to establish a Proving Ground at Sandy Hook, New Jersey. Operating on a shoestring budget, the Ordnance people moved expeditiously, and in the fourth week of October the first round was fired from a temporary proof battery. The testing facility soon became one of the Army's most important installations.

A technical revolution in weaponry, sparked by the industrial revolution and fed by the fires of nationalism, was underway on both sides of the Atlantic. The United States at first lagged in the contest. But in the mid-1880s, Congress, taking cognizance of the powerful modern navies being built by a number of European powers, began to make significant appropriations for the development and manufacture of powerful sophisticated rifled guns and mortar for emplacement in the Nation's coastal fortifications.

The Sandy Hook Proving Ground played a vital role in this program. All the experimental guns and carriages for the sea coast defenses were tested at Sandy Hook. After a model had been accepted by the Ordnance Board and placed in production, all the guns and carriages manufactured by the Army Gun Factory, other arsenals, or private contractor were shipped to Sandy Hook to be proof fired before being sent to the site where they were to be emplaced. This practice continued for many years. All the big guns and mortars and their carriages mounted in the Nation's Endicott-and Taft-period coastal fortifications from early 1890s through World War II were developed at Sandy Hook and many of them proved there. The heavy and field artillery used by the United States Army in the Spanish-American and World War I was tested at Sandy Hook, as were various types of Gatling guns and mitraileuses. The Life-Saving Service's Lyle gun was

tested at the Proving Ground. Powders, both explosive and propellant, and fuses were tested.

Sandy Hook Proving Ground also played a significant role in the development of radar in the years immediately prior to World War II.

In the 1930s radar (radio detecting and ranging) was developed independently, and about the same time in the United States, Great Britian, Germany, and France under various names.

The two ideas basic to pulse radar were the echo principle and the pulse principle. The echo principle was formulated in the 1880s by Heinrich R. Hertz in his work with electromagnetic waves, while the pulse principle was formulated in 1925 by Gregory Breit and Merle A. Truve in ionospheric work.

A. Hoyt Taylor and Leo C. Young of the Naval Research Laboratory and Col. William R. Blair of the Signal Corps and associated scientists spearheaded development in radio detection in the United States. By 1930 navy technicians had devised an interference type of radio detection. Army scientists first worked on microwave radar in the early 1930s, but the set were military failures, because they could not attain sufficient range. The output of power of microwave oscillator tubes at this time was too weak.

Success came by 1936 when both the army and navy developed pulse radar on longer wave lengths generated by special high power tubes. The Signal Corps demonstrated a model of the army's first radar in 1937. Army Chief of Staff Malin Craig was impressed with the SCR-268 radar, but he was also worried about what he felt was an inadequate amount of secrecy. After negotiations, the equipment was located at Sandy Hook among the holly and dunes. Capt. Rex V.D. Corput, the project superintendent, and Paul E. Watson, the civilian chief of the section, began work.

The Spermaceti Cove Life Saving Station

The Life-Saving Service in the years between 1848 and 1915 grew and matured from 14 Jersey shore stations into a "highly specialized organization of personnel expert in coastal rescue operations." The network of stations was slowly expanded, first to the neighboring coast of Long Island, then to other coastal areas, and ultimately to all coasts and the Great Lakes. Formally reorganized in 1871-72, the Life-Saving Service assisted more than 28,000 distressed vessels and 184,000 people. This service and its dedicated personnel represented one of society's noblest attributes--man's humanity to his fellow man.

When a volunteer Life-Saving Service was established in 1848, there were no paid lifesavers. The stations were merely depots in which lifesaving gear was stored to be employed by volunteers in rescuing seamen and passengers from stranded vessels. They also provided shelter on isolated coasts for shipwreck victims. In the 1850s provision was made for the hire of keepers for each station and in 1871 for the employment of surfmen during the winters.

Under Sumner J. Kimbal, beginning in 1871, the Life-Saving Service evolved into an organization with a high esprit and technical competence in rescue operations in which the nation took pride. Spermaceti Cove is intimately associated with the birth and development of the United States Life-Saving Service.

The Spermaceti Cove Life-Saving Station was one of the first eight Federally funded Life-Saving Stations to be established and is the only one of that group known to be extant. Restored by the Coast Guard in 1929-1930, it is now sited behind the Twin Lights Museum and is the property of the Twin Lights Historical Society.

A second building was erected in 1872 and served as the lifesavers' quarters until May 1895. This was razed in 1929.

Number 436 is the third station that served the lifesavers at Spermaceti Cove. It was constructed in 1894, and occupied form 1895 until 1949, when it was decommissioned, and still stands on the site--a tangible link with the past.

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Plumb Island, Skeleton Hill Island and South Island are not included within the boundaries of the Historic District

Errata Sheet

1. Page 23 add following buildings to NIKE Missile Launch Control Area.

T-429 Generator building. 1958
T-430 Enlisted Mens Barracks. 1955
T-431 Enlisted Mens Barracks. 1955
T-432 Enlisted Mens Barracks. 1955
T-433 Enlisted Mens Barracks. 1955
S-434 Latrine. 1955
T-435 Boiler House. 1955
S-437 Ready Building. 1964
T-439 Sentry Box. 1958
S-447 Paint and Old Storage Building. 1959
448 Sentry Control Station. 1958
449 Missile Assembly Building. 1959

450 Warhead Assembly Building. 1959
S-456 Sentry Box. 1960
457 Storage Building. 1960
458 Dog Kennel Building. 1958

2. Page 23 add following buildings to Tracking Station Towers

T-402 Barracks. 1955
T-403 Barracks. 1955
T-406 Latrine. 1955
T-407 Boilerbuilding. 1955
413 Sentry Box. 1955
423 Sentry Box. 1958
411 Control Van Building. 1956
417 Radar Tower 1956 (Target Tracking Radar)
418 " " " (Aquisition Radar)
419 " " " (Missile Tracking Radar)
420 " " " (Target Tracking Radar)
421 " " " (Aquisition Radar)
422 " " " (Missile Tracking Radar)
409 Control Van Building. 1956
410 Generator House. 1956
468 HIPAR Radar Building 1962
452 Equipment and Operations Building 1960
467 Target Ranging Radar Tower 1961
472 HIPAR Target Tracking Radar Tower 1962
473 " " " " " "
469 HIPAR Radar Tower (Concrete Base) 1962
414 Electric Power Building (Generator) 1961
453 Pedestal Radar Tower 1960
454 Equipment and Operations Building 1960